Impact of Labor Migration and Foreign Exchange Inflow on Rural Poverty Reduction

--Evidence from China in 1980-2021

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Abstract. Foreign exchange inflow plays a crucial role in rural poverty reduction and economic growth in developing countries. Taking China as an example, the authors analyzed the role of labor migration and agricultural foreign exchange inflow in alleviating rural poverty. Based on the time series data from 1980 to 2021, this paper investigated the historical incidence of poverty in China. Moreover, the effects of agricultural development, dynamic migration and foreign exchange inflow on rural poverty reduction in China were deeply analyzed by using the autoregressive distributed lag model (ARDL) from the perspectives of long-term and short-term estimation. Finally, effective measures to reduce poverty were proposed from the aspects of rural incentive plan, introduction of agricultural irrigation technology and provision of economic and technical subsidies, and inspiration to rural targeted poverty alleviation of other developing countries was pointed out.

Keywords: Foreign exchange inflow; Labor migration; Rural poverty reduction.

1. Introduction

Poverty reduction is an important part of the United Nations Sustainable Development Goals (SDGs). The poor population in the global rural areas accounts for 75% of the total poor population, and the development of agriculture is one of the important measures to reduce rural poverty in the world [1]. Agricultural development is closely related to rural poverty reduction[2], especially for developing countries, foreign exchange inflows in agriculture play an important role in rural economic development. Agricultural remittances from abroad can promote the investment of rural human capital in the country [3], and have a significant role in promoting rural poverty reduction and economic growth in developing countries [4-6]. Adams Jr et al. analyzed remittances, inequality and poverty factors based on data from 71 developing countries, and believed that remittances can greatly reduce the severity of poverty [7]. In addition, remittances also have a positive effect on local economic growth and the improvement of people's educational skills, helping to accelerate regional investment, human development, and the improvement of residents' health [4, 8-10]. The migration of local labor, as one of the main sources of foreign exchange in the region, may also have a positive impact on rural poverty reduction in the region [11].

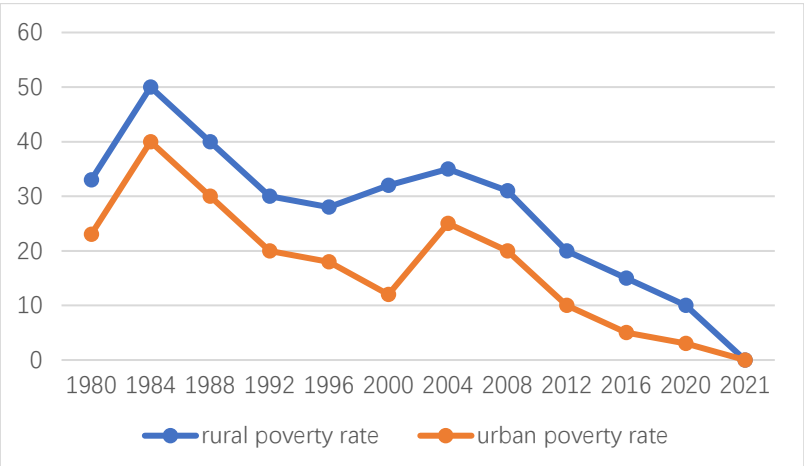


Fig. 1 Trends of poverty incidence in China, 1980-2021

According to the trend of poverty incidence in China's rural and urban areas from 1980 to 2021, it can be seen that the incidence of poverty in China has dropped significantly in recent years (Figure 1). According to the World Bank (WB) data, the incidence of rural poverty in China dropped by 44 percentage points from 1980 to 2021. Most Chinese living in rural areas are mainly engaged in agriculture. Therefore, the improvement of agricultural productivity can significantly reduce the incidence of rural poverty [13].

Almost everything in human society today is based on energy. Without energy, the production and life of human society will cease. For the people of many countries in the world, electricity has been universal, and cars are also commonly used as means of transportation. Energy is basically easy to obtain. Few people will consider the overall energy situation of human society, and only when the power supply is tight and the price of refined oil rises, they will realize the energy problem. But in parts of the world today, energy is still a luxury, and energy poverty still plagues many people on the planet. According to the international energy agency released in April, 2022 (The Track of Sustainable Development Agenda Energy Progress Report), it introduced the current economic development from four aspects energy poverty problem: First, how does the epidemic affect power construction; the second is electricity, which is affected differently by energy poverty in different places; the third is the dependence and influence of poor areas on electricity;the fourth is the difference between rural and urban areas and between countries on energy poverty.

