

## Econometric Analysis of Development of Real Estate Industry in Zhanjiang

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**Abstract.** In order to promote the development of real estate in Zhanjiang City, this essay uses the method of econometrics to establish the regression model with the related indicators of real estate development in Zhanjiang from 2000 to 2013 as the econometric analysis. The results show that the total real estate output value of Zhanjiang City is closely related to capital investment and labor input in the real estate industry. Therefore, it can be concluded that in order to promote sustainable development of real estate industry in Zhanjiang, it is necessary to increase capital investment and labor input in the real estate industry.

### Introduction

The real estate industry has the characteristics of large industrial value, high correlation and strong industrial driving ability, and healthy and stable development. The real estate industry is of great significance for maintaining and promoting the overall steady economic growth under the current economic background in our country. The urban real estate is not only closely related to people's livelihood, but also closely linked with the trend of economic development. It is one of the important pillar industries in the national economy. From the historical experience of national economic development, we can see that the development of the real estate industry will have a lasting impact on economic development and spread to many industries, including the steel industry, building materials industry, construction industry, transportation industry, service industry, financial industry, chemical industrial, mechanical and electrical industry, communications, commerce, urban landscape, shopping and tourism, work and living environment and standards of social civilization, are closely related with the real estate industry. The real estate industry's impact on the national economy is crucial.

Zhanjiang is in the process of accelerating urbanization. At this stage, the population will quickly concentrate on urban areas and form a large demand for urban real estate. Therefore, it is necessary to analyze the influencing factors of real estate development in Zhanjiang .

### Model Setting and Data Description

Table 1 shows real estate development effectiveness indicator data in Zhanjiang from 2000 to 2013. The data is from Zhanjiang City Statistical Yearbook and Zhanjiang City Government portal.

Table 1 Table of real estate development effectiveness indicator data in Zhanjiang

Year	Total output of real estate $Y$ (million yuan)	Capital investment in real estate industry $K$ (million yuan)	Labor input of real estate industry $L$
2000	2762.24	785.05	3078
2001	4735.59	829.91	3120
2002	5312.45	1066.91	3295
2003	5934.53	1145.67	3275
2004	8898.71	1566.62	5670
2005	8889.24	2078.06	7105
2006	10521.04	2394.46	6546
2007	12509.93	3400.17	7863
2008	14807.27	3675.42	9684
2009	17786.64	4727.28	10305
2010	21089.69	7504.25	11853
2011	26384.87	10745.97	11990
2012	31110.97	11496.31	12356
2013	33934.04	15478.46	13395

The real estate investment in real estate capital  $K$  and real estate labor input  $L$  of Zhanjiang City are the vertical axis, and Zhanjiang City real estate output value  $Y$  is abscissa. Make scatter plot, which is as shown in Figure 1.

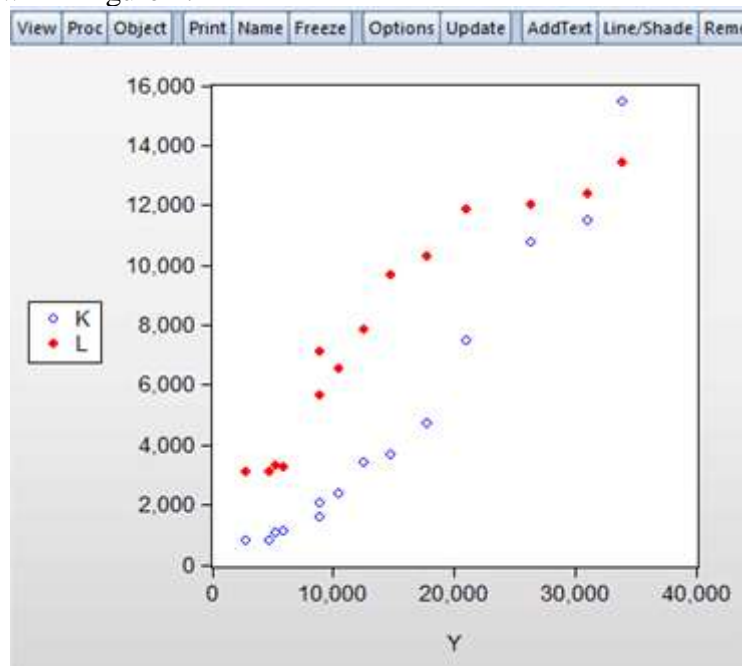


Figure 1 Scatter plot of total value of out-put  $Y$ , capital investment  $K$ , and labor investment  $L$  of Zhanjiang

As can be seen from the scatter plot, Zhanjiang City real estate total value of output  $Y$ , capital investment  $K$ , real estate labor input  $L$  have a linear relationship. According to the scatter plot, build a regression model:

$$Y_t = \beta_0 + \beta_1 K_t + \beta_2 L_t + \mu_t \quad t = 1, 2, \dots, 14$$

**Estimation of Model Parameters**

Using *EViews* software and the method of *OLS* to estimate the parameter of the model, the results are shown in Figure 2

View	Proc	Object	Print	Name	Freeze	Estimate	Forecast	Stats	Resids
Dependent Variable: Y									
Method: Least Squares									
Date: 12/29/16 Time: 22:26									
Sample: 1 14									
Included observations: 14									
Variable	Coefficient	Std. Error	t-Statistic	Prob.					
C	314.9471	1002.207	0.314254	0.7592					
K	1.402363	0.161090	8.705483	0.0000					
L	0.971904	0.199541	4.870699	0.0005					
R-squared	0.987004	Mean dependent var	14619.80						
Adjusted R-squared	0.984641	S.D. dependent var	10086.25						
S.E. of regression	1250.020	Akaike info criterion	17.28712						
Sum squared resid	17188039	Schwarz criterion	17.42406						
Log likelihood	-118.0098	Hannan-Quinn criter.	17.27444						
F-statistic	417.6933	Durbin-Watson stat	2.479042						
Prob(F-statistic)	0.000000								

Figure 2 The regression results of real estate industry output and real estate industry capital investment and labor force in Zhanjiang

The regression equation is as follows:

$$\hat{Y}_t = 314.9421 + 1.402363K_t + 0.971904L_t \quad t = 1, 2, \dots, 14$$

**Conclusion**

When the other conditions remain unchanged, when the capital investment of real estate in Zhanjiang *K* is increased by 1, the total value of out-put of real estate industry in Zhanjiang is increased by 1.402. When the other conditions are unchanged, when the labor input of real estate industry *L* is increased by 1, the total output of real estate in Zhanjiang will be increased by 0.972.

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