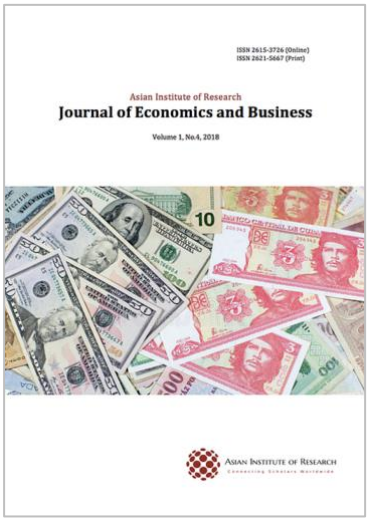

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Research on the Factors Affecting the Sales of Urban Commercial Housing in China

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Abstract
With the rapid development of the market economy after the reform and opening up, there is also rapid development in China's real estate industry. However, in recent years, high prices have been hotly debated. As a pillar industry of the national economy, the real estate industry is not only concerned with the quality of life of the residents, but also with the stable development of the national economy. Moreover, the housing prices are also affected by many complex factors. This article will start from the three perspectives of supply, demand and macro economics, and subdivide them into the four factors that affect the total population, average wages of employees, investment in real estate development, and gross domestic product. Using Equal Part Linear Regression Model to analyze the data in 2016, identify and verify the important factors that affect the sales price, and then drawing relevant conclusions through specific analysis, as well as the implications for the future development of China's housing prices.

Key Words: Housing Prices; Supply Factor; Demand Factor; Equal Part Linear Regression Model

1. Introduction

In recent years, the real estate industry has developed rapidly and has become a pillar industry in China's new development stage, playing an important role in the national economy. The basic requirements of the real estate industry meet the needs of the people's material and cultural life, as well as the driving force of economic development. However, the rising housing price started to cast a negative impact on people's lives. Thus, more and more attention is paid on the commercial housing price and the affecting factors.

With the aim of understanding the important factors affecting commercial housing prices and having implications for the future development of housing prices, this paper is an application of Equal Linear Regression Model on the affecting factors of the housing price.

Equal Part Linear Regression Model is the main model of this research. The Equal Part Linear Regression analysis method is a new linear regression analysis modeling method proposed by Pan, based on selected actual cases. This method constructs an Equal Part Linear Regression line by dividing the sampling points into equal parts and moving the aliquots from left to right (Pan, 2017). This approach allows researchers to observe the trend of each equal part and compare it to the results of a general Linear Regression Model to improve the performance of the linear regression model. When the sample data is large enough, the Linear Regression Model construction process takes a long time so the Equal Part Linear Regression Model encoded by R language will be better.

2. Literature review

Domestic research on housing prices has gradually increased in recent years, with the expansion of housing prices. In particular, it has determined that research topics are collected from databases, and linear regression analysis has drawn conclusions and quantitative research. This paper analyzes the factors affecting housing prices by four specific factors: the total population, the average wage of employees on the job, the amount of investment in real estate development, and the gross domestic product. The amount of real estate development investment and GDP are from the perspective of supply and macroeconomic factors respectively, and then the total population and the average wage of employees on the job are considered in terms of demand. S.W. Decarlo (1997) pointed out that the reasons for the fluctuation of the real estate market mainly included supply and demand changes, vacancy rate, monetary policy, employment level, population trends, regulations and policies, family size, etc. He believed that the supply and demand are the most important factors.

Residents are the main part of the demand for commercial housing, so the population directly affects the demand for housing in one area. The rapid development of the economy has promoted the development of urbanization, so the increase in the population of the city has also boosted the demand for commercial housing. Yan Lei (2011) applied the panel data from 1997 to 2008 to empirically analyze various factors affecting real estate prices. The real estate price is proportional to the total population at the end of the year and has a significant relationship, and the total population and population structure will affect housing demand.

Income is considered to be the most important determinant of consumer spending. At the same time, increase and decrease of the average wage of employees on the job and the extents of the change are closely related to the income of the residents and the disposable income of the individual. Both of them directly affect residents' spending power. Wang and Huang (2005) concluded that there was a close positive correlation between the income level of residents and housing prices through the discussion of the relationship between the income level of residents and housing prices. Meanwhile, based on the simple partial equilibrium model, Li and Meng (2005) empirically analyzed the panel data of 31 provinces and cities in China from 1999 to 2003. The per capita disposable income and investment in real estate are important factors for housing price increase.

In terms of investment in real estate development, more research has linked this aspect to interest rates and credit, etc. however, very few independent analysis of real estate development investment was put forward. For an instant, Liang and Gao (2006) found that both the growth rate of construction industry loans and the growth rate of real estate development funds in financial institutions are negatively correlated with housing prices. The increase in capital means an increase in supply. That is, the larger the credit scale, the lower the house price will be.

