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Econometric Analysis of the Impact of Tax Burden on Economic Growth in the Current Tax System

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Abstract:

Tax revenue is an important part of the national fiscal policy, which plays a key role in a country's economic growth. However, the tax burden on the economic growth will lead to different levels of obstacles, but also will have a significant impact on people's lives. Based on the current tax system in China, this paper uses econometric methods to quantify the impact of tax burden on economic growth. Concluded that the relationship between the economic growth in China in recent years and the macro tax burden is not very close, the pulling effect of macro tax burden on economic growth is not obvious, even still a certain degree of economic growth to negative effect. Therefore, reducing the overall macro tax burden has become a key part of the transformation of China's development model.

Keywords: Tax burden, economic growth, econometric analysis

1. Introduction

A measure of the scale and level of a country's economic development is usually included in the gross domestic product, gross national product, national income, etc. Including: GDP (gross domestic product GDP) is the total value of a country (or region) in a certain period of time (usually a year) in the market price of the domestic residents and foreign residents in the territory of the production of final goods and services, equal to the sum of GDP deducted foreign net factor income after the ultimate social value and labor value. National Product Gross (GNP) refers to a country (or region) in a certain period of time (usually a year) all permanent units in a certain period of time the final outcome of the initial distribution of income. It is equal to the gross domestic product and the net income from abroad for the first time. National income national income, Ni) is a state of material production sectors of workers in a certain period of time (usually a year) after deduction of new value creation the sum that a country in a certain period of time the production of social total product consumed in the production of the means of production.

Due to the current amount of China's national GDP and gross domestic product difference and sources in the scale of China's economy to foreign investment income is relatively small, so usually the gross domestic product (GDP) to measure economic development.

In the study of the relationship between tax burden and economic growth, the western countries have different theories and schools for a long time. The earliest classical school put forward the correlation between tax burden and economic development point of view; Keynesian school from the tax on the economic effects of proposed tax burden of "internal stabilizer" and "discretionary" principle; supply sides advocate from lower tax rate, expand tax base, ensure tax revenue to achieve the steady and coordinated development of production, revenue and economic. The Laffer curve pointed out that the tax rate will not only affect the tax revenue, will also have a certain effect on economic growth. According to the bell curve, there is a best tax rate point, namely the vertex position bell curve. When the tax rate is low, will affect the overall level of Taxation, is not conducive to the steady growth of the economy and taxation; when the rate is higher, the taxpayer tax burden, affecting the taxpayer's enthusiasm will eventually have an adverse effect on economic growth.

This chapter analyzes the relationship between tax burden and economic growth through regression analysis. Before the establishment of a regression model, first set up related variables: Yi, model explanatory variables, used to represent the gross domestic product (GDP) growth rate; x1, explanatory variables in the model, used to represent the above small caliber macro tax burden; X2, explanatory variables in the model to represent above caliber macro tax burden.

Analysis of the sample for the 2007-2013 years of Chinese GDP data which has been calculated in the medium and small caliber macro tax burden data.

2. Econometric Analysis of the Impact of Tax Burden on Economic Growth in the Current Tax System

2.1. The Impact of Small Caliber Macro Tax Burden on Economic Growth

Firstly, a linear regression model is established:

$$Y_i = \beta_1 + \beta_2 X_1 + U_i \quad (a)$$

Secondly, collect the sample data, as shown in table 1:

Item	2007	2008	2009	2010	2011	2012	2013
Yi	0.1862	0.1536	0.0788	0.1510	0.1513	0.0893	0.0868
X1	0.1716	0.1727	0.1746	0.1823	0.1897	0.1937	0.1942

Table 1: GDP and total tax revenue in our country in 2004-2013

Secondly, the use of Eviews8.0 software, the above data processing, the results were analyzed as shown in Figure 1 below:

Dependent Variable: Y				
Method: Least Squares				
Date: 11/27/14 Time: 21:36				
Sample: 2007 2013				
Included observations: 7				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.514102	0.302619	1.698841	0.1501
X1	-2.112695	1.654410	-1.277008	0.2577
R-squared	0.245937	Mean dependent var	0.128143	
Adjusted R-squared	0.095125	S.D. dependent var	0.042289	
S.E. of regression	0.040227	Akaike info criterion	-3.353585	
Sum squared resid	0.008091	Schwarz criterion	-3.369039	
Log likelihood	13.73755	Hannan-Quinn criter.	-3.544597	
F-statistic	1.630749	Durbin-Watson stat	2.085891	
Prob(F-statistic)	0.257686			

Figure 1: China GDP 2007-2013 growth rate and small caliber macro tax burden regression results

According to the regression analysis of Figure 1, the following results can be obtained:

A. In equation (a), the $\beta_2 = -2.112695 < 0$, that small caliber macro tax burden and economic growth in the opposite direction change, when other conditions unchanged, the small caliber macro tax burden for each increase of 1%, economic growth will be reduced by 2.11%.

