The Impact of Housing Price Fluctuations on Residents' Consumption under the New Development Pattern

-- Based on Panel Quantile Model Analysis

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Abstract

As a consumer product with investment nature, housing occupies an important position in the wealth of Chinese residents. This article uses relevant data on consumption, income, and housing prices in 31 provinces, autonomous regions, and municipalities in my country from 2012 to 2020to empirically analyze the actual effects of housing price fluctuations on household consumption in my country by constructing an individual fixed-effect model, and identify the effects by regional grouping regression. The difference. The study found that, on the whole, there is a significant positive correlation between housing prices and residents' consumption, that is, rising housing prices will stimulate residents' consumption and increase wealth. From a regional perspective, the relatively low-developed inland middle-sized provinces and cities It is more affected by housing price fluctuations than eastern and western provinces and cities.

Keywords

New Development Pattern; Housing Price; Household Consumption; Panel Quantile Model; Difference.

1. Introduction

Housing is not only a high-value investment product, but also a high-cost consumer product. This dual attribute has established its important position in the wealth of Chinese residents. Around 1990, my country's real estate market ushered in a golden period of development after experiencing theoretical discussions, pilot projects, and the full launch of housing reforms. It has continued to grow and become a pillar industry of my country's economy. According to data from the National Bureau of Statistics, the size of the market for the sale of commercial housing has reached 14997.274 billion yuan in 2018.Compared with 1998, the average housing sales price has also risen from 2,112 yuan per square meter to 8,737 yuan, with an average annual growth rate of 7.36%, and the overall real estate market has developed prosperously. Correspondingly, housing expenditure has always accounted for the vast majority of my country's per capita consumption. Taking 2019 as an example, housing expenditure reached 23% of the national per capita expenditure. In our country, the housing problem has always been related to the quality of life and happiness of residents. Under such a realistic background, the fluctuation of housing prices will affectWhat role does the consumption of Chinese residents play? Is it to promote household consumption and increase household wealth? Or curb household consumption to produce crowding out effect? Based on this, this paper uses relevant data on consumption, income, and housing prices in my country's 31 provinces and municipalities from 2012 to 2020 to empirically analyze the impact of housing prices in my country on residents' consumption and find out regional differences. Find a better policy balance among residents' consumption[1].

2. Literature Review

Due to the high investment value of real estate, some scholars believe that increasing the price of housing can increase residents' assets, which in turn will boost consumer spending. Clancy et al. (2014) constructed a consumption model to study the relationship between house prices and consumption in Ireland from 1980 to 2013, and finally found that house price fluctuations significantly increased the level of expenditures of Irish residents. Bhatia and Mitchell (2016) empirically analyzed the relationship between house price fluctuations and household consumption based on Canadian micro-data, and believed that rising house prices would increase the cumulative capital gains of residents and drive consumption levels. Aladangady's (2017) study based on household consumption in the United States found that keeping other conditions unchanged, for every 1% increase in average house prices, household consumption increases by an average of about 0.47%. Domestic scholars He Shengcai and Liu Lizhen (2015) used a short-sighted consumption model to analyze and concluded that compared with stock prices, fluctuations in housing prices in my country have a stronger effect on household consumption. Chen Zheng and Gao Honggui (2016) used a dynamic panel generalized moment model to analyze the mechanism by which housing price fluctuations in various provinces and cities across the country affect urban household expenditures. They found that in addition to positive promotion of consumption, there are also regional differences and differences in housing prices. Hysteresis. He Cuixiang et al. (2017) performed a quantile regression of relevant data according to the nature of household resident and non-residential consumption, and concluded that the increase in housing prices significantly promoted the consumption level of households with houses[2].

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3. Theoretical Mechanism

In summary, due to differences in individual expectations of housing prices, differences in the purpose of purchasing houses (residential or non-residential), differences in willingness to purchase houses, and differences in regional economic development levels, the effect of housing prices on consumption is that "house purchase expenditures are crowded out." Whether the "pressure effect" or the "real estate wealth effect" is still uncertain. There are differences in the model testing methods adopted by various scholars, resulting in a great controversy over the mechanism of action between house selling prices and consumption. Taking into account the current situation of my country's vast territory and large regional development differences, this paper uses a fixed-effect model to return housing prices and residents' consumption in 31 provinces, municipalities, and municipalities as a whole based on a macro analysis perspective. And put forward policy recommendations based on local conditions.

