

Relationships between Real Estate Markets and Economic Growth in Vietnam

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Abstract

This study analyses the relationship between the real estate market and economic growth in Vietnam, a country with a fledgling real estate market. Research data included economic growth rate and growth rate of the real estate market in Vietnam. The research used quarterly data for the period from 2005: Q1 to 2018: Q1. With the characteristics of Vietnam, there has been no real estate index up to now; therefore, the research used data on growth rates of the real estate market. In addition, the real estate market in Vietnam is still young, so the data series is very short, which is a limitation of this research. With qualitative and quantitative methods especially with the Vector Auto Regressive (VAR) model; the results of the study indicate new findings, unlike previous studies, including: (1) The real estate market positively impacts Vietnam's economic growth, most noticeably in the second quarter lag and the fourth quarter lag, and then its trend impacts inversely; (2) The real estate market and economic growth in Vietnam have fluctuated over time with many risks that are affected by the past shocks of these factors. From these findings, we proposed some managerial implications for managing the real estate market with economic growth in Vietnam sustainably.

Keywords: Economic Growth, Real Estate, Housing, Economic Crisis, Vietnam.

JEL Classification Code: E2, G32, O11, R30.

1. Introduction

A real estate market crisis can have a major impact on the economy, and the collapse of the real estate market is a decisive factor for many economic crises (Li & Chen, 2015; Zhao, Zhan, Jiang, & Pan, 2017). The housing market is an important part of the real estate market; some previous studies have investigated the relationship between the volatility of the economy and the real estate market, while many other studies have explored this relationship with the housing market (representing the real estate market). Evidence shows that from the beginning of the 17th century

to the 19th century, there were 42 major financial crises in the world, of which 21 crises related to the uncertainty of the housing market; this proves that there is a strong correlation between the housing market and macroeconomic indicators (Zhang, Li, Hui, & Li, 2016). In another study, Zhao et al. (2017) suggested that downturns in the real estate market have triggered most of the financial crises that have occurred in the past two decades. These financial crises later spread to other sectors, making it difficult for economic development. Researchers and policy-makers have therefore paid attention to the relationship between the real estate market and economic turmoil (Bouchouicha & Ftiti, 2012; Li & Chen, 2015). There seems to be a consensus among researchers and policy-makers that the real estate market plays an important role in promoting economic growth or degradation. For example, Miller, Peng, and Sklarz (2011) argued that the housing market, representing the real estate market, plays an important role in the economy. This is evident when the housing market rescues the US economy from a severe downturn when the US stock market plunged in 2001, or the fact that the housing market crisis led to global economic downturn in 2008. Other views also have suggested that the housing market

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plays an important role in the economy; the interaction between the housing market and economic growth has given rise to important policies (Nyakabawo, Miller, Balcilar, Das, & Gupta, 2015).

In recent years, Vietnam's economy has experienced many difficult stages; the demand for real estate in large cities has increased, which has made the real estate market, as well as the economy, constantly unpredictable and risky (Ministry of Construction of Vietnam, 2016). Figure 1 shows that Vietnam's economic growth and real estate market growth have fluctuated over time and declined sharply during the 2008 financial crisis. In addition, the real estate market in Vietnam experienced a difficult period and a big decline in 2012. During this period, the volume of housing transactions fell sharply, the real estate sector had difficulty accessing capital due to the policy of tightening bank credit, and Vietnam's economy still declined in 2012 (TCER, 2014). By the end of 2013, the real estate market gradually recovered and increased steadily over the following years. During this time, Gross Domestic Product (GDP) continued to grow at a high rate, about 6% annually for four consecutive years (from 2013 to 2016) (General Statistics Office of Vietnam, 2017). In 2017, Vietnam's GDP growth rate reached 6.8%, which is considered the highest in the past five years. GDP per capita increased by 10% to \$ 2.385 per capita. In 2017, the credit growth will range from 18% to 19%, the consumer credit increased 65%, the purchasing and repairing credit accounted for 53% of total credit, a 77% increase compared with 2016 (Savills Company, 2018).

