

The Demand Influence Factors of the Business Price in 2013 of China—The Cross-Sectional Analysis of the Real Estate Developer Factors Based on the Selected 35 Cities

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Abstract

This dissertation investigates the relation between the real estate developers and the price development on the business market in 2013. Based on the result of the correlations analysis and regression analysis, owner's equity affects to the dependent variable of the business price.

Keywords

cross-sectional analysis, supply, business price, real estate developer

1. Introduction

The demand part of the real estate market of China is the consumers, and the supply part of the real estate market of China is the real estate developers or the enterprises. The developers construct the real estate and the consumers pay money to the real estate developers in order to buy the real estate (Newell & Webb, 1996). However, there is a dearth of information regarding real estate developers, and that actually motivated this research.

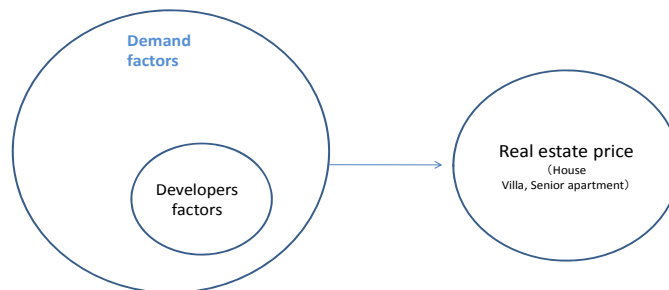


Figure 1. The Relationship Between the Developers' Factors and the Demand Factors Which Affect to the Real Estate Price in China

The developers factors are not the whole demand factors of the real estate market of China, but there is no doubt that it is the most important part of demand factors which affects to the real estate market of China all the time. Therefore, all of the independent variables would take from the developers' factors in this research.

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There is a dearth of information regarding the developer's factors that affect the real estate market. Therefore, this study tends to focus on the influence factors the real estate developers have on the price of real estate in order to make the independent various (Abraham et al., 1994).

The evaluation index system of real estate enterprises

Zou and Yang(2008) The evaluation index system of real estate enterprises

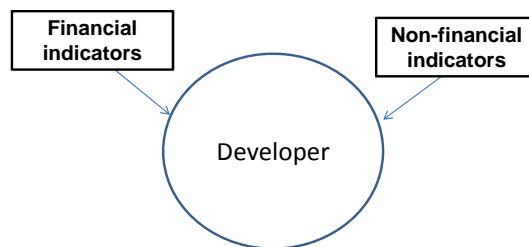


Figure 2. The Two Sides of the Influence Factors about the Real Estate Developers

Furthermore, real estate developers were elucidated in a previous research titled “The evaluation index system of real estate enterprises” by Zou and Yuan (2008). As result, the independent variables on the part of developers' are made by two sides of financial and non-financial indicators based on Zou and Yuan's research (Figure 2).

There are four parts of the return on assets, the asset turnover, the asset liability ratio and the main business vivid rate in financial indicators and three parts of the land development, the real estate development and the real estate operating conditions in non-financial indicators. Although it only evaluates the system of real estate enterprise, it does not fit as the developer factors of the demand part. These factors in Zou and Yang's research (2008) cannot be used as the independent variables of this research directly. Therefore, the new factors for this research are redefined based on previous

researches and the empirical analysis is done in the next step.

2. The Model and the Independent Variables

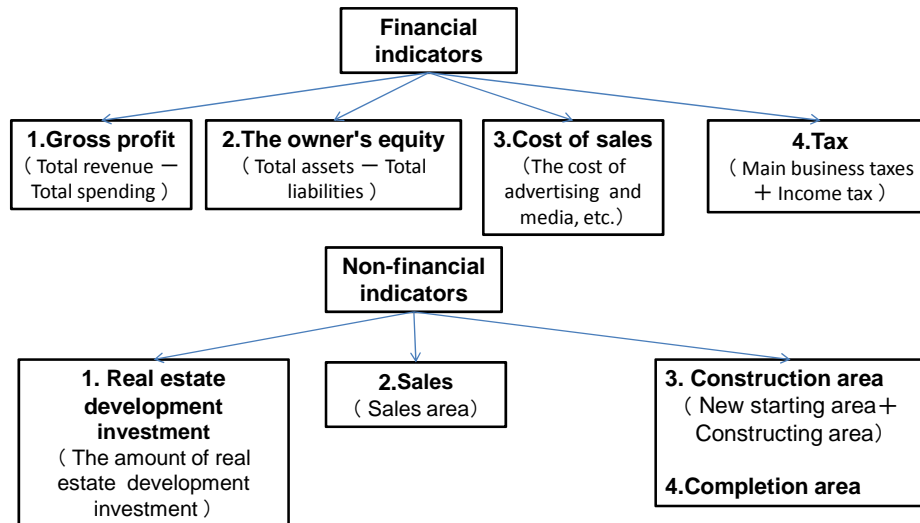


Figure 3. The Model and the Independent Variables

There are two important points that make up the independent variables in this research. The first one is that all of the independent variables are the quantity parameters, not the quality parameters. The quantity parameters could reflect the condition of the real estate developers' on the side of supply more accurate than quality parameters. Therefore, this research does not use any percent parameters.

