Will Tourism Development Increase Housing Prices?

——Based on the Empirical Analysis of Hainan Province, China

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ABSTRACT.   *Based on the background of rising housing prices in Hainan Province, China, under the background of "International Tourism Island", this paper uses data from 2012 to 2016 in Hainan Province cities and counties to build a regression model to study the mechanism of tourism development and expected impact on housing prices in Hainan Province And effects. The research shows that: (1) The development of tourism in Hainan Province of China and the expectations of the tourism industry will have different effects on the average house price level. The development of the tourism industry has a pushing effect on the average house price level of the real estate market, while the expectation of the tourism industry will be reduced Average house prices; (2) Tourism development and expectations have no significant impact on house price growth rates; (3) Tourism development has an increased effect on local residents' incomes higher than the effect on house prices, leading to a reduction in the house price-income ratio, therefore The impact of Hainan's tourism development on real estate is healthy and stable. Although it has increased housing prices, it will not contribute to the real estate bubble; (4) In terms of housing prices of different types of commercial housing, the development of tourism has significantly improved business The price of commercial housing reduces the price of commercial residential housing, and has a greater impact on the price of commercial commercial housing than that of commercial residential housing, while the development of tourism is expected to have no significant impact on the price of commercial commercial housing. The price of residential housing has an inhibitory effect on the average housing price of the entire real estate market.*

KEYWORDS: *Tourism development; House prices; Regression model; House price growth rate; House price-income ratio;*

1. Introduction

Since the State Council of China announced in 2009 that it will build Hainan Island into an "international tourist island" strategy, due to the rich natural resources and geographical advantages of Hainan Province, domestic and foreign tourists have poured in, and the tourism industry in Hainan Province has developed rapidly. Become the pillar industry of Hainan Province. Statistics show that from 2010 to 2017, the number of overnight tourists in Hainan Province increased from 18.9692 million to 55.91444 million, an average annual increase of 9.9%; tourism revenue increased from 25.391 billion yuan to 81.199 billion yuan, an average annual increase of 11.9%.

While the tourism industry is developing rapidly, housing prices in Hainan Province are also rising rapidly. Relevant data show that the price of commercial housing in Hainan Province increased from 8735.06 yuan/m2 in 2010 to 11,836.81 yuan/m2 in 2017, a cumulative increase of 35.51%.

As a "barometer" for the operation of the real estate industry in Hainan Province, real estate prices are not only important indicators of the government's macro-control, but also an important topic of people's livelihood concerned by all sectors of society. So, does the development of tourism in Hainan Province really contribute to the rise in housing prices? This is a question worth exploring. This article is based on the relevant index data of cities and counties in Hainan Province from 2012 to 2016, and by constructing a regression model to measure and analyze the impact mechanism and impact of tourism development on housing prices in Hainan Province, and propose relevant policy recommendations accordingly.

2. Literature review

Regarding the relationship between tourism and housing prices, domestic and foreign scholars generally have the following three views:

The first view is that the development of tourism has an effect on housing prices. Liu Jiayi (2013) [1] examined the data of 30 provinces and regions in mainland China from 2000 to 2009, and comprehensively used methods such as mixed regression and sysGMM(2010)[2] Based on the relevant data of Qingdao City and applying unit root test, Granger causality test and other methods, it is believed that the rapid development of tourism has a certain promoting effect on the real estate industry, but the effect is limited, and the tourism industry must not have development prospects. And blindly optimistic about the real estate market. The second view is that tourism development has little effect on housing prices. Zhang Yali (2015)[3] studied the interrelationship of Hainan's real estate industry and tourism from a spatial perspective by establishing a panel model and a coupling coordination model, and found that the coupling and coordination degree of the two industrial systems in Hainan Province is low. The third view is that the impact of tourism development on housing prices has different directions and effects under different control conditions. Constantine[4] used the DID method and based on the data of the six Olympic cities

hosting from 1984 to 2000, the analysis concluded that "the tourism development brought by the Olympic Games does not always increase housing prices, and the lack of commercialization may cause housing prices in the hosting cities to fall." .