According to the World Economic Outlook released by the International Monetary Fund on April 19, 2022, the total global GDP (GDP) in 2021 is 96.59 trillion US dollars, the total population is 7.686 billion, and the nominal per capita GDP is 12,528 US dollars. We can see from these data, whether it is to achieve the overall goal of the sustainable development agenda in 2030, or 7 goals to achieve the agenda, human society needs to continue to work long and hard.

Further broken down, there are only 31 developed countries with per capita GDP over 30,000 US dollars, mainly including traditional European and American powers such as Germany, Britain and France, as well as Japan and the Four Asian tigers. There are 37 well-off countries with per capita GDP between $10,000 and $30,000, mainly eastern European countries, middle Eastern oil producers, China and Russia, etc. There are 62 developing countries with per capita GDP between 3,000 and 10,000 US dollars, mainly including Turkey, Brazil, Vietnam, etc. There are 57 poor countries with a PER capita GDP of less than $3,000, including India and a large number of African countries.

In terms of the number of countries, more than 60% of the world's countries belong to developing and poor countries; In terms of total population, more than 80% of the world's population has a GDP per capita that is below the global average. Therefore, to develop the economy and eliminate poverty is a major problem facing all human societies. Globally, the proportion of the population with access to electricity increased from 83% in 2010 to 91% in 2020, an increase of 1.3 billion people. The number of people without access to electricity fell from 1.2 billion in 2010 to 733 million in 2020. However, the pace of world electrification has slowed in recent years due to the increasing complexity of reaching more remote, poorer and underserved populations, as well as the impact of COVID-19. From 2010 to 2018, an average of 130 million people had access to electricity each year; From 2018 to 2020, that number fell to 109 million. The annual growth rate of the number of people with access to electricity was 0.8 percentage points between 2010 and 2018, but fell to 0.5 percentage points between 2018 and 2018.

Between 2010 and 2020, 45 countries achieved universal access to electricity, 19 of them in Latin America and the Caribbean. As of 2020, 91 countries still do not have universal access to electricity, and sub-Saharan Africa accounts for a large portion of the world's unconnected population. Between 2010 and 2020, an average of 25 million people had access to electricity each year, in line with the annual population growth of 26 million. About a third of the countries with deficit access to electricity (including 8 of the 20 countries with the largest underserved population) experienced increases in access to electricity of more than 2 percentage points per year during this period; 71% of the deficit countries had an annual growth rate of less than 2 percentage points, with electricity access declining in seven of them.

Since most of the poor people in developing countries depend on agriculture for their livelihoods, it is reasonable to believe that the growth of agriculture in developing countries can significantly improve the economic level of the region, thereby improving people's living conditions. The oil crisis in the Gulf region in the late 1970s led to a dramatic increase in labor demand, and a large number of labor from other regions moved to Middle Eastern countries. For many developing countries and regions, labor migration, as the main source of regional foreign exchange, can promote local economic growth and improve the living standards of local people by improving the quality of health and education [4-5,10]. The local government has also gradually removed its control over the private sector, realizing the multiplier effect of remittances flowing into the real economy [12]. Therefore, this study takes China as an example to empirically analyze whether foreign exchange inflows from the agricultural sector can have a greater marginal effect on poverty reduction than other sources of income.

2. Research Methods

This study collected annual data from different sources in China from 1980 to 2021. Among them, agricultural data and rural population poverty data come from the China Rural Statistical Yearbook over the years; foreign exchange inflow, government expenditure and education data come from the World Bank development indicators respectively. All the variable indicators and calculation methods involved in this study are shown in Table 1.

Table 1. Variable index and calculation method

Variable	Symbol	Calculation method
Rural poverty rate	$Rpov_t$	Proportion of rural population below the poverty line
Agricultural Development	Agr_t	Agriculture as a share of GDP
Foreign exchange inflows	Rem_t	Per capita foreign remittances received as a share of GDP
Agricultural labor	Lab_t	Agricultural labor as a share of all labor
Government spending	$Govex_t$	Government Fiscal Expenditure (USD)
Education level	Edu_t	Education spending as a share of GDP

The time series analysis is carried out with China as the sample, and the model is set as:

$$Rpov_t = \alpha_0 + \alpha_1 Agr_t + \alpha_2 Lab_t + \alpha_3 Rem_t + \alpha_4 Govex_t + \alpha_5 Edu_t + \varepsilon_t \quad (1)$$

First, the ADF test (Augmented Dickey-Fuller) and the PP test (Phillips-Perron) were used to test for the existence of a unit root. Both ADF and PP test the null hypothesis that there is no non-stationary unit root. In the presence of structural transformation, the study further conducted ZA test (Zivot and Andrews) to test the unit root in the presence of structural breakpoints.