Another important point about the independent variables is that this research uses the per developers' parameters instead of the pure quantity parameters based on the quantity parameters. Due to the "per developers" data can reflect the real ability of the real estate developers in different areas or in different cities.

There are also two aspects of the independent variables in the model: the financial and non-financial sides (Figure 3). There are four parameters in the financial side. The first one is the gross profit. It is the result of the total revenue minus total spending of the real estate developers. It can reflect the ability to pursue the profit and to create wealth of the real estate developers. Moreover, the higher the datum is, the stronger the ability to pursue the profit and create wealth for the real estate developers.

The second parameter on the financial side is the owner's equity. It is the result of the total assets minus the total liabilities of the real estate developers. It can reflect the scale or the size of the real estate developers. The large the datum, the stronger the real estate developers' scale or the size would be introduced.

The third parameter is the cost of sales. In China, a lot of money has been invested in media, such as newspapers, magazines, or the wall advertising etc. The real estate developers pay a lot of money to advertise their business projects in order to promote the sale of their business projects. These huge advertising expenses would finally be accounted for by the price of the real estate (Margo, 1996). Therefore, this parameter tends to find the relationship between the advertising expense and the real estate price (Witte et al., 1979). Here, the higher the datum, the more money would be invested in the media as the advertising expense.

The fourth parameter is the tax. In China, there are more than 50 kinds of taxes about the real estate market. The local government gets a lot of benefits from the real estate market. Some researchers said that these taxes might be the most important reason for the increase of the real estate price. The parameter of tax includes the main business taxes and income tax and it almost includes all of the taxes during the real estate on the developers' side. This parameter tends to find the relationship between the taxes and the business price. The higher the datum, the more taxes are been paid from the real estate developers to the local government (England & Ravichandran, 2010).

There are also four parameters in the non-financial side. The first one is the real estate development investment. It is the amount of real estate development investment which include the land investment, etc. This parameter could directly reflect the amount of the real estate development investment of the real estate developers every year. The higher the datum, the more money would be invested to the local real estate market from the real estate developers.

The second parameter is the sales. It is the amount of the sales areas of the real estate. This parameter can directly reflect the amount of the sales areas of the real estate developers every year. The higher the datum, the more areas of real estate would be sold by the local real estate developers.

The third parameter is the construction area. This includes the new starting area and the constructing area in one year. In China, there is a special policy or system named pre-sale system. This policy permits the real estate developers to sell their real estate project at the same time of construction. It means that the real estate developers could sell their real estate when they begin to construct the real estate. Thus this parameter is also very important because it reflects the development and sale ability of the real estate developers. The higher the datum, the more area would be constructed or sold by the real estate developers.

The fourth parameter is the completion area. It means that the construction area is completed. The price of construction of completed business might be higher than the construction of business, but sometimes, the more completed area would lead the lower business price. Because the presale system allows the developers to sell their real estate project at the same time of construction, if the real estate developers still cannot sell out all of the real estate until construction is completed, the developers would decrease the price of the real estate in order to sell out the business project. The lager the datum, the more the construction area is completed, or possibly thce more the financial pressure on the real estate developers.

The cross-sectional analysis of the real estate developer factors based on the 35 cities

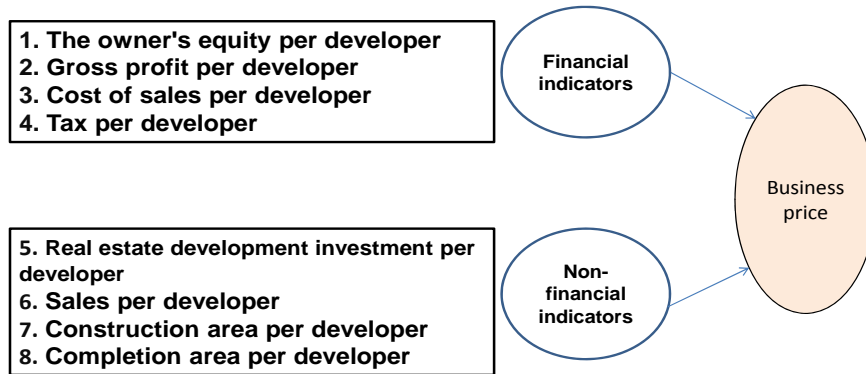


Figure 4. The Model of This Research

Based on the new defined independent variables, the model or the hypothesis is that: the four kinds of financial reasons and four kinds of non-financial reasons affect to the business price, and the empirical analysis is done based on this study’s model (Figure 4).

