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Property tax reform, economic growth and industry influence-evidence from provincial data in China

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ABSTRACT

Research shows that concern about the effect of taxes on economic growth and development is supposed to be noticed, because it is beneficial for the reasonable effective system design of property tax reform and the economic development in china. But today, there are few works that examine the impact of property tax on economy in China. Using the provincial data from 2001 to 2012 in china, this paper adopts AK model in the theory of endogenous economic growth and tax elasticity index to examine the economic effects, reveals the root of the influence as well as the industry influence from the current three main ideas of property tax reform. The result shows that the improvement of the property tax rate will not only give people negative effect which is greater than enterprise, but also keeps decreasing effect on enterprise investment. The root of economic impact is still derived from capital investment in the traditional factors of production. The consolidated tax will reduce the third industrial tax burden and increase the second industrial tax burden, especially influence on education, information, computer and software industry.

KEYWORDS

Property tax; Economic growth; Industry influence.



INTRODUCTION

In china, property tax reform is always a major concern and all kinds of different analysis and discussion have been made by various researchers. The decision on relating property tax reform at an appropriate time has been adopted at the Third Plenary Session of the 18th Communist Party of China(CPC) Central Committee. Therefore, it is very urgent to study the effect of property tax reform not only to design and improve property tax reform but also to imply the decision. At present, a large number of studies mainly from property taxes and rates, the real estate market, local governments, resource allocation and redistribution of wealth have been provided. But, as a tax policy, it is important to the economy of a country which reasonable property taxes can not only achieve the allocation of resources, equitable income distribution function optimization, but also aim to achieve macroeconomic objectives of macroeconomic stability. In short, how can the property tax reform affect the social economy in the end? What is the impact on other related industries. However, there is few empirical tests of these. The reasons of lack of empirical research lie in that property tax reform, which has no clear program and has very little basic data, is still in the pilot phase. Further, it is not beneficial not only to improve the plan of property tax reform but also to develop the economy.

So the influence of property tax reform on economic growth and related industries is of primary interest to this research. This belongs to the category of tax and economic growth. Although the neoclassical growth theory and the endogenous growth theory did not agree to each other theoretically, but they all indicate that the tax is an important factor for economic growth. According to this situation, using multi-country data from tax rates, tax structure, government taxes, etc, foreign scholars dominate the empirical study of the correlation between them. For example, Netzer (1966) shows the impact of property tax on the economy from the perspective of the tax burden using the partial equilibrium approach. Using a pooled cross-section time-series data set for 31 sub-Saharan African countries, Skinner (1987) tests these propositions by measuring the impact of government taxation and expenditure on aggregate output growth. He finds that the impact of tax distortions on output growth is usually negative^[1]. Mendoza, Miles-i Ferretti, Asea (1997) believe that in the exogenous labor supply model, the consumption tax does not distort consumer prices and has no effect on the incentive of capital accumulation and economic growth when the labor supply is inelastic^[2].

In China, the research mainly comes from a macro tax burden view and studies the relationship between tax policy and economic growth. Similarly, Ma Shuanyou and Wang Junping made a lot of empirical research on it, but there have been few tests of these effects of specific taxes on economic growth. Wang Qi (2006) analyses the effect of value-added tax and business tax on economic growth. He believes that in long-term there is stable positive correlation between taxes and economic growth. Alternatively, He Hui (2011) reveals that financial market interest tax and stamp duty have the negative effect on economic growth^[3]. Specifically, as Shi Ziyin (2008)^[4] assert, there are differences of different tax effects on economic growth and we should consider different types of taxes on economic growth according to the tax structure. Otherwise, Gao Lingling (2012) studies the effects of property tax on various sectors of the economy and the major macroeconomic variables by the CGE model. She then finds that improvement of tax rate, which will lead to the increase in house prices and real estate industry output, will play an important role in regulation of the macroeconomic and sectoral economic^[5]. However, the study only involved in real estate development and trading revenue stage, failed to reflect the impact of property tax in holding part. Therefore, in this paper, we explore the effects of property tax, economic growth and industry influence from the current three main ideas of property tax reform in order to give guidance for further details for property tax reform.

The remainder of the paper proceeds as follows. Section 2 outlines the theoretical model, Selects data and sets up the scheme of property tax reform. We test the impact of property tax on the economic growth and reveal the root of the influence, subsequently. Section 3 evaluates the industry influence of property tax. The conclusion is presented in Section 4.

