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Analysis on the Poverty Reduction Effect of Fiscal Transfer Payment in Rural Areas

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Abstract: *I*n the past 40 years of Reform and opening up, with the rapid development of China's economy and the effective implementation of the government's poverty alleviation policy, all impoverished counties have been lifted out of poverty by the end of 2020. As an important means of adjusting income gap, the government's fiscal transfer payment has the potential effect of reducing poverty. Based on the panel data of 29 provinces from 2007 to 2018, this paper uses Pooled OLS regression and GMM analysis methods to study the poverty reduction effect of fiscal transfer payment on rural areas. The results show that the increase of fiscal transfer payment has a significant impact on the reduction of rural poverty in China.

Key words: Fiscal Transfer Payment; Engel Coefficient; Poverty Reduction Effect

1.Introduction

Over the past four decades of Reform and opening up, China's economy has developed rapidly. Meanwhile, poverty alleviation and eradication have been incorporated into the overall national development strategy. The Chinese government has put forward a series of poverty reduction and alleviation policies. Relying on fiscal expenditure to make up for market shortages and provide public goods for the poor population, a Chinese-style poverty alleviation path has been widely praised. From the 18th CPC National Congress to the end of 2019, the number of poor people has decreased from 98.99 million to 5.51 million, and the poverty incidence rate has dropped from 10.2% to 0.6%. The living standards of people in poverty-stricken areas continued to improve. In 2016, the per capita disposable income of rural residents in poor areas was 8452 yuan, and the increase rate is 2.2% which is faster than that of all rural residents. By the end of 2020, all poverty-stricken counties has been lifted out of poverty.

There is no consistent conclusion about the poverty reduction effect of fiscal transfer payment. For example, Darity and Myers (1987) propose that government transfer payment cann't help the poor get out of poverty, and the related reaction set off by transfer payment will make the poor more trapped on the contrary. Pushkar & Ray (2003) and Emmanuel & Maro (2008) find government transfer payment can effectively reduce poverty using the country-specific data. The study of Deepak (2009) shows public transfer payment will not lead to significant increase of income, and the increase of public transfer payment will "replace" private transfer payments to some extent. Based on CHNS data, Liu Qiouzhi (2010) finds China's fiscal transfer payment has an unsatisfactory effect on poverty reduction, and public transfer payment will make the poor poorer to a certain extent. Chu Deyin & Zhao Fei (2013) studies the nonlinear relationship between transfer payment and poverty by constructing a panel threshold regression model. The results show that within a certain threshold, increasing fiscal transfer payments can reduce rural poverty, but will aggravate rural poverty beyond this threshold instead. Fan Liming & Xie E (2014) use panel data to empirically test the impact of

China's transfer payment on household poverty vulnerability, and find no matter where the poverty line is drawn, public transfer payment has no impact on chronic poverty. Xie E (2017) find that with 1% increasement of the fiscal transfer payment, the poverty incidence decreases by 2% when direct tax is adopted, and decreases by 1% when indirect tax is adopted. Based on the multidimensional poverty analysis, Wang Xijing & Gao Yanyun (2017) believe the poverty reduction effect of transfer payment is higher in regions with high public service supply capacity. Chen Guoqiang et al. (2018) use the nonlinear moderating effect model to study the rural poverty reduction effect of public transfer payment. The result reveals fiscal transfer payments has a mitigating effect on rural poverty. Lu Hongyou & Du Yichen (2019) use anonymous and non anonymous evaluation indicators to comprehensively measure the redistribution and poverty reduction effect of "package" of fiscal instruments. The result shows that China's fiscial redistribution instruments have significant poverty reduction effect. The breadth, depth and intensity of poverty have all fallen by more than 20%. Ren Zhian & Zhu Kangfeng (2018), using panel regression model combined with space analysis, point out China's fiscal transfer payment has nonlinear space for poverty reduction effect, the short-term fiscal transfer payment is conducive to regional rural poverty, but the long-term one is not conducive to rural poverty. Yang Huaihong (2015) studies the impact of fiscal transfer payment on urban poverty reduction and believes fiscal transfer payment has a significant impact on poverty reduction.

From the existing researches, on the one hand, different scholars still have great controversy about the poverty reduction effect of fiscal transfer payment. On the other hand, most scholars mainly study poverty reduction from the perspective of economic growth and increasing the rural residents' income, while there is less research on the relationship between transfer payment and poverty reduction. This paper will study the impact mechanism of financial transfer payment on rural poverty, and use the provincial panel data to conduct empirical research on the poverty reduction effect of financial transfer payment. Finally, this paper will put forward targeted policy recommendations.