Some scholars explain the reasons for changes in house prices from other aspects. Lu Ming et al.(2014)[5] analyzed the relationship between urbanization, immigration and housing prices, and found that after controlling other factors, the housing demand brought by urbanization and immigration will lead to an increase in housing prices; Zhou Huaikang et al.(2019)[6] verified the role of immigrants in pushing up housing prices; Wang Yunxia(2010)[7] believed that environmental factors were the key to increasing the value of real estate; Dong Zhiyong(2010)[8] analyzed and studied the relevant sources of housing price changes from the perspective of the supply and demand of the commercial housing market Momentum, and believe that the changes in commodity housing prices are mainly driven by the demand side and local government forces, while the supply-side and monetary policies have relatively little effect on the real price of commercial housing, but the real interest rate has a greater impact on residential commodity housing prices.

Looking at the relevant research literature in recent years, there is relatively little research on the relationship between tourism development and housing prices at home and abroad, and because of the different samples and research method choices, there are often large differences in research conclusions. As a typical tourism province, Hainan Province analyzes whether tourism development has a positive effect on housing price changes, and can provide reference for government departments to formulate policies to regulate housing prices.

3. Theoretical model

3.1 Mechanism of action

As far as the theoretical analysis is concerned, there are two main ways for tourism to affect house prices: One is the way of tourism consumption, which is mainly realized by acting on the prices of commercial business houses. The development of tourism will increase the flow of population, and this part of the flow of people is often tourism consumers, which will directly promote the booming development of accommodation and catering, transportation, retail and other industries, and then expand the commercial business of these industries. Demand, when demand exceeds supply, will lead to an increase in housing prices for commercial operations. The second is the resource and environment approach. This approach is mainly achieved by acting on the price of commercial housing, and the impact of tourism on the price of commercial housing at different stages of development is different. In the early stage of tourism development, based on the rich natural resources and geographical advantages of the tourist destination, in order to improve the quality of life and the convenience of obtaining tourist resources, the number of foreigners moving into the tourist residence will gradually increase, thereby increasing the demand for commercial housing, Resulting in an

increase in commodity housing prices. In 2009, after the country announced that it had positioned Hainan as an "international tourist island", a large number of residents in the mainland, especially in the Northeast, moved to Hainan to buy homes. The rapid rise in housing prices in Hainan was not unrelated to this. When the impact of tourism development on the resources and environment of the tourism destination exceeds the limit that the destination can bear, the resources and environmental advantages of the tourism destination will be gradually weakened, resulting in a slowdown in the demand for commercial housing from outside the region. The increase in housing prices in the previous stage promoted the increase in the investment and supply of commercial housing, which in turn led to a gradual narrowing of the housing supply and demand gap until the two reached a balance. At this time, the development of tourism industry gradually reduced the role of boosting housing prices. When the resources of tourist destinations enter the stage of over-development and utilization, the convenience and pleasure of the immigrants who purchase the houses in the tourist places gradually decrease, which in turn affects the enthusiasm of the immigrants who purchase the houses in the tourist places to buy houses. It has a restraining effect on the housing prices in tourist destinations.

3.2 Variable selection

In order to explore the impact of tourism development on house prices from different angles, this paper takes the average house price level (lnHouseprice), house price growth rate (Houseprice), house price income ratio (Housepriceincome) as the explanatory variables.

In terms of the choice of explanatory variables representing the development of tourism, although the number of tourists is the most direct indicator of the development of tourism, this article does not directly use the number of tourists, but uses the tourism-resident population ratio, and will be studied annual tourism- The resident population ratio is divided into the base period tourism-resident population ratio(lnTour-Dwell) and the base period to the research year of the tourism-resident population ratio growth rate (Tour-Dwell') as the explanatory variables. It is a relative quantity, and relative to the number of tourists, it can better reflect the relative development of tourism under the situation of continuous inflow of Hainan Province; secondly, it can alleviate the more serious endogenous problems between tourism development and housing prices. Finally, the growth rate of the tourism-resident population ratio can reflect the expectation of the future tourism development to a certain extent, so this approach can distinguish the different impacts of the tourism-resident population ratio and its growth rate [5].

In addition to the above two explanatory variables, this paper also sets control variables in terms of housing supply and demand. On the supply side, factors such as real estate investment amount (HI) and real estate investment growth rate (HI') that affect housing supply are used as control variables. The higher the real estate investment amount and investment growth rate, the higher the supply and the lower

the housing price. In terms of demand, the two factors of resident population (Dwell) and per capita GDP are used as control variables. The larger the resident population, the larger the city size and the more demand for housing; the larger the per capita GDP, the higher the labor productivity. The more income an individual gets, the greater the purchasing power of the house, which increases the demand for houses and drives up house prices.

