



Original Article

Determinants of Real Estate Bubbles in Thach That, Hanoi, Vietnam from 2017 to 2023

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Abstract: This paper focuses on the determinants impacting the real estate bubbles in the suburban district of Thach That, Hanoi, Vietnam. Two models are used, including the RADF Test to identify the presence of the bubble in Thach That industrial region, center region, and high-tech park; and the OLS Regression to identify the factors influencing the bubbles; based on 76 observations showing monthly changes in residential land values from January 2017 to April 2023 and different independent variables' data, such as gold price, Thach That population data, stock market indexes, trade balance, annual variation in the quantity of businesses, total investment cash flow into the market, and USD/VND rates for exchange and credit growth rates. Some conclusions are drawn from research results. Firstly, not all the regions throughout Thach That show the existence of real estate bubbles. Only the center region and new high-tech park experienced non-agricultural land price bubbles from 2019 to early 2022, while there are no bubbles in the industrial zone. Secondly, there are differences in factors concluded in the research compared to previous research. The research finds four factors affecting central landing prices and two affecting high-tech park prices. Also, a variable lag of one month affecting directly the bubbles in the high-tech park is due to qualitative investing psychological behaviors.

Keywords: Vietnam real estate bubble, housing bubble, land price bubble, asset bubbles, influencing factors. EL Code: G10, G11, G12, G14, G17, G18.

1. Introduction

Real estate bubbles have been an attractively argumentative topic for economic researchers worldwide because of their heavy impacts on not

only the domestic economy but also the global economy. Typical examples are financial crisis 2008 and recently, real estate bubbles in China that deteriorates the economy and belief of investors. In Vietnam, the importance of the real

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estate market is undeniable. For one thing, according to the Vietnam Real Estate Association, real estate business (encompassing real estate development and construction activities) accounts for about 15% of GDP pie; secondly, real estate sector is always a pool for FDI capital to flood in. Typically, according to General Statistics Offices, in the first quarter of 2024, the amount of FDI flowing into real estate development was 1,583.26 million USD, accounting for 25.6% total amount. Finally, real estate has been always an appalling conventional channel for domestic investors since then, noted as idiom “tac dat tac vang”. However, the more important real estate market is in the domestic economy, the more destructive it becomes when real estate bubbles form then burst if there is no timely interpretation by the government (I).

In recent years, residential land in suburbs, including Thach That, has gasped much attention from both giant developers and individual investors because of i) Government development plants; ii) Advanced infrastructure and convenient highway; and iii) Astonishingly high-priced residential land in the capital that forces middle-class and low-income residents to reallocate their investing channels. However, a surge in attention and development plants in Thach That and vicinities could turn to a boon for brokers and speculators to manipulate land market, forming real estate fevers then impacting considerably low - to middle – income individual investors’ assets. Distinctively, differentiation in producing activities among communes in Thach That also results in variations in the non-agricultural residential land prices, making Thach That real estate market somehow reflect realistically real estate situation in Vietnam in general (II).

Moreover, a spot in Vietnam real estate characteristics is that as speed of urbanization in Vietnam has been high in the past 30 years in Vietnam, condominium segment accounts for a great proportion, concentrating densely in two metropolitans Hanoi and Ho Chi Minh City. As a result, most researchers have paid their attention mostly to the condominium segment,

creating a research gap for non – agricultural residential lands that are located mostly in marginal suburban areas and vicinities (III).

From the arguments (I), (II), and (III) mentioned above, in this paper, a research on the determinants impacting Thach That real estate bubbles from 2017 to 2023 is done.

This paper aims to complete the three main goals: i) Confirming the existence of the pricing bubbles in segment residential land in Thach That from 2017 to 2023; ii) Clarifying the factors affecting the landing bubbles in the district; and iii) Suggesting some methods to handle the bubbles problems. In order to fulfill main goals, the study step-by-step presents detailed delivers, including i) Essential relevant terminologies; ii) Available research associated with the topic in the study; iii) Proof for existence of residential land bubbles using Stata model; iv) Discussion about the impact of landing prices; and v) Recommendation to improve transparency in the real estate market.

2. Literature Review

2.1 Terminology

An economic bubble is defined as "trade in high volumes at prices that are significantly different from intrinsic values" (P. M. Garber, 1990; Sh. S. Levine & E. J. Zjajac, 2007 [1, 2]). The origins of bubbles continue to be a source of consternation for economic theory. A weak financial policy and excessive monetary liquidity in the financial sector are the basic ideas behind the formation of economic bubbles (R. Topol, 1991 [3]).

Regarding bubbles in the real estate market, there are many ways to explain the terminology of it. The term "real estate bubble" refers to an excessive increase of virtual demand that results in a temporary surge in price relative to the theoretical price (L. Wang et al., 2020) [4]. Similarly, N. H. Tien et al., (2019) [5] interpreted that according to popular economic theories, the real estate bubble phenomenon refers to a market condition in which real estate

prices or real estate transactions are abruptly transacted at an exorbitant price without reflecting the level of utility or consumer purchasing power. A real estate bubble is a form of economic bubble that happens regularly in local or global real estate markets and frequently coincides with a land boom. The real estate bubble burst is a huge gap between supply and demand in the market, leading the prices soar as quickly as their increase.

