The Influence Study of Local Fiscal Expenditures on the Urban-Rural Income Gap

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Abstract

Local governments form the policy distortion inclining to urbanization of public financial resource configuration under the double simulation of economic interest and political promotion, since from reform tax system. The paper adopts panel data from provinces of Chinese reform tax system from 1994-2012 and establishes variable intercept fixed effect panel data model to verify influences of local fiscal expenditures on the urban-rural income gap. The results indicate that there is co-integration relationship between local fiscal expenditures and the urban-rural income gap. There is negative effect between local fiscal expenditures and the urban-rural income gap. Therefore, it is necessary to further deepen the reform of the fiscal and taxation system and optimize structure of local fiscal expenditures.

Key words: Reform tax system; Local fiscal expenditures; Urban-rural income gap

INTRODUCTION

Chinese economy has entered into double transition stage of system transformation and development transformation, since from the reform and opening-up policy. Finance is the modern foundation and an important pillar to realize national governance system and governance ability. As a public resource configuration, the local government expenditure is an important mechanism to improve supply efficiency of public goods. It has already become a vital reforming measure in Chinese public sectors, since from yearly years of the new nation, especially for the reform and opening-up policy. In 1994, China implemented the reform tax system of financial system, so economic interests of local governments had a certain institutional guarantee (Zhang, 2012). However, the policy distortion inclining to urbanization of public financial resource configuration under the double simulation of economic interest and political promotion is formed, since from reform tax system (Xu & Wang, 2010; Tao et al., 2010). This paper tries to discuss influences of local financial expenditures on the urban-rural income gap since from the reform tax system, from the perspective of financial decentralization and tests influences of local financial expenditures on the urban-rural income gap empirically.

1. LITERATURE REVIEW

At the earliest, American economist Kuznets (1955) proposed a famous Kuznets Inverted U Theory concerning the urban-rural income gap, namely economic growth at the initial stage of economic development will enlarge the income gap. After economic prosperity, economic growth will shorten income gap. Greenwood (1989), Ding (2002), Hertel (2006) and Sicula (2007) demonstrated influences on the urban-rural income gap, from the perspective of financial development, dual economic structure, household registration reform, surplus rural labor force, family and individual characteristics, etc.. However, they had different opinions on the Inverted U Theory. The study of Kanbur (2005) finds that governmental behaviors (resource price distortion and nonfeasance of market distortion) also are important factors of impacting the urban-rural income gap. The study on financial decentralization and

the urban-rural income gap mainly involves in three categories: The first one is financial decentralization, economic growth and the urban-rural income gap. Wang et al. (2007) thought that financial decentralization under the political centralization continues to enlarge the urban-rural income gap and absence of fairness between market segmentation and public utilities, while activating local economy. Yin (2004) came up with the moderate principles of financial decentralization and thought that Chinese fiscal decentralization not only failed to promote regional economic growth effectively, but also intensified different degree of regional economic development. The second one is the urban-rural income gap caused by supply difference of public goods under the background of decentralization. Xie (2007) thought that increasing rural public product supply can reduce the urban-rural income gap, while extra-budgetary revenue and improvement of macroscopic tax burden between regions will enlarge the urban-rural income gap. Shen and Zhang (2007) studied the urban-rural income gap convergence effect of Chinese public expenditures and thought that government public expenditures didn't have an obvious role on reducing the urban-rural income gap, so as to restrain the realization of governmental entire welfare level and fairness. In addition, Jin (2008), Yu (2011) and Ding (2013) also studied this aspect. The third one is to discuss influences of financial decentralization system on the urban-rural income gap. Shen and Fu (2005), Wu (2006), Li et al. (2011) studied lagging and deficiency of institutional supply. Yao and Yang (2003) thought that unbalanced and deficient institutional supply in Chinese financial decentralization reform resulted in enlarging the urban-rural income gap. Meanwhile, Lu and Chen (2004) drew a conclusion that adjustment of financial expenditure structure enlarged the urban-rural income gap.