Recent studies have suggested that the real estate market plays an important role in the economy (Bouchouicha & Ftiti, 2012), and the recession of the real estate market has triggered most major financial crises (Zhao et al., 2017). The relationship between the real estate market and economic growth is an interesting topic in finance and is of great interest to researchers around the world, especially in developed countries. However, in

countries with young real estate markets like Vietnam, there is almost no research on this issue.

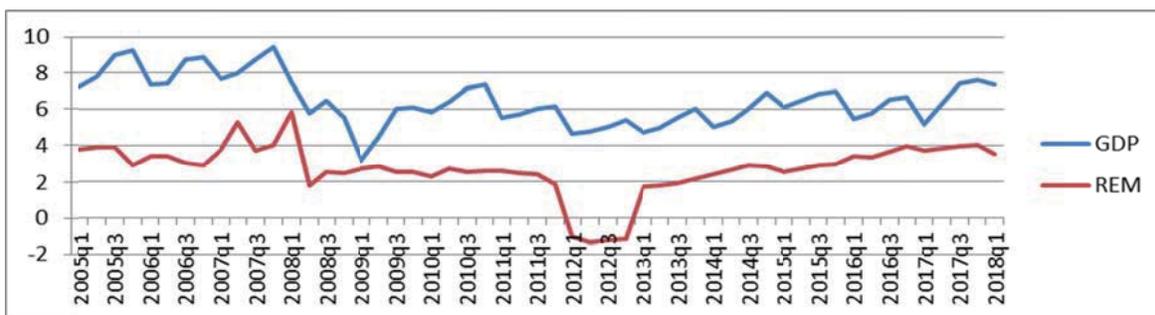
This research will provide empirical evidence to help researchers and policy-makers have a more comprehensive view of the relationship between the real estate market and economic growth in Vietnam; simultaneously, it will open a new research direction for further research. This study may also provide positive effects for countries with conditions similar to Vietnam for research and application.

2. Literature Review

Several studies have shown that there is a relationship between the real estate market and economic growth. For example, Li and Chen (2015) used quarterly data from 2000 to 2014 and stated that the real estate market is correlated with economic growth in China at an average level. According to Nyakabawo et al. (2015), the nature and direction of the causal relationship between the housing market and economic growth depends on the duration of the study and the research methodology, which may change over time. Meanwhile, many other studies suggest that there is a one-way effect from the real estate market to economic growth, or economic growth to the real estate market.

2.1. The Impact of Real Estate Market on Economic Growth

Crises in the real estate market can have major consequences for the economy. Indeed, many studies have found that the collapse of the real estate market is at the center of many financial crises (Iacoviello & Neri, 2010). Thus, the boom and degradation in the real estate market is a worrying issue for policy-makers (Bouchouicha & Ftiti, 2012).



*Note: - GDP: The economic growth; - REM: the real estate market growth

Figure 1: Economic growth and real estate market growth in Vietnam (2005:Q1-2018:Q1)

Although the real estate market can affect the economy through multiple channels, most previous studies have focused on the effect of the wealth effect on the level of expenses (Miller, Peng, & Sklarz, 2011). For instance, at the overall level of the economy, Benjamin, Chinloy, and Jud (2004), Kishor (2007), and v Lettau and Ludvigson (2004) suggested that there is a correlation between housing wealth and expenditure. At the household level, Engelhardt (1994, 1996) showed that changes in housing prices can affect the behaviour of homeowners and tenants. In another study, Campbell and Cocco (2007) found a strong correlation between housing prices and spending in the UK between 1988 and 2000. The study claimed that rising housing prices may stimulate spending by increasing the wealth of households, or by limiting borrowing.