As a national pillar industry, the real estate industry and GDP have a correlation, and this connection is more complicated. Yang and Tan (2011), after studying the factors affecting housing prices in the Pearl River Delta, concluded that there is a two-way causal relationship between GDP and housing prices and that social output has a very large impact on housing prices. Zhao (2014) studied the impact of GDP and household income on the prices of different types of houses. It was found that the most affected by GDP fluctuations was the price of commercial housing, followed by ordinary residential, residential and high-end residential, affordable housing. Residents' income has the least impact on the price of commercial housing, which is determined by the dual nature of real estate as both consumer goods and investment products.

3. Analysis of Model Framework

3.1 Methodology

In this paper, the key study method is Equal Part Linear Regression Model, which is proposed by Professor Pan Wen-Tsao (2017). According to his theory, data can be divided into several equal divisions with Equal Linear Regression Modeling, and then each aliquot of model trends can be observed independently.

Equal Linear Regression theory assumes that y is a continuous dependent variable that depends on x. The standard linear regression model can be expressed as follows:

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i$$

Since linear regression uses Least Squares Method (LSM) to seek for the line that minimizes the sum of the squared errors (SSE). So the formula above can also be written as:

$$\min \Sigma_i [y_i - (\beta_0 + \beta_1 x_i)]^2$$

Then this formula can be expressed by:

$$\hat{\beta}_0 = \frac{\sum_{i=1}^{n}(xi - \bar{x})(yi - \bar{y})}{\sum_{i=1}^{n}(xi - \bar{x})^2}$$

$$\hat{\beta}_1 = \bar{y} - \bar{\beta}_0 \bar{x}$$

Coefficient of determination and confidence interval:

$$\hat{\beta}_1 - t_{\frac{\alpha}{2}} \times S_{\hat{\beta}_t}, \hat{\beta}_i + t_{\frac{\alpha}{2}} \times S_{\hat{\beta}_t}), i = 0,1$$

The symbol "t" means data is equally divided into t parts. Each part is analysis by linear regression model respectively.

3.2 Theoretical review

Since 2002, the problems of overheated real estate investment in various cities in China have risen, housing prices have been rising, and the growth rate is too fast. Figure 1 is the relevant statistics.

People buy houses on the one hand for a living, on the other hand for investment, so the property has the attributes of both consumer goods and investment goods. According to the microeconomics supply and demand theory, when real estate is used as a consumer product, its price is affected by supply and demand; when it is used as an investment, its price is mainly affected by income. Whether it is a consumer product or an investment product, the price will be affected by the regional macroeconomy. According to the above hypothesis, it can be inferred that supply, demand, and macroeconomics will have a certain impact on the selling price of commercial housing.

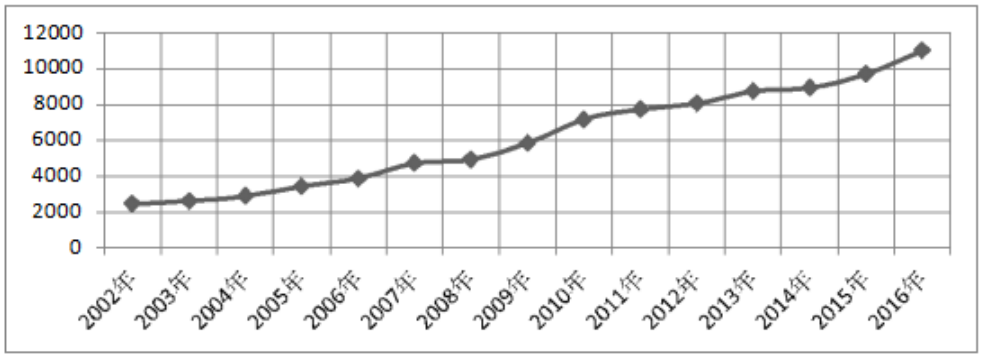

Figure 1. The average selling price of the commercial housing of major cities in China from the year 2002 to 2016（Unit：Yuan)

In summary, the factors affecting the selling price of commercial housing are multi-faceted. Due to the conditions, we use the amount of real estate development investment (indicated by X1) to represent the supply side factor and select the total population at the end of the year (in X2). The average wage of employees on the job (indicated by X3) represents the demand side factor, and the regional GDP (indicated by X4) is selected to reflect the regional macroeconomic level, while the sales price of commercial housing is used as the dependent variable (indicated by Y). The following figures are collected from the China Statistical Yearbook. This paper makes certain theoretical analysis and assumptions based on the results of data operation.

3.2.1 Supply-side factor

The amount of real estate development investment is the amount of investment in real estate commodities in the same year. The higher the investment amount is, the more the new construction area of the residential area in that year. And in the next few years, the supply of commercial housing will increase, so that the price of real estate will change. Therefore, the amount of investment in real estate development will affect the price of real estate by affecting the supply of real estate.