Factors Affecting the Real Estate Bubble

Indeed, bubble formation and bust are forms of crisis that cause far more instability in the local and global economies. Across the world, as the real estate bubble is a hot topic, many researchers have made an effort to analyze the cause of real estate bubbles and their impact on the economy. According to R. N. Weber (2015) [6], a moderate tenant demand boom turned into a speculative bubble is due to a flood of inexpensive cash made by taking advantage of sophisticated financial instruments, shaking the connection between pricing and supplying. As a result, the formation of bubbles and busts must have more complicated traits and causes than simply economic cycles. The P/I ratio was utilized in Cadil's (2009) study [7] to assess and pinpoint the signs of speculative demand that would eventually result in the Czech real estate bubble. L. Wang. et al., (2020) [4] placed particular emphasis on the connection between the real estate bubble and the banking system's troubles with bank loans in a different study. The asset depreciation coefficient, according to the researchers, exacerbates the bank's systemic risk contagion and contributes to the burst of real estate bubbles during economic cycles. China's higher bank leverage rate has, in some ways, made the banking system more unstable and increased the risk of real estate bubble busts. Mentioned in a study on the real estate bubble in the US, that in less than two years, the Federal Reserve swiftly reduced short-term rate yields after the "new economy" bubble burst in 2000 spurred a more robust recovery of the US economy, according to W. Zhou & D. Sornette

(2006) [8]. However, this strategy might result in a fresh housing bubble as climbing house demand was backed by historically low mortgage rates, as was demonstrated by the LPPL (log-periodic power law) model. Additionally, the impact of macroeconomic variables together with qualitative variables on housing bubbles have been mentioned by many researchers. Assessing the real estate market in Ho Chi Minh city, a relevant study by N. H. Tien et al., (2019) [5] mentioned three factors that are indirect, encompassing transparency of buying-and-managing activity in the market, real estate state management, and monetary policies, and two direct factors, including investor psychology and capital resources for the Vietnamese real estate market, are identified. N. T. Anh (2021) [9] assessed Vietnamese housing and landing bubble as it is set to burst based on common indicators including cheap interest rates, demand-pull inflation, and irrational exuberance. Moreover, such prevalent methods as altering the law to reduce the gap between supply and demand, controlling investment into the securities market and real estate market, supervising investment behaviors frequently, and increasing the elucidation in investing and trading activities specifically and the market, in general, to address the bubble problems effectively are suggested. Likewise, the correlation between monetary policies and the real estate price index concerned about the real estate market in Hanoi was underlined by L. P. Lan. et al., (2023) [10]. VAR model is used to help the authors analyze housing and building prices in the Hanoi, thus, the occurrence of a real estate bubble and conclusions about such factors as monetary policy, lag variable, and response of index market that impact the Hanoi condominium prices are confirmed in the study.

2.2. Research Hypotheses

There are some hypotheses constructed for this research based on the literature review above.

- As mentioned above, the monetary policy of central bank is one of critical elements driving

to real estate bubbles. When the interest rate is high, investors are reluctant borrow money from commercial banks to purchase residential land.

Hypothesis 1: Benchmark interest rates negatively affect Thach That residential landing bubble.

As gold price increase as there is a surge in demand due to the instability in economy domestically and globally. The reasons for instability could be geopolitical risks, war, or global pandemic. An increase in gold price leads to free exchange rate USD/VND increase, reducing the purchasing power of residents. As a result, Vietnamese tend to invest money in lands not only to protect their assets but also to expand their returns.

Hypothesis 2: gold prices affect the Thach That residential landing bubble.

- It is evident that whenever the real estate is vibrant, the number of businesses in the real estate market upsurges.

Hypothesis 3: Change in the number of businesses in the real estate market is an indicator of Thach That the residential land price bubble.

- As trade is an important activity contributing to the growth of the domestic economy. If GDP increases, people will become wealthier and have money to invest in residential land.

Hypothesis 4: Balance of trade could results in Thach That residential landing bubble.

- The more number of residents, the more they require lands to settle.

Hypothesis 5: Total number of residents in Thach That has effects on the residential land price bubble in the district.

- Public investment is an important factor to attract capital from giant real estate developers.

Hypothesis 6: Public investment impacts Thach That residential landing bubble.

- As landing purchases require a huge amount of money, investors often tend to borrow money from commercial bank.

Hypothesis 7: Growth of credit annually influences the Thach That mortgages, and residential landing bubble.

- High exchange rates USD/VND is often due to gap between interest rates. When the interest rates in Vietnam is low, residents tend to move their deposits in banking system to high return investing channel such as real estate.

Hypothesis 8: Therefore, the eighth hypothesis is that current exchange rates USD/VND influence Thach That residential land bubble.

- As stocks and real estate are often considered as high-return investment channels.

Hypothesis 9: VN-Index has close relationship with Thach That residential landing bubble.