According to the regression results, the relationship between the growth rate of GDP and the macro tax burden of small caliber is:

$$Y_i = 0.514102 - 2.112695 X_1 \quad (b)$$

B. Goodness of fit test R-squared=0.095125 is explained, the explanatory power of the regression equation is weak, that is, small caliber macro tax burden on the GDP change rate of 9.51% has made an explanation. From the value of the T and F statistics, are through the test, that is, the impact of small caliber macro tax burden on the rate of change of GDP is not significant.

Based on the above discussion, we can know that the impact of small caliber macro tax burden on economic growth is not significant, and there is no significant correlation between the two.

2.2. Influence of Macro Tax Burden on Economic Growth

In the same way, the relationship between the economic growth and the macro tax burden of the medium caliber macro tax burden is analyzed in accordance with the above methods.

Firstly, a linear regression model is established:

$$Y_i = \beta_1 + \beta_2 X_2 + U_i \quad (c)$$

Secondly, collect the sample data, as shown in table 2:

Item	2007	2008	2009	2010	2011	2012	2013
Yi	0.1862	0.1536	0.0788	0.1510	0.1513	0.0893	0.0868
X2	0.1931	0.1953	0.201	0.207	0.2196	0.2257	0.227

Table 2: GDP and total tax revenue in our country in 2004-2013

Secondly, the use of Eviews8.0 software, the above data processing, the results were analyzed as shown in Figure 2 below:

Dependent Variable: Y Method: Least Squares Date: 11/27/14 Time: 21:52 Sample: 2007 2013 Included observations: 7				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.484438	0.228713	2.118101	0.0877
X2	-1.698146	1.087925	-1.560903	0.1793
R-squared	0.327633	Mean dependent var	0.128143	
Adjusted R-squared	0.193160	S.D. dependent var	0.042289	
S.E. of regression	0.037986	Akaike info criterion	-3.468257	
Sum squared resid	0.007215	Schwarz criterion	-3.483711	
Log likelihood	14.13890	Hannan-Quinn criter.	-3.659268	
F-statistic	2.436418	Durbin-Watson stat	2.079042	
Prob(F-statistic)	0.179299			

Figure 2: China GDP annual growth rate of 2007-2013 and the macro tax burden regression results

According to the regression analysis of Figure 2, the following results can be obtained:

A. Equation (c), the beta 2 = -1.698146 < 0, the caliber of the macro tax burden and economic growth in the direction of change, when other conditions unchanged, the macro tax burden for each increase of 1%, economic growth will be reduced by 1.69%.

According to the regression results, the relationship between the growth rate of GDP and the macro tax burden of medium caliber is:

$$Y_i = 0.484438 - 1.698146X_2 \quad (d)$$

B. Goodness of fit test R-squared = 0.193160 is explained, the explanatory power of the regression equation is weak, that is, the macro tax burden on the GDP change rate of only 19.32% made an explanation. And from the t statistic and the value of F statistics, are through the test, that is, the impact of the macro tax burden on the GDP rate of change is not significant.

Based on the above discussion, we can know that the influence of medium caliber macro tax burden on economic growth is not significant, and there is no significant correlation between the two.

3. Conclusions

China's economy can maintain a lasting development trend, so that the economy can continue depends on recovery in the enterprise whether there is positive to expand investment and production, people have job and enthusiasm to do pioneering work, and these need to government departments from the financial point of view, to give support, the implementation of structural tax cuts, reduce the tax burden on the level of the residents and businesses. High tax burden, especially the substantial growth of non tax revenue, on the one hand, shows that China's tax source and tax structure is not reasonable; on the other hand, also reflects the government's expenditure structure there is a big problem. The former in addition to non tax revenue is not standardized, but also reflects the imbalance in the proportion of indirect tax and direct tax and national debt scale is too small, transfer low macro tax burden, tax and is too concentrated to the central. The latter in addition to spending freely and without planning, a problem has long been criticized is for excess government spending, public service coverage range is small and the level of supply is low, which leads people to buy the higher prices of public products, do not enjoy the financial income of high growth benefits of level of ascension.

In view of this, we need to reform the current tax system, accelerating the construction of public finance, fiscal revenue and expenditure structure optimization, which includes the following contents: one is Positive tax clearance fee, standardize non tax revenue, and gradually the government all revenues into the budget management, strengthening the people's Congress Supervision, while promoting implicit debt is dominant, dominant debt of government bonds, reducing tax burden level, improve the transfer tax burden to government bonds. Two is to establish a people-oriented tax structure. For example, on the problems of personal income tax, change currently to individual as a unit, without considering the needs of the burden of household spending and education, health care, pension and other large expenditures, appropriate to expand the scope of deduction, raising the rate of deduction, will be changed to the annual tax monthly tax, allow the family as a unit tax declaration. Third, government spending to more standardized, transparent and legalization, change the current fiscal expenditure for the low proportion of people's livelihood and public products, residents enjoy the public goods the quantity is too small, improve the government's public service and the level of social security.

4. References

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