2.Theoretical analysis on fiscal transfer payment's poverty reduction effect

Since China implemented the reform of tax sharing system in 1994, there are four forms of transfer payment from the central finance to the local finance: financial transfer payment, special transfer payment, tax return and other transfer payments. Among these ones, financial transfer payment is a kind of subsidy which is arranged by the central finance to the local government to make up the financial gap. As an important part of fiscal transfer payment, financial transfer payment is also an important means to narrow the gap between the rich and the poor. Special transfer payment is a kind of subsidy set by the central government to achieve specific macro goals and development strategies. Special transfer payment is mainly used for education, medical treatment, agriculture, poverty alleviation and other subsidies, which plays a vital role in improving the living standards of rural residents.

The mechanism of poverty reduction effect of fiscal transfer payment can be divided into micro and macro levels.

From the micro level, some of the financial transfer payment is distributed to the poor in the form of direct subsidies, such as social insurance, welfare allowance, pension, relief fund, etc., which can directly improve the income level of the poor people. It is also the most direct way to reduce poverty and narrow the income gap, especially for those who are extremely poor. It is difficult to reverse the current situation of poverty by other means in a short period of time. They can only maintain their basic living by transferring income. According to statistics, financial transfer payment accounts for about 20% of the income of poor families. In another way, special transfer payment can provide policy guarantee for the poor and provide employment opportunities for the poor, so that they can earn money through their own labor. By guiding the poor people to participate in production and employment, the living standard of the rural poor people is improved.

From the macro level, by investing a large amount of financial transfer payment in poor areas, optimizing the economic development environment and stimulating social investment, the economic growth of poor areas can be promoted. Under the "trickle effect", the poor people can obtain more employment opportunities, improve the financial revenue of poor areas and enhance their self "hematopoietic" ability. A large amount of financial transfer payment

investment can alleviate the problem of insufficient financial expenditure in poor areas, and improve the production and construction capacity and the level of basic public services in poor areas. The construction of agricultural infrastructure can reduce drought, flood and pest disasters, improve agricultural productivity, and indirectly increase the income of rural residents. With the development of economy, people transform labor-intensive products into capital-intensive products through technological transformation, improve the total factor productivity of products, and thus improve the population productivity which also improves the living conditions of farmers to some extent. By accelerating the equalization level of basic public services, all citizens can obtain basic public services equally, which is conducive to creating a good atmosphere of market competitiveness and increasing farmers' labor enthusiasm. Then the survival and development ability of people in poor areas is enhanced.

3.Empirical study on the poverty reduction effect of fiscal transfer payment

3.1 variable description

(1) Explained variable. Rural poverty (POV). This article mainly studies the effect of fiscal transfer payment on rural poverty reduction. First ,it is necessary to measure the poverty situation of each province. Due to the long time span of the study, the data of poverty incidence in each region is incomplete. This article uses the method of Ren Zhian et al. (2018) to use the Engel's coefficient of rural households as an alternative indicator to reflect the level of rural poverty. Engel's coefficient represents the degree of wealth of a family. The larger the value is, the poorer the family is. Engel's coefficient = food expenditure / total expenditure.

(2) Explanatory variables. Financial transfer payment (TR) is the core explanatory variable of this paper. Financial transfer payment = provincial budget expenditure - provincial budget revenue.

(3) Control variables. This paper selects the following five main explanatory variables as control variables. ① The level of per capita GDP (RGDP) reflects the economic development level of a region. ② The intensity of financial support for agriculture (AG) is the total expenditure of each province on agriculture, forestry and water affairs. ③ Total fixed assets (FIX) is the total fixed assets investment of each province. ④ Foreign direct investment (FDI) is the actual amount of FDI in each province. ⑤ The proportion of rural population in the total population, which is denoted as SHARE.

3.2 Data processing and variable descriptive statistics

Due to the reliability and availability of data, this article mainly uses the data of 29 provinces and cities in mainland China (except Xizang and Gansu) from 2007 to 2018 as the analysis object. Due to the volatility of the data in the sample period, in order to eliminate the influence of multicollinearity, the logarithmic processing was conducted for each variable, which is denoted as Lnpov, Lntrans, Lnpgdp, Lnag, Lnfix, Lnfdi, Lnshare.

Descriptive statistical results of each variable are shown in Table 1. Due to the different units selected for each variable, each value cannot be compared horizontally. However, from the perspective of the standard deviation of each variable, the difference of foreign direct investment is the largest, and the standard deviation is 1.57. The smallest standard deviation is the proportion of rural population, with a standard deviation of 0.32, indicating that each indicator has different values.