PROPERTY TAX AND ECONOMIC GROWTH

This paper adopts AK model in the theory of endogenous economic growth as the theoretical foundations for the study. There are some reasons on the choice. First of all, the recent research results show that endogenous growth theory provide the effective idea in formulating national fiscal and industrial policies. Thus, it is known as the reflection of a typical endogenous of the basic idea growth theory. Second, according to various empirical findings, AK model of endogenous growth theory can characterize China's economic growth^[6]. Since AK model believes that the savings rate or investment rate have growth effect on the economy. In this paper, we use the effects of different property tax reform program on consumption, savings, and investment to investigate the effects of property tax reform on China's economic growth.

The model

According to He Hui's(2011) studies of economic growth model of financial market tax effect on economic growth, using AK model, namely: $Y_t = AK_t$. Let Y was the function of capital (including material and human capital) K , A represented the normal number of technical level. Then, I and S respectively denoted the investment and savings. If the capital come from the investment which was turned by the savings during t period, the proportion of which savings turned into investment was for ϕ' . s' indicated the savings after adjustment for the reform. Moreover, IG, SG, sg respectively were the investment rate, savings rate and the savings rate. After series of inference^[9], because of the regulation of the final tax, we assume a economic growth rate Δg_{t+1} , that is:

$$\Delta g_{t+1} = A \left[1 - \frac{1 + SG}{(1 + IG)(1 + sg)} \right] \phi' s' \tag{1}$$

Equation 1 explains the mechanism about property tax reform on the economic growth theoretically. Namely, once the adjustment of property tax, it will directly affect the consumer behavior, increase or decrease the consumption demand. At the same time, changes in consumer demand also affects the enterprise investment demand, and ultimately affect the economic growth. In addition, the studies of economic growth show that the level of economic development, public policy and city level need to be controlled because these factors play the important role in economy. As a result, it can be expressed as follows:

$$gdpv = a_0 + a_1 taxv + a_2 sv + a_3 inv + \sum_{n=4}^6 a_n x_n \tag{2}$$

Where $gdpv$ is the growth rate of province's gross domestic product (preceding year =100), which is as a proxy for the economic growth. As the influence coefficient of each variable, $a_i (i = 0, 1, 2, \dots, 6)$ is constant. And $taxv$ which is the ratio of property tax to revenue indicates the effective tax rate for property tax. sv (savings rate) represents the proportion of resident savings from income. The reaction from these two indicators can explain the economic impact of property tax reform to the resident individuals. Moreover, inv (investment rate) is the proportion which fixed investment accounted for GDP, and denotes the economic effect of property tax reform on enterprises investment. x_n are the other control variables, respectively including the open degree of economy (x_1 , as the proportion of total export-import volume accounted for GDP), inflation rate (x_2 , the residents of CPI index, preceding year =100) and the city rate (x_3 , as the ratio of total number of the urban population in the total population,

because of missing data it is instead by the ratio of the urban employment population in the total population during 2001-2004.)

Property tax reform schemes

There is no definite plan for property tax reform, and residential is not included in the tax scope. But from the expert opinion and the pilot schemes of Chongqing and Shanghai, property tax is essentially taxed in the holding stage. Furthermore, the land may be part of the scope on property tax and the overall real estate system should be adjust and reform(Gu Yunchang, 2013).The next step on property tax reform is those taxes in the link of construction and trade will be reduced, but in the link of hold will be increased(Lou Jiwei, 2013).Consequently, considering the various real estate taxes and the burden of residents,we build the following three schemes which come from China Economic Research Center of Peking University and Ba Shusong^[7], respectively.

Scheme1:Combined the property tax with urban land use tax.

Scheme2:Property tax, urban land use tax, land value-added tax, deed tax, city maintenance and construction tax will be merged one.

Scheme3:Combined these taxes from Scheme2 with the part of land grant fee. namely, the land grant fee only includes government income, accounting for about 30%.It will be calculated according to rate of certificate bonds in 2013 and be shared by 70 years.

Empirical strategy

Data and model form

As stated above, because of lack of data from Tibet, this paper collect the provincial panel data except Tibet in china and develops a regression model. All data for this study come from China Statistical Yearbook, China tax Yearbook, China land resources Yearbook and China economic information network covering the period from 2001 to 2012.