Differing from the existing studies, this paper studies the logical relationship and mathematical basis of local government expenditures and the urban-rural income gap under the background of reform tax system and realizes the functional value of finance or local finance.

2. MODEL SETTING, INDICATOR SELECTION AND DATA SOURCES

2.1 Model Setting

The study verifies influences of financial expenditures on the urban-rural income gap. In order to make analysis correspond with economic reality and avoid from endogenous problems generated by the model, it must control other independent variables of impacting farmer income growth as much as possible. We introduce other control variables (*X*) in the model. This paper adopts panel data of Chinese provinces and establishes the following panel data analysis model, in view of regional effects and time effects:

$$CI_{i,t} = \alpha + \beta G_{i,t} + \gamma X_{i,t} + \eta_i + \lambda_t + \varepsilon_{i,t}. \qquad (1)$$

Here *CI* refers to the urban-rural income gap, *G* stands for local government financial expenditures, *i* refers to various Chinese provinces(cities), *t* means time dimension (years), η_i stands for time-independent regional fixed effect, λ_t is time-independent time fixed effect; $\varepsilon_{i,t}$ is regression residual items; and α, β, and γ are parameters to be estimated.

Because this paper studies influences of local financial expenditures on the urban-rural income level, we select urbanization (*UR*), the urban-rural economic development level (*EC*), employment structure (*EM*), financial development (*FIR*) and human capital (*ED*) as other control variables (*X*). Urbanization is used for controlling influences of urbanization process on urban-rural income gap. The urban-rural economic development level is applied to control convergence effects of urban-rural economic development on the urban-rural income gap. Employment structure (*EM*) is adopted to control influences of non-agricultural industrial development and non-agricultural employment proportion on the urban-rural resident income gap. Financial development (*FIR*) is needed to control influencing effects of financial development level on the urban-rural income gap. Human capital is utilized to control influences of the urban-rural human capital on income gap.

2.2 Indicator Selection and Data Processing

2.2.1 Indicator Meaning and Measurement

Urban-rural income gap (*CI*): It uses the specific value between disposable income of urban residents and per capital net income of rural residents to measure the urban-rural income gap. The specific calculation formula is: The urban-rural income gap=disposable income of urban residents/per capital net income of rural residents.

Local government financial expenditures (*G*): Local government financial expenditures of gross level G_{it} refers to general local government expenditures in budget:

Urbanization (*UR*): For the measurement of urbanization, we still the measuring method of mainstream literatures and use the specific value between non-agricultural population and total population;

Economic development level (*EC*): It is used locally per capital gross domestic product (GDP) to measure;

Employment structure (*EM*): It is calculated by the proportion between employed population and total employed population in second industry and third industry;

Financial development (*FIR*): It is utilized the specific value between loans to financial institutions in the end of years and GDP to measure;

Human capital level (*ED*): It is calculated by using the specific value between school student number of common colleges and total population of each province.

2.2.2 Data Sources and Processing Description

This paper analyzes panel data of 31 provinces and cities in Chinese mainland from 1994 to 2012 empirically. All original data come from the State Statistics Bureau website, *Chinese Statistical Yearbook* (over the years), *Chinese Rural Statistical Yearbook*(over the years), *Compilation of Statistics in the Past 60 Years of New China*, *Statistical Yearbook* of provinces and cities over the years, Statistical Bulletin and statistical information network of provinces and cities. In order to avoid heteroscedasticity of time series data, this conducts recalculation processing of absolute number variables on the basis of eliminating price factors, conducts logarithm process on absolute number indicators, and ultimately calculates the following indicators, including the urban-rural income gap (CI), local government financial expenditures ($\ln G$), urbanization (UR), economic development level ($\ln EC$), employment structure (EM), financial development level and human capital level (ED).