Friedman's permanent income hypothesis seems to provide the first theory of the wealth effect of the real estate market. According to this hypothesis, housing price changes can affect the level of spending in the economy. Housing price increases will raise real incomes and homeowners' spending needs, which will lead to an increase in spending in the economy and set up the foundation for economic growth (Miller et al., 2011). At the same time, the deterioration of the housing market will lead to a drop in spending, which may have a detrimental effect on economic growth (Nneji, Brooks, & Ward, 2013). While some research has documented the impact of the real estate market on spending in the economy, Phang (2004) found no evidence of the statistically significant impact of the housing market on spending in Singapore. The author argued that households react differently to the wealth effect of housing. According to Phang (2004), housing is a risky asset, so restraining the resale of homeowners seems to be the reason for housing prices rising in Singapore, where expenditure in the economy has not increased.

Recently, economists have proposed a collateral effect of real estate (which may be represented by housing); the developed housing market will help increase the mortgageability of homeowners through home mortgages (Nneji et al., 2013). For example, Schmalz, Sraer, and Thesmar (2016) discovered the role of the housing mortgage channel in capitalising entrepreneurial homeownership projects. In another study, Lim (2018), when collecting data from 54 countries during 1995-2012, provided empirical evidence of the impact of housing bubbles on economic growth, which was less of a problem in previous studies. The study suggested that as the housing market improves, the ability to borrow capital from owners increases, thereby stimulating economic growth. Zhao et al. (2017) showed that a financial crisis often arises from a weak financial system related to the country's real estate sector. As the real estate bubble bursts, real estate

prices fall, bad debt soars, banks' abilities to make payments goes down due to unpaid loans, and collateral is not valuable enough to pay the original debt, leading to an economic crisis. In general, although the impact of the real estate market is different among countries, it plays a very important role in economic growth.

Bjrnland and Jacobsen (2010) collected data in Norway, Sweden, and England in the period from 1983: Q1 to 2006: Q4, and suggested that the housing market contributed about 4%-6% of the economic growth in all studied countries, with the largest effect seen in the UK. Through the Vector Auto Regressive (VAR) model, their research results showed the role of the housing market in the monetary policy transmission mechanism when determining the impact of the housing market on economic growth. In another study, Crowe, Dell'Ariccia, Igan, and Rabanal (2013) collected data from 40 countries during 2000-2009, and estimated that around 91% of countries experiencing a real estate market boom and a credit market boom resulted in a financial crisis or a sharp drop in economic growth. In the United States, Nyakabawo et al. (2015) used the VAR model to analyse the data from 1963: Q1 to 2012: Q2, and showed the impact of the housing market on economic growth with a positive trend that doubled the negative trend. Therefore, the impact of the real estate market on economic growth varies among countries and depends on the duration of the study. The trend, however, is positive.

2.2. The Impact of Economic Growth on the Real Estate Market

In reality, economic growth is an indicator that reflects the state of the economy, and it can affect the value of wealth in general (Bouchouicha & Ftiti, 2012). As the economy improves, national incomes improve, and the demand for real estate in the economy increases, which has a positive impact on the real estate market. Yunus (2012) collected data in the period of 1990s: Q1 - 2007: Q4 to examine the impact of macroeconomic factors and the stock market on the real estate market in 10 developed countries in North America, Europe, Australia, and Asia. With the combination of the VAR and Vector Error Correction Model (VECM), research results in most countries showed that shocks to economic growth have had a positive impact on the real estate market (Yunus, 2012). In the United States, Nneji et al. (2013) analysed the impact of macroeconomic factors on the real estate market and divided it into 'boom', 'steady-state', and 'crash' stages between 1960 and 2011. The results showed that the real estate market was affected by economic growth, which is obviously reflected in the 'crash' stage.

Zhang et al. (2016) recently used the VAR model to examine the relationship between macroeconomic factors and the housing market in first-, second-, and third-tier cities from July 2005 to June 2015. The results of the study showed that macroeconomic growth has had an impact on first-tier cities and the magnitude of this impact decreases in smaller cities. Generally, the trend of the influence of economical growth in this field is mainly positive (Zhang et al., 2016).