First of all, to avoid the deviation and improve the effectiveness of the estimation of parameters, this paper has carried on the model specification test. According to the form to set test method ($N = 30, K = 6, T = 12$), the F statistics respectively is $F_1 = 0.4683, F_2 = 0.8486$ Check the F distribution table, under the significant level of 5%,we find that $F_{10}(174,150)=1.2987, F_{20}(203,150)=1.2891$ And thus $F_1 < 1.2987, F_2 < 1.2891$ we accept the hypothesis and chose the following pooled regression model:

$$gdpv_{it} = \alpha_0 + \alpha_1 taxv_{it} + \alpha_2 sv_{it} + \alpha_3 inv_{it} + \sum_{n=4}^6 \alpha_n x_{nit} + u_{it} \quad (3)$$

$i = 1, 2, \dots, 30, t = 1, 2, \dots, 12$ u_{it} is also referred to as the random error. Secondly, respectively used the F test, the individual effects of Breusch-Pagan test and Houseman test to screen and test the model. Tab.1 presents using the fixed effects model.

Table 1 : The result of screen and test model

Content	Method	Null Hypothesis	Test Results
Pooled OLS or random effects	Breusch and Pagan lagrangian multiplier test	No individual random effects,error distribution, $H_0: \sigma^2_{\gamma} = 0$	Chi-Sq Statistic=580.4753 prob=0.0000, Reject the null hypothesis and select Random effects
Pooled OLS or fixed effects	F test	Significant at Individual effect, $H_0: \gamma_1 = \gamma_2 = \dots = \gamma_n = 0$	$F = 18.2573 > F_{0.05}(29, 324) = 1.5026$, Reject the null hypothesis and select fixed effects
Random effects or fixed effects	Haunsman test	Random effects was established, and Individual effects and the explanatory variables are also independent.	Chi-Sq Statistic=45.0225 prob=0.0000, Reject the null hypothesis and select fixed effects

To avoid the estimation error, It is still considered further about the groupwise heteroskedasticity, the autocorrelation between the cross-section and time dimensions in fixed effects. Next, the residuals have been test. The results are thus consistent with those reported in Tab.2. From table 2, we can know that there are heteroscedasticity and autocorrelation problems, to using feasible generalized least squares estimation (FGLS) to correct, ultimately regression results is in Tab 3.

Table 2 : The result of heteroskedasticity and correlation test

Content	Method	Null hypothesis	Test results
autocorrelation in the groups	Wooldridge test	H ₀ :no first order autocorrelation	Chi-Square=16.2189 prob=0.0001, Reject the null hypothesis and exist serial correlation in the groups
autocorrelation in the cross-section	Pesaran test	H ₀ :difference in coefficients not systematic	F(1,29)=4.1829, prob>F=0.0000,Reject the null hypothesis and exist correlation in the cross-section
Groupwise heteroskedasticity	Modified Wald test	H ₀ :Between group with heteroscedasticity	Chi-Square=18.4159 prob=0.0002,Reject the null hypothesis and exist Groupwise heteroskedasticity

Table 3 : Regression results

variable	Scheme 1		Scheme 2		Scheme 3	
	Coefficient	t –Statistics	Coefficient	t –Statistics	Coefficient	t –Statistics
C	-0.3261	-5.2530	-0.2932	-4.6795	-0.3544	-3.6679
Taxv	-0.2919	-2.1914	0.0372	2.2987	0.0395	2.6644
Sv	31.9804	2.2458	16.9947	1.2119	26.3318	1.5522
Inv	0.1000	9.3729	0.0951	8.9087	0.0888	5.4230
X1	0.0529	1.1270	0.0497	1.0374	0.0493	0.7757
X2	0.0140	23.7294	0.0137	22.9500	0.0142	14.9678
X3	0.0000	-0.2026	-0.0001	-0.5793	0.0000	-0.0848
R-squared	0.7021		0.6926		0.5345	
Adjusted R-squared	0.6966		0.6869		0.5259	
F-statistic	126.8930		121.2907		61.8133	
Durbin-Watson stat	2.0067		1.9861		1.3845	

Results

Under the level of 5%, Tab.3 illustrates that none of adjusted R² values are less than 54%, which is higher considering. That is that GDP above 54% can be explained by other variables, and the fit of the model is better. On the one hand, according to the estimated coefficient, the most significant correlation between each variable and GDP in various schemes is taxv, which ranges from negative to positive. It unambiguously show that, in an acceptable range of residents, an increase in effective rate of property tax will increase the proportion of property tax for residents income. Thus, it will cause the change from negative economic growth to the benefit of economy.

