

Calculation and Forecast of China Provincial Differentiated House Price's Reasonable Range*

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ABSTRACT

Real estate prices is one of the important factors affecting the Chinese people's livelihood, in order to promote the economy and society's stable and sustained development, the domestic various regions must give priority to solving the housing problems of the residents. Since 2003, China has always put the house price as a control target, and frequently mentioned "make the house prices go back to be reasonable". In order to study whether Chinese regional house price is adaptable with resident's disposable income, this article use the housing price to income ratio index to measure the matching degree between house price and people's actual demand, thereby provide the reference basis to government to make better macroeconomic policies objectives.

Keywords: Housing price to income ratio, Reasonable range, Housing pricing bubble, Financial risks

INTRODUCTION

International society specified the house price reasonable range. The purpose is to make the house price match the demand of urban residents, and keep the house price and urban residents demand in consistent status, maintain steady economic development, and in certain extent inhibit the housing price bubble to appear.

The so-called housing price bubble refers to the land and house prices are too high, and formed a seeming phenomenon of prosperity, the main feature is its actual use value does not match the house price value. In China, due to residents' strong demand for housing and estate agent excessive speculation in the real estate business, so housing prices continue to a higher level, to promote the deterioration of the housing bubble, once the bubble burst, prices will drop substantially, it will inevitably lead to economic and financial crisis, such as:① gross national income will be reduced. Studies show that the impact of housing price changes on consumption is far greater than the impact of stock changes, if house prices fall, not only affect the real estate market transactions^[1], but also will have impact to the other real estate associated industries, resulting in a general decline in all aspects of consumption, so that investment income is reduced, and the gross national income reduced accordingly; in addition, if housing prices fall, also will cause residents' income in the real estate market being reduced, so people's consumption and investment both will be reduced, thereby the GNI is reduced. ② the supply of consumer goods will be reduced. The housing bubble burst will cause house prices' falling, and reducing the residents benefit from the real estate market, so that the

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residents’ available consumption funds is reduced, and because of this reason that the production and sale of consumer goods industry is facing a crisis, if this last for long time, this also will lead a large number of corporate layoffs and even bankruptcy, so the consumers will have less surplus funds for consumption and make the economy into a vicious cycle.^③ economic development is hindered, unemployment has risen. After the housing bubble burst, followed by a large number of enterprises closed down, and unemployment ratio will rise, and the crime will be increased, and even in worse case that the economic development is impaired, or even declined. All in all, the housing price bubble’s change is related to relevant industries and overall economic development, so the reasonable housing prices control is particularly important.

With respect to the emergence of foreign housing bubble, although China has not yet experienced the process of the real estate bubble burst, but the potential risks should not be overlooked. For the current provincial cities, it is well known that the housing price of Beijing ranked first in provincial cities, the housing prices of downtown is up to as much as 60,000RMB per square meter; and lowest housing price’s provincial city is Huhhot, in recent years, the highest housing price is less than 10,000RMB per square meter, nevertheless, its price is still higher than most of the second and third tier cities, it is showing that Chinese provincial cities widespread have the housing bubble phenomenon.

CALCULATION METHOD OF THE HOUSING PRICE TO INCOME RATIO AND INTERNATIONAL STANDARDS

Housing price to income ratio is the ratio of the total price of housing and urban household annual income, of which the total price of housing is equal to the per capita housing area multiplied by per household average population, and then multiplied by the per unit area of residential average selling price, in order to facilitate the calculation, in the year 2014, our country combined the per capita housing area and the per household average population, namely housing area, and provides standard is 100 square meters. Urban household income is equal to the household average population multiplied per capita total annual household income^[2]. The national total housing price to income ratio is equal to the sum total of China 31 capital cities (excluding Hong Kong, Macao and Taiwan) housing price to income ratio divided by 31.

International common housing price to income ratio calculation is using median price of residential units divided by the median price of the annual household income, in accordance with established practice, the housing price to income ratio should between 3 to 6, then it is a reasonable range^[3], if the housing loan factor is considered, the housing consumption accounts for the proportion of income should be less than 30%^[4], if the calculated housing price to income ratio is higher than a predetermined reasonable range, the higher prices, the greater the possibility of a bubble. In China, only a part of the income of all household income is included in the statistics, so the calculation result of housing price to income ratio exits a big discrepancy, and also there are errors in our statistics, because the main data is focused on the city, and income ratio of the township residents is ignored, so China housing price to income ratio reasonable range should be slightly larger than the international standard, and the housing price to income ratio between 6 to 7 should be more scientific.