At the same time, considering the impact of environmental and geographic factors on housing prices, this paper also takes the urban area (ln urban area and PM10 concentration (lnPM10) as the control variables. The size of the urban area represents the level of urbanization, and PM10 concentration reflects the city Whether the air quality is good or bad, it will have a certain impact on housing prices.

Based on the variables selected above, this article builds a regression model to verify the impact of Hainan's tourism development on house prices:

$$\ln Houseprice_i = \alpha_0 + \beta_1 \ln(Tour - Dwell_i) + \beta_2(Tour - Dwell'_i) + \beta_3 X_{3i}$$
$$+ .... + \beta_j X_{ji} + \mu_i$$

Among them, the subscript i represents the ith city (county), the subscript j represents the jth explanatory variable, and α_0 and μ_i are the intercept term and the random disturbance term, respectively. X_{ji} is the control variable and $\beta_1 \sim \beta_j$ is the parameter to be estimated.

4. Empirical analysis

4.1 Selection of samples

In this paper, the data of cities and counties in Hainan Province, China from 2012 to 2016 are selected as samples. Variables such as sales and sales area of commercial housing, number of tourists, real estate investment, number of permanent residents, GDP per capita, and PM10 are derived from the "Hainan County" in the EPS data platform. "City Statistics Database", consumer price index comes from "China Financial Database". The nominal housing price of a commercial house is obtained by dividing the sales of commercial houses in various cities by the corresponding sales area. Due to the lack of data in some areas or the obvious abnormal fluctuations in housing prices, they are eliminated. In the empirical analysis, only the nominal housing price data of 12 cities and counties are used, and then the consumer price index of each city and county is deflated to eliminate inflation. Influence the actual housing price.

4.2 Estimated results and analysis

4.2.1 Relationship between average house price level and tourism development

Table 1 takes house prices (average prices of various types of houses) as the explanatory variables, and the tourism-resident population ratio lnTour-Dwell and the tourism-resident population ratio growth rate Tour-Dwell' as the explanatory variables.

Table 1 The average house price level is the model estimation result of the explained variable

Explanatory variables	Explained variable ($\ln Houseprice$)					
	(1)	(2)	(3)	(4)	(5)	(6)
$\ln Tour\text{-}Dwell$	0.291*** (5.48)	0.278*** (3.803)	0.183** (2.375)	0.197** (2.895)	0.143* (2.013)	0.056* (1.698)
$Tour\text{-}Dwell'$		$-0.043**$ (-3.803)	$-0.046*$ (-3.335)	$-0.070*$ (-2.895)	$-0.184*$ (-2.414)	$-0.179*$ (-2.253)
$\ln HI$			0.118* (2.092)	0.117** (2.365)	0.157 (1.758)	0.012 (0.346)
HI'				0.083* (1.832)	0.092 (1.255)	0.040 (1.434)
$Dwell$					0.002* (1.599)	0.004*** (6.316)
$GDP\text{-}per\text{-}capita$					5.42E$-$06 (0.632)	2.6E$-$05*** (6.776)
$\ln Urban\text{-}area$						0.225*** (5.812)
$\ln PM10$						$-0.629**$ (-3.996)
α_0	8.722*** (133.6)	8.759*** (56.6)	7.321*** (10.46)	7.251*** (11.8)	6.76*** (7.42)	5.06*** (8.09)
F	30.06	13.67	13.99	14.42	11.57	136.73
R^2	0.750	0.752	0.840	0.892	0.933	0.997

Note: The values in parentheses represent the t statistic, and ***, **,* indicate that the coefficientsare significant at the statistical level of 1%, 5%, and 10%, respectively.

In column (1) of Table 1, we only introduce tourism-resident population ratio as the explanatory variable. The regression coefficient is estimated to be 0.291 and the judgment coefficient is 0.75, which indicates that tourism development has not affected commercial housing without considering other factors. The increase in housing prices has a positive effect and the push-up effect is more obvious. For every 1% increase in the tourism-resident population ratio, the price of commercial housing in Hainan Province, China will increase by an average of 0.291%. —Cities with higher permanent population ratios have higher house prices. However, in the

regression models (1)-(6), with the increase of the introduction of control variables, the regression coefficient of the tourism-resident population ratio is gradually decreasing, in the regression model (6) it is reduced to 0.056, at 10% of the statistics The level is significant, that is, tourism-every 1% increase in the permanent population will result in an average house price increase of 0.056%, which is far lower than the value in the regression model (1).It can be seen that although the development of tourism will push up house prices, if Ignoring other factors and studying the relationship between the two alone may often overestimate the effect of tourism development on housing prices.