It can be seen from the following line chart that the average real estate investment in major cities in China has been raising since 2002. Figure 2 shows the same upward trend in the price of commercial housing as in Figure 3. From this, it is assumed that the real estate development investment (X1) is related to the commercial housing price (Y).

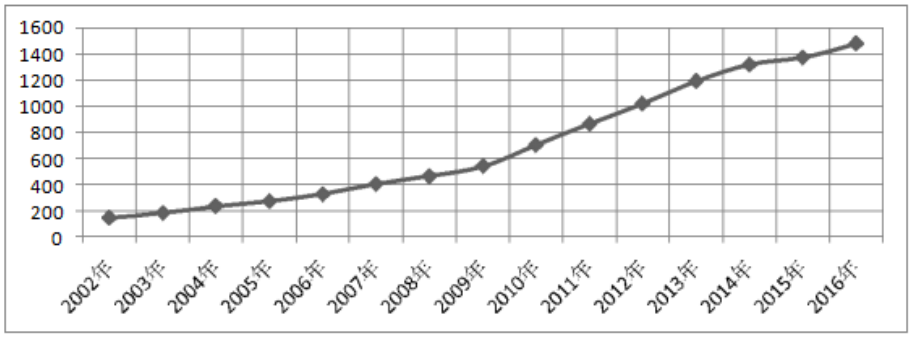

Figure 2. Average real estate investment of major cities in China from 2002 to 2016 (Unit: hundred million Yuan)

3.2.2 Demand-side factor

First of all, the main body of demand for real estate is people. Therefore, the price and the population of the local population are closely related to the population density. The higher the population density is, the greater the demand will be for commercial housing in the region. When the amount of demand is more than supply, the price of commercial housing to rise will be caused. Therefore, the total population at the end of the year is selected to reflect the impact of population size. According to Figure 3, we assume the total population at the end of the year (X2) and commercial housing.

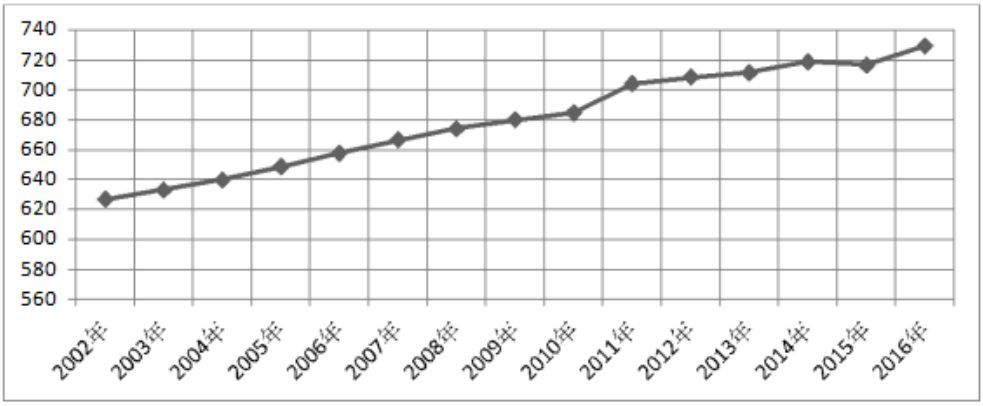

Figure 3. The average annual population of major cities in China from 2002 to 2016 (Unit: ten thousand)

Second, the income level of residents is one of the most important factors affecting the consumption structure. To a certain extent, the average wage of employees in an area represents the income level of residents in the area. When the income is low, even if the demand side subjectively has the demand for housing purchase, it will be restricted by the income level and cannot afford to buy a house. Therefore, the income level directly limits the purchasing power of the demand side. As people's disposable income increases, the Engel coefficient will

gradually decline, and the proportion of food expenditures for purchasing survivability will be lower and lower. As incomes increase, the demand for previously no purchasing power is turned into an effective demand. People's demand for commercial housing is growing. Therefore, this paper selects the average salary of employees on the job to reflect the income level of residents. According to Figure 4, we assume that the average wage (X3) of employees is positively correlated with the sale price of commercial housing (Y).

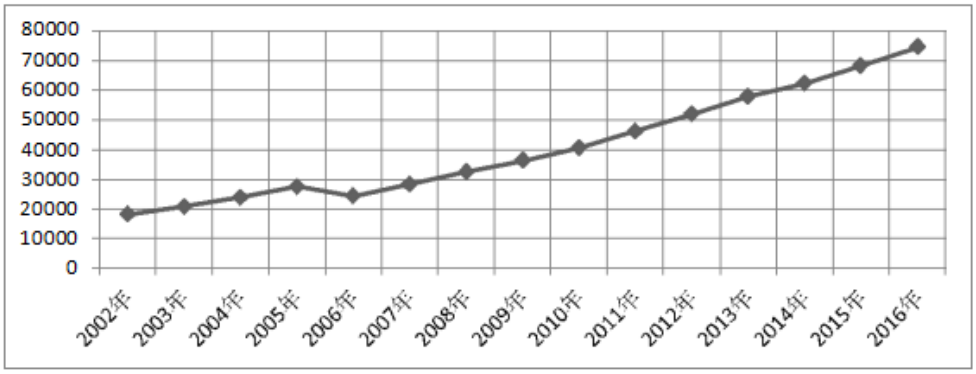

Figure 4. The average wage of employees in major cities in China from 2002 to 2016 (Unit: yuan/year)