3. Methodology

3.1. Research Methods

This study employs a quantitative approach to gradually achieve its goals. According to Itamar Caspi in Journal of Statistical Software [11], RADF test is qualified for time series data and be able to test for stationarity of the pricing data to detect the sign of bubbles. There are many researches worldwide using RADF test to prove their theory on the existence of pricing bubbles. In “*Use of unit root methods in early warning financial crises*”, T. Virtanen et al., (2017) [12] suggests that early warning tool based on unit root methods provides a valuable accessory in financial stability supervision. Therefore, two main models are used in the study: i) The RADF Test to identify the presence of the bubble in three different Thach That regions, including the industrial region, center region, and high-tech park; and ii) The OLS Regression is used to identify the factors influencing the bubbles.

3.2. Research Models and Variables

Unit root test RADF for verification of real estate bubble existence.

Following PYW, RADF combines some tests on ADF (Augmented – Dickey-Fuller) regression (C. F. Baum, J. Otero, 2020 [13]) is as follows:

$$\Delta y_t = \alpha_{r1,r2} + \beta_{r1,r2} y_{t-1} + \sum_{i=1}^k \delta_{r1,r2}^i \Delta y_{t-i} + \varepsilon_t$$

In which, y represents for regional residential landing prices, t is total time, equivalent to 76 months studied, from January 2017 to April 2023, r1 and r2 are fractions of T, and ε is the error term.

Apart from conventional ADF, other two tests are included in the PYW study, SADF and GSADF.

OLS Regression for factors affecting Thach That landing price bubbles

The housing land prices are estimated by the equation:

$$P_AV = \alpha_0 + \sum_{i=1}^k (\alpha_1 * GO + \alpha_2 * IN + \alpha_3 * TR + \alpha_4 * CB + \alpha_5 * SC + \alpha_6 * PLN + \alpha_7 * SP + \alpha_8 * CDG + \alpha_9 * CE) + \varepsilon_i$$

$$IDT = \alpha_{d0} + \sum_{i=1}^k (\alpha_{d1} * GO + \alpha_{d2} * IN + \alpha_{d3} * TR + \alpha_{d4} * CB + \alpha_{d5} * SC + \alpha_{d6} * PLN + \alpha_{d7} * SP + \alpha_{d8} * CDG + \alpha_{d9} * CE) + \varepsilon_{di}$$

$$CTR = \alpha_{t0} + \sum_{i=1}^k (\alpha_{t1} * GO + \alpha_{t2} * IN + \alpha_{t3} * TR + \alpha_{t4} * CB + \alpha_{t5} * SC + \alpha_{t6} * PLN + \alpha_{t7} * SP + \alpha_{t8} * CDG + \alpha_{t9} * CE) + \varepsilon_{ti}$$

$$HTK = \alpha_{h0} + \sum_{i=1}^k (\alpha_{h1} * GO + \alpha_{h2} * IN + \alpha_{h3} * TR + \alpha_{h4} * CB + \alpha_{h5} * SC + \alpha_{h6} * PLN + \alpha_{h7} * SP + \alpha_{h8} * CDG + \alpha_{h9} * CE) + \varepsilon_{hi}$$

In which, P_AV, IDT, and CTR are dependent variables,

P_AV: average prices of Thach That housing land, unit (million VND),

IDT: Thach That housing land prices in industrial region, unit (million VND),

CTR: Thach That housing land prices in the center, unit (million VND)

Independent variables:

HTK: Thach That housing land prices in Hoa Lac high-tech park, unit (million VND)

GO: price of gold, unit (million VND per ounce),

IN: basic rates of interest by the State Bank, unit (percent),

TR: Vietnamese annual balanced trade, unit (billion USD),

CB: the quantities of corporates found in the Vietnam real estate market, unit (thousand corporates),

SC: financial cash flow into Vietnam real estate market, unit (trillion VND),

PLN: the number of Thach That residents, unit (thousand persons),

SP: points of VNIndex,

CDG: growth of credit every year, unit (percent),

CE: USD/VND exchange rate, unit (thousand VND),

ε: error term in the model.

The selection of those variables depends very much on the literature review which is presented in Table 1 below:

Table 1. Previous studies using cited variables

Variable	Name	Previous studies using the variables
P_AV	Average price	
IDT	Thach That housing land prices in industrial region	
CTR	Thach That housing land prices in the center	
HTK	Thach That housing land prices in Hoa Lac high-tech park	
GO	Gold price	M. Ali, A. Samour, F. Joof, T. Tursoy (2024); S.Abraham, H. N. Ramanathan (2020) [14, 15]
IN	Basic rates of interest by the State Bank	W. Zhou, D. Sornette (2006); N. T. M. Linh et al., (2020) [8, 16]
TR	Trade balance	J. K. Galbraith, S. Hasu, W. Zhang (2009) [17]
CB	Number of businesses	C. Liu, W. Xiong (2018) [18]
SC	Total social investment	N. H. Tien et al., (2019); C. Liu, W. Xiong (2018); P. T. T. Truong, D. P. Thai (2019) [5, 18, 19]

PLN	Population	C. Liu, W. Xiong (2018); L. Phatudi, C. Okoro (2020) [18, 20]
SP	Stock market index	D. T. T. Trang, B. N. Toan (2021) [21]
CDG	Growth of credit every year	L. Wang et al., (2020); L. P. Lan et al., (2023); N. T. M. Linh. et al., (2020) [4, 10, 16]
CE	Exchange rates	J. K. A. Jack, F. Okyere, E. K. S. Amoah (2019); N. Miller, M. Sklarz, N. Real (1988) [22, 23]

4. Data Sources

The research uses only quantitative secondary data.