The impact of tourism development on housing prices. After adding other control variables to the regression model (6), Tour-Dwell' is significantly negative, which shows that the expectation of the development of tourism in Hainan Province will play a role in reducing housing prices, and the expectation of the development of tourism in Hainan Province will lead to The flood of investment in the real estate market has caused the supply of commercial housing to seriously exceed demand, thereby lowering housing prices.

This article also verifies the impact of other factors on the housing prices in Hainan Province. In regression (3)-(4), we gradually introduce real estate investment (HI) and real estate investment growth rate (HI'). The regression model (4) shows that in controlling Tour-Dwell and Tour-Dwelli's Under the circumstances, the coefficients of HI and HI' are significantly positive at the statistical level of 5% and 10% respectively, which means that the increase in real estate investment and the acceleration of investment growth have pushed up housing prices. But this is contrary to our usual perception, because real estate investment and the growth rate of real estate investment are both supply-level factors. Increased supply should reduce house prices, but why would house prices be pushed up? Our guess is in real estate At the same time that the increase in investment and the growth of real estate investment are accelerating, the demand for housing in Hainan is also increasing, and the demand is still greater than the supply, so house prices are still rising. In the regression model (5), we introduce two factors at the demand level: resident population Dwell and GDP per capita.The results show that the coefficients of HI and HI' are no longer significant, which validates our above-mentioned conjecture that HI and HI' are An indicator of supply relative to demand, real estate investment and other factors mainly affect housing prices by affecting the supply and demand of the real estate market, which is basically consistent with the research conclusions of relevant scholars[9][10].

In the regression model (6), we introduce two environmental geographic variables, urban area and PM10 concentration, into the model, the coefficients of which are 0.225 and -0.629, respectively, and are significant at the statistical levels of 1% and 5%. In the case of variables, every 1% expansion of the urban area will lead to an average increase of 0.225% in housing prices, and the urbanization process has increased housing prices in Hainan. The average house price in Hainan.

4.2.2 Relationship between house price growth rate, house price-income ratio and tourism development

In order to study the impact of tourism development on the growth rate of house prices, the current house price growth rate Houseprice' is used as the explanatory variable, while introducing Tour-Dwell, Tour-Dwelli', HI, HI', Dwell, Dwell', GDP per capita, etc. As explanatory variables and control variables, the regression estimation results are shown in Table 2. The regression models (7)-(8) show that the coefficients of TourDwell and Tour-Dwelli' are not significant, so the impact of tourism development on the growth rate of house prices is not significant.

In the regression models (9)-(11), house price-income ratio Houseprice-Income is used to replace Houseprice in regression (1)-(6) as the explained variable. From the regression results, the variables Tour-Dwell and Tour-Dwelli can be seen 'The regression coefficients are all negative, meaning that they all have a negative impact on the house price-income ratio lnHouseprice-Income. With other variables unchanged, the ratio of tourism-resident population increases by 1%, or the development of tourism is expected each additional unit will result in a price-income ratio of 0.114%. This shows that although the development of tourism has promoted the rise of housing prices to a certain extent, it has a greater promotion effect on the increase of local residents' income, which has led to a reduction in the price-to-income ratio. The impact of development is healthy and stable. Although it raises housing prices, it will not contribute to the real estate bubble [11].