4. Establishment and Analysis of the Model

4.1. Variable Selection and Data Description

This paper selects relevant data from 31 provinces, municipalities, and municipalities (excluding Hong Kong, Macao, and Taiwan) from 2012 to 2020 as the research sample. Although Tibet and Xinjiang have certain particularities, in order to ensure the accuracy of the forecast and the richness of the data , It is still included in the scope of the study. The average sales price of commercial housing, urban per capita disposable income, and household consumption expenditures are all derived from the 2009-2020 China Statistical Yearbook, China Real Estate Statistical Yearbook, and the statistical yearbooks of provinces, regions and cities[4].

With reference to a large number of relevant research literatures, most scholars generally adopt the individual fixed-effect model for empirical research on the impact of housing price fluctuations on household consumption. Therefore, this article gives priority to setting the individual fixed-effect model as the focus of the research, but it is still necessary to design the model. The rationality of the determination shall be inspected by measurement. First, use STATA12.0 to do Hausman test, and the P value obtained is significantly less than 0.05, indicating that the hypothesis of random effects is rejected, so from the test results, it is more appropriate to choose a fixed effects model than random effects; second, use chow test (F Test) and LR test from the complex to the simple case in order to check the change of the intercept term, and finally determine the specific form of the model.

This article also adds a comparative analysis of the results of the mixed regression and the expected model. It can be seen from the overall regression results that whether it is a mixed regression model or a fixed effect model, it is concluded that urban per capita net income and average housing sales price have a significant impact on per capita expenditure at the level of 5% or 10%. The R2 obtained by using the fixed effects model is 0.9770, which is higher than 0.9589 of the mixed regression. It shows that the fitting effect of the expected model is better than that of mixed regression. Specifically, urban per capita net income and housing sales prices have a significant positive correlation with consumption willingness, and a significant negative relationship with the consumer price index. This means that with the increase in housing sales prices, residents' willingness to consume will generally increase while other conditions remain unchanged. This proves that housing prices are dominated by wealth effects on residents' willingness to consume, and that per capita income and consumption expenditure are positively correlated. The above conclusions are in line with previous scholars' research conclusions and actual experience. In addition, the regression coefficients of propensity to consume and consumer price index are negative and not very significant. The hypothesis that housing prices rise too quickly to promote consumer consumption has been verified in the study of 31 provinces and municipalities as a whole[5].

4.2. Build Panel Quantile Regression Model

This part builds a panel quantile regression model to conduct an empirical analysis of the consumption promotion effect of tax cuts and fee reductions in the context of the new dual-cycle development. The panel quantile regression model is also a weighted minimization residual error that modifies the traditional linear panel model. The regression estimation method of the sum of absolute values, in the form of:

$$Y_{it}(_T \mid X_{it}, D_{it}) = \alpha_i + \beta_T X_{it} + \theta_T D_{it} + \varepsilon_{T,it} \ . \tag{1}$$

Among them: Yit is the explained variable, Xit is the explanatory variable, Dit is the control variable, βT and θT are the marginal effect parameters at the Tth quantile, and εT,it is the unobserved random item.

In the traditional mean linear model,all sample points are given the same weight in the estimation procedure,so the relative importance of the sample points has nothing to do with the position of the sample points in the sequence;and in the quantile represented by equation (1) In the numerical model,the relative importance of the sample points is constrained by the weight of the sample points in the sequence. The sample points within a given quantile level are given a higher weight.

Therefore,the parameters βT,θT and εT,it are actually conditional estimates under the conditions of a given quantile and a sample set {Yit,Xit,Dit}. In the estimation procedure,the panel quantile model described by equation (1) is estimated by minimizing the conditional loss function in equation (2):

$$\min_{\alpha_{T,i}\beta_T} \sum_{T=1}^{T=M}\sum_{i=1}^{i=N}\sum_{t=1}^{t=T}\left|W_T L_T\right| \quad . \tag{2}$$

Among them: WT is the weight of the quantile of T ∈ (1,2,...,M-1,M);LT is the loss function of the panel quantile model parameter estimation,LT is expressed by equation (3):

$$L_T = Y_{it}\left(_T\mid X, D_{it}\right) - \left(\alpha_i + \beta_T X_{it} + \theta_T D_{it}\right) + \lambda\left(\sum_{i=1}^{i=N}\left|\alpha_{T,i}\right|\right) . \tag{3}$$

The panel quantile model can not only effectively eliminate the normal distribution assumption based on the minimum residual square sum panel model for the unobserved residual items;it can also analyze the heterogeneity and adjustment of the parameter values at different locations in the sample interval. Direction to better reflect the rich information in the sample data set. Therefore,this study chooses the panel quantile model for empirical analysis to improve the value and accuracy of the research.

