

Analysis on the Influencing Factors of Real Estate Investment in Xi 'an

Hui Sun, Wei Xu

Xi'an Eurasia University, Xi'an, Shaanxi 710065, China

Abstract

The real estate industry as one of the three pillar industries of the national economy, the development of the regional real estate industry affects the coordinated development of the entire regional national economy. This article combines xi 'an real estate development present situation, carries on the analysis to the influence real estate investment numerous factors. Based on the relevant data of Xi 'an city from 2011 to 2020, this paper analyzes the relevant factors affecting xi 'an real estate investment by establishing a multiple stepwise regression model, and obtains the key factors affecting Xi 'an real estate investment, which provides reference for xi 'an real estate investment and the formulation of corresponding policies.

Keywords

Real Estate Investment; Influencing Factors; Regression Analysis.

1. Introduction

Real estate investment is an important part of the fixed assets of the whole society. The development of real estate industry will have a chain reaction on the development of other related industries to varying degrees, thus affecting the overall and coordinated development of the whole national economy. Xi 'an as the northwest important hub city economy, culture, education, economic growth is rising steadily in recent years, high-tech industry continuously in xi 'an, and accompanied by 2016 two-child policy open, change in policy, xi an increasing population, followed by the real estate market development is rapid, supply and sales increased dramatically, House prices are climbing. As one of the three pillar industries of the national economy, the real estate industry is an important factor to promote the economic development and comprehensive strength of Xi 'an city. The economic environment, political environment and ecological environment of a region all affect the investment environment of real estate industry.

From 2000 to 2011, the annual growth rate of investment in the national real estate investment market was higher than 20%, while from 2012, there was a significant decline, especially in 2015, the growth rate of investment was only 0.99%. With the opening of the two-child policy in 2016, the support and guidance of relevant policies, the growth rate of national real estate investment has increased in recent years, but they are all lower than 10%. In 2021, the investment growth rate is 4.4%. From the data, it can be seen that the national real estate investment market is slowing down and gradually approaching a relatively stable state. The annual growth rate of real estate investment in Xi 'an is basically higher than the national real estate investment except in 2019. In 2019, the residential investment in Xi 'an showed a rising trend, with a growth rate of 9.0%, while the investment in office buildings and commercial buildings decreased significantly, resulting in a 2.1% decrease in the overall investment compared with the previous year.

2. Analysis of the Current Situation of Xi 'an Real Estate Investment Market

With the continuous advancement of urbanization in Xi 'an, the continuous entry of high-tech enterprises and the introduction of a large number of high-tech talents, the urban population is increasing every year, and the increase of population requires the matching of the size of the city. Similarly, with the continuous increase of the size of the city, the requirements of the population for housing are also changing. Therefore, the real estate market in Xi 'an is still in strong demand. Since 2016, the transaction price of the real estate market in Xi 'an has been rising gradually. Even when the transaction of commercial housing was suspended during the epidemic, the price was still rising. Under the continuous hot property market in Xi 'an, the government has been continuously regulating and managing the property market, coordinating the pre-sale management of commercial housing and capital supervision, so as to stabilize the development of the real estate market.

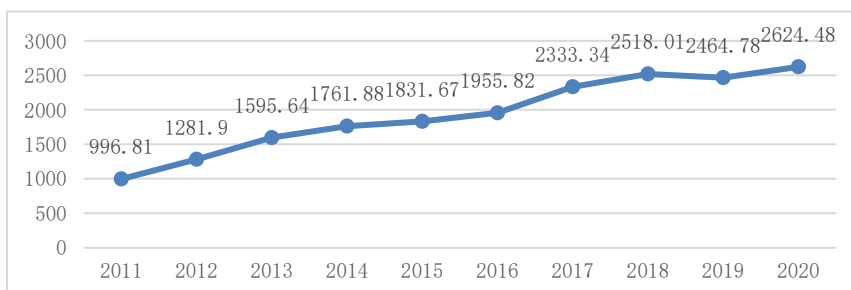


Fig 1. 2011-2020 Real Estate Investment in Xi 'an (Unit: 100 million Yuan)

3. Single Factor Analysis of Influencing Factors of Real Estate Investment in Xi 'an City

The influencing factors of real estate investment include economic factors, policy factors, environmental factors and population factors, etc. In this paper, through the study of relevant literature and combined with the relevant indicators of real estate investment in xi 'an statistical yearbook, Finally, the main factors affecting real estate investment in Xi 'an are permanent resident population, urbanization rate, per capita GDP, per capita disposable income, housing completion and construction area, and sales of commercial housing.