3. EMPIRICAL ANALYSIS PROCESS

3.1 The Unit Root Test

In order to realize accuracy of the unit root test and overcome limitations of panel data unit root testing methods, we adopt the LLC test method, IPS test method, Breitung test method, ADF-Fisher test method and PP-Fisher test method simultaneously to conduct the unit root test on research objects. The null hypothesis of the LLC and Breitung test is the homogenous panel unit root, namely each section unit has the same unit root process; the null hypothesis of the IPS, ADF-F and PP-F test is heterogeneous panel unit root, namely each section unit has different unit root process.

The results show that in the original sequence, Breitung tests refuses the null hypothesis that CI has the homogeneous root unit on the significance level of 10%, LLC refuses the null hypothesis that $\ln EC$ has the homogeneous root unit on the significance level of 1%, IPS test and ADF-F test refuse the null hypothesis that $\ln EC$ has the heterogeneous root unit on the significance level of 1%, LLC test refuses the null hypothesis that EM has the heterogeneous root unit on the significance level of 1%, IPS test refuses the null hypothesis that EM has the heterogeneous root unit on the significance level of 5%, ADF-F test refuses the null hypothesis that EM has the heterogeneous root unit on the significance level of 1%, LCC test refuses the null hypothesis that FIR has the homogeneous unit root on the significance level of 5%, LLC test refuses the null hypothesis that EM has the homogeneous root unit on the significance level of 1%, and IPS test and ADF-F test refuse the null hypothesis that $\ln EC$ has the heterogeneous root unit on the significance level of 1%. Therefore, it can be judged that parts of $\ln EC$

and ED are stable, EM sequence is partly stable on the significance level of 10%, while other sequences are non-stable sequences.

The inspection results of all sequences after first difference indicate that Breitung test refuses the null hypothesis that CI has the homogeneous unit root on the significance level of 5%, while Breitung test accepts the null hypothesis that UR has the homogeneous unit root on the same level. To sum up, all variables have no unit root process after the first difference and belong to stable sequences.

3.2 Co-Integration Test

The unit root test results of panel data indicate that all studies variables are first integration and can conduct the co-integration test of panel data. Eviews software provides a method of co-integration test for three kinds of panel data. Here we conduct KAO test analysis directly. The output statistical volume is -3.712747, accompanying the probability of 0.0001. The inspection results indicate that the ADF statistical volume between sequences of four model variables (under the 5% of Confidence Interval (CI)) is obviously, namely KAO test thinks that model variable sequences have the co-integration relationship.

3.3 Selection and Estimation of Panel Model

Panel data models contain hybrid estimation model, fixed effect, and random effect model. In order to avoid from deviation set up by the model and effectiveness of intensified parameter estimation, we select the variable intercept fixed effect model in line with the above-mentioned methods of selecting panel models. This is consistent with the analysis of Yi (2013). The estimated results are shown in Table 2. It can be observed from the regression result of R^2, adjusted R^2, and F-statistics, etc., results that goodness of fit of the model is good, and it passes the significance test in entirety.

From the perspective of regression estimated results of national level, local government expenditures are important factors of impacting the urban-rural income level, regression coefficient symbol is positive and satisfies significance level of 5%, indicating that local government expenditures have the significant positive effect on the urban-rural income gap, namely with the scale expansion of local government expenditures, the urban-rural income gap also is enlarged with it. From the perspective of influencing degree, it can be observed that the local government expenditure changes a percent point every time, and the urban-rural income gap will change 0.1272 percent point. In addition, urbanization, financial development and human capital level also have positive effects on the urban-rural income gap. However, regression coefficient of financial development level has no statistical significance, while economic development level and non-agricultural employment have the significant negative effect on the urban-rural income gap.