On the other hand, from absolute value of coefficient, the most significant influence is residents’ savings. The finding here is similar to the reported by Shi Ziyin(2011). That is, as Shi Ziyin assert, real estate tax is a kind of property tax which is a tax on stock and is made up by accumulation of flow in each period. So the levy of property tax is a substantial tax on savings^[4]. In comparison, in the aspect of factor changes, the improvement of all variables except for effective tax rate of the property tax from scheme1 to 2 will still maintain the consistency of coefficient direction. But all variables have declined, especially in the urbanization and the savings rate which have sharply dropped to 189.92% and 46.86%, respectively. Furthermore, investment rate, economic openness and inflation rate only slowly drop. Then in scheme 3, investment rate and economic openness continue to respectively decline. The coefficient of savings rate,urbanization, and the inflation rate are declining at the beginning, then are gradually rising. The development presents a "v" type. Those which have been affected hardest are still urbanization and savings rate. These also show that the main engine in our country's economic

expansion is from the resident income. Property tax reform will give individual more direct impact than enterprise. Regardless of the project, the correlation among investment rate, economic openness and GDP growth is always positive. Moreover, the economic effect of property tax reform on enterprises investment continue to be promoted. But it will be reduced to a certain extent after improving the effective tax rate of property tax. At the same time, it is important to observe that although the influence of urbanization on economic growth is very little in different property tax scheme, difference between various scheme is the biggest. Consequently, it presents that the development of regional economy will be significantly influenced once the part of land grant fee has been incorporated into property tax system.

The microscopic explanation of property tax reform on economic growth

According to the endogenous growth theory, economic growth can be attributed to inputs or productivity growth. As stated above, we have estimated the average effect of property tax reform on economic growth. Then, this paper continues to reveal the source of economic change from factor inputs and total factor productivity.

Property tax reform and factor inputs

In the micro-economic theory, factor inputs mainly included capital, labor and land. We continue to use the relevant data as mentioned earlier. inv_{it} still denote the investment in fixed assets which is as a proxy for the capital. Due to the lack of data, the labor (lab_{it}) is viewed as the employment in urban units (Year-end). And the land has been reflected by the form of land grant fee in program 3. Furthermore, as seen in new growth theory in economy, foreign trade could promote the economic growth by accelerating their technological progress and enhancing factor productivity (Lucas, 1988). Also, Okun's Law also emphasized there was a relatively stable relationship between the changes of GDP and unemployment rate. Meanwhile, a kind of alternative relationships between unemployment and inflation could be suggested by the Phillips curve. Therefore, this paper adopts economic openness Error! Reference source not found. and inflation Error! Reference source not found. as control variables of capital and labor input. Finally, from two aspects of capital and labor, the model we then start with is as follows:

$$inv_{it} = \alpha_0 + \alpha_1 gdpv_{it} + \alpha_2 taxv_{it} + \alpha_3 x_{1it} + u_{it} \quad (4)$$

$$lab_{it} = \alpha_0 + \alpha_1 gdpv_{it} + \alpha_2 taxv_{it} + \alpha_3 x_{2it} + u_{it} \quad (5)$$

($i=1,2,\dots,30, t=1,2,\dots,11$) As the influence coefficient of each variable, α_i ($i=1,2,3,4$) is constant. Table 4 focus on the coefficient Error! Reference source not found. in different property tax reform, because it represents the average impact of property tax reform on investment factors in real estate industry. As can be seen from the coefficient α_2 , scheme 2 is bigger than 1. It reveals that, all else being equal, the capital investment will be increased slightly after merging tax and raising property tax rate. However, after considering the factors of land and incorporation of land grant fee, the growth will have a slightly decline and finally maintains at 5.28%. Meanwhile, the supply of labor will maintain a slightly decline and eventually reduce 3.31%. It also shows that, compare to the reduction of labor supply, the capital investment growth in property tax reform is more significant. To a larger extent, the impact of the property tax reform on economic growth is obtained through capital investment rather than labor input.