Next, a cointegration test is performed. Autoregressive distributed lag model (ARDL) can be used for single cointegration analysis. Its setting is more flexible, and it can be used to analyze stationary time series and first-order single integration series, and the obtained results are consistent with the samples. In addition, long-term and short-term effects can be calculated simultaneously, correcting for endogeneity biases for long-term effects that cannot be estimated. Set up the ARDL model as follows:

$$\Delta \mathrm{Rpov}_t = \beta_0 + \sum_{i=0}^{p} \beta_{1_i} \Delta \mathrm{Rpov}_{t-i} + \sum_{i=0}^{p} \beta_{2_i} \Delta \mathrm{Agr}_{t-i} + \sum_{i=0}^{p} \beta_{3_i} \Delta \mathrm{Lab}_{t-i} + \sum_{i=0}^{p} \beta_{4_i} \Delta \mathrm{Rem}_{t-i} + \sum_{i=0}^{p} \beta_{5_i} \Delta \mathrm{Govex}_{t-i} + \sum_{i=0}^{p} \beta_{6_i} \Delta \mathrm{Edu}_{t-i} +$$
$$\beta_7 \mathrm{Rpov}_{t-i} + \beta_8 \mathrm{Agr}_{t-i} + \beta_9 \mathrm{Lab}_{t-i} + \beta_{10} \mathrm{Rem}_{t-i} + \beta_{11} \mathrm{Govex}_{t-i} + \beta_{12} \mathrm{Edu}_{t-i} + \varepsilon t$$

Among them, β_0 is a constant, ε is the residual, t is the year, Δ is the first difference, and the summation sign of all variables indicates the error correction; the F test can be used to evaluate the long-term effect of the time series and the joint significance of the time lag level [14].

For the stability of the model, the study used cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) to test.

The recursive residuals based on the above tests can effectively combine short-term and long-term dynamic results. If the results of the above two tests are below the critical limit of the 5% significance level, the model is stationary. In this study, the JB test was used to test the normal distribution of the samples. The standard value of the JB test is that the probability is greater than 5%. If the estimated result exceeds 5%, the sample is considered to be normally distributed. The study assumes that the rural poverty rate, agricultural GDP, agricultural labor force, foreign exchange inflows, government spending, and education levels are all subject to normal distributions in terms of skewness, kurtosis, and JB statistics, so there are no non-continuous outliers (Table 2).

Table 2. Descriptive analysis of all variables

Variable	Rural poverty Rate (%)	Agricultural GDP (%)	Agricultural Labor Force (%)	Foreign Exchange Inflow (%)	Government Expenditure (Log U.S. Dollars)	Education Level(%)
Mean	29.73	23.72	45.65	5.10	22.86	2.42
Median	33.24	23.43	46.79	4.96	22.65	2.49
Maximum value	49.30	28.45	54.01	10.25	24.26	3.02
Minimum	4.10	20.22	5.73	1.45	21.59	1.84
Standard error	12.06	1.79	7.46	2.25	0.73	0.34
Skewness	-0.64	0.63	-4.06	0.23	0.40	-0.18
Kurtosis	2.38	3.42	22.89	2.20	2.16	1.98
JB Statistics	3.18	2.80	731.16	1.35	2.12	1.84
Number of samples	38	38	38	38	38	38

Note: The JB statistic value is used to test whether it obeys the normal distribution

3. Results and Analysis

From the results of the unit root test, the key assumption of the ARDL test is that all variables are not second-order single integers [15]. The study uses ADF, PP, ZA to test the stationarity of samples. The ADF test results show that the two variables of agricultural labor force and education level are time-stationary series, while other variables are first-order single integral series; PP test results show that agricultural labor force, foreign exchange inflows and government expenditure are time-stationary series, while other The variables are all first-order single integer sequences (Table 3). The ZA test is used for the unit root test when there is a structural mutation. The results show that except for the agricultural poverty rate, which is a time-stationary series, all other variables are first-order single-integral series (Table 4). In summary, since there is no second-order single integral sequence, it is reasonable to use the ARDL model in this study. The ARDL model is sensitive to the Akaike Information Criterion (AIC) which selects the second-order lag value, in which the long-term relationship depends on the lag order, and the choice of order affects the acquisition of effective information [16]. The F statistic value more reflects the upper limit of the 5% significance level, and the result has an asymmetric cointegration relationship, so the ARDL model can be used.