3.1. Changes of Permanent Resident Population in Xi 'an City

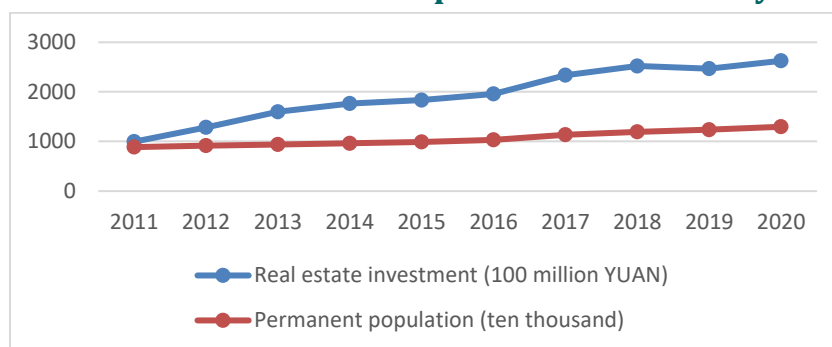


Fig 2. Permanent population of Xi'an from 2011 to 2020

Thanks to the rapid economic growth and the trusteing of Xi Xian New Area, the total resident population of Xi 'an reached 12.9529 million in 2021, an increase of 4.4851 million or 52.97% compared with 2010, accounting for 32.77% of the total population of the province. The

increase in the number of permanent residents will inevitably increase the investment in fixed assets of housing, office and education, thus driving the development of real estate.

3.2. Urbanization Rate of Xi 'an

Xi 'an has obvious advantages in economy, education and science and technology in northwest China. With the opening of the two-child policy in 2016 and the lowering of the threshold for settling down in 2017, the urbanization process of the permanent population in Xi 'an is accelerating. The urbanization rate of the permanent population in 2016 is 76.65%, and the urbanization rate of the permanent population in 2020 is 79.2%.

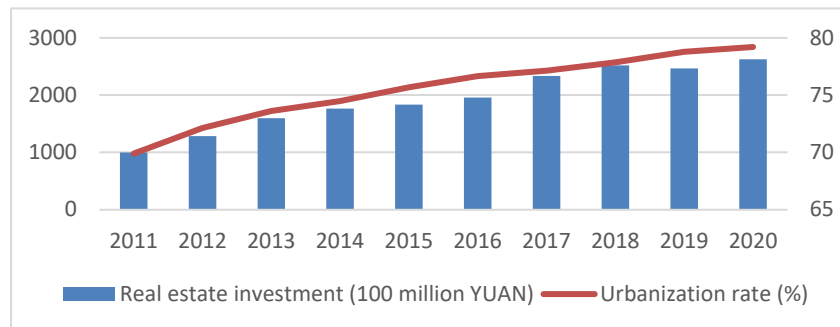


Fig 3. Urbanization rate of Xi 'an from 2011 to 2020

3.3. Per Capita Disposable Income of Xi 'an

The per capita disposable income of Xi 'an was 30032.5 yuan in 2016 and 35,783 yuan in 2020, with a fast growth rate. The increase of GNP will be accompanied by the increase of per capita income, which will improve per capita disposable income, enhance consumption purchasing power and increase the demand for housing. And then drive the development of the real estate market.

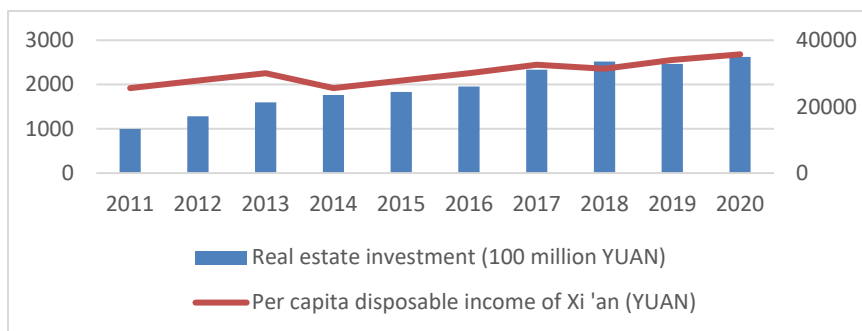


Fig 4. 2011-2020 Per capita disposable income of Xi 'an City

3.4. Sales of Commercial Housing in Xi 'an City

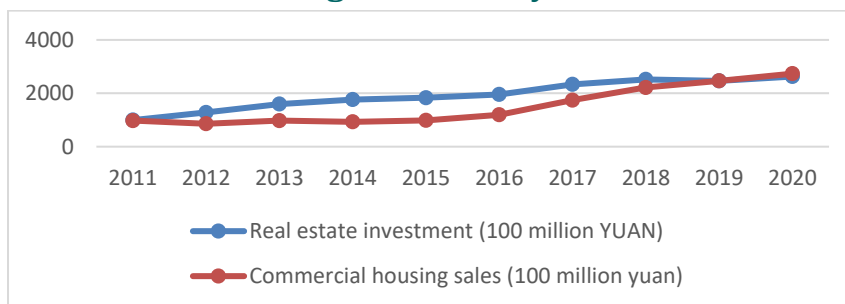


Fig 5. 2011-2020 Real estate sales of Xi 'an city

The sales volume of commercial housing in Xi 'an has doubled in 10 years from 97.371 billion yuan in 2011 to 273.458 billion yuan in 2020, increasing by 180%.

4. Empirical Analysis on the Influencing Factors of Real Estate Investment in Xi 'an City

4.1. Data Processing

This paper mainly analyzes and studies the main factors influencing the xian real estate investment, and factors associated with the historical data are from xi 'an statistical yearbook, caused by the change of statistical methods in 2011-2013, xi 'an per capita disposable income data unavailable, therefore, in this paper, using the SPSS to deal with missing data values, make the data integrity, Facilitate analysis and modeling.