Table 2 Regression estimation results of house price growth rate and house price income ratio as explanatory variables

Explanatory variables	*HousePrice'*		Explained variable (ln*Houseprice-Income*)		
	(7)	(8)	(9)	(10)	(11)
ln*Tour-Dwell*	−0.147 (−0.450)	−0.137 (−0.752)	−0.155** (−2.785)	−0.057* (−2.856)	−0.114* (−2.46)
Tour-Dwell'	0.248 (0.444)	0.017 (0.056)	−0.115 (−0.941)	−0.27* (−2.23)	−0.266*** (−5.58)
ln*HI*	−0.265 (−0.606)	0.007 (0.035)		0.109 (1.296)	−0.012 (−0.258)
HI'	−0.084 (−0.294)	0.001 (0.008)		0.03 (0.54)	−0.07 (−1.87)
Dwell				−0.003** (−2.44)	−0.004*** (−5.11)
Dwell'	72.234 (1.137)	18.130 (0.529)			
GDP-per-capita				5.3E−06 (0.665)	2.30E−05** (4.21)
GDP'-per-capita	−3.962** (−1.732)	−2.454** (1.142)			

Other environmental variables	Uncontrolled	Controlled	Uncontrolled	Uncontrolled	Controlled
α_0	1.601 (0.389)	−1.149 (−0.22)	1.523*** (12.91)	0.25*** (0.305)	−1.66*** (−1.90)
F	0.868	0.81	10.38	5.93	33.14
R^2	0.510	0.684	0.698	0.877	0.988

4.2.3 The relationship between different types of housing prices and the development of tourism

The above analysis shows that the development of tourism in Hainan Province of China has a role in pushing up the average house price. Commercial housing includes office housing, commercial housing, commercial housing and other types. The mechanism and effect of tourism development on the prices of different types of commercial housing may vary. Now measure and analyze the impact of tourism development on the prices of commercial business houses and commercial housing, and replace the tourism-resident population ratio and tourism-resident population in the above model with the number of tourists (Tour) and the growth rate of tourism (Tour') After gradually introducing other variables, the regression estimation results are shown in Table 3.

Table 3 Regression estimation results of various factors on different types of house prices

Explanatory variables	$HousePrice_{Business}$		Explained variable ($\ln Houseprice\text{-}Income_{Residential}$)	
	(12)	(13)	(14)	(15)
ln$Tour$-$Dwell$	0.241** (3.117)	0.363** (3.452)	−0.224*** (−4.604)	−0.152* (−1.681)
$Tour$-$Dwell'$	−0.159 (−0.717)	−0.192 (−1.976)	−0.040 (−0.282)	−0.214* (−2.875)
lnHI		0.004 (0.050)		0.118 (1.98)
HI'		0.164** (3.210)		−0.078 (−1.48)
$Dwell$		0.012** (3.037)		0.003** (2.649)
GDP-per-$capita$		−1.22E−05 (−1.567)		2.60E−05** (3.023)
Other environmental geographic variables	Uncontrolled	Controlled	Uncontrolled	Uncontrolled
α_0	6.04*** (5.27)	7.67*** (8.98)	5.88*** (8.11)	5.39** (3.05)

F	10.95	33.71	19.21	36.58
R^2	0.71	0.988	0.81	0.990

According to the results of regression (12)-(13), the coefficients of Tour are significantly positive at the statistical level of 5%, and under the control of other variables, each increase in the number of tourists by 1% will result in commercial housing The price increased by 0.363%, indicating that the increase in the number of tourists significantly increased the price of commercial premises. Due to the increase in the number of tourists in Hainan Province, the development of Hainan's business has been promoted, and the demand for commercial business houses has also expanded, so the price of commercial business houses has also increased. The coefficient of Tour' is not significant, indicating that the expectation of tourism development has no significant impact on the price of commercial business housing in Hainan Province, that is, the increase in the price of commercial business housing is not caused by the expectation of the development of tourism, which verifies the above The impact of tourism development on real estate in Hainan is healthy and stable. Although it has increased housing prices, it will not contribute to the conclusion that a real estate bubble will arise.

In regression (14)-(15), the price of residential commercial housing is used as the explanatory variable. It can be seen from the regression estimation results that the increase in the number of tourists and the expectation of the increase in the number of tourists will significantly reduce the price of Hainan's residential commercial housing. Since the construction of Hainan International Tourism Island in 2009, with the influx of tourist population, the rich natural resources and ecological environment of Hainan Province have gradually become saturated.When it reaches a certain level, it will significantly reduce the outsiders who have the will to settle in Hainan. Demand for commercial housing in Hainan. In order to further investigate the reasons for the rise in the price of residential commercial housing, according to the results of regression (15), it can be seen that the number of permanent residents has a positive correlation with the price of commercial residential housing, and each increase in the number of permanent residents will cause the price of residential commercial housing An increase of 0.003%. At the same time, the increase in GDP per capita has also significantly increased the price of commercial housing in Hainan.