Thach That's land price data includes 76 observations showing monthly changes in residential land values from January 2017 to April 2023. This period of time is chosen because it is impossible to get access to the prices of land prices in the region during the earlier period, and also because of technological problem which makes it hard for authors to collect the prices of land in the previous years. Most websites of real estate companies deleted data and posts about 5 years after they were released. Secondly, the prices are gathered from trading websites such as nhatot.com and alonhadat.com.vn, as well as some public and private Facebook groups for land trade. Additionally, the prices are taken from records of district real estate auctions.

Regarding the independent variables, gold prices data are collected from website Trading Economics. The population number is on Thach That district's website. The authors also access to

other financial websites, for example cafef, Investing, and Bloomberg, to collect stock market indexes.

Additionally, the website of the General Statistics Office is used for data on the trade balance, annual variation in the number of businesses, total investment cash flow into the market, and USD/VND rates for exchange; credit growth rates are collected from the same mentioned sources. All independent variables stated in the study are within the timeframe from 2017 to April 2023.

5. Research Results

5.1. Descriptive Statistics

After collecting scattered data throughout 15 communes in the district, the data were manipulated to eventually retain 76 valid observations. The following table is a general descriptive statistics table for the component variables.

Table 2. Descriptive statistics of dependent variables

Variables	Obs	Mean	Std. Dev.	Min	Max	Source
	units	(VND million/m ²)	(VND million/m ²)	(VND million/m ²)	(VND million/m ²)	
CTR	76	28.942	16.287	7.7	57.25	Online group, auction records
HTK	76	15.443	10.044	3	39.9	Online group, auction records
IDT	76	36.822	23.141	10	70.61	Online group, auction records
P_AV	76	27.069	15.665	6.8	51.703	Online group, auction records

Source: authors summarized using Stata.

Table 3 Descriptive statistics of independent variables

Var	Obs	Mean	Std. Dev.	Min	Max	Source
	units	VND million/m ²	VND million/m ²	VND million/m ²	VND million/m ²	
GO	76	43.782	6.918	35.15	58.94	TradingEconomics [24]
IN	76	5.368	1.033	4	6.5	TradingEconomics [25]
TR	76	.085	1.534	-2.8	3.854	GSO [26]
CB	76	4.988	3.019	-1.067	10.133	Collected data
SC	76	189.363	63.378	99.267	363.033	Wichart [27]
PLN	76	229.413	23.505	194.1	269.013	District website's data [28]
SP	76	1042.78	205.030	703	1501	Investing [29]
CDG	76	13.684	1.644	12.1	16.96	Wichart [30]
CE	76	23.076	0.254	22.449	23.370	Investing [31]

Source: author synthesized using Stata.

5.2. Unit Root Test to Find out the Occurrence of Bubbles of House Landing Price

In order to assess Thach That housing land prices, the study divides it into three main

regions. As a result, unit root test RADF is used to the landing prices of the three different areas to provide a more transparent view of the land market scenario in Thach That district from 2017 to April 2023.

Table 4. Unit root test for stationarity of the time series in central areas

	Test statistic	1%	5%	10%
Z(t)	-4.2	-2.423	-1.854	-1.458

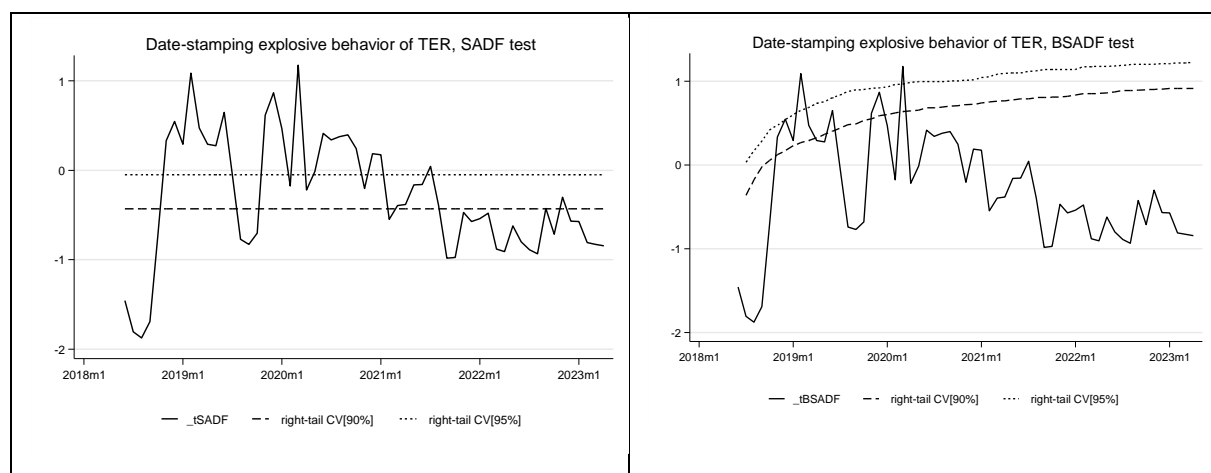


Figure 1. Test the occurrence of central bubbles of house landing price in Thach That (Source: author synthesized using Stata).