Table 3. Unit root test of variables

Variable	ADF Test Statistics		PP Test Statistic	
	Level Value	First Order Difference	Level Value	First Order Difference
Rural Poverty Rate	0.914	-3.848***	0.510	-3.647***
Agriculture as a Share of GDP	-1.997	-5.551***	-2.012	-5.562***
Agricultural Labor	-6.545***	-10.206***	-6.556***	-33.952***
Foreign Exchange Inflows	-1.710	-5.741***	-5.746***	-5.746***
Government Spending	-0.133	-5.396***	-5.406***	-5.406***
Education Level	-3.275**	-4.489***	-2.525	-4.281***

Note: ***, ** indicate significant at the 1% and 5% levels, respectively

Table 4. ZA structure change test

Variable	Level Value		First Order Difference	
	T-Statistic	Time Mutation Node	T-Statistic	Time Mutation Node
Rural Poverty Rate	-5.244**	1997	-6.194***	1993
Agriculture as a Share of GDP	-2.880	1986	-6.136***	2006
Agricultural Labor	-18.354	2002	-9.257***	2004
Foreign Exchange Inflows	-3.896	1995	-6.908***	1989
Government Spending	-3.521	1997	-6.931***	2002
Education Level	-4.707	1999	-4.857*	1988

Note: ***, ** and * indicate significant at the 1%, 5% and 10% levels, respectively

3.1 3.1 ARDL Long-term Estimates

The long-term estimation results of the ARDL model show that agricultural development does have a significant positive impact on rural poverty (Table 5). Ali et al. found that, in the long run, agricultural development has the most significant impact on reducing rural poverty [17]. The results show that agricultural labor can also effectively reduce the incidence of rural poverty. As stated in the existing literature, rural population migration can effectively alleviate the occurrence of poverty, and there is an inverse relationship between the two [18-19]. This increase in income level based on the migration of population from developing countries to developed countries will effectively give back to local rural economic development through the inflow of foreign exchange [7, 11]. Especially in the 1990s, China's foreign exchange inflows totaled US$37 billion, which was 10.06% of domestic GDP in the same period [8, 20], and most of the foreign exchange inflows were used for domestic consumption and commodity purchases [21].

Table 5. Long-term estimation results of ARDL

Variable	Coefficient	Standard Error	T Statistic	Probability
Agriculture as a Share of GDP	2.721	0.635	4.290	0.005
Agricultural Labor	-0.953	0.310	-3.070	0.022
Foreign Exchange Inflows	-1.460	0.530	-2.750	0.033
Government Spending	-20.782	1.339	-15.520	0.000
Education Level	8.164	2.767	2.950	0.026
ECT	-1.117	0.370	-3.020	0.023

In this study, foreign exchange inflows do have a significant long-term effect on alleviating rural poverty, which is consistent with existing studies [7, 11, 22]. For developing countries, the foreign exchange generated by the migration of labor from their own countries to other developed countries can quickly accumulate capital in the region, thus effectively exerting the multiplier effect of economic improvement. The coefficient of error correction (ECT) in this study is -1.117, which means that the deviation of the rural poverty rate in the short-run to long-run equilibrium transition is adjusted to 11.17%.

3.2 ARDL short-term estimation

The short-term estimation of ARDL model shows that the first-order difference value of agricultural development still has a significant negative impact on rural poverty in the short term. In the short term, the government's agricultural policies in terms of tax relief and corruption control can effectively improve agricultural productivity and alleviate rural poverty [23-24]. In the long run, the impact of such a policy may be limited (Table 6).

The coefficient for rural labor is not significant. From 2017 to 2018, China's agricultural labor force accounted for 43.3% of the total labor force. On March 27, 2019, the Chinese government promulgated a new policy named "Isaas" (meaning sympathy) to provide rural female residents with raw materials such as livestock and seeds, and encourage them to participate in agricultural breeding and planting [25]. The logic behind it is that the effective development of agriculture can better absorb surplus labor and create new employment opportunities.

