“Stock market, real estate market, and economic growth: an ARDL approach”

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STOCK MARKET, REAL ESTATE MARKET, AND ECONOMIC GROWTH: AN ARDL APPROACH

Abstract

The paper investigates the correlation between stock market, real estate market, and economic growth in Vietnam, which is an emerging country. Quarterly data in Vietnam from the third quarter of 2004 to the third quarter of 2018 were utilized. By using the Autoregressive Distributed Lag (ARDL) approach, the results reveal that economic growth is positively associated with stock market and real estate market. An unprecedented finding of this study is that economic growth (GDP) is more correlated to stock market efficiency (SME) than net trading value by foreign investors (FI). Moreover, global financial crisis (GFC) exerts a negative impact on economic growth and real estate market in Vietnam. Further, net trading value by foreign investors (FI) also negatively influences real estate market (REM) in the short term. The study has greatly succeeded in giving first empirical evidence on the relationship between stock market, real estate market, and economic growth in Vietnam. More than that, the results show the key role of global financial crisis in this correlation. The findings are valuable to economies around the world, especially bringing a practical and meaningful value to developing countries like Vietnam.

Keywords economic growth, global financial crisis, real estate market, stock market efficiency, Vietnam

JEL Classification E21, G01, O16

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INTRODUCTION

The impact of stock market on economic growth was first studied by Goldsmith (1969). This influence has been also reported by a majority of scholars, namely Levine and Zervos (1998), Arestis, Demetriades, and Luintel (2001), Enisan and Olufisayo (2009), Shahbaz, Ahmed, and Ali (2008), Ake (2010), Ngare, Nyamongo, and Misati (2014), Pan and Mishra (2017), Fufa and Kim (2018). Also, the nexus between real estate market and economic growth has been attracting more and more attention in recent empirical research (Bouchouicha & Ftiti, 2012). In fact, Schmalz, Sraer, and Thesmar (2016) highlighted the significant impact of real estate market on economic growth. Furthermore, there exists a close association between stock market and real estate market. Although this correlation has been concluded in many empirical studies (for example, Liu & Su, 2010; Su, 2011; Su, Chang, & Zhu, 2011; Hui, Zuo, & Hu, 2011; Heaney & Sriananthakumar, 2012; Hui & Chan, 2014; Li, Chang, Miller, Balcilar, & Gupta, 2015; Tsai, 2015; Yuksel, 2016; Ali & Zaman, 2017; Bahmani-Oskooee & Ghodsi, 2018), there have been different views on the level of influence.

Along with stock and real estate market, national economic growth is also greatly influenced by global financial crisis (Miller, Peng, & Sklarz, 2011). However, most of existing studies have hardly analyzed the role of global financial crisis in the correlation between stock market, real estate market, and economic growth. Therefore, this study is

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conducted with the aim of providing first empirical evidence to this issue. Notably, its data are collected in Vietnam, an emerging country that has gained many achievements in the international economic integration. Thus, there is possibly a close association between stock market, real estate market and economic growth. Global financial crisis may play an essential role in this relationship too.

The remaining part of the paper is structured as follows: section 1 provides the relevant literature review and research hypotheses, section 2 deals with the data and methodology utilized, section 3 presents the findings and discussion, last section offers the conclusion.

1. LITERATURE REVIEW AND RESEARCH HYPOTHESES

1.1. Economic growth and stock market

The relationship between economic growth and stock market was first mentioned by Goldsmith (1969). Accordingly, stock market would supply investors an effective investment channel and raise long-run capital sources for firms, as well as the economy, thereby boosting the economy. Moreover, stock market would stimulate the effective allocation of resources in the economy, foster both domestic and foreign investment, which, in turn, boost the economic growth (Carp, 2012).

Most of earlier scholars have concluded that stock market exerts a positive impact on economic growth (for example, Levine & Zervos, 1998; Arestis et al., 2001; Enisan & Olufisayo, 2009; Shahbaz et al., 2008; Ake, 2010; Ngare et al., 2014; Fufa & Kim, 2018). On the contrary, Pan and Mishra (2017) found the long-term negative effects of stock market on the economic growth in China.

Additionally, it has been argued that capital flow of foreign investors in stock market plays an important role in fostering the economic growth. For example, Mishra, Das, and Pradhan (2010) confirmed the causal relationship between foreign investment organizations and economic growth in India. Meanwhile, Durham (2004) could not confirm the statistically significant impact of capital flows of foreign investors on economic growth. Furthermore, Durham (2004) claimed that it would depend on the absorption ability of each country. Net trading value by foreign investors is an indicator of their capital in equity market and the international integration ability of stock market as well (Bolanos, Burneo, Galindo, & Berggrun, 2015).