3. Research Methods and Materials

3.1. Data Collection

The data of the study was collected from the General Statistics Office of Vietnam. Research data included economic growth rate and growth rate of the real estate market in Vietnam. The research used quarterly data for the period from 2005: Q1 to 2018: Q1. With the characteristics of Vietnam, there has been no real estate index up to now; therefore, the research used data on growth rates of the real estate market (focusing on the real estate market, including three main areas of business: (i) Sales (commercial); (ii) The official or residential rentals; and (iii) Consultancy (brokering). In addition, the real estate market in Vietnam is still young, so the data series is very short, which is a limitation of this research.

However, the analysis of short data series on the real estate market has been done in previous studies. For example, Liang and Cao (2007) used quarterly data on the real estate market in China for the period from 1999: Q1 to 2006: Q2. Also in China, Mallick and Mahalik (2012) used quarterly data on the housing market for the period from 1999: Q2 to 2009: Q3. Recently, Ibrahim and Law (2014) used quarterly data on the housing market in Malaysia for the period from 1999: Q1 to 2011: Q4. Based on these studies and discussions with 6 experts (including representatives of Vietnam Ministry of Construction, Vietnam Real Estate Association, and economic researchers), most experts said that over a 13-year period, quarterly data with 53 observations were reasonable to analyse the relationship between the real estate market and economic growth in Vietnam.

3.2. Research Methodology

The research analysed the relationship between the real estate market and economic growth by VAR models. The use of the VAR model is based on the research of Nyakabawo et al. (2015), and is consistent with previous studies such as Bjørnland and Jacobsen (2010) and Zhang et al. (2016). Moreover, this approach has also been used

by previous studies using short data series on real estate markets by Ibrahim and Law (2014) and Mallick and Mahalik (2012).

To examine the relationship between the real estate market and economic growth, the research conducted an optimal latency test, using the VAR estimation model at latency 4. The research used the following equations to fairly examine the impact of economic growth on the real estate market (Equation 1) and the impact of the real estate market on economic growth (Equation 2).

The equation that economical growth impacts the real estate market is represented as:

$$REM_t = \alpha_0 + \sum_{j=1}^4 \alpha_{1j} REM_{t-j} + \sum_{j=1}^4 \alpha_{2j} GDP_{t-j} + \varepsilon_{1t} \quad (1)$$

The equation that the real estate market impacts economic growth is represented as:

$$GDP_t = \beta_0 + \sum_{j=1}^4 \beta_{1j} REM_{t-j} + \sum_{j=1}^4 \beta_{2j} GDP_{t-j} + \varepsilon_{2t} \quad (2)$$

In which REM_t reflects the real estate market (the growth rate of the real estate market) in Vietnam in quarter t. GDP_t is economic growth in Vietnam in quarter t. ε_{1t} và ε_{2t} are error terms.

Equation 1 showed whether economic growth and the real estate market in the past have affected the real estate market in the present. In this equation, the research focused on the GDP_{t-j} variable, where j = 1 to 4, which indicates that the real estate market is affected by past economic growth. For the latency variable of the real estate market, REM_{t-j}, where j = 1 to 4, allowed us to determine the impact of the real estate market of the past on the real estate market at present.

Equation 2 allowed us to evaluate the impact of the real estate market and economic growth in the past on the process of economical development currently. In this equation, the main concern is the REM_{t-j} variable, where j = 1 to 4, which will indicate the impact of the real estate market in the past on current economic growth. For the latency variable of economic growth, GDP_{t-j}, where j = 1 to 4, allows us to determine the influence of past economic growth on current economic growth.

4. Results and Discussion

4.1. Unit Root Test

The study used Dickey-Fuller test (Dickey & Fuller, 1979) to examine the stationary trends of two data series. With the null hypothesis H₀, the sequence is non-stationarity. If the null hypothesis is rejected, the data sequence is stopped,

and vice versa. Table 1 shows that the real estate market and economic growth are stopping at 5% of significance.