Table 6. Short-term estimation results of ARDL

Variable	Coefficient	Standard Error	T Statistic	Probability
Agriculture as a Share of GDP	-3.412	0.931	-3.670	0.010
Agricultural Labor	0.693	0.407	1.700	0.140
Foreign Exchange Inflows	2.485	0.560	4.440	0.004
Government Spending	13.933	5.946	2.340	0.058
Education Level	-7.978	2.930	-2.720	0.035

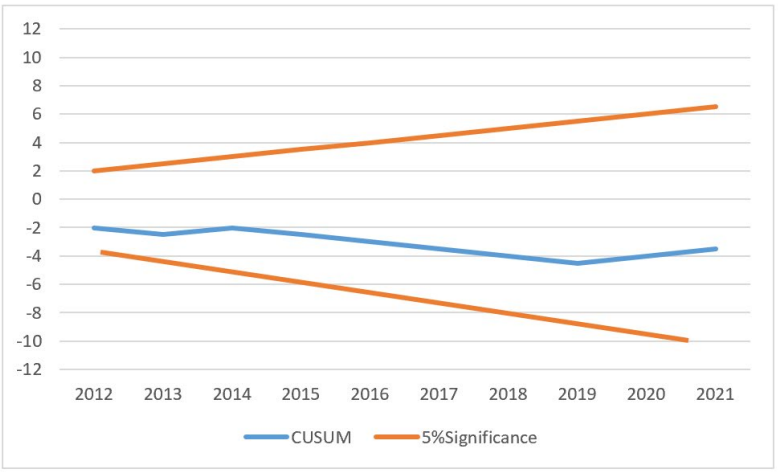
Foreign exchange inflows have a more significant impact on alleviating rural poverty in the short term. Although foreign exchange inflows come directly from middle- and high-income immigrant families, they can be transferred to middle- and low-income poor families through the multiplier effect, thereby effectively improving their living standards. For poor families, due to the high cost of migration, most poor families still live in their original places, and it is difficult to enjoy the radiation effect brought by the economic development and labor demand of neighboring countries and regions [22]. The poor residents in these rural areas are the biggest beneficiaries of foreign exchange inflows. The incentive effect brought by foreign exchange inflows has a larger marginal effect on poverty alleviation in rural areas in the short term.

3.3 Diagnostic Tests

The results of a series of diagnostic tests such as R2, F test, LM test, JB test, Harvey test, Glejser test and stability (CUSUM, CUSUMSQ) test show that the R2 value shows that nearly 99.7% of the rural poverty variation can be determined by regression relationship Interpretation of independent variables; F value is significant, indicating that the model has a high fit; JB test results are not significant, proving that the data obey a normal distribution; serial correlation LM test is also not significant, it is considered that there is no serial correlation; Harvey and Glejser test For the diagnosis of heteroscedasticity, from the statistical results, both are not significant, proving that there is no heteroscedasticity (Table 7). The results of the stability test (CUSUM and CUSUMSQ) of the ARDL model showed that, with the 5% significance level as the standard, all variables remained stable during the sample observation period (Figure 2).

Table 7. Results of diagnosis test

Test	Statistics
R2	0.997 5
F test	7.439 1(0.000 0)
LM test	0.918 0(0.433 7)
JB Inspection	0.337 9(0.844 5)
Harvey test	0.786 5(0.697 3)
Glejser test	1.477 9(0.254 5)
Stability Checks (CUSUM and CUSUMSQ)	Normal



