

# Research of Influence Factors on House Price through Worldwide especially in the Factor of Human

Zhe Lyu\*

Northeast Yucai School, ShenYang, 110000, China

\*Corresponding author: Eprater67758@student.napavalley.edu

**Abstract.** Since the monetization and commercialization of housing in China in 1998, the housing price has continued to rise, and the high housing price has caused no small trouble to the life of ordinary people. At the same time, with the development of China's economy, a large number of people flow from rural to urban, from the central and western to the east. This paper makes an empirical analysis on the data of more than ten cities from 2000 to 2009. Then the relevant data was used. Finally, this paper estimates the impact of real estate price on population migration from 2000 to 2009. The results show that during 2000-2009, the real estate price has a significant impact on population migration, and the real estate price has become an important factor in each region. Generally, areas with high housing prices also have high per capita income, which attracts more population inflows. According to the research, the following suggestions are put forward: strengthen the interactive research of real estate price and population migration; strengthen regional exchanges and cooperation to grasp the overall population flow trend; strengthen the construction of low-income housing; improve the transportation network; adjust the structure of land supply and stabilize real estate prices.

**Keywords:** Population migration; population size; population density; age structure.

## 1. Introduction

The population migration has great influence on the house price. According to Fan, for the city with an outflow of population, the cities with population outflow tend to have the characteristics of small city, low proportion of population outflow, backward industrial structure and few employment opportunities [1]. The research shown that per capita GDP and land price index have a positive impact on housing prices at the significance level of 0.01, the real estate speculation index has a positive impact on housing prices at the significance level of 0.05, and the population loss rate has a negative impact on housing prices at the significance level of 0.01. Residential land premium rate, long-term loan interest rate, capital return indicators do not have an impact on housing prices. This paper verified that the economic situation has a great impact on the house price.

In recent years, for the needs of economic development and industrial optimization and upgrading, cities have rushed to introduce relevant policies to attract talent inflow. The inflow of migrants will inevitably produce more housing demand, which will lead to the rise of urban housing prices [2]. At the national level, population mobility can promote the rise of urban housing prices. Every 1% increase in the proportion of floating population, urban housing prices will rise by 0.23%.

Meanwhile, Hu pointed out the connection between the population and the houses prices. The article is about whether the level of public service will affect the outflow willingness of the floating population that has entered the city. The influence of housing price itself and the change of housing price growth rate on the mobility intention of the floating population that has entered the city [3]. It shown that house price is an important symbol of local quality and has an important impact on the migration of floating population. During 2008-2018, China's housing prices rose more than 1.5 times that of per capita wages.

Another literature which also indicates the great significance of density of population, in the new first-tier cities as a whole, the impact of industrial structure and population density on housing prices is positively correlated, and housing prices steadily increase with the continuous optimization and upgrading of industrial structure and the continuous rise of population density [4]. Under the

condition of controlling other variables unchanged, every 10% increase in population aging, urban housing prices will decrease by 11%, indicating that the deepening of population aging significantly promotes the decline of urban housing prices [5].

## 2. Methods

### 2.1. Data Source

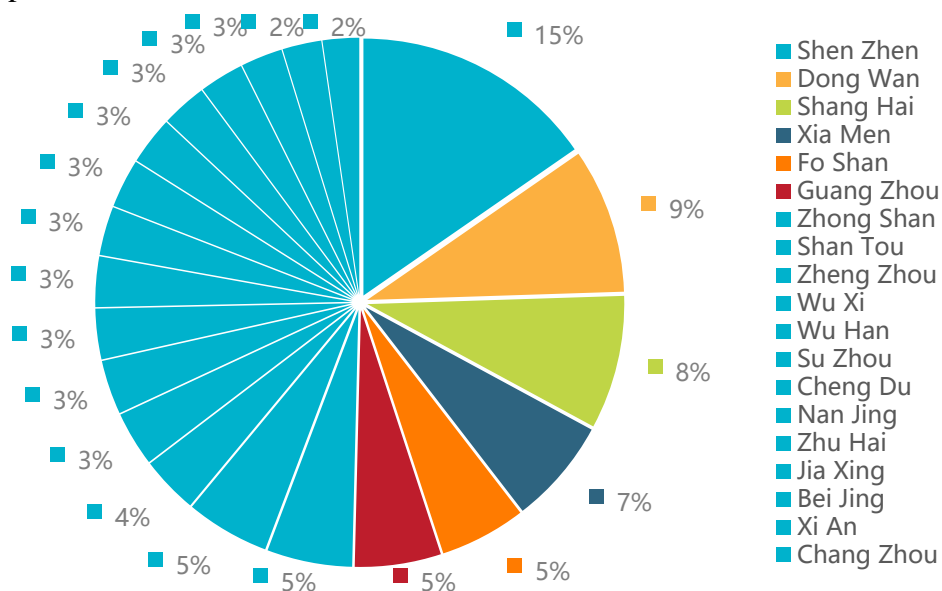
All the data which is used in the passage is from CNKi. The sample size is 5. All the data are from the year 2010 to the year 2020.