The test statistic shows that the price variable CTR is appropriate for the model and the upsurge in landing prices is unstable. More specifically, the soaring period of residential land values in the Thach That center region is vividly shown by the Figure 1 above. The prices in 2019 and the beginning of 2020 dramatically increased, above the right-tail confident value

95%, according to the right figure BSADF test for multiple bubble identification, indicating a real estate bubble in the area. This result is relevant to the realistic observation that during the same timeframe, the landing prices in central areas doubled, and the number of transactions increased dramatically.

Table 5. Unit root test for stationarity of the time series in Hoa Lac

	Test statistic	1%	5%	10%
Z(t)	-5.1	-2.616	-1.950	-1.610

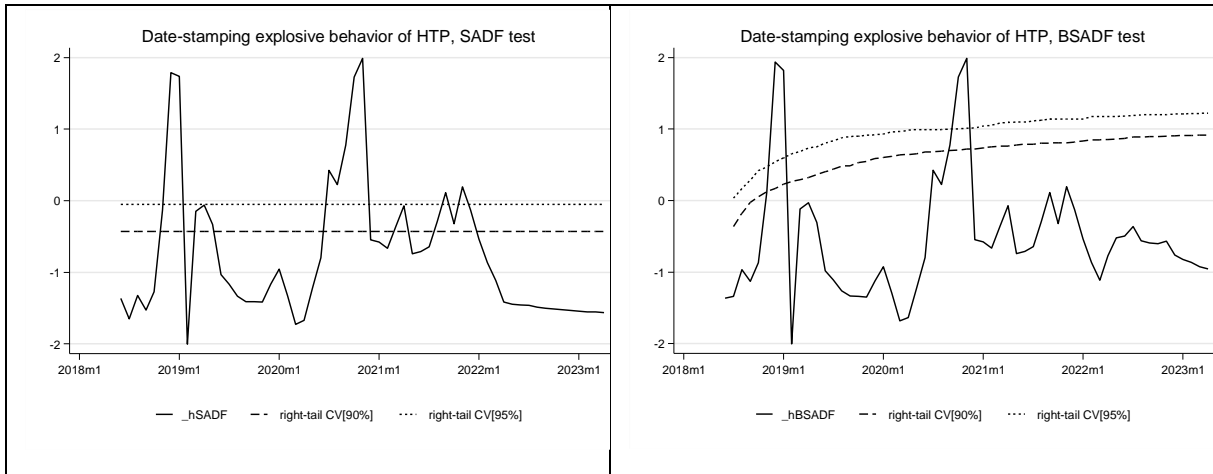


Figure 2. Test the occurrence of the bubbles of Thach That house landing price in Hoa Lac. (Source: author synthesized using Stata).

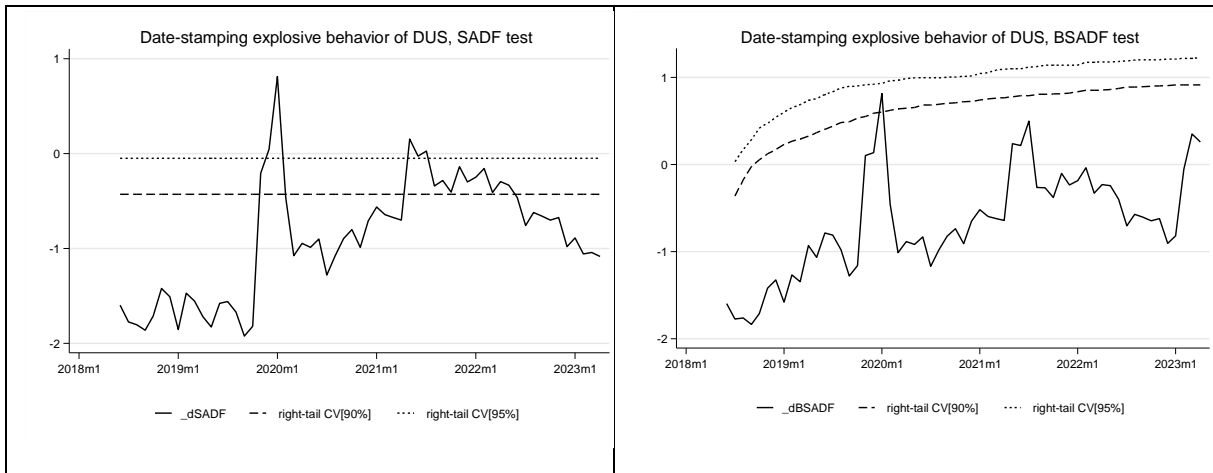


Figure 3. Test the occurrence of the bubbles of Thach That industrial house landing price. (Source: author synthesized using Stata).