3.2.3 Macroeconomic factors

The real estate industry is the pillar industry of the national economy and is affected by the overall level of macroeconomic development. GDP growth will drive economic development and improve people's quality of life, and national income will increase. As a result, First-time home purchase demand and improved home demand will increase, and more people will generate speculative demand. For real estate providers, the rise in GDP means that the macroeconomy is better, thus increasing the confidence of real estate developers to invest. Therefore, Investment will be increased so that housing prices will be affected. It can be seen from Figure 5, the average GDP of major cities in China has raised steadily since 2002. From this we assume that when the GPD rises, the house price will also rise, that is, the regional GDP (X4) is positively correlated with the commercial house price (Y).

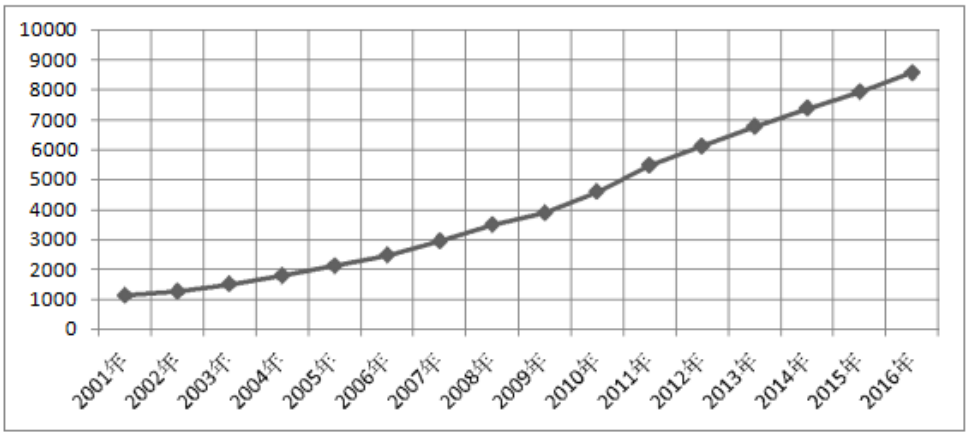

Figure 5. Average GDP of major cities in China from 2002 to 2016 (Unit: hundred million yuan)

4. Analysis with Equal Part Linear Regression Model in R language

4.1 Process of analysis

The following steps are required:

Ⅰ. Establish a data worksheet. The investment amount of real estate development is variable X1. The total population at the end of the year is variable X2. The average salary of the on-the-job job is variable X3, the gross domestic product is X4, and the average sales price of commercial housing is Y. Name the worksheet "testdataL5" and save it in CSV format.

Ⅱ. Create a data folder on the computer C drive and place the testdataL5 worksheet in the folder.

Ⅲ. Create an Equal Part Linear Regression in R language:

Run all the functions and confirm that the required installation packages are prepared. (Relevant characters are shown in Table 1)

Table 1. The required installation packages

```
install.packages("SparseM")
install.packages("quantreg")
install.packages("boot")
install.packages("ggplot2")
install.packages("grid")
install.packages("Rmisc")
library(SparseM)
library(quantreg)
library(boot)
library(ggplot2)
library(grid)
library("Rmisc")
```

a. Define a function "equal_lm" to handle regression analysis and parse data. Then set five parameters: formulation, data, model name, C (confidence level) and K (the number of variables).

b. DF_model divides the data into equal parts and calculates the final result.

c. Define a function "PY_data" to split the data and calculate the model results. Then input five parameters: formulation, all data(all data), C (confidence level), K (the number of variables) and alpha (the number of mobile data samples, 5 data at a time).

d. Draw a function graph of the confidence interval. Set a strip chart function: "ymin" is the lower limit; "ymax" is the upper limit.

e. Set the variance test function of samples and F test for translation model coefficient.

f. After completing the above steps, the R language initial environment of the Equal Part Linear Regression is established.