### 2.2. Method Introduction

Factor analysis is used to measure and analyze the development level of new urbanization. Then, the selected samples are divided into southern and northern regions, and variables such as the average sales price of residential commercial housing, talent flow, new-type urbanization development level, residential investment, loan balance of financial institutions, and employment density are selected. The fixed-effect model is used to test the significance of the results of different regional regression equations and evaluate the impact of talent flow on urban housing prices. The threshold effect model is used on the basis of regression analysis.

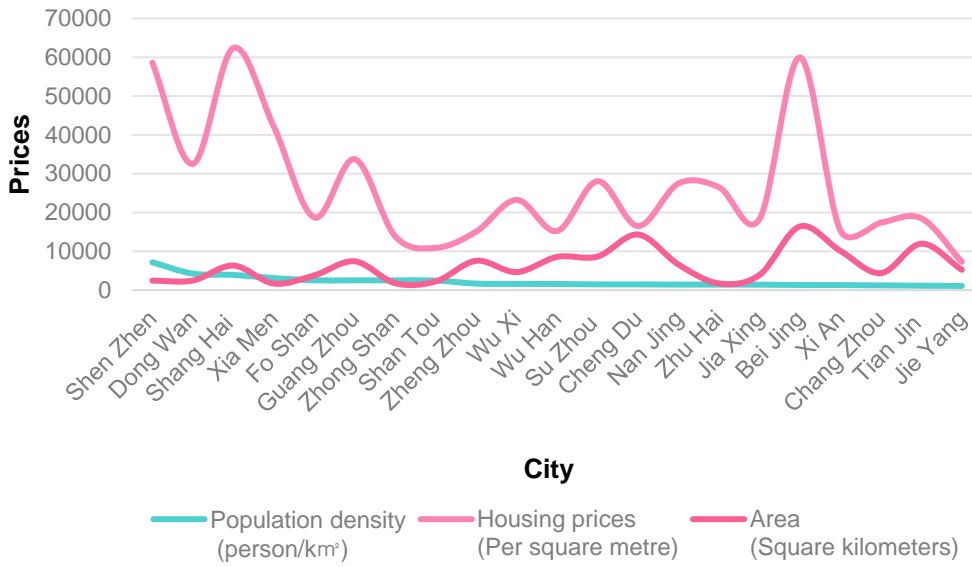
## 3. Results and Discussion

During the research, by making pie chart, line chart, bar chart of 21 typical city house prices in China. Making these pictures can help to have an intuitive expression on how these factors above influence the price of houses.



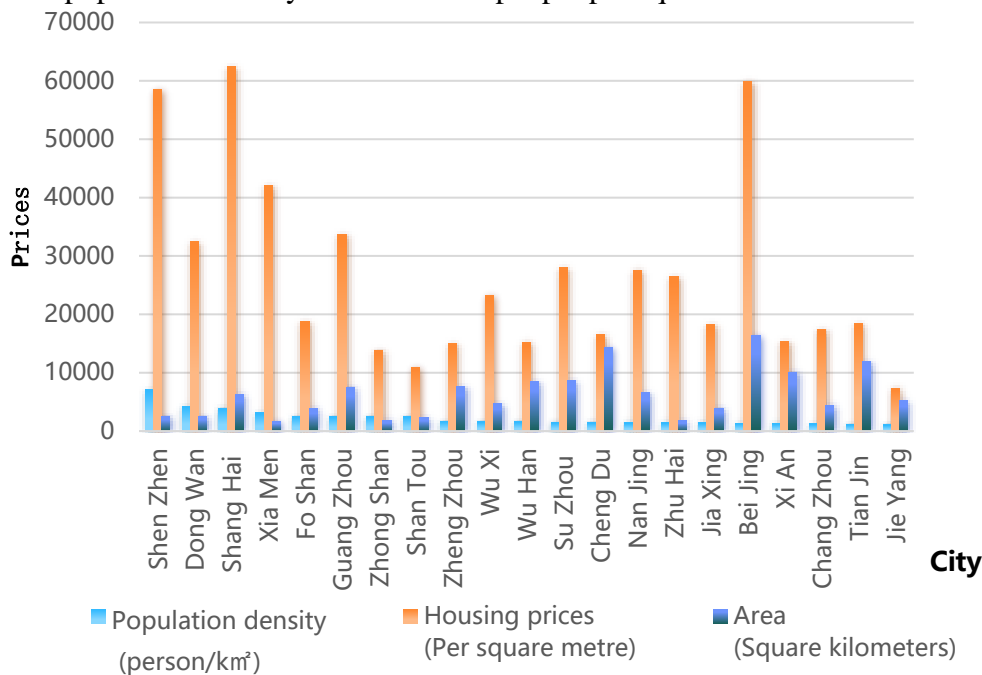
**Fig. 1** Population of different countries

According to statistics analysis in Figure 1, the top 10 cities with the highest population density in China are Shenzhen, Dongguan, Shanghai, Xiamen, Foshan, Guangzhou, Zhongshan, Shantou, Zhengzhou and Wuxi. we can get the percentage of each city.