The test statistic is far smaller than critical values of unit root test, showing that the price variable HTK is meaningful and appropriate for the model (figure 2). In Hoa Lac high-tech park, the prices in the beginning 2019 - ending 2020 and beginning 2021 skyrocketed dramatically, considerably over the right-tail confident value 95%, indicating real estate bubbles with evidence of speculative activities. The result of test is relevant to the real-life observation in Thach That during the same timeframe, especially at the beginning of 2021 when the prices in Tan Xa and Tien Xuan villages doubled or tripled but decreased rapidly after real estate tightening policies of the government.

The aforementioned figure 3 provides a clearer illustration of the residential land price boom in Thach That's industrial region. In the

right figure BSADF test, the prices remained under the right-tail confident value of 95%, indicating that there were no real estate bubbles formed.

In conclusion, from 2017 to April 2023, residential land price bubbles were present in two over three regions. Of these, two regions are the central region and Hoa Lac park of high-tech, another is the industrial region.

5.3. OLS Regression for Locating Variables that Impact Thach That Housing Land Bubbles

Linear Regression for the Central Prices of Residential Lands

The authors do linear regression for CTR to determine the relevant factors.

Table 6. OLS regression result

CTR	Coeff.	St.Er.	t-value	p-value	[95% Conf	Interval]
GO	.39**	.15	2.60	.01	.09	.68
IN	-.16	1.25	-0.13	.91	-2.63	2.36
PLN	.59***	.05	12.53	0	.50	.67
SP	-.01	.00	-1.56	.13	-.012	.00
CDG	1.51***	.37	4.12	0	.80	2.23
TR	-.49	.36	-1.36	.19	-1.22	.22
CB	-.14	.19	-0.71	.47	-.52	.25
SC	.04***	.01	4.20	0	.018	.06
CE	-.1	2.87	-0.04	.96	-5.81	5.62
Constant	-140.62**	68.31	-2.59	.04	-276.97	-4.24
Mean of dep var	28.95		SD dep var		16.29	
R-sq	0.96		Num of obs		76	
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$						

The resulting OLS regression for the central region is as follows:

$$\text{CTR} = -140.62 + 0.39*\text{GO} + 0.59*\text{PLN} + 0.04*\text{SC} + 1.51*\text{CDG} \quad (1)$$

The variables IN, SP, TR, CB, and CE do not impact the CTR or the impact is negligible. Other variables, including GO, PLN, CDG, and SC have a significant impact on CTR.

The final resulting OLS regression for HTK is as follows:

$$\text{HTK} = -22.88 + 0.74*L - 0.46*CB + 0.02*SC \quad (2)$$

The variables GO, IN, PLN, SP, CDG, TR, and CE with the P-values > 5% do not affect significantly the dependent variable HTK. Other variables, including SC, and CB have a significant impact on HTK. Moreover, as residential land trade closely correlates with financial psychological behaviors, the influence of those variables on residential land prices involves a variable lag (L), which is added into the model in order to optimize the model regression for HTK.

In general, in the central area, GO, PLN, CDG, and SC are the factors that positively

influence the housing land price bubbles, supporting assumptions (2), (5), (6), (7), defusing assumptions (1), (3), (4), (8), (9). Meanwhile, cash flow capital positively affects high-tech park housing price bubbles, and

difference in the quantity of businesses has negative effects on the housing land price bubbles in the region, supporting assumptions (6) and (3), denying assumptions (1), (2), (4), (5), (7), (8), and (9).

Table 7. Linear Regression for Hoa Lac high – tech park prices of residential lands

HTK	Coeff.	St.Er.	t-value	p-value	[95% Conf	Interval]
L	.74***	.08	8.04	0	.56	.91
GO	.12	.16	0.76	.43	-.19	.42
IN	-1.67	1.10	-1.53	.13	-3.87	.53
PLN	-.08*	.03	-1.87	.07	-.16	.01
SP	-.001	.001	-0.28	.79	-.01	.01
CDG	-.25	.33	-0.76	.46	-.90	.41
TR	.08	.33	0.23	.82	-.58	.72
CB	-.46***	.17	-2.70	.01	-.80	-.12
SC	.02**	.01	2.23	.03	.001	.04
CE	2.25	2.57	0.89	.39	-2.88	7.36
Constant	-22.88	62.07	-0.38	.72	-146.86	101.11
Mean of dep var		15.61	SD dep var		10.01	
R-sq		0.92	Num of obs		76	

(Source: author synthesized using Stata).