Ⅳ. Perform data analysis in Equal Part linear Regression Model

a. Data reading (Relevant characters are showed in Table 2 &3):

Table 2. Characters Input

```
setwd("C:/data")

data=read.csv("testdataL5.csv")

data
```

Table 3. The process of data reading

```
Loading required package: plyr
> setwd("C:/data")
> data=read.csv("testdataL5.csv")
> data
          Y         X1         X2      X3         X4
1   0.27497 0.0400057 0.0136286 1.22749 0.2566913
2   0.12830 0.0230001 0.0104440 0.87806 0.1788539
3   0.08281 0.0101577 0.0103800 0.61189 0.0592773
4   0.07667 0.0068013 0.0037025 0.64820 0.0295560
5   0.06425 0.0052052 0.0024097 0.56213 0.0317359
6   0.07128 0.0070967 0.0073440 0.67444 0.0546001
7   0.09354 0.0053517 0.0059563 0.73764 0.0673033
8   0.06557 0.0059665 0.0075343 0.68434 0.0591794
9   0.06680 0.0052613 0.0096205 0.62583 0.0610161
10  0.24747 0.0370903 0.0145000 1.20503 0.2817865
11  0.17754 0.0184560 0.0066279 0.90191 0.1050302
12  0.15753 0.0260663 0.0073600 0.87153 0.1131372
13  0.11228 0.0127033 0.0059096 0.83656 0.0868649
14  0.09369 0.0135259 0.0072983 0.71054 0.0627438
15  0.11089 0.0167944 0.0068706 0.67630 0.0619764
16  0.20021 0.0076580 0.0022055 0.69218 0.0378427
17  0.08218 0.0067460 0.0052279 0.65812 0.0435499
18  0.08247 0.0116414 0.0063283 0.77012 0.0653612
```

b. Perform simple linear regression

Apply simple linear regression to all data. “c=0.90” means the confidence is 0.90, and “k=5” means a total of 5 variable (4 X variables + 1 constant term). (Relevant characters are shown in Table 4)

Table 4. Simple Linear Regression performance

```
data=read.csv("testdata.csv")
model0_result1<-equal_lm(Y~X1+X2+X3+X4,datak=data,modelname="model0",c=0.95,k=5)
model0_result1
```

c. Perform Equal Part Regression

Divide data into 3 equal parts. “c=0.90” means the confidence is 0.90, “k=5” refers to a total of 5 variable (4 X variables + 1 constant term) and “alpha=3” represents the three equal parts. (Relevant characters are shown in Table 5)

Table 5. Equal Part Regression performance

```
model_dengfen_result<-DF_model(Y~X1+X2+X3+X4,alldata=data,c=0.90,k=5,alpha=3)
model_dengfen_result
write.csv(model_dengfen_result,"dengfeng.csv")
variable<-c("Y","X1","X2","X3","X4")
plot_conf(k=5,mn=model_dengfen_result,variable)
```

d. Apply translation model

(Relevant characters are shown in Table 6)

Table 6. Application of translation model

```
mode_pingyi_result<-py_model(Y~X1+X2+X3+X4,data,c=0.90,k=5,alpha = nrow(data)/3)
mode_pingyi_result
write.csv(mode_pingyi_result,"pingyimodel.csv")
variable<-c("Y","X1","X2","X3","X4")
plot_conf(k=5,mn=mode_pingyi_result,variable)
```

e. Use F Test to examine samples

(Relevant characters are shown in Table 7)

Table 7. Application of F Test on samples examination

```
variable<-c("Y","X1","X2","X3","X4")
F_test_result<-F_test(variable,data,3)
F_test_result
write.csv(F_test_result,"data_F_test.csv")
```

f. Use F Test to test Translation Model Regression coefficient

(Relevant characters are shown in Table 8)

Table 8. Application of F Test on Tranlation Model Regression coefficient

```
mode_pingyi_result<-py_model(Y~X1+X2+X3+X4,data,c=0.95,k=5, alpha= nrow(data)/3)
mode_pingyi_result
data_beta_result<-py_xishu_f_test(mode_pingyi_result,3,c("constant","x1","x2","X3","X4"))
data_beta_result
write.csv(data_beta_result,"data_F_test.csv")
```

Ⅵ. Get the result of the operation

(Relevant images and characters are shown in Figure 6 and Table 9)