HOUSING PRICE TO INCOME RATIO CALCULATION OF CHINA 31 PROVINCIAL CITIES (EXCEPT HONG KONG, MACAO AND TAIWAN)

Except Hong Kong, Macao, Taiwan, China 31 provinces’ economic development level is varied with each other, there is a big difference among them, and all have housing bubble phenomenon, which is reflected in the provincial cities housing price to income ratio. Compare different cities’ housing price to income ratio, get the following results:

Table1. Chinese mainland provincial city housing price to income ratio in 2014

排名 Ranking	城市 City Name	房价收入比 Housing price to income ratio	排名 Ranking	城市 City Name	房价收入比 Housing price to income ratio
1	北京 Beijing	14.5	17	武汉 Wuhan	7.7
2	上海 Shanghai	11.9	18	石家庄 Shijiazhuang	7.4
3	广东 Guangzhou	11.8	19	南昌 Nanchang	7.4
4	杭州 Hangzhou	10.8	20	长春 Changchun	7.1
5	福州 Fuzhou	10.8	21	重庆 Chongqing	7
6	海口 Haikou	9.7	22	成都 Chengdu	6.9
7	天津 Tianjin	9.6	23	哈尔滨 Harbin	6.9
8	太原 Taiyuan	9.6	24	贵州 Guizhou	6.8
9	乌鲁木齐 Urumqi	9	25	昆明 Kunming	6.7
10	南京 Nanjing	8.9	26	济南 Jinan	6.4
11	兰州 Lanzhou	8.8	27	沈阳 Shenyang	6.4
12	宁波 Ningbo	8.5	28	西安 Xi'an	5.8
13	合肥 Hefei	8.1	29	银川 Yinchuan	5.4
14	西宁 Xining	7.8	30	呼和浩特 Hohhot	5.1
15	郑州 Zhengzhou	7.8	31	长沙 Changsha	5.1
16	南宁 Nanning	7.8			

Data Sources: *Sorting from Website data*

Table 1 shows that the average value of China provincial city housing price to income ratio is about 8.18, it is higher than the international housing price to income ratio maximum upper limit value 6, indicating that China's housing bubble is a widespread phenomenon, in which the first-tier cities such as Beijing, Shanghai, Guangzhou, Tianjin's housing price to income ratio is more than 9, Beijing is even can reach to 14.5, indicating that the housing price level has low degree of matching with the residents demand, the contradiction is intense, and serious housing bubble is existed; second-tier cities such as Hangzhou, Nanjing, Ningbo, and Tianjin are also above the average, but the contradiction is

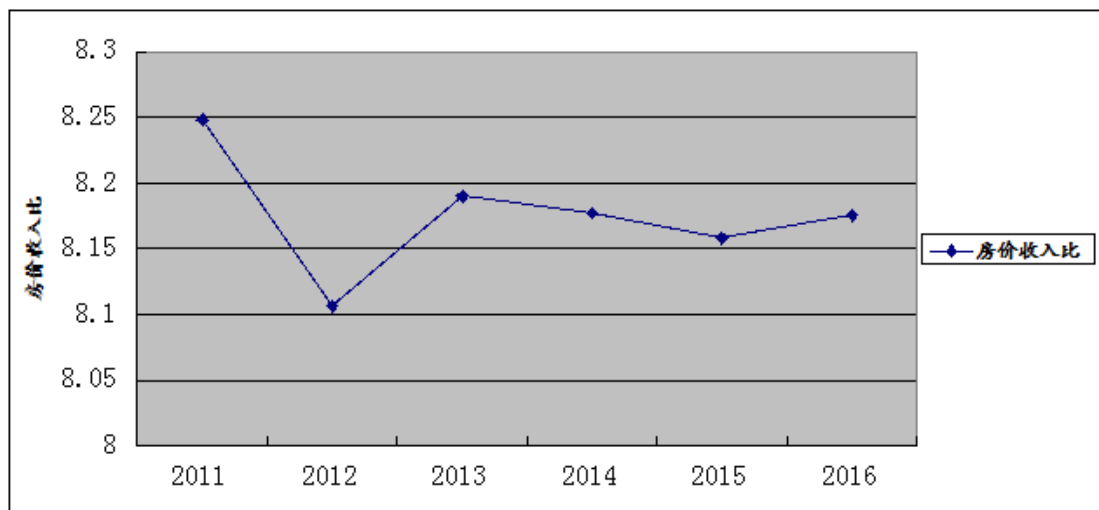
smaller than the first-tier cities; As shown in Table 1, for the provincial capital cities, only Xi'an, Yinchuan, Hohhot, Changsha's housing price to income ratio's range is from 3 to 6, belong to the scope of the reasonable range. If only refer to the reasonable range of Chinese housing price to income ratio, only 6 cities can satisfy the standard, it is 18% of the total number of cities, the proportion is very small.