All these parameters were the data of 35 in 2013. These 35 cities are the most important economic cities, which includes almost provincial cities and other economically developed cities. There is no doubt that the development of the real estate needs economic development. Therefore, the real estate development situation of the 35 cities could reflect the real condition of the real estate development of China.

3. The Empirical Analysis of House Price in 2013

3.1 The Descriptive Statistics

Table 1. Descriptive Statistics (2013) (Business)

	N	Minimum	Maximum	Mean	Std. Deviation
The owner’s equity per developer	35	3552	55591	17271.66	11177.778
Gross profit per developer	35	-127	10523	1684.17	1833.33
Cost of sales per developer	35	85	1087	358.43	176.419
Tax per developer	35	246	5590	1284.43	936.998
Real estate development investment per developer	35	160040	3966554	1538909.86	1041336.98

Sales per developer	35	51713	2440387	674963.29	540531.199
Construction area per developer	35	1097686	39670386	10701329.49	7470435.081
Completion area per developer	35	144664	4560779	964300.2	842845.068
Business price	35	7895	34686	15349.26	6594.966
Valid N (listwise)	35				

Based on Table 1, the mean value of the owner's equity per developer is 172 716 600 Yuan RMB. The mean value of cost of sales per developer is 3 584 300 Yuan RMB. The mean value of tax per developer is 12 844 300 Yuan RMB. The mean value of Cost of sales per developer is 27.9% of the mean value of Tax per developer. The Gross profit per developer is 16 841 700 Yuan RMB. The Real estate development investment per developer is 15 389 098 600 Yuan RMB. The mean value of the Gross profit per developer takes 19% of Real estate development investment per developer. The mean value of construction area is 10 701 329.49 m². The mean value of completion area is 964 300.2 m². The average completion area is 9% of Construction area. The average sales area is 674 963.29 m² in 2013. The average business price in 2013 is 15 349.26 Yuan RMB/m².

3.2 The Correlations Analysis

Based on the descriptive statistics, the correlations could help in determining the independent variables for the regression analysis.

Table 2. Correlations (2013) (Business)

		The owner's equity per developer	Gross profit per developer	Cost of sales per developer	Tax per developer	Real estate development investment per developer	Sales per developer	Construction area per developer	Completion area per developer
The owner's equity per developer	Pearson Correlation	1	.762**	.719**	.781**	.318	.158	.240	.291
	Sig. (2-tailed)		.000	.000	.000	.063	.365	.164	.090
	N	35	35	35	35	35	35	35	35
Gross profit per developer	Pearson Correlation	.762**	1	.895**	.969**	.075	-.031	.000	.026
	Sig. (2-tailed)	.000		.000	.000	.668	.862	.998	.882
	N	35	35	35	35	35	35	35	35
Cost of sales	Pearson Correlation	.719**	.895**	1	.891**	.191	.125	.112	.066

per	Correlation								
developer	Sig.	.000	.000		.000	.271	.475	.522	.708
	(2-tailed)								
	N	35	35	35	35	35	35	35	35
Tax per	Pearson	.781**	.969**	.891**	1	.107	.004	.030	.059
developer	Correlation								
	Sig.	.000	.000	.000		.541	.983	.866	.735
	(2-tailed)								
	N	35	35	35	35	35	35	35	35
Real estate	Pearson	.318	.075	.191	.107	1	.909**	.842**	.757**
development	Correlation								
investment	Sig.	.063	.668	.271	.541		.000	.000	.000
per	(2-tailed)								
developer	N	35	35	35	35	35	35	35	35
Sales per	Pearson	.158	-.031	.125	.004	.909**	1	.921**	.792**
developer	Correlation								
	Sig.	.365	.862	.475	.983	.000		.000	.000
	(2-tailed)								
	N	35	35	35	35	35	35	35	35
Construction	Pearson	.240	.000	.112	.030	.842**	.921**	1	.884**
area per	Correlation								
developer	Sig.	.164	.998	.522	.866	.000	.000		.000
	(2-tailed)								
	N	35	35	35	35	35	35	35	35
Completion	Pearson	.291	.026	.066	.059	.757**	.792**	.884**	1
area per	Correlation								
developer	Sig.	.090	.882	.708	.735	.000	.000	.000	
	(2-tailed)								
	N	35	35	35	35	35	35	35	35