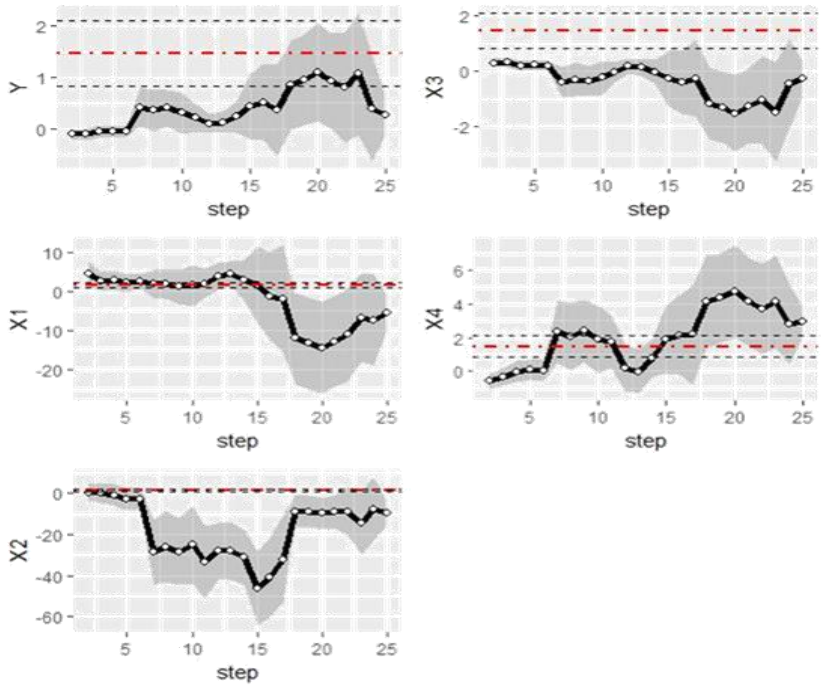

Figure 6. Images of Operation results

Table 9. Operation results

```
123 0.0185449363  -17.47860555  -2.337305641
124 0.3879613858   -1.03821495   0.466090981
125 0.0007011546    1.81938346   4.087103927
> data_beta_result<-py_xishu_f_test(mode_pingyi_result,3,c("constant","x1","$
> data_beta_result
    data_compare variavle     f_value      p_value
6              - constant  0.17603842 0.1210225057
7  model 1 and 2       x1  0.52232461 0.5447767220
8              -       x2  0.23053142 0.1842833430
9              -       X3  0.13039718 0.0737008741
10             -       X4  0.11482178 0.0592782559
11             - constant  0.09005415 0.0386954027
12 model 1 and 3       x1  0.48466705 0.5002545696
13             -       x2 19.68095770 0.0135762405
14             -       X3  0.11032882 0.0553170991
15             -       X4  0.59376189 0.6259413181
16             - constant  0.51155966 0.5321655392
17 model 2 and 3       x1  0.92790392 0.9439320042
18             -       x2 85.37212869 0.0007980661
19             -       X3  0.84609820 0.8752407067
20             -       X4  5.17116080 0.1405296858
> write.csv(data_beta_result,"data_F_test.csv")
>
```

4.2 Analysis of the result

In Figure 7, the red dotted line is the standard linear regression line, the upper and lower horizontal dashed lines are the confidence intervals of the standard linear regression, the irregular thick lines are the Equal Part Linear regression lines, and the upper and lower gray areas are the confidence intervals of the aliquot linear regression.

4.2.1 Analysis of the X1 (Real estate development investment)

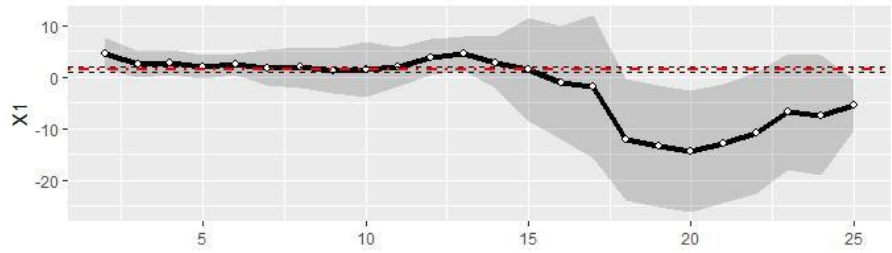

Figure 7. The trajectories of the multiple Equal Part Linear Regression's coefficients and the confident intervals (X1)

From Figure 7, it can be seen that X1 is underestimated in lower and medium divisions. This situation means that the variable X1 in the lower and middle points affects the variable Y more significantly. There is an overestimation situation in the upper division, at which point the self-variation X1 has no significant effect on the variable Y.

Why is there such a turning point? The reason for this needs to be further explored:

In the lower and middle divisions, the variable X1 affects the Y more significantly. The first reason is that in the middle and low-price level areas (such as second- and third-tier cities), housing prices have a large potential for growth, and house prices are more likely to float. Second, in low-price provinces, many properties have not yet been developed. Third, with the rise in per capita wages, people's purchasing power in housing has increased. In order to solve the problem of excessive housing prices in first-tier cities, the government has set policies to restrict the purchase of commercial housing for migrants. As a result, many people have shifted their targets to second- and third-tier cities, and housing demand in second- and third-tier cities has increased. In conclusion, when the amount of real estate development investment fluctuates, real estate prices will also fluctuate significantly.

In the upper divisions, the variable X1 has no significant effect on Y. The main reason is that in major cities, housing price is at a high level. The excessively high cost of buying a house cast a negative impact on domestic life and economy. As a result, the policy is set to limit the commercial housing price. Policies such as increasing property taxes limit capitalist investment.