Table 1 Descriptive statistics of each variable

Variable	Sample size	Average	Standard Deviation	Minimum	Maximum
lnpov	348	-0.993	0.18	-1.39	-0.58
lntrans	348	7.234	0.76	4.67	8.67
lnpgdp	348	10.496	0.52	8.84	11.81
lnag	348	5.794	0.76	3.13	7.18
lnfix	348	9.628	0.95	6.68	11.49
lnfdi	348	12.85	1.57	6.10	16.49
lnshare	348	-0.78	0.32	-2.30	-0.33

3.3 Empirical analysis

OLS regression is reliable only when classical assumptions are satisfied. GMM regression allows heteroscedasticity and autocorrelation in the random disturbance term of the model. Therefore, in order to test the robustness of the results, both methods were used for regression. Column 2 and 3 in Table 2 show the Pooled OLS and GMM regression results.

Table 2 Regression results

Variable	Pooled OLS (lnpov)	GMM (lnpov)
Lntrans	-0.0282**	-0.0375***
	(-3.07)	(-3.48)
Lnpgdp	-0.0774***	-0.0803***
	(-4.97)	（-4.92）
Lnag	-0.0119	-0.0158
	（-1.04）	（-1.21）
Lnfix	-0.00439	0.00649
	（-0.48）	（0.68）
Lnfdi	0.0151***	0.0124***
	（4.68）	(3.69)
Lnshare	0.0328	-0.0217
	(0.50)	(-0.30)
_cons	1.225***	1.278***
	(7.15)	(7.12)
N	348	319

Note: The T statistic value corresponding to the estimated coefficient is shown in brackets. ***, **, * separately means significant at the level of 1%, 5% and 10%.

Comparing the Pooled OLS and GMM regression results of provincial panel from 2007 to 2018, it can be seen that there is little difference between the two methods. “Lntrans” has passed the test at the significance level of 5%, and the estimated value of coefficient is negative, which indicates that the increase of fiscal transfer payment will reduce rural poverty, so as to achieve the purpose of poverty reduction. The concrete realization path may be that it directly increases their income by providing welfare transfer payment to the poor, such as pension and relief fund, and provides employment opportunities for the poor through special transfer payment and thus increases their income indirectly, such as encouraging farmers to create employment through poverty alleviation discount loan. Based on the results of existing literature studies, it is shown that the poverty reduction effect of special transfer payments is the most obvious among various poverty reduction method. However, it should be noted that the coefficient of fiscal transfer payment is

about 0.03, and the coefficient of economic growth is about 0.08. In comparison, the poverty reduction intensity of fiscal transfer payment is relatively small, so the poverty reduction effect of fiscal transfer payment is generally effective but there is still large room for improvement.

In addition, it can be seen from the regression results that per capita GDP can also significantly reduce rural poverty, which shows that the improvement of economic development level is conducive to poverty reduction. Economic growth can increase labor demand, promote employment level, and improve the income of poor people, so as to alleviate poverty. However, the increase of FDI will significantly increase rural poverty, which may be due to the role of FDI in the population with high education level, which will increase the income of skilled workers, so the role is mainly urban, to a certain extent this will increase the gap between urban and rural areas and increase the poverty level in rural areas.

4.Conclusions And Policy Rocommendations

Based on the panel data of 29 provinces in China from 2007 to 2018, this paper empirically studies the poverty reduction effect of fiscal transfer payment. The results show that the increase of fiscal transfer payment has a significant impact on China's rural poverty reduction, but its economic effect is not ideal. Based on the above conclusions and the current era background, the following suggestions are put forward.

Firstly, we should increase the fiscal transfer payment to rural areas, continue to support the advantageous characteristic industries in poor areas, and stabilize the income source of rural residents. The poverty reduction effect of "hemopoietic" poverty alleviation is generally higher than that of "blood transfusion" poverty alleviation. By supporting local characteristic industries, providing job opportunities or entrepreneurial subsidies for the poor, their work potential can be stimulated and their income can be increased in a sustainable way.

The second is to improve the anti-poverty policies for poverty alleviation through education, employment and entrepreneurship, and enhance the ability of poor individuals to escape poverty on their own. For the poor, it is necessary to improve their education level or increase their human capital through professional skills training to improve their ability to get rid of poverty. Individuals can obtain more job opportunities and find more income-increasing channels while mastering knowledge and skills.

Thirdly, the poverty alleviation policy of urban-rural integration should be established to narrow the income gap between urban and rural residents. The existing poverty alleviation policies mainly adopt the way of dividing urban and rural areas, and the poverty standards of urban and rural areas are also different. Such a dual-separation policy cannot promote the process of urban-rural integration. Therefore, it is necessary to establish an integrated poverty alleviation institution between urban and rural areas, ensure the integration of various systems, ensure the equalization of basic public services between urban and rural areas, and let urban and rural residents enjoy the same education, medical security system and minimum living security system, so as to improve the effectiveness of rural poverty alleviation.

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