Property tax reform and total factor productivity

We continue to compare the changes in different property tax reform program caused by TFP (Total factor productivity). In this paper, following the Li Junyu's (2013) research^[8], we empirically

estimate the growth rate of TFP during 2001- 2012 and create the following regression equation to explore whether the property tax reform will cause the change in factor productivity or not.

$$TFP_{it} = \alpha_0 + \alpha_1 gdpv + \alpha_3 taxv_{it} + u_{it} \tag{6}$$

Table 5 presents that the absolute value of coefficient α_2 is much smaller than above. Compare to the traditional description factors of production, such as labor and capital, the growth of TFP has a poor contribution to economic growth in property tax reform. So the contribution of TFP in sample period is not obviously rising. The development Chinese real estate industry is still mainly rely on the promotion of the traditional production factors. But technological advances make lower to the development of real estate industry.

Table 4 : Impact of property tax reform on factor inputs

Variable	Capital investment						Labor supply					
	Scheme 1		Scheme 2		Scheme 3		Scheme 1		Scheme 2		Scheme 3	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	-0.7505	-5.0055	-0.8006	-5.1311	-0.8002	-5.1248	-0.1167	-0.053	-0.7386	-0.3241	-0.7264	-0.3191
GDPV	3.2273	5.0268	-0.071	-1.3721	-0.0646	-1.2855	23.3223	5.2616	0.6861	1.8885	0.7021	1.9908
TAXV	2.0607	8.2331	2.17	8.7477	2.1694	8.7317	-1.571	-1.2801	-1.601	-1.2378	-1.6229	-1.2626
X1	-1.0989	-8.5924	-0.9898	-7.5826	-0.9895	-7.5777						
X2							0.0266	0.9362	0.0373	1.2627	0.0375	1.27
R-squared	0.3483		0.3018		0.3013		0.0819		0.0148		0.0159	
Adjusted R-squared	0.3423		0.2954		0.2949		0.0735		0.0057		0.0069	
F	58.089		46.9869		46.8777		9.7061		1.634		1.7668	
D.W	0.6335		0.5877		0.5881		0.1019		0.0902		0.0908	

Table 5 : The impact of property tax reform on TFP

Variable	TFP					
	Scheme 1		Scheme 2		Scheme 3	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.0442	1.2211	0.0494	1.321	0.0502	1.3446
GDPV	-0.0625	-2.0063	-0.0553	-1.722	0.0282	2.3374
TAXV	0.7479	4.8745	0.738	2.2493	-0.0562	-1.7495
X1						
X2						
R-squared		0.0732		0.021		0.0222
Adjusted R-squared		0.0675		0.015		0.0162
F		12.924		3.5175		3.7207
D.W		0.0475		0.0303		0.0308

IMPACT ON PROPERTY TAX REFORM TO RELATED INDUSTRIES

Because there is significant correlation to real estate, with these indicators of the tax burden and the tax elasticity, we continue to study the potential tax effect of property tax reform on related industries. Followed by the China Tax Yearbook’s division which involved three industries and 17 secondary industries, we choose these industries related to pay property tax. The taxes of industry come from 2013 China Tax Yearbook, and the added value come from the 2013 China Statistical Yearbook.

Due to lack of relevant data of land grant fee in each industry, we only select schemes 1 and 2 to estimate property tax reform.

Tax burden impact estimates

The formula 7 is of the from:

$$\text{Industry tax burden} = \frac{\text{Industry tax}}{\text{Industry output}} \quad (7)$$

Where industry output, we use the formula as follow: *total output = middle use + using use + end use - other use - imported*

Use above formulas and take the case of 2012, we can interpret the results of scheme 1 and 2 as in the following. Firstly, the property tax revenue will increase 315.265 billion yuan in scheme 2. Of which, the largest growth is obtained in the tertiary industry, followed by the second industry. It is close to 196.076 billion, accounting for 62.19%. The changes indicate that the ratio of industry tax in scheme 1 is 5.71%, while it reach 17.39% rapidly in scheme 2. Secondly, the real estate industry has always maintained the highest tax burden from scheme 1 to 2. During 17 industries, there are six industry of which property tax reform reduce the tax burden, including the tertiary industry accounted for 5. At the same time, the industry tax burden increases are five. There are three in the second industry. The industry tax burden of the rest is unchanged.