5. Conclusions and policy recommendations

Based on the data of cities and counties in Hainan Province from 2012 to 2016, a regression model was constructed to study the impact of tourism development on housing prices in the context of "international tourism island". The empirical results show that: (1) the development of tourism and the expectations of tourism will have different effects on the average house price level. Tourism development has a pushing effect on the average housing price in the real estate market, but if we ignore other factors and study the relationship between the two, we often overestimate this effect. Expectations for the tourism industry will lead to an overwhelming investment in the real estate market, causing the supply of

commercial housing to seriously exceed the demand, thereby reducing the average house price. (2) Tourism development and expectations have no significant impact on house price growth. (3) The effect of tourism development on the increase of local residents' income is higher than the effect of pushing up housing prices, resulting in a reduction in the price-income ratio. Therefore, the impact of tourism development on real estate in Hainan Province is healthy and stable, although House prices, but will not contribute to the real estate bubble. (4) In terms of housing prices for different types of commercial housing, the development of tourism in Hainan Province has significantly increased the price of commercial business housing and lowered the price of commercial residential housing, but the impact of tourism development on commercial business housing prices is high for commercial housing. The development of the tourism industry is expected to have no significant impact on the prices of commercial business houses, which will have a depressing effect on the average housing price of the entire real estate market by lowering the prices of commercial residential houses. (5) Real estate investment mainly affects housing prices by affecting the supply and demand of the real estate market.

Based on the above conclusions, this article proposes the following policy recommendations: (1) Hainan Province should fully understand the impact of tourism development on housing prices, improve the construction of related facilities for tourism development, and provide commercial housing for the commercialization of tourism development, etc. Fixed places to achieve the coordinated development of tourism and real estate; (2) The policy should be fully used to guide the Hainan real estate market funds, classify management of different types of commercial housing markets, appropriately reduce the construction of residential commercial housing, and make Hainan real estate funds More business in the field of commercial housing and other commercial housing, which is conducive to promoting the balance of supply and demand for different types of commercial housing, maintaining the healthy and stable development of the real estate market in Hainan Province, and at the same time promoting the diversification of Hainan's industry; (3) in tourism and While developing the real estate industry, attention should be paid to protecting the natural resources and environment of Hainan Province and achieving green development.

References

[1] Liu Jiayi. Will tourism development push up housing prices? ——Empirical research based on Chinese provincial data [J]. Tourism Science, 2013, 27 (02): 24-35+58.
[2] Li Yuxiang, Huang Guoan. An empirical study on the relationship between tourism and the real estate market——Taking Qingdao as an example [J]. Journal of Economic Research, 2010 (25):158-159.
[3] Zhang Yali. Research on the relationship between tourism and real estate in coastal areas of China [J]. Economic and Trade Practices, 2015 (9):321-322.
[4] Constantine K. The price of victory: The Impact of the O-lympic Games on Residential Real Estate Markets [J]. Urban Study, 2011 (2): 1-18.

[5] Lu Ming, Ou Haijun, Chen Binkai. Reason or Bubble: An Empirical Study on Urbanization, Immigration and House Price [J]. World Economy, 2014, 37 (01): 30-54.

[6] Zhou Huaikang, Peng Qiuping, Sun Bo. Who is boosting housing prices?——Based on empirical evidence of China's high-level floating population [J]. China Economic Issues, 2019 (01): 93-100.

[7] Wang Yunxia. Environmental factors are the key to enhancing the value of real estate [J]. Urban Development, 2010 (10): 70-71.

[8] Dong Zhiyong, Guan Hao, Ming Yan. Analysis of factors affecting real estate prices: an empirical study based on panel data of provinces and cities in China [J]. Journal of China University of Geosciences (Social Science Edition), 2010, 10(02): 98-103.

[9] Xing Yue, Feng Suosen. Hainan's real estate investment and housing prices return to maturity and rationality [J]. China Finance, 2005 (11): 23-24.

[10] Zhang Hong, Yang Fei. Research on the interaction between housing prices, real estate development investment and inflation [J]. Economic Issues, 2013 (1): 49-52.

[11] Zhou Shu. Perspective of Hainan house prices under the "international tourist island"-rational increase or economic bubble [J]. National Business Conditions (Theoretical Research), 2010 (12): 110-111.