**Fig. 2** House price of different cities

From Figure 2, Shenzhen is one of the four first-tier cities in Beijing, Shanghai, Guangzhou and Shenzhen, but its land area is very small, its land area is only 1997 square kilometers, Shanghai's land area is 6340 square kilometers, that is, Shenzhen is only about one sixth of Shanghai's area, Shenzhen's area is very small, but Shenzhen's population is as high as 17.68 million people, the population density has surpassed Hong Kong. Shenzhen has become the most densely populated city in China, with a population density of about 8800 people per square kilometer.



**Fig. 3** House price of different cities

From Figure 3, By Correlation and regression analysis some we can get the tread that the house price has Positive correlation with the density of people and the area, which is the same with the line chart. Whether the real estate price of a region is related to the population density is analyzed from a theoretical point of view, with the density size to analyze, Shenzhen density is large, covers a small area, according to online statistics, China's top 10 cities with the highest population density are Shenzhen, Dongguan, Shanghai, Xiamen, Foshan, Guangzhou, Zhongshan, Shantou, Zhengzhou and Wuxi. Shenzhen is one of the four first-tier cities in Beijing, Guangzhou and Shenzhen, but its land

area is very small, its land area is only 2465 square kilometers, Shanghai's land area is 6340 square kilometers, that is, Shenzhen is only about two-fifths of Shanghai's area, Shenzhen's area is very small, but Shenzhen's population is as high as 17.68 million people, the population density has surpassed Hong Kong. Shenzhen has become the most densely populated city in China, with a population density of about 7,173 people per square kilometer. Dongguan ranked second in population density, Dongguan city is not large, the population is large mainly because there are many factories in Dongguan, many large companies set up offices in Shenzhen and Guangzhou, and then set up factories in Dongguan, factories have a large number of workers, Dongguan population density ranked second in the country. Population density has both advantages and disadvantages. The advantage of population density is that business is very prosperous, purchasing power is large, people are everywhere, and it is certainly easy to do business, especially street roadside catering, hairdressing, beauty, fitness and other life shops, business is particularly good, population is concentrated, and education is often easy to implement and the level of education is very high [6]. Large population density also has disadvantages, the more obvious is the traffic pressure, more people and more cars, often traffic jams, housing shortage, rent is particularly expensive, shortage of resources and so on. Population flow not only changes the population structure of the city, but more importantly, it also intensifies the differentiation of the real estate market. In the first and second tier cities with rapid economic development and greater attraction, due to their strong economic strength and abundant employment opportunities, they have attracted a large number of migrants [7]. The influx of these people will undoubtedly increase the demand for real estate in these cities, which will push up prices.

In the third - and fourth-tier cities with relatively backward economic development, the population outflow phenomenon is more serious because of their weak economic attraction [8]. This has made the real estate market in these cities less demanding and prices relatively stable. In addition to the above effects, migration will have other profound effects on the real estate market. For example, with the influx of a large number of young people, the real estate market demand in some cities is becoming younger, and the demand for small units and apartment houses is increasing [9].

At the same time, with the deepening of urbanization, the expansion of cities and the development of new areas will also be affected by population flow. For real estate enterprises, how to accurately grasp these changes and adapt to the needs of the market is undoubtedly an important challenge they face. In order to prove the correctness of this reasoning, it is also necessary to test from the perspective of specific data, and the best way to test is to analyze the correlation between real estate price and regional population density [10]. There are many methods for correlation analysis of the two sets of data, and this paper uses the most simple and direct excel table for calculation. Table 1, 2, 3 are the statistical tables of real estate price index and regional population density from 2000 to 2009, which are calculated according to the data in the previous table. In the calculation of population density, the year 2000 is taken as the base, that is, the population density in 2000 is 100, and the change of population density after 2001 and 2002 is calculated respectively. In order to better explain the relationship between them, correlation analysis is made on the two sets of data of real estate price and population density in Table 1, and excel is used to directly calculate the data, which fully shows that the change of real estate price in each region has a high correlation with the change of population density in the region. As can be seen from the curve graph in Table 2, the changes of real estate prices in all regions in the past nine years are highly consistent with the changes of population density in all regions in the same period, showing an upward trend. The difference is that the increase of real estate prices is greater than the increase of population density in the same time.