4.3. Descriptive Statistical Analysis

The 31 provinces and municipalities are divided into three regions: the east, the middle, and the west according to the development level, and the return will be carried out again. The first group reflects the impact of per capita income in the eastern region where the level of development is relatively high. Specifically, the effect coefficient of per capita income on consumption reached 0.9224, while the other two places only had 0.7804 and 0.8705. It can be seen that the propensity to consume in this area is obviously affected by income, but the coefficient of influence on the average housing price is only 0.0288 , Even less than 20% of the effect of the central and western regions, probably because housing prices in these areas are still high whether they are rising or falling, discouraging consumers. Therefore, the impact of its fluctuations on consumer spending is not obvious. In addition, according to the empirical results, it can be found that the consumer price index has an inverse relationship with residents' willingness to consume. For every 1% increase in the value index, consumer spending will decrease by 0.8032 units; the second group is based on the empirical results of the central region[6].

The per capita income of residents is still the main factor affecting residents' consumption, with an impact coefficient as high as 0.7804, and it is significant at the level of 5%. In the central region, where development is vigorous and the economy is the second most developed, the average housing price has a significant positive effect on household consumption expenditure.

In detail, the average housing price increases by 1 unit, and the per capita cost of residents increases by 0.1468 units. The third group specifically reflects the effect of the average housing sales price in the western region. As in the previous analysis, the higher the per capita income, the greater the consumption expenditure of residents. That is, the increase in the per capita disposable income of residents will increase by 0.8705 units, which is second only to the eastern region. The housing sales price will also increase the residents' willingness to consume like the eastern and central regions. Specifically, for every increase in the average housing sales price of one unit, the total consumption expenditure will increase by 0.1219 units. In addition, the inhibitory effect of the price index on household consumption is not outstanding, which may be due to the lack of overall consumption capacity in the region[7].

5. Research Conclusions and Policy Implications

This paper uses the individual fixed effects model to conduct an empirical study on panel data of 31 provinces, municipalities and municipalities in my country from 2010 to 2018, analyzes the impact of housing prices on household consumption, and draws the following conclusions: First, on the whole, 31 provinces across the country The empirical result obtained in the urban area is that urban per capita net income and housing sales prices have a significant impact on consumer expenditures, and they promote the increase of consumption levels while stimulating the rapid accumulation of social assets. This conclusion confirms the wealth effect. Second, the regression results show that the most significant impact of housing prices on residents' consumption is not the most economically developed eastern region, but the central region, where development is vigorous and economically developed, and housing prices and residents' income have increased rapidly.

The housing prices in the western region of the third group have no significant impact on residents' consumption. The reason may be that the provinces and municipalities covered by this group have a relatively low level of overall economic development and their own consumption power is relatively weak. Based on the research conclusions, the following policy recommendations are put forward: First, from the perspective of the overall effect, the continuous increase in housing prices in my country over the years has promoted the increase in household consumption, and the two maintain a clear positive correlation. Local governments should insist on effective macro-control of real estate prices, continue to effectively promote the construction of affordable housing, and improve the financial service system that matches the real estate industry. Second, when the government formulates housing price control policies, it should expand its perspective, not confined to the traditional perspective that only focuses on the absolute value of housing prices and growth limits.

It should also take into account the differences in consumption power, tendencies, and goals in combination with actual conditions to formulate targeted and Adaptive policies. Because residents' propensity to consume represents residents' willingness to consume and fully reflects the happiness of residents' lives, local governments should establish corresponding price control measures for different consumption purposes. For example, in the central and western provinces and cities where housing prices are not too high, the changes in housing prices should be continuously and steadily adjusted to prevent the excessively rapid increase in housing prices from affecting residents' spending power and quality of life. Third, for the eastern region, where the level of development itself is relatively high, the impact of housing prices on residents' consumption is weaker than that of the central and western provinces and cities. The government should actively stabilize the real estate market. In addition to maintaining the existing control policies, It is necessary to optimize and improve the consumption environment, and strive to further release domestic consumption demand.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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