Tax elasticity estimates

Typically, the tax elasticity can be expressed as the ratio of tax revenue growth and GDP, Accordingly, we set ΔT as the tax changes and ΔY as the industry added value. Then, industry tax elasticity e can be expressed as follow:

$$e = \frac{\Delta T / T}{\Delta Y / Y} \quad (8)$$

If, $e > 1$, it indicates that the tax is elasticity, and it is growing at a faster rate than GDP. if $e = 1$, it shows that the tax is unit elastic, and the tax revenue growth is in line with GDP growth. if $e < 1$, it illustrates that the tax is growing more slowly than GDP.

The arithmetic suggests that, in scheme 2 the industries which tax elasticity is greater than 1 add three, namely, construction, residential services, other services and public administration and social organizations. The remaining is less than 1 in two schemes. On the other hand, from scheme 1 to scheme 2, the tax elasticity industry have been improved except education, renting and business services. It shows that the property tax reform make these industries got less burdens. And taxes flexibility decreased mean that the impact of these industrial fluctuations reduced to the property tax revenue. With the steady improvement of GDP, property tax revenue in these industries will grow steadily. In addition, it is worth mentioning that the tax elasticity of information transmission, computer services and software industry in scheme 1 and education in scheme 2 is negative. In general, the elasticity of tax revenue is a positive in theory. Nevertheless, in the background of a major tax reform, it would be negative. This reflects that the combination of property tax will lead property tax revenues above industry to fall sharply, thus greatly reducing tax costs. Eventually, the tax elasticity will be decidedly greater.

CONCLUSIONS

The improvement of the property tax rate will not only give people negative effect which is greater than enterprise, but also keeps decreasing effect on enterprise investment to some extent. And the negative effect will be greater to the residential consumption and saving. The development of

regional economy will be significantly influenced once the part of land grant fee has been incorporated into property tax system. Moreover, the root of economic impact is still derived from capital investment. On the whole, the consolidated tax will reduce the third industrial tax burden and increase the second industrial tax burden, especially influence on education, information, computer and software industry.

In a word, when levying property tax, firstly, we should focus on retention and simplify taxes. It will play an active role in guiding rational household consumption and investment. Secondly, broad tax base and reduce tax rates. This will help to increase the relevance of property taxes and national economy and enhance the regulatory role of economy. Furthermore, this also decrease the tax burden on citizens and arouse people's enthusiasm of taxes. Thirdly, the influence of property tax reform on the relevant industry and macro economy should be given overall consideration to reduce its negative effects and play a positive role. Finally, the scale of reformed property tax should be consistent with the overall scale of property tax and fee in real estate development and construction. We should follow the principle when choosing scheme and considering whether the land grand fee included in property taxes or not.

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REFERENCES AND NOTE

- [1] Jonathan S.Skinner; Taxation and Output Growth: Evidence from African Countries[M], Massachusetts: NBER Working Paper, (1987).
- [2] E.G.Mendoza, G.M.Miles-i Ferretti, P.Asea; On the Ineffectiveness of Tax Policy in Altering Long-Run Growth:Harberger's Superneutrality Conjecture[J], Journal of Public Economics, **66**, 99-126 (1997).
- [3] He Hui; Economic Effects of Financial Market Taxation: Empirical Analysis Based on the Data of China[M],BeiJing, Economic Science Press, (2011).
- [4] Shi Ziyin; Theoretic Frame on the Relationship between Macro Tax Burden and Economic Growth[J], Journal of Hubei University of Economics, **11**, 79-82 (2008).
- [5] Gao Linlin; The impact of real estate capital tax on macro economic and sectoral economic —the empirical analysis based on CGE model[D], Dongbei University of Finance and Economics, (2012).
- [6] Wang Cong, Yang Xuanliang, Liu Yansong, Ren Baoping; Literature Review on AK Model of Endogenous Growth Researches in Developed Countries[J].Journal of Intelligence, **2**, 188-192 (2010).
- [7] Ba Shushong, Liu Xiaohong, Yi Yu; Research on the impact of property tax reform on the real estate market[M]. Beijing: Capital University of Economics and Business press, (2011).
- [8] Li Junyu; A study on changes in China Real Estate Research Malmquist TFP index [J]. Northern Economy, **14**, 36-38 (2013).
- [9] See references 3 about specific deduction.