4.2.2 Analysis of the X2 (Population of the area)

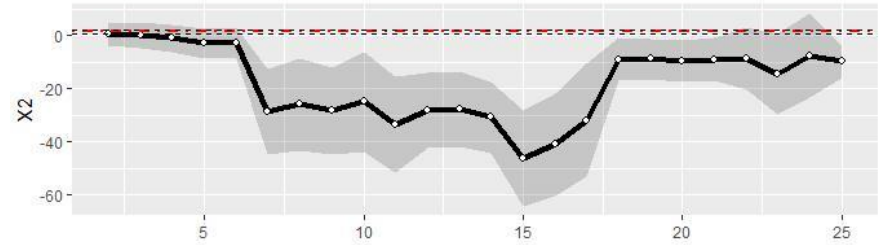

Figure 8. The trajectories of the multiple Equal Part Linear Regression's coefficients and the confident intervals (X2)

From Figure 8, it can be seen that whether in low or high divisions, there will be an overestimation in X2. It means that in either the low or the higher scores, X2 does not have a great effect on the variable Y. That is, the impact of the total population on the average selling price of commercial housing is not significant. That is because the data only reflect the impact of the population instead of the structure. But commercial housing is usually purchased on a household basis. The population cannot reflect the family structure directly.

4.2.3 Analysis of the X3 (Average salary of employees

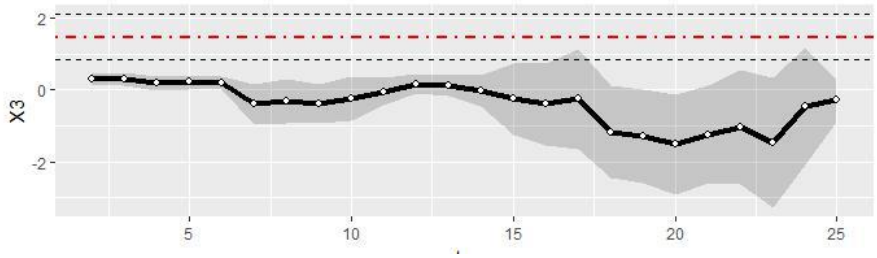

Figure 9. The trajectories of the Multiple Equal Part Linear Regression's coefficients and the confident intervals (X3)

From figure 9, whether in low or high divisions, X2 will have an overestimation by using Equal part Linear Regression Model. That is, whether it is in low or high points, the effect of independent variables X3 is not significant. In summary, the average salary of employees is not significant for the average selling price of commercial housing.

4.2.4 Analysis of the X4 (GDP)

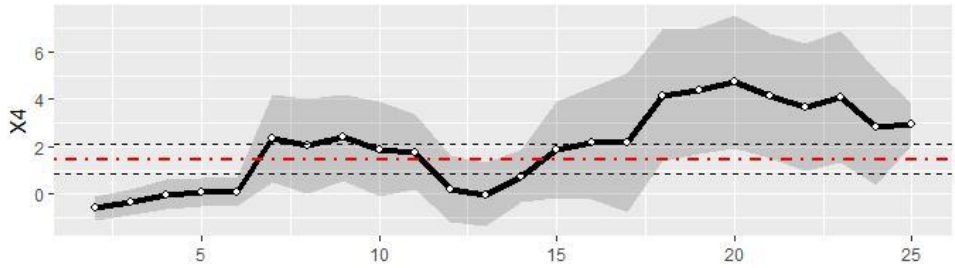

Figure 10. The trajectories of the Multiple Equal Part Linear Regression's coefficients and the confident intervals (X4)

From Figure 10, it can be seen that X4 is overestimated at low aliquots. It means that the effect of X4 on Y is not significant. However, in the medium aliquot, there are two kinds of phenomena: underestimation and overestimation. It means that X4 has both significant and insignificant situations. The reason is worth further exploration.

After searching relevant materials, the reason for the situation in the middle branch is that with the continuous improvement of the gross national product (GDP), the living standards and quality of life are constantly improving. People's willingness to purchase houses is becoming stronger because of the meaning of housing ownership. It can reflect a person's living standard and personal accomplishment. Also, it is a way to show personal achievement and social status. The boom of buying a house is a good explanation for the emergence of such phenomena. Due to the excessive demand for commercial housing, more and more investors regard buying a house as a high-profit making behavior. So the prices keep rising. This has led to a large financial bubble in the real estate industry. Once the bubble is disillusioned, a disastrous impact will occur in the national economy.

In this regard, the government departments have introduced various laws and regulations prohibiting malicious real estate speculation and implemented certain government intervention and control over the real estate industry, so there will be overestimation behind the image. In this regard, the government stated to establish various laws and regulations prohibiting malicious real estate speculation and implemented certain government intervention and control over the real estate industry, so there will be overestimation on the right side of the image.

There is an underestimation in the high aliquots, which means that the influence of the X4 is significant. In the high-altitude, the Equal Part Linear Regression line shows a positive correlation as a whole.