In the reverse direction, economic growth has a significant influence on stock market. Indeed, healthy economic growth brings the investors more opportunities to increase their income, as well as their investment in stock market, which, in turn, stimulate its operation and development. In other words, economic growth positively affects the stock market. This influence has been also reported by Liang and Teng (2006), Shahbaz et al. (2008), Enisan and Olufisayo (2009), L. Marques, Fuinhas, and A. Marques (2013).

Generally speaking, there have been different views on the nexus between economic growth and stock market, but the main trend is positive. Stock market efficiency and net trading value by foreign investors are two essential indicators of the stock market. Consequently, the research hypotheses are suggested as follows:

H_{1a}: *Economic growth is positively influenced by stock market efficiency.*

H_{1b}: *Economic growth is positively influenced by net trading value by foreign investors.*

H_{1c}: *Stock market efficiency is positively influenced by economic growth.*

H_{1d}: *Net trading value by foreign investors is positively influenced by economic growth.*

1.2. Economic growth and real estate market

When real estate market grows, household wealth and loan capacity increase, stimulating the expenditure and investment in the economy, which

serves as the basis for economic growth (Miller et al., 2011; Schmalz et al., 2016). However, recession in real estate market brings out a decline in the expenditure and investment, and then exerts a negative impact on the economic growth (Nneji, Brooks, & Ward, 2013). In fact, the recession in real estate market activates the most global financial crises and makes it difficult to develop the economy (Zhao, Zhan, Jiang, & Pan, 2017). Recently, Lim (2018) claimed that the impact of the real estate market is bigger in the economies with less developed financial systems.

A vast majority of previous studies have revealed that real estate market actively affects the economic growth. However, some studies have also found a negative nexus between real estate market and economic growth. For instance, Crowe, Dell'Ariccia, Igan and Rabanal (2013) stated that an excessive increase in the real estate market will create a bubble phenomenon, thereby causing a financial crisis and eventually an economic recession in the future.

In the opposite direction, economic growth may exert a positive influence on real estate market. It is because a positive economic growth helps citizens improve their income, increase their housing demands, thereby stimulating the real estate market. This impact has been concluded by Igan, Kabundi, Simone, Pinheiro, and Tamirisa (2011), Nyakabawo, Miller, Balcilar, Das, and Gupta (2015), Zhang, Li, Hui, and Li (2016), Choi and Park (2017), Tupenaite, Kanapeckiene, and Naimaviciene (2017), Zhao et al. (2017).

Consequently, there have been many views on the correlation between economic growth and real estate market, but the main trend is positive. Hence, the following hypotheses are proposed:

H_{2a}: *Economic growth is positively influenced by real estate market.*

H_{2b}: *Real estate market is positively influenced by economic growth.*

1.3. Stock market and real estate market

There may exist a bilateral causality between stock market and real estate market. Indeed, developments in the stock market give a rise to the investors' income, as well as their demands for residential and investing housing, thereby boosting the real estate market. On the other hand, these developments improve the capital from stock market into real estate market (via real estate investment funds and listed real estate firms), leading to the developments in real estate market. Hence, stock market may have a positive impact on real estate market. In the other direction, when real estate market grows, it becomes easier for real estate holders to access to capital via mortgage-backed securities for the investment expansion, which, in turn, fosters the development in the stock market. Thus, stock market is possibly correlated to real estate market. This relationship has been confirmed in the works analyses of Su (2011), Su et al. (2011), Hui et al. (2011), Heaney and Srianantha kumar (2012), Hui and Chan (2014), Tsai (2015), Yuksel (2016), Bahmani-Oskooee and Ghodsi (2018).

Nevertheless, it is also believed that stock market may be negatively associated with real estate market. Accordingly, developments in stock market give rise to investment capital to real estate market. However, if this increases excessively, bubbles are more likely to occur in the market, facing risks of a future crisis and dramatic fall. This is similar to the impact of real estate market on stock market. This negative nexus has been clearly reported in the studies of Liu and Su (2010), Li et al. (2015), Ali and Zaman (2017).

Consequently, there have been contradictory views on the relationship between stock market and real estate market, but the main trend is positive. Following this, the following hypotheses are suggested:

H_{3a}: *Stock market efficiency is positively influenced by real estate market.*

H_{3b}: *Net trading value by foreign investors is positively influenced by real estate market.*

H_{3c}: *Real estate market is positively influenced by stock market efficiency.*

H_{3d}: *Real estate market is positively influenced by net trading value by foreign investors.*

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1.4. The impact of global financial crisis on stock market, real estate market, and economic growth

In general, most researchers have asserted that financial crisis is negatively associated with stock market, real estate market, and economic growth. For instance, Kroszner, Laeven, and Klingebiel (2007) claimed that the financial crisis exerts a negative influence on economic growth. Cerra and Saxena (2008) also stated that financial crisis is correlated to big and continuous recessions of economic output. Heaney and Srianantha kumar (2012), Tsai (2015) reported that the relationship between stock and real estate market considerably increases during the time of global financial crisis. Hui and Chan (2014) emphasized that global financial crisis exerts more influence on stock market than real estate market. By their analysis, Pan and Mishra (2017) concluded that the global financial crisis (from 2007 to 2012) significantly influences China's economy.