6. Discussion and Recommendations

6.1. Discussion on the Previous Research Recommendations

As mentioned in the literature review, there are some common prevalent factors, including the influences of altering the system of banking and monetary policy using related factors. In research on important variables of Vietnamese real estate bubbles, particularly Ho Chi Minh City, N. H. Tien et al., (2019) [5] cite five main factors affecting bubbles, including the psychological investment behaviors of investors, financial sources and investment capital, transparency in the market, fiscal policy, and monetary policy. Reflecting on the research, investment capital flowing into the residential land market is proven to have significant positive effects on the market of two regions. However, the interest rate and macro monetary policy are not the determinants making landing bubbles in the center and high-tech park because most middle-aged people in Thach That are so risk-

averse, therefore, they hesitate to borrow huge sums of loans from commercial banks to purchase lands, and also because the problems related to legal landing clearance have been explicit. Credit growth has influences on bubbles of house landing prices in only the central region. Due to a shortage of sufficient resources, the psychological factors are not in the equation, resulting in certain drawbacks of the study.

6.2. Research Implications

6.2.1. Discussion on the Occurrence of Bubbles of Thach That House Landing Prices Within 76 Months

Within more than six years, while multiple real estate bubbles appeared in the center and high-tech park, there were not any non-agricultural residential land price bubbles in the industrial region. More specifically, the Thach That center region showed indicators of two tiny bubbles, one in the first half of 2019 and the other in 2020. It can be explained by the increases in landing trades in the central region

because of convenience in education and services. Similarly, in high-tech park, early in 2019 there were the first indications of explosive behavior in landing prices, and late in 2020 and early in 2021 there were the second ones. Thach That has actually been a desirable place for private company construction and investment since the local government encouraged modified development in 2016 and landing clearance in 2017, causing a significant change in the price of residential land. The non-agricultural land values in Hoa Lac increased dramatically from merely 5 million dong/m² in late 2016 to early 2017 to around 20 million dong/m² within two years and then continued to rise to about 30 million dong/m² in 2021. In contrast, in a different scenario, residential land values in the industrial sector appear to be more steady and do not show any indications of real estate bubbles. Despite a boom in late 2019, the considerable rise in industrial region landing prices is primarily the result of consumer demand. Mass manufacture of wooden furniture has been promoted thanks to sophisticated machinery and technology, increasing the average monthly salary to VND 10 million. As a result, an increasing number of residents in the district and its environs have abandoned farming in favor of working in the industrial zone.

6.2.2. Discussion on Determinants of Residential Land Price Bubbles in Thach That

Model states that the price of gold, the number of residents, investment capital cash flow, and credit growth year over year are the four factors that have the most impact on residential land values in Thach That center. Besides, in the model, just three variables – lag, the fluctuation in the enterprise number, and capital into the market – have impacts on the prices of land in the Hoa Lac market.

Gold price: The relationship between gold prices and real estate values is quite new.. A rise in the price of gold is a sign of an unstable economy, according to empirical observation, though. The purchasing power of people would decrease when the interest rate is lowered, so yellow metal is viewed as a safe haven. In a

research of M. Ali. et al (2024) [14], the authors reckoned that gold price shocks negatively impact on housing prices both in the short and long term by studying China's housing market. It is typically true in 2024 when China's real estate market is still looming despite \$138 billion bond sale to raise the domestic economy and real estate market specifically. However, in the view of Vietnam's market during and after the COVID-19 pandemic. Thanks to both monetary and fiscal policies, investment and retailing activities would be encouraged to enhance the domestic economy, causing individuals to wish to invest in real estate in potential areas such as industrial or central regions. This eventually drives up the cost of residential land in those areas. Therefore, even though the relationship between gold prices and residential land prices is weak and different based on every region and tradition, there is a correlation between them twos at a glance.

Population: Population growth, driven by a higher birth rate, boosts land prices due to increased density and demand for land and apartments. This trend, supported by research of C. Liu, W. Xiong (2018) and L. Phatudi, C. Okoro (2020) [18, 20], suggests population growth as a key factor in real estate booms. In Thach That, where population is increasing, the center region experiences significant growth, fueled by developed education and services, leading to higher incomes and population influx. Despite rising demand, the absence of sudden population booms suggests population growth primarily influences price growth rather than triggering real estate bubbles. Thus, it can be asserted that population is not a potential factor for real estate bubbles but a strong determinant for the growth in residential land prices, especially in steadily growing areas like Thach That.

Social investment capital: Social investment capital is a crucial factor influencing residential land prices, supported by previous research. Studies by N. H. Tien. et al., (2019) and by P. T. T. Truong, D. P. Thai (2019) [5, 19] emphasized the role of financial sources from commercial banks and infrastructure projects in

driving real estate bubbles. Government construction plans and incentives further exacerbate these bubbles by stimulating investment and creating a fear of missing out among investors. This phenomenon, akin to the situation in the Chinese real estate market noted by C. Liu & W. Xiong (2018) [18], is evident in Thach That, particularly in the Hoa Lac high-tech park area. Despite government efforts to regulate the market, residential land prices experienced significant surges in 2019-2020 and again in 2021-2022, driven by increased investment and speculation. Even in regions like the center region, where investment was not as substantial, infrastructure development still contributed to price increases, albeit on a smaller scale.