** . Correlation is significant at the 0.01 level (2-tailed).

Based on the result of the correlations (Table 2), the result between the gross profit per developer and tax per developer is 0.969, the result between the cost of sales per developer and tax per developer is 0.891, the result between the cost of sales per developer and the gross profit per developer is 0.895. It means that only one of the parameters between these two parameters which the result is high could be chose to continue with the regression analysis.

Both of the cost of sales and the tax are one kinds of the cost which in order to increase the profit of the real estate. The bigger of the cost value, the higher gross profit the real estate developers. As result, the gross profit is chose instead of the cost of sales and the tax to continue with the regression analysis.

The result between owner's equity per developer and the gross profit per developer is 0.762. Because the profit is one part of the owner's equity, the more of the profit the developers obtain, the more owner's equity the developers obtain. But compare to the owner's equity, the profit of the developers can introduce the ability of the developers obtain the benefit.

The result between owner's equity per developer and cost of sales per developer is 0.810. The more sale cost the developers spend, the more owner's equity the developers would obtain.

The result between owner's equity per developer and tax per developer is 0.891. The more tax the developers turn over to the government, the more owners' equity the developers would obtain.

The result between real estate development investment per developer and sales per developer is 0.828, because the more of the developers' investment, the more area can be sold.

The result between real estate development investment per developer and construction area per developer is 0.836, because the more of the developers investment, the more area can be construct.

The result between construction area per developer and sales per developer is 0.868. Due to the presale system, the developers could construct and sale the business project at the same time, the changes of the sales area and the construction areas are same in sometimes.

The result between construction area per developer and completion area per developer is 0.855, because the more areas are constructed, the more areas would be completed.

As result, the owner's equity per developer, real estate development investment per developer, completion areas per developer are chosen to continue with the regression analysis.

3.3 The Regression Analysis

Following the correlation analysis, the relationship between the real estate developer influence factors and the business price is sustained by performing a regression analysis between the owner's equity, cost of sales, tax, gross profit, real estate development investment, construction area, completion area, sales, and the business price of 35 cities. The regression is based on the following variables:

Y: The business price of 35 cities in 2013;

X1: The owner's equity per developer of 2013;

X2: Cost of sales per developer of 2013;

X3: Tax per developer of 2013;

X4: Gross profit per developer of 2013;

X5: Real estate development investment per developer of 2013;

X6: Construction area per developer of 2013;

X7: Completion area per developer of 2013;

X8: Sales per developer of 2013.

The regression model looks as follows:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8$$

Table 3. Variables Entered/Removed* of Regression Analysis (2013) (Business)

Model	Variables Entered	Variables Removed	Method
1	The owner's equity per developer		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

*. Dependent Variable: business price.

Table 4. Model Summary of Regression Analysis (2013) (Business)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.547*	.299	.277	5605.944

*. Predictors: (constant), the owner's equity per developer.

Table 5. Coefficients of Regression Analysis (2013) (Business)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9779.907	1762.035		5.55	0
	The owner's equity per developer	0.322	0.086	0.547	3.749	0.001

*. Dependent Variable: business price.

Table 6. Excluded Variables* of Regression Analysis (2013) (Business)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Real estate development investment per developer	-.255**	-1.709	0.097	-0.289	0.899

*. Dependent Variable: business price;

** . Predictors in the Model: (constant), the owner's equity per developer.

The method of the regression analysis is stepwise. Based on the result (Table 3, Table 4, Table 5, Table 6), all the value of the adjusted R square is bigger than 0.4.

The results of the analysis as follows:

$$Y = 0.547X_1$$

One of the points of this regression analysis is that the T value of the sales per developer is negative value; it means that the sales per developer have the opposite effects to the business price.

Based on the result of the regression analysis, all the significant of parameters are lower than 5%.

4. The Conclusion about the Influence Factors of the Business Price in 2013

The conclusion of this research is that the owner's equity per developer affects to the business price in 2013.

The higher owner's equity per developer leads the real estate developers to get bigger scale and power to do the real estate development. The higher power helps the real estate developers to get more benefit. Example for increasing the technical and do more adverting it helps the real estate developers to get more sales with higher price. So the increasing of the owner's equity per developer will promotes the increasing of the business price.

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