Table 1: Results of Unit Root Tests

Variable	Test statistic	Prob.
The real estate market (REM)	-3.302**	0.0148
Gross Domestic Product (GDP)	-2.923**	0.0428

Note: ** indicates rejection at the 5% level.

4.2. Granger Test

To test the causal relationship between variables in the VAR model, the study used Granger's causality test (1969). Under this test, in equation 1, if the regression coefficient $\alpha_2j = 0$ is negative, this indicates that GDPt has a Granger relationship with REMt. In contrast, if the regression coefficient $\beta_1j = 0$ is rejected (equation 2), REMt has a Granger relationship with GDPt; if, however, both the regression coefficients α_2j and β_1j are zero, this indicates a causal relationship exists between REMt and GDPt. Test results are presented in Table 2.

The Granger test results in Table 2 show that, with a 1% significance level, there is a real estate market impact on economic growth. Meanwhile, with the data collected, the study did not find a statistically significant impact of economic growth on the real estate market. This result is consistent with the results of Bjørnland and Jacobsen (2010) and Crowe et al. (2013).

Table 2: Granger causality Wald tests

	H0: REM does not Granger-cause GDP		H0: GDP does not Granger-cause REM	
	Chi-sq	Prob.	Chi-sq	Prob.
Wald tests	24.59***	0.000	1.3076	0.860

Note: *** indicates rejection at the 1% level.



Figure 2: The relationship between the real estate market and economic growth

Tables 3 and Figure 3 show that the real estate market is moving in the same direction as economic growth, which is quite strong at two quarters and is statistically significant at 5%. But, this trend reversed in the fourth quarter lag with a 1% significance level. The results of this study are consistent with previous findings of Nyakabawo et al. (2015) in the US. However, the study of Nyakabawo et al. (2015) in the US suggested that the impact of the housing market on economic growth is likely to be positive rather than negative. Particularly for this study, new findings emerged that are distinct from those of Nyakabawo et al. (2015) in the US.

The negative impact of the four-quarter lag showed that the real estate market in Vietnam is risky and unique in the young market. As the real estate market develops, it will increase the ability to borrow and stimulate owners' spending, thereby boosting economic growth, which was clearly demonstrated in Vietnam around 2007. Conversely, when the real estate market is down, economic growth will be slow; this result was also proved in Vietnam at a time when the real estate market fell sharply in the second quarter of 2008 and 2012.

However, when the real estate market is overheating, there will be many risks, apart from the psychology of Vietnamese people, who are often rushed to invest in real estate in hopes of high profits when there is a real demand in society (the 'crowd' trend) (Ministry of Construction of Vietnam, 2016). Real estate loans surge with most real estate mortgages; meanwhile, the stage of appraisal with many problems still exists, leading to bad debt growth and slower economic growth (with a lag of 4 quarters). This causes the real estate market in Vietnam to develop unsustainably, which can be demonstrated through the 2008 financial crisis in Vietnam. The main cause of the financial crisis in Vietnam, as well as the United States, all stemmed from subprime mortgage lending and the overheating of the real estate market.

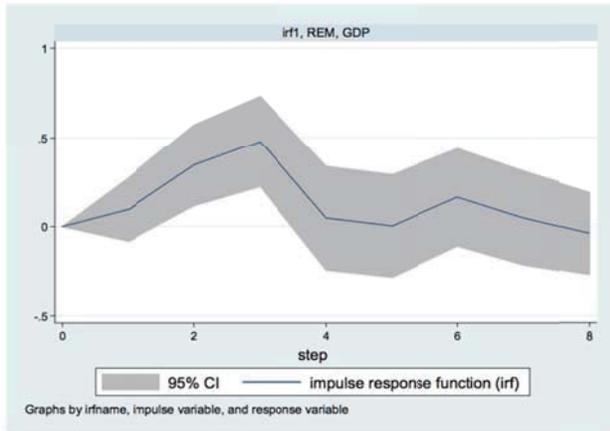
Additionally, the study finds the positive effect with the one-quarter lag of the economy and the real estate market, afterwards this effect can reverse or fluctuate over time. This implies that economic growth and the real estate market have always been affected by its shocks in the past, but that the trend is likely to change over time, which reflects the continuous fluctuation of these two factors in young real estate markets like Vietnam.