Accordingly, the following hypotheses are suggested:

H_{4a}: *Stock market efficiency is negatively influenced by global financial crisis.*

H_{4b}: *Net trading value by foreign investors is negatively influenced by global financial crisis.*

H_{4c}: *Real estate market is negatively influenced by global financial crisis.*

H_{4d}: *Economic growth is negatively influenced by global financial crisis.*

2. DATA AND METHODOLOGY

2.1. Data

Data are collected quarterly in Vietnam, an emerging country, in the period from the third quarter of 2004 to the third quarter of 2018. Despite being launched officially in 2000, it was not until 2005 that Vietnam stock market started its operation efficiently. Vietnam ese real estate market is seen as a young market because real estate has been commonly traded since third quarter of 2004 when the Land Law 2003 taking effects from July 1, 2004 was first issued. On the other hand, real market index has been quarterly published by General Statistics Office of Vietnam (GSO) since 2004:Q3. Consequently, we are only able to collect the quarterly data in this period. Short data series on housing market have been frequently analyzed by a number of earlier scholars such as Liang and Cao (2007) with the analysis in China from 1999:Q1 to 2006:Q2, Ibrahim (2010) with the research in Thailand in the period from the first quarter of 1995 to the last quarter of 2006, Ibrahim and Law (2014) with the analysis in Malaysia between the first quarter of 1999 and the last quarter of 2011, Lean and Smyth (2014) with their study from the first quarter of 2000 to the third quarter of 2010. Therefore, we believed that the period from the 2004:Q3 to 2018:Q3 is appropriate and allows the robust analysis.

Data on stock market (SME and FI) obtained from the State Securities Commission of Vietnam (SSC) are used to calculate the quarterly average. Data on real estate market and economic growth from the General Statistics Office of Vietnam (GSO) are calculated under the form of quarterly growth rate as compared to the previous year.

The data collection is conducted in Vietnam, a developing country with a nascent stock and real estate market. Vietnam is chosen for this analysis for two reasons: (1) stock market and real estate market are two attractive investment channels. Also, there may exist a relationship between stock market, real estate market, and economic growth in Vietnam; and (2) due to its integration into the global economy, global financial crisis may play a major role in this correlation.

2.2. Methodology

The ARDL approach is used to analyze the correlation between stock market, real estate market, and economic growth in Vietnam. The ARDL approach suggested by Pesaran, Shin, and Smith (2001) has been used by some previous researchers, namely Shahbaz et al. (2008), Pan and Mishra (2017). One of its strengths is its appropriateness for empirical research using the time series data

with little observation and data series not stationing at the same stage (I(0) or I(1)) and no variables becoming stationary after second difference I(2) (Tursoy & Faisal, 2016).

Based on the findings of earlier studies, the following models are suggested:

Model 1. The impact of stock and real estate market on economic growth.

$$GDP = f\left(SME,\ FI,\ REM,\ GFC\right). \quad (1)$$

Model 2. The impact of real estate market and economic growth on stock market.

$$SME = f\left(REM,\ GDP,\ GFC\right). \quad (2)$$

Model 3. The impact of real estate market and economic growth on net trading value by foreign investors.

$$FI = f\left(REM,\ GDP,\ GFC\right). \quad (3)$$

Model 4. The impact of stock market and economic growth on real estate market.

$$REM = f\left(SME,\ FI,\ GDP,\ GFC\right). \quad (4)$$

In Figure 1, economic growth (GDP) is the quarterly growth of gross domestic product, stock market efficiency (SME) is the value of traded stocks to the market capitalization value, net trading value by foreign investors (FI) is the net trading value by foreign investors to the value of traded stocks, real estate market (REM) is the real estate market growth, mainly on business activities in real estate market (including three major fields – commerce, office or house lease, consultancy (agency)), global financial crisis (GFC) is the recent global financial crisis, which started in August 2007 (Kapan & Minoiu, 2018) and lasted until March 2013 (Cayon, Thorp, & Wu, 2017). Thus, global financial crisis is measured through dummy variable. This means that GFC has the value of 1 during the global financial crisis (from the third quarter of 2007 to the first quarter of 2013) and the value of 0 for the other periods. ECM – error correction mode.

3. RESULTS

3.1. Descriptive statistics

The data collected between the third quarter of 2004 and the third quarter of 2018, with the variables, are shown in Table 1.