Overall, we get the following conclusions: 1, the housing price to income ratio is basically showing decreasing trend from the eastern to the western, and high housing prices cities are mostly in the eastern coastal area; 2, first-tier cities housing prices to income ratio was significantly higher than the second and third tier cities, but there are few prominent second-tier cities, such as Lanzhou and Tianjin; 3, the price earnings ratio of the economically developed cities is higher than the economy underdeveloped cities, the more developed the economy, the higher the annual income of residents, consumers can have more ample funds for consumption, and correspondingly the housing price will be higher.

FORECAST FOR CHINA 31 PROVINCIAL CITIES HOUSING PRICE TO INCOME RATIO

With government's continuously regulation and intervention in the real estate industry, consumer's invest attitudes gradually become rational, in 2014, China's total housing price to income ratio tends to be stable, although China's total housing price to income ratio is 8.18 and this is still higher than the range of 6-7, but the ratio is expected to fall in the future, resulting in little likelihood of the housing bubble burst.

Table2. 2011--2016 provincial cities housing price to income ratio (including the prediction)



Data Source: Sorted from website data

See from Table 2, we can know the highest total housing price to income ratio of six years is in year 2011, it is nearly 8.25, and the lowest is in 2012, and housing price to income ratio is 8.11, compared to last year, it has fallen down by nearly 0.15, after that there is an increase in 2013, but the ratio is still lower than in 2011, it is only 8.19, and in the year of 2014, the ratio is slightly low. And based on exponential smoothing method to forecast the housing price to income ratio of 2015 and 2016 respectively, the ratio can be clearly seen that this year and next year's ratio will go up and down, but the volatility is not obvious, and the floating range can be basically controlled within 0.05, indicating that China's real estate market is basically stable, and the collapse phenomenon will not happen due to the housing bubble.

Through the analysis and forecast of China's total housing price to income ratio, it shows the trend of the real estate situation in 2015: First, the new house's price increasing will be reduced by the impact of policies in recent years, China's housing prices have bid farewell to the high growth period, and began to maintain the stable development level, under the premise of constant disposable income, in 2015 housing price to income ratio will decline; secondly, disposable income amount of increase also decreased, influenced by the rising prices, inflation and such macroeconomic impact, in 2015 the disposable income is nominally a rising trend, if housing prices remain unchanged, the housing price to income ratio will decline; Furthermore, the housing price to income ratio will go down again, mainly because of growth in the real estate industry in 2014 has decreased, resulting in the price growing rate become tight and income increase is more than the house price increase.

CONCLUSIONS AND POLICY RECOMMENDATIONS

Through the comparison and analysis of the above, getting the following conclusions:

(1) The housing price to income ratio continuously drops. During 2011 to 2014, the housing price to income ratio dropped from 8.24 to 8.18, mainly because the strong regulation of the property market in 2010, housing prices began to continuously keep in low increase. Although provincial cities total housing price to income ratio is higher than the international level, but for China's actual situation, the value of 8.18 is not far from the reasonable range 6-7, use this housing price to income ratio all over the country and it is showed that the national housing bubble phenomenon is not serious, and basically crash will not occur.

(2) House prices continued to show a rising trend, but the increase amount is slowing down. Total housing price to income ratio continued to decline, indicating that the rapid growth state of the housing price was no longer exist, and due to the presence of macroeconomic factors, the price of commodities is bound to keep rising, there will be showing the phenomenon of slowing house price growth. For various cities, before the housing price suppress policy's introduction, the first-tier and second-tier cities housing prices will continue to rise, second-tier cities' increase amount will be smaller than the first-tier cities; For the third-tier and fourth-tier cities will appear differentiation based on the quality of the local economy and the bubble extent of speculation in the property market, some cities prices will rise, some prices will fall, the value of investments will be reduced.

The main purpose of the study the housing price to income ratio is its impact on housing prices and economic development, through the above series of analyzes, what measures should be taken to alleviate the problem of high prices?

(1) Control land prices. When the government sold the land to real estate agent, give full consideration to the level of income and consumption of local residents, under the premise of maintain adequate profit of the government to reduce the land price, so that the real estate business development costs will be reduced, so solve the high prices problem from the price source.

(2) Increase supervision. The government should strengthen supervision of the real estate market, reduce malicious driving up prices and inducing consumers to buy house and other undesirable sales phenomena's occurrence probability, regulate the market and reduce the prices; In addition, in pursuit of rapid economic growth, some local governments use the high prices as a policy instrument, central government should also strengthen supervision for this type of phenomenon, so that the local government's goal is consistent with the central government.

(3) Improve the consumption concept. Consumers should rationally purchase the house, and change the traditional concept, and according to their actual situation, choose another way of living, such as

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rental housing, sharing living, etc., by all these means to ease the housing shortage problem, effectively prevent the excessive growth of house prices.

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