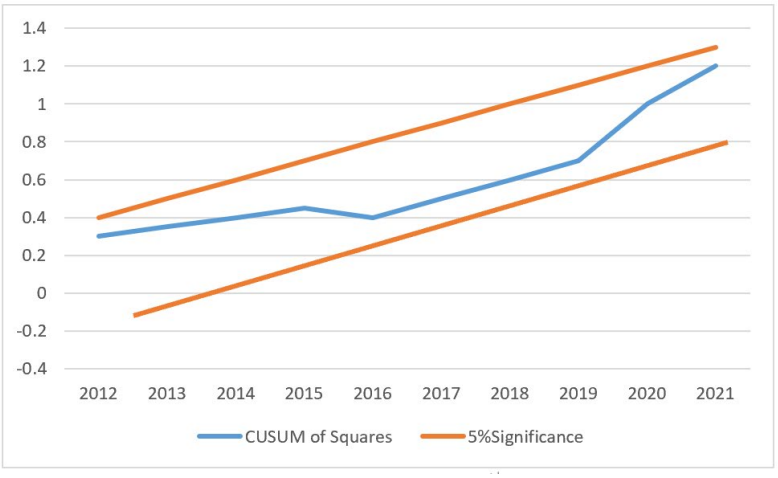


Fig. 2 Results of ARDL stability test

Note: The solid line is the cumulative sum and the cumulative sum of squares, and the dotted line is the 5% significance level confidence interval.

3.4 3.4 Robustness Check

In this study, dynamic least squares (DOLS), fully modified least squares (FMOLS) and generalized method of moments (GMM) are used to further examine the impact of foreign exchange inflows from agricultural countries on rural poverty. When performing cointegration analysis of non-stationary panel data, the use of dynamic least squares can effectively eliminate the endogeneity problem and obtain statistics with asymptotic normal distribution [26]. Fully Modified Least Squares provides unbiased estimates under small sample conditions [27]. The generalized law of moments does not assume that the samples are normally distributed, but estimates through the moment conditions. Therefore, for long-term ARDL models, these three estimation methods are still reliable in the presence of cointegration. The results show that most variables are still significant and their signs remain stable, especially foreign exchange inflows, and all model coefficients are significantly negative, further indicating the rationality of the hypothesis in this study (Table 8)

Table 8. Results of robust check

Variable	DOLS	FMOLS	GMM
Agriculture as a Share of GDP	3.018 6	5.219***	-0.550*
Agricultural Labor	3.124 4***	0.619**	0.015
Foreign Exchange Inflows	-3.324 9***	-3.092**	-0.434**
Government Spending	-5.737 0***	-3.850***	-16.124***
Education Level	-16.648 9	-8.197	0.980

4. Conclusions, Policy Recommendations and Implications

4.1 Main conclusions

Using China's time series data from 1980 to 2021 as a sample, this study analyzes the impact of foreign exchange inflows in agriculture based on the migration of domestic labor on poverty reduction in rural areas in the region. Using the ARDL model, the study examined the relationship between long-term, short-term, and variables with time-mutated unit root cointegration. The following main conclusions are drawn:

First, the effect of foreign exchange inflows on rural poverty reduction is more reflected in the short term, while the long-term impact of agricultural technology development on rural poverty reduction is more critical. For regions with high population density represented by China, by encouraging the promotion and participation of agricultural planting, irrigation and breeding technologies, a balanced poverty reduction effect can be achieved in the long and short term.

Second, labor migration can not only effectively alleviate the labor demand in the immigrant country, but also create more employment opportunities in the immigrant country. Therefore, a flexible and reasonable visa policy can attract more high-skilled labor to participate in the international division of labor. However, for labor-exporting countries, the high transaction costs caused by international exchange will affect the realization of the poverty reduction effect of local rural residents to a certain extent, and weaken the international competitiveness of labor-exporting countries.

4.2 Policy Recommendations

First, governments of developing countries should reduce the transaction costs of capital flows by introducing more flexible foreign exchange inflow and transaction policies, and provide local residents with more convenient and secure financial services by vigorously transforming and building financial and wealth management infrastructure in rural areas. transfer service. For poverty reduction in rural areas, more favorable local immigration policies will help local residents who migrate abroad to participate in local rural and agricultural construction and development through exchange through appropriate channels. This will not only help improve the quality of life of rural residents, but also help the government to increase foreign exchange reserves.

Second, the government should provide cash, subsidies, and crop insurance for agricultural needs by developing new agricultural policy programs. The efficient flow of cash is crucial to the development of agricultural economies in rural areas. For the smallholder economy, good agricultural planting, breeding and irrigation facilities are also conducive to poverty alleviation. Therefore, differentiated rural policies (for small farmers and large-scale operations) can better leverage the multiplier effect of cash flows such as foreign exchange inflows. In the long run, the popularity of electric power facilities in agricultural production, the convenience of supplying raw materials for crops, and the application and subsidies of new energy irrigation technologies will play a more fundamental role in effectively overcoming the decline of the long-term effect of foreign exchange inflows.