Fluctuation in the number of businesses: In “China’s Real Estate Market” by C. Liu and W. Xiong (2018) [18], the increase in the number of commercial businesses is one of the reasons of a surge in housing prices. As the more firms are founded, the more opportunities for people to be employed, resulting in higher demand for house rent. This situation, eventually, drove up the housing prices in China in 1990s. In case of Thach That from 2017 to 2023, transformation of Thach That from an agricultural area to an industrial hub after the "New countryside" campaign results in improved income and quality of life. This shift attracted more businesses and residents, increasing population density and driving up land prices, a common trend in industrial regions. However, the Hoa Lac high-tech park presents a different scenario, with fluctuating land prices despite initial business growth illustrated in the model. This is attributed to small real estate companies facing bankruptcy during market downturns and unresolved legal issues leading to ghost projects. Investors are hesitant due to these uncertainties, causing instability in land prices.

Credit growth: Credit growth, driven by monetary policies, increases lending by commercial banks, leading to more individuals and firms taking out mortgage loans for real estate investment. This surge in demand can fuel

price increases, reminiscent of the subprime mortgage crisis in the USA in 2008. Several studies explored the relationship between credit growth and real estate bubbles, indicating its significance. Factor credit growth and its impacts on real estate bubble were also mentioned in many other research, such as “*Impacts of monetary policies on the real estate bubble in Hanoi, Vietnam*” by L. P. Lan et al., (2023), “*Causal relationship between banking system development and real estate market*” by N. T. M. Linh et al., (2020), and “*Relationship between macro-economic determinants and real estate bubbles*” by P. H. Long (2020) [10, 16, 32]. While the center region in Thach That, with its stable and higher land prices, may be affected by credit growth as real estate prices rise, the author suggests that banking loans may not heavily influence land purchases in Thach That due to locals, especially risk-averse middle-aged individuals, relying more on personal relationships for low-interest or interest-free loans. Thus, banking loans constitute a relatively low percentage of land purchases in the region.

7. Recommendations

7.1. Recommendations for Avoiding of Pricing Bubble of Housing Lands

Stricter regulations for land lots in the capital, particularly in the suburbs. In the real estate industry, the term "land lots" is used. Although Hanoi continues to tighten regulations pertaining to land lots and the transfer of land use rights, regulations in suburban and places with a developing economy, such as Thach That, appear to be loosening to encourage the growth of construction and investment.

7.2. Recommendations for Reduction in Residential Land Price Bubble Boom

Encouraging equal industrial growth across all communes. Due to the district's unequal population distribution and the concentration of industries and enterprises in a select few communes, residential land prices vary

significantly between communes. The local government can also demand a decrease in birthrates and maturation in the industrial zone and central region, and it can offer incentives to residents who comply.

Rigorously monitoring borrowing activities of individual investors. As individual investors often get into the trap of fear of missing out, easy credit policy from commercial banks somehow pave the way for them to blow up the residential land prices. Commercial banks need to have suitable policies to tighten lending activities during residential land price bubble formation.

Restricting the number of newcomers to the district's real estate brokerage industry because speculative behaviors leading to real estate bubbles always associate with brokers who take advantage of asymmetric information.

Moreover, as many researchers mentioned, the state government also has to take responsibility for residential land price bubbles by modifying timely monetary policy, as well as frequently supervising lending activities in commercial banks. Regarding individual investors, having awareness of the real estate market is essential to reduce loss.

8. Conclusion

The research has completed three main goals set out: proving the existence of landing bubbles in Thach That and determining the factors having impacts on the bubbles to suggest suitable methods in the recommendation section. In short, the study concludes some points as follows.

Firstly, using RADF test, the study has proven the occurrence of multiple pricing bubbles of housing lands in two particular regions, center and high-tech park, and rejects the possibility of bubbles happening in the industrial region.

Secondly, in the use of OLS regression, the study has discovered some factors affecting the landing bubbles in Thach That. In particular, while there are four quantitative determinants, including gold price, population, investment capital, and credit growth, influencing landing

bubbles in the central region, only two factors (investment capital and change in the number of businesses) and an additional lag of one month are found that affect the landing bubbles in high-tech park. By using two model in the study, author has illustrated clearly the real estate situation in marginal suburban areas, which is new among research relating to real estate. As landing prices in vicinities such as Thach That is watched closely by both giant developers and investors, having an overall picture of local real estate market in the past few years is essential to well manage their capital.

Finally, the research also presents some methods, based on models and previous research. For municipal government, they are recommended to control land lot prices more strictly, develop industry equally throughout the district, call locals for a reduction in the birth rate in the industrial zone, rigorously censor development projects, control the number of brokerage new entrants, and ensure the transparency in the local real estate market. The state government is also encouraged to control the flow of capital running into the real estate market strictly and to supervise lending, and leverage activities frequently to guarantee the health of the market. Also, it is necessary for investors to gain knowledge of the real estate market before blindly jumping into the market to avoid risks and losses.

The research has some limitations as follows. First, the shortage of data for the total of 23 communes in Thach That. In fact, the study is able to cover prices in 15 communes as a representative for Thach That general landing prices. Second, a lack of qualitative data. Investing activities depend very much on psychology and behaviors, which have not been accessed yet. Therefore, to optimize the study in the future, a survey to collect necessary qualitative data will be conducted.

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