Table 1. Data of influencing factors of Real estate investment in Xi 'an from 2011 to 2020

Year	Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Data 9
2011	996.81	69.9	8247.69	631.03	1674.85	973.71	245.14	25599.26	3869.84
2012	1281.9	72.13	9947.89	1063.7	1383.84	858.53	280.17	27844.9	4394.47
2013	1595.64	73.61	10454.27	795.35	1522.5	976.19	303.30	30032.5	4924.97
2014	1761.88	74.47	12422.1	1533.7	1525.95	928.74	343.69	25599.26	5492.64
2015	1831.67	75.68	13392.94	976.64	1584.08	985.35	427.42	27844.9	5801.2
2016	1955.82	76.65	14727.1	1560.18	1877.78	1194.41	474.39	30032.5	6282.65
2017	2333.34	77.12	15843.92	1634.63	2147.67	1743.43	562.78	32597.4	7471.89
2018	2518.01	77.85	16044.57	977.28	2221.27	2214.18	658.64	31406.7	8349.86
2019	2464.78	78.78	17475.02	1057.69	2155.46	2462.79	797.58	34064.3	9399.98
2020	2624.48	79.2	16916.07	834.55	2086.77	2734.58	849.84	35783	10020.39

date1 : Real estate investmentAmount (100 million yuan)

date2 : Urbanization rate (%)

date3 : Housing construction area(10, 000 square meters) of housing

date4 : The houseCompleted Area (10,000 square meters)

date5 : Commercial housingSales area (10,000 square meters)

date6 : Commercial housingSales volume (100 million Yuan)

date7 : Added value of real estate (100 million Yuan)

date8 : Per capita disposable income (yuan)

date9 : GNP (100 million yuan)

4.2. Empirical Analysis

This paper analyzes the influencing factors of real estate investment in Xi 'an city with multiple regression analysis. The explained variables y is real estate investment, and the explanatory variables x_i ($i = 1, 2, \dots$) are each influencing factor. A multiple regression model is established:

$$y = a_1x_1 + a_2x_2 + \dots + a_nx_n + \mu, \mu \sim (0, \sigma^2)$$

Many influence factors of real estate investment, real estate investment in different areas of the influence factors also have difference, in order to analyze the importance of the various factors affecting xian real estate investment, this paper used the stepwise regression analysis in multivariate regression analysis, by gradually introducing various explanatory variables, if the introduction of variable results significantly through the inspection, and keep the explanatory variables, Otherwise, the variable is removed until the whole equation is significant and passes the test.

Table 2. Regression analysis results of influencing factors of real estate investment in Xi 'an city

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	-10092.342	1059.068	-9.529	0.000
x_1	150.979	0.160	8.957	0.000
x_2	0.343	0.003	2.139	0.007
R-squared		0.977	Durbin-Watson stat	2.126
Adjusted R-squared		0.971	Prob(F-statistic)	0.1
S.E. of regression		93.47701	F-statistic	152.005

SPSS was used for multivariate stepwise regression analysis, and finally two explanatory variables were introduced: x_1 is urbanization rate, x_2 is sales area of commercial housing.

$$y=150.979x_1 + 0.343x_2 - 10092.342$$

It can be seen from the data results that the model fits well ($R^2=0.977$), and the R^2 closer to 1, the better it fits. The significance of F statistics were all less than 0.1, and the Durbin-Watson stat value was 2.126, indicating that the series basically had no autocorrelation. The tolerance value was $0.378 > 0.1$, and the VIF value was 2.643, indicating that there was no serious collinearity between variables. On the whole, the model has been tested and has certain explanatory ability in practical application.

5. Conclusion

Real estate investment in Xi 'an is still in the stage of steady rise, and there are many factors affecting real estate investment in Xi 'an. Based on multiple regression model analysis, this paper concludes that the key factors affecting real estate investment in Xi 'an are the urbanization rate of Xi 'an and the sales area of commercial housing. Urbanization rate is an important indicator of a region's modernization level. The urbanization process will bring dense population, scientific and technological progress, economic development and industrial structure adjustment, which will inevitably affect the development of the real estate industry. The sales area of commercial housing is also interdependent with real estate investment. The increase of sales area of commercial housing will inevitably promote the pace of real estate investment. Through the analysis and research of this paper, I hope to provide reference for xi 'an real estate investment and government departments to formulate relevant policies.

Acknowledgments

This paper is supported by the "Science Research Program of Xi'an Eurasia University" (NO. 2020XJ2K09).

References

- [1] Hu MENGfei. Research on regional differences of China's real estate market [D]. Xiamen: Xiamen University, 2017.
- [2] Zhao Jie, WU Zhenrong. Analysis of the impact of urban population on real estate investment: A case study of Xi 'an city [J]. Modern Marketing, 2018(11): 5-6.
- [3] Qiu Tingting. Analysis of the Influencing factors of Fuzhou Real Estate Price [J]. Journal of Fujian Normal University of Technology. 2021.12 (39).