5. Conclusion

5.1 Summary of the influence of independent variables

There are four factors influencing the price of commercial housing considered in this paper, namely, the amount of investment in real estate development, the total number of people in the region, the average salary of working positions, and the gross domestic product. Among them, the real estate development investment and the gross domestic product have a significant impact on the price of commercial housing. The total population of the region and the average salary of the incumbent posts have no significant impact on the price movement of the commercial housing.

For the amount of real estate development investment, the impact of medium and low-level real estate development investment on the price of commercial housing is significant. This is because, in the middle and low housing prices, the real estate market is not saturated, there is still a large amount of land for real estate developers to develop, and the supply relationship of real estate is relatively balanced. So the price of commercial housing is slightly higher than the cost of real estate construction, that is, the amount of investment in real estate development. In areas with high housing prices, the amount of real estate development investment has no significant impact on real estate prices. This is because in the high-priced areas, that is, some first-tier cities, people's housing demand is high, and some investors have purchased a large number of commercial housing for speculation, resulting in a housing price bubble. Therefore, in order to control housing prices, the state and the government have adopted house price control policies and purchase restrictions, resulting in limited housing price fluctuations. In the provinces where housing prices are too high, the speculation is more obvious. The greater the supervision of the state, the greater the investment restrictions on capital plus. Therefore, in the first-tier cities, the impact of real estate development investment on commercial housing prices is not significant.

The impact of real estate development on medium and high levels of GDP on real estate prices is particularly significant. GDP is the domestic consumption index, which refers to the total price of a country's consumption in a certain period of time. In the middle and high level of GDP, people's consumption level is strong, the willingness to purchase real estate rises, the market demand is large, and the seller's supply and demand relationship is at the seller. In the market, house prices have risen. The rapid development of the national economy will promote the prosperity and development of the real estate industry. At the same time, real estate also plays an important role in the growth of the national economy. The prosperity and recession of the economy directly affect the real estate industry.

5.2 Residential price change trend forecast

In recent years, China's real estate industry has developed rapidly and has become a pillar industry of the national economy. The price of real estate sales, especially the price of commercial housing, has also risen. The high level of GDP reflects the economic growth rate and the quality of economic growth and expands the demand in the real estate market. According to the relationship between GDP and real estate prices, future economic growth will also drive up the price of housing, and this trend will spread from first-tier cities to second- and third-tier cities.

From the analysis of consumption hotspots, the consumption demand for living and shopping in the five major material consumptions of eating, wearing, using, living, and traveling has been increasing. The housing aspect is particularly prominent, and people's housing consumption demand is far from being satisfied. The development stage and development requirements of the national economy determine that China's real estate is at a high-speed development stage, and housing will become a persistent consumption hotspot. The rise of housing prices is also the inevitable result of economic development. How to control the rising housing prices within the psychological tolerance of consumers, controlling appropriate consumption is an issue that the government should pay much attention to.

5.3 Suggestion on current phenomena

High-level GDP promotes the rise of housing prices, causing a large number of property market bubbles. The increase is more than people's expectations. Consumers are unacceptable, which will lead to a decline in

consumption, a decline in GDP, and a relationship between GDP and housing prices. Only when the house price is controlled at an appropriate level can the real estate industry develop healthily, it requires the government to make reasonable adjustments to the real estate market.

5.3.1 Government functions should be transformed to improve the management level of the real estate market.

The government and its various departments must create a fair and competitive market environment for real estate development enterprises according to economic laws. Strengthen research on relevant rules and policies in real estate investment, management and service areas, improve policy transparency; strengthen real estate market statistics, provide reliable information for real estate market management; build scientific and effective on the basis of comprehensive and dynamic collection of real estate market information data Real estate market early warning and forecasting system; do a good job in real estate development planning, promote the real estate marketization process, and strive to improve the level of service to enterprises.

5.3.2 The housing security system needs to be improved.

The Housing Administration Bureau can establish different housing security systems for low-income groups. Implement low-rent housing policies for low-income groups; provide affordable housing for low-income people. The establishment of a housing security fund, in view of insufficient local funding sources, the central government should solve the problem of funding sources through transfer payments. Establish a housing archive and distribution system for low-income people and arrange housing investment and housing allocation according to actual needs, so that insurance should be guaranteed.

5.3.3 Increase the supply of commercial housing.

The government should give certain policy support to the construction of medium and low-priced, medium and small-sized ordinary houses. By means of relevant taxes reduction and exemption, real estate developers can be guided to increase the development of small and medium-sized ordinary houses.

In addition, the supply of ordinary housing could be increased according to demand. Formulate sales rules also plays a role which will give buyers preferential treatment in terms of distribution, mortgage interest rate, down payment ratio and use of provident fund loans, meet the needs of ordinary residents to purchase houses. And thus the cost and pressure of buying houses will decrease.

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