#### 4. Conclusion

First, regional population density is highly correlated with real estate prices. The rise of real estate prices in a region has a positive consistent relationship with the rise of population density in the region, and the rise of population density is the internal direct driving force for generating rigid demand, which can explain why the real estate control policies have repeatedly failed in recent years.

Second, the rise in regional real estate prices is conducive. An increase in the price of real estate in one area will lead to an increase in the price of real estate in the surrounding area or the wider area. As population density increases, real estate prices rise, and the profits generated by real estate spreads become more and more large. This benefit can be passed on to the surrounding area, resulting in higher property prices in the surrounding area and beyond. Rising prices inevitably lead to property bubbles. Different regions, due to different levels of economic development, population density will also be different. In areas with low population density, the demand for real estate is relatively limited, and if the real estate price is too high, it will inevitably lead to a real estate bubble. Places with high population density can afford relatively high real estate prices. If the population density of an area decreases or stays the same, while the real estate price continues to rise, the real estate bubble in the area will increase, and the real estate price will fall sooner or later.

Fourth, in order to fundamentally solve the problem of real estate prices, it is important to balance the level of economic development between regions, so that the population is reasonably distributed among regions, so as to balance the demand for real estate between different regions, and finally achieve the relative stability of real estate prices, but also effectively resolve the increasing real estate bubble.

In short, using population density changes to explain real estate price changes can, to a certain extent, explain the root cause of the failure of long-term control policies to control the rise of real estate prices. At the same time, it can also explain the reason why real estate prices continue to rise in some areas while falling in others under the same real estate control policies. According to the empirical results, from the perspective of the national average level, the urban population does have a significant impact on the real estate price, and there is an inherent coordination between the two. The increase of the urban population promotes the rise of the real estate price, while the decrease of the population will greatly affect the change of the real estate, which has been confirmed in Japan and Europe. By region. The regional differences between the two are obvious, which is related to the imbalance of regional development. On the one hand, it is the result of population flow, and on the other hand, it is the result of the income difference of urban residents in various regions. How to coordinate the relationship between them is of great significance to social development and stability. As far as China's land ownership system is concerned, since the ownership of land is in the hands of the government, there is no complete market-oriented transaction, so we cannot analyze the supply of housing from a completely market-oriented perspective. This is also an important problem in the real estate price of our country. People also have to see that with the free flow of population, more people are willing to go to some big cities or cities with higher levels of economic development, but also willing to let their offspring stay there to continue to develop, so the demand for housing in big cities should be increased with the increase of population flow failure. The increase in demand is obvious, so in terms of the current economic development situation, if other factors are not considered, the house price should be increased with the increase in the number of urban population.

## References

- [1] Kuang Greatest. Expectations, Speculations, and Urban Housing Price Fluctuations in China. *Economic Research*, 2010, (9): 12.
- [2] Gao Yang, Wang Chaohui, Qiao Haohao, et al. Spatial Differentiation of Housing Prices in Shanghai's Tourism and Accommodation Industry and Its Influencing Factors. *Geographic Science*, 2022, 42(8): 11.
- [3] Li Chongfu. Basic ideas for solving the abnormally high housing prices in big cities. *China Circulation Economy Editorial Department*, 2021, (4): 4-7.
- [4] He Saiqi, Jin Shengping, Chen Jiaqing. Construction and application of panel data model for new ordinary residential housing price index. *Statistics and Decision*, 2023, (9): 63-67.
- [5] Chen Rui. Research on the Interaction between Urbanization, Tertiary Industry, and Housing Prices. *Journal of Shenyang University of Technology*, 2021, 14(1): 65-72.

- [6] Wu Yeqiang. Research on the Relationship between China's Investment Structure and Economic Development. Jilin University, 2021.
- [7] Fan Jianshuang, Zhou Lin, Yu Xiaofen. The impact of land finance and land market development on urban housing prices. *Geographic Science*, 2021, 41 (5): 9.
- [8] Chen Yao, Chen Xiangman. Empirical Analysis of the Impact and Spatial Effects of House Price and House Income Ratio on China's Urbanization. *Economic Geography*, 2021 (4): 9.
- [9] Zhao Wei, Wu Donglin, Zhao Minjuan. Heterogeneity Expectation, Individual Interaction, and House Price Fluctuation. *Financial Forum*, 2022, 27 (10): 10.
- [10] Zhang Qianqian, Quan Shifan. Research on the Impact of High Housing Prices on Investment Efficiency in the Manufacturing Industry. *Investment Research*, 2021, 4(7): 53-65.