From the perspective of districts, influences of local government expenditures on the urban-rural income gap in three major regions under the tax system have obviously different. Regression coefficient symbols in the East, Middle and West are positive, namely local government expenditures in the East, Middle and West will enlarge the urban-rural income gap, while regression coefficient in the West has no statistical significance, while eastern areas are obvious on the *CI* of 10%. From the perspective of influencing degree, the local government expenditure in the East increases 1% every time, the urban-rural income gap will enlarge 0.0896%. The local government expenditure in the middle increases 1% every time, the urban-rural income gap will enlarge 0.7088%, and the local government expenditure in the west increases 1% every time, the urban-rural income gap will enlarge 0.0252%. Furthermore, other control variables also have a regional difference on influences of the urban-rural income gap. Urbanization has obvious positive effects on the urban-rural income level in the East and Middle, and regional effect in the West is negative, but has no statistical significance. Regression coefficient of economic development level is negative, indicating that economic development is beneficial to shorten the urban-rural income gap, but regression coefficient in the West is not obvious. Increasing non-agricultural employment in three major regions can shorten the urban-rural gap, but regression coefficient in the East has no statistical significance, Financial development in the East and Middle can shorten the urban-rural income gap, but it will enlarge the urban-rural income gap in the West, while human capital level in the East, Middle and West has the obvious positive effect on the urban-rural income gap.

Table 1
Regression Results of Local Government Expenditures in the Whole Nation and Three Major Areas Under Tax System

Variables	Whole nation	East	Middle	West
C	4.290137***	2.633962***	10.31685***	5.357331***
ln$G$	0.127169**	0.089607*	0.608773***	0.025162
UR	0.410706**	1.476745***	2.169403***	-0.119893
lnEC	-0.179217**	-0.151905**	-1.303309***	-0.102038
EM	-0.019635***	-0.000747	-0.016636***	-0.041923***
FIR	0.011811	-0.112382**	-0.298665*	0.188215
ED	0.374885***	0.103326***	0.673139***	0.810538***
R^2* MERGEFORMAT	0.877003	0.857305	0.808896	0.767576
Adjusted R^2* MERGEFORMAT	0.868981	0.845414	0.790894	0.748761
F-Statistics	109.3308	72.09563	44.93241	40.79545
DW Statistics	0.381452	0.723165	0.514293	0.462614
Sample size	589	209	152	228
P(*F*- Statistics)	0.000000	0.000000	0.000000	0.000000

Note. ***, ** and * refer to pass the significant level test at 1%, 5% and 10%, respectively, similarly hereafter.

CONCLUSIONS AND POLICY ADVICE

This paper analyzes the configuration behaviors including to urbanization of local financial resources under the dual simulation of economic benefits and political promotion in the Chinese institutional change between regional governments. Moreover, this paper applies panel data of 31 provinces and cities in Chinese mainland from 1994 to 2012, since from Chinese reform tax system and analyzes influences of local expenditures on the urban-rural income gap empirically. Main conclusions are shown as follows: The local expenditure is an important factor of impacting the urban-rural income gap. There is co-integration relationship between the urban-rural income gaps by controlling other variables. From the perspective of negative effect between local financial expenditures under the condition of controlling other variables, there are opinions of controlling other variables. From the perspective of the negative effect between local financial expenditures and urban income gap, namely it enlarges the urban-rural income gap between local financial expenditures, namely, the human-resource enlarges the urban-rural income gap. From the perspective of districts, the conclusion that the urban-rural income gap is consistent with the conclusion but significance of regression coefficient in districts.

According to empirical analysis researches, it indicates that except for shortening the effect of shortening the urban-rural income gap, the configuration of public financial resources on the basis of shrinking overseas the urban-rural income level is small production. Configuration of public financial resources should get rid of configuration of inclining to urbanization, and it gradually steps to the right path of optimizing expenditures for supporting agriculture. First of all, shares between expenditures for supporting agriculture and total expenditures are gradually stepped. Changes of public facility expenditures and expenditures for UNESCO inclining to urbanization, positive external involving agricultural financial development and convenience of positive externality and convenience of facilities reduce development elements of rural economy and production operation of product transaction. It not only prevents capital and talents, etc., production elements from conducting unidirectional transfer from rural areas to urban areas, but also promotes bi-directional benign mobility, increases industrial investment opportunities, and cultivates the emergence of new-type agricultural operation subjects, such as rural entrepreneurial parks, rural medium small and micro-sized enterprises, home farms, and stock cooperative, etc..

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