Table 3: The results of VAR

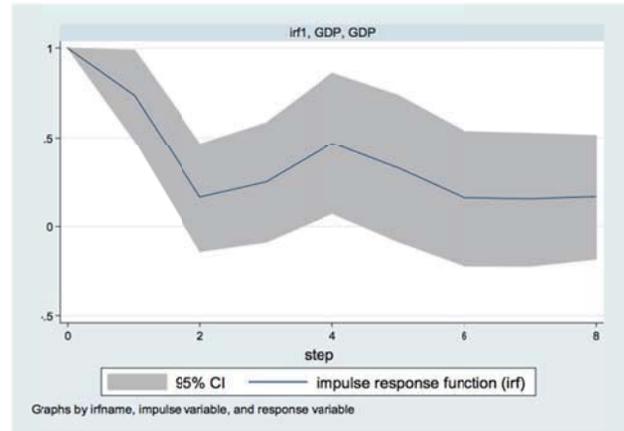
Variable	The real estate market		Gross Domestic Product	
	Coef.	Prob.	Coef.	Prob.
C	0.09670	0.784	0.47021**	0.020
REM(-1)	0.3735**	0.019	0.0954	0.294
REM(-2)	0.1689	0.304	0.2384**	0.011
REM(-3)	0.2149	0.201	0.1431	0.137
REM(-4)	-0.1882	0.239	-0.3778***	0.000
GDP(-1)	0.1888	0.400	0.7360***	0.000
GDP(-2)	-0.0021	0.994	-0.3962***	0.009
GDP(-3)	0.0857	0.745	0.3553**	0.019
GDP(-4)	-0.0691	0.748	-0.0106	0.932

Note: ** and *** indicate significance at the 5% and 1% level, respectively

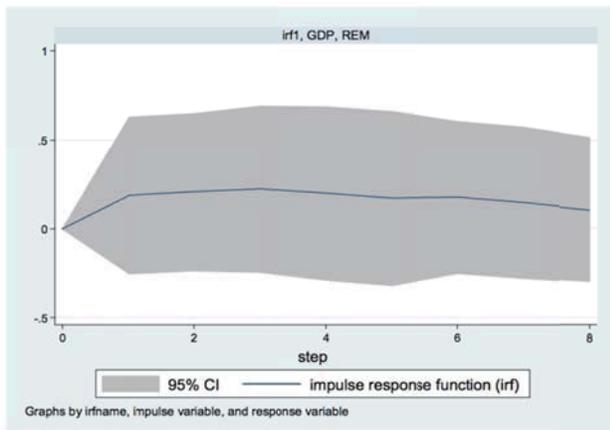
The impact of shocks of the real estate market (in the past) on economic growth (at present).



The impact of economic shocks (in the past) on economic growth (at present).



The impact of economic shocks (in the past) on the real estate market (at present)



The impact of the shocks of the real estate market (in the past) on the real estate market (at present)