4.3 Implication

First, as an important part of rural financial targeted poverty alleviation, providing high-quality rural financial public services and products is crucial for giving full play to the role of finance in poverty reduction and alleviation in rural areas [28]. Financial poverty alleviation and poverty alleviation pay attention to the efficiency of capital investment and risk prevention and control at the same time, especially Internet finance, as an important carrier for the development of inclusive finance, has inherent advantages in targeted poverty alleviation because of its inclusive nature and the ability to bridge geographic gaps[29] . However, the existing rural financial systems in developing countries still have problems such as high cost of financial services, inadequate capital management, and imperfect risk protection mechanisms, making it difficult to meet the diversified financial needs

of rural residents [30]. China's rural financial service system, especially the significance of financial poverty alleviation through foreign exchange inflows, is very important.

Second, foreign exchange inflows can significantly alleviate rural poverty in the short term. The inflow of foreign exchange can have a multiplier effect by increasing the income of local residents to improve living standards and investing in health care, education and the purchase of commodities (such as real estate, etc.). Due to the imperfect financial services such as foreign exchange in rural areas of developing countries at this stage, there is a phenomenon of financial exclusion, that is, financial institutions in rural areas are withdrawing from cities, farmers and rural enterprises are difficult to obtain loans, and funds flow in reverse to cities, etc.[31] , which will have a negative impact on the short-term effect of foreign exchange inflows from agricultural countries in reducing rural poverty. To alleviate financial exclusion, it is necessary to lower the financial threshold, through privatization, tax subsidies and other policy measures, to cultivate new rural financial institutions such as village banks in a targeted manner, overcome the defects of the rural financial market, and reduce the adverse selection of funds for poor farmers, so as to effectively Stimulate the capital flow multiplier effect of foreign exchange inflows in rural poverty reduction. In addition, in addition to strengthening the government's macro intervention in financial institutions, it should also focus on improving the rural financial ecology, creating a favorable environment for credit and information flow, and raising the financial awareness of poor rural residents. Through big data inclusive finance, the credit guarantee of poor farmers can be realized, thereby overcoming the vicious circle of financial exclusion [32].

Third, labor migration can not only effectively alleviate the labor demand of the immigrant country, but also create more employment opportunities for the immigrant country. Therefore, a flexible and reasonable visa policy can attract more high-skilled labor to participate in the international division of labor. However, for labor-exporting countries, the high transaction costs generated by international exchange will affect the realization of the poverty reduction effect of local residents to a certain extent, and reduce the international competitiveness of labor-exporting countries. In the process of comprehensively and deeply promoting the new round of household registration system reform, developing countries should reform the population registration system (such as the unified household registration system for urban and rural areas to the residence permit system transitioning from the unified management of the population) to realize the free movement, employment and housing of rural residents [33]. On the one hand, this can effectively improve the mobility of personnel, capital and resources brought about by labor migration, and on the other hand, it can also realize the differentiated division of labor in different regions based on their own endowments, which is important for rural residents in developing countries to truly enjoy inclusive growth in the era of globalization. The benefits that come with it are crucial.

Fourth, in the long run, the effect of foreign exchange inflows on rural poverty reduction will be attenuated, and the development of agricultural technology will have a more critical impact on rural poverty reduction. guiding role. The realization of the road of agricultural modernization with the characteristics of developing countries should improve the productivity of cultivated land, resource utilization rate and labor productivity through continuous improvement of agricultural technology, so as to realize the increase of agricultural production and income[34]; Encourage farmers to actively participate and achieve a balanced poverty reduction effect in the long-term and short-term.

To sum up, based on the free migration of rural labor, rural finance represented by foreign exchange inflows can exert the multiplier effect of cash flow, which is conducive to alleviating rural poverty. This is especially important for developing countries with high population density and scattered rural settlements. Accelerating the mobility of rural funds is an important guarantee for the realization of agricultural modernization, which is conducive to further promoting the development of inclusive finance in rural areas of developing countries, thereby injecting fresh blood into rural targeted poverty alleviation and rural revitalization in developing countries. In the short term, the positive effect of cross-border capital flows (especially inflows) on the living standards of rural residents and poverty reduction in rural areas should be emphasized; in the long run, the rational

allocation of modern agricultural technologies, raw materials and resources is the key to other developing countries. It is a decisive factor for the country to truly achieve comprehensive poverty alleviation in rural areas and to promote the comprehensive development of rural residents' expenditure on medical care, education, and consumption.

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