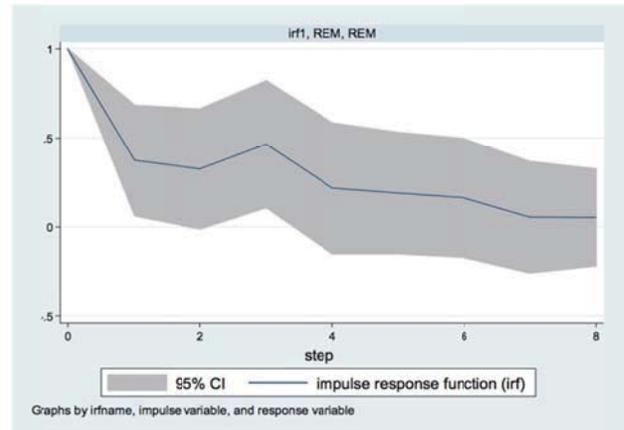


Figure 3: The results of impulse response analysis

5. Policy Implications

Research shows that economic growth in Vietnam has been positively influenced by the real estate market in the past, with a lag of 2% with 5% significance, and negatively impacted by the real estate market in the past with a four-quarter lag with a 1% significance level. In addition, economic growth and the real estate market are also affected by the past shocks of these factors. Thus, the real estate market plays an important role in growing the economy in Vietnam. In other words, proposing implications for the real estate market to influence economic growth in Vietnam is necessary.

The development of the real estate market has led to an increase in economic growth in the last two quarters, so it can be seen that the real estate market is of a certain importance to the economy, as demonstrated by case studies in other countries. However, with the nascent nature of the real estate market, it has many risks and unstable development, the trend of ‘herd’ investment is quite popular, especially with retail investors and local residents. Therefore, with the lag of four quarters, the impact of the property market on economic growth reversed negatively. In addition, the past turmoil of the real estate market has not only negatively impacted the real estate market, but also impacted economic growth. Because of this, it is necessary to forecast the real estate market in order to reach a

development orientation and take appropriate policies to manage the real estate market in a sustainable manner. At the same time, it is also important to limit the negative impacts of past shocks of the real estate market to the current real estate market as well as the economy. The lesson of the financial crisis that has arisen from the upheavals of the real estate market in the United States and Vietnam in 2008 is a clear demonstration of the restriction in market forecasting, as well as the loose control of the real estate market; these will lead to serious consequences for the economy.

Vietnamese Government should restructure the real estate market continuously, develop diversified kinds of real estate goods to meet the real demand of the market, overcome the 'phase-out' of goods supply and demand in the real estate market, stabilise market actively, and create the foundation for economic development. Vietnamese Government and authorities such as Ministry of Finance, Ministry of Construction, etc. ... create the chance of accessibility to capital for the real estate market and adjust the flexible credit policies in order to facilitate capital for real estate market participants. Solving bad debts of the real estate enterprises should be also focused. Meanwhile, commercial banks need to strengthen the inspection and supervision of the use of capital of participants to limit credit risk. This will help both the real estate market and the economy to develop in a sustainable way.

Vietnamese Government should improve the capacity of the real estate market participants to ensure that the real estate market operates in a professional manner. At the same time, it is vital to encourage foreign investors to invest in the real estate market, especially high-end real estate segment that needs large capital. Build a reliable and transparent information system on the real estate market. In particular, the real estate price indexing for each geographic region should be developed to help policy-makers, managers, and researchers have a more comprehensive view of the real estate market.

The growing economy in Vietnam is not only affected by the past shocks in the real estate market, but also by past economic growth. Therefore, it is necessary to stabilise the macroeconomic situation, especially economic growth. At the same time, it is important to forecast economic growth in the coming time in order to have a development orientation and take the initiative in adopting appropriate policies to promote sustainable economic growth.

6. Conclusions and Limitations

With the use of the VAR model, the findings reveal new features, such as the simultaneous impact of the real estate

market on economic growth, which is most evident with a latency of two quarters. With a lag of four quarters, the trend reverses to the opposite direction. This result was evident during the recent financial crisis in Vietnam. In addition, the study also shows that the real estate market and economic growth fluctuate over time, with more potential risk and impact from past shocks, which shows that the 'young' market in Vietnam has been developing 'hot' and following the trend of 'herd' (crowds), leading to unsustainable development.

The results of the study include the empirical evidence of the relationship between the real estate market and economic growth over the pre- and post-crisis periods in Vietnam, where the real estate market is immature, but practically valuable and meaningful. With these results, the research has achieved its goals. However, the study also encountered some limitations, such as not mentioning the control variables that can affect the real estate market and economic growth, which is also the research direction for the next study.

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