Table 1. Descriptive statistics of all variables

Variable	Mean	Min	Max
Economic growth (GDP)	0.066	0.031	0.095
Stock market efficiency (SME)	0.293	0.060	1.453
Net trading value by foreign investors (FI)	0.023	–0.059	0.164
Real estate market (REM)	0.028	–0.013	0.059
Global financial crisis (GFC)	0.404	0	1

During the study, the economic growth of Vietnam reached its highest value in the last quarter of 2007 (9.5%). The main factors contributing

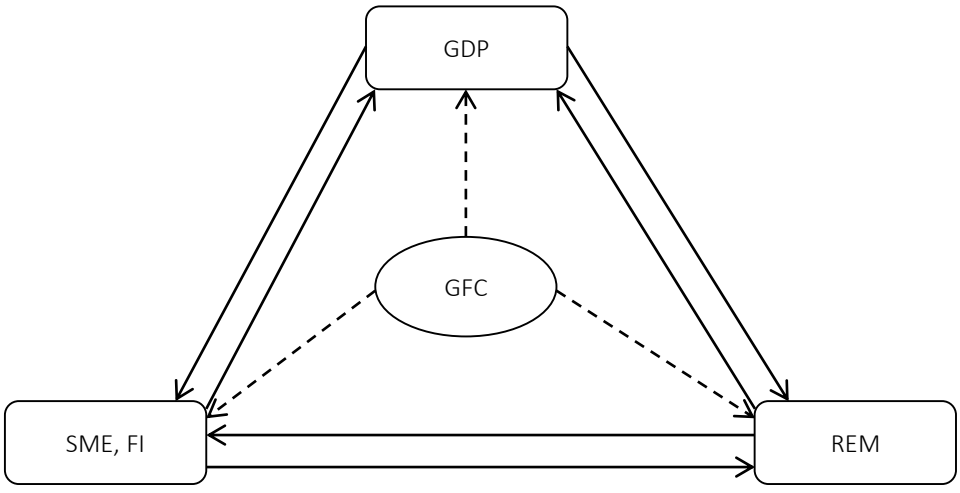

Figure 1. The correlation between stock market, real estate market, and economic growth

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to this growth can be counted as follows: (1) on January 1, 2007, Vietnam successfully became an official member of the WTO; (2) stock market efficiency (SME) and real estate market (REM) were growing considerably. However, Vietnam's economy started to decrease dramatically and reached its lowest value in the first quarter of 2009 (3.1%). That is because Vietnam was passively influenced by the global financial crisis.

Table 2. Correlation matrix

Variables	GDP	SME	FI	REM	GFC
GDP	1.000	–	–	–	–
SME	0.522***	1.000	–	–	–
FI	0.263*	–0.095	1.000	–	–
REM	0.573***	0.321**	–0.001	1.000	–
GFC	–0.351***	–0.285**	0.169	–0.462***	1.000

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table 2 indicates that economic growth (GDP) is negatively associated with global financial crisis (GFC). Meanwhile, other variables (SME, FI, REM) are positively related to economic growth (GDP). On the other hand, there is a positive relationship between real estate market (REM) and stock market efficiency (SME). Furthermore, global financial crisis (GFC) is negatively correlated to stock market efficiency (SME) and real estate market (REM).

3.2. Unit root test

Results of Augmented Dickey-Fuller test (ADF) suggested by Dickey and Fuller (1979) for testing the stationarity of data series are presented in Table 3.

Table 3. Unit root test (Dickey-Fuller test)

Variables	At level	At Δ
	I(0)	I(1)
GDP	0.045**	0.000***
SME	0.048**	0.000***
FI	0.001***	0.000***
REM	0.085*	0.000***
GFC	0.564	0.000***

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table 3 shows that economic growth (GDP), stock market efficiency (SME), net trading value by foreign investors (FI), and real estate market (REM) become stationary at the original data series I(0). Meanwhile, global financial crisis (GFC) stations at the first difference I(1), with the 1% level of significance.

Table 4. ARDL bound testing cointegration

Model 1. The impact of stock and real estate market on economic growth $F_1 = 5.324$								
ARDL bound testing cointegration	**10%**		**5%**		**1%**		***p*-value**	
	I(0)	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**
F_1	2.578	3.740	3.084	4.370	4.244	5.790	0.002***	0.017**
Model 2. The impact of real estate market and economic growth on stock market efficiency $F_2 = 3.318$								
ARDL bound testing cointegration	**10%**		**5%**		**1%**		***p*-value**	
	I(0)	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**
F_2	2.841	3.932	3.422	4.625	4.747	6.179	0.057*	0.180
Model 3. The impact of real estate market and economic growth on net trading value by foreign investors $F_3 = 3.543$								
ARDL bound testing cointegration	**10%**		**5%**		**1%**		***p*-value**	
	I(0)	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**
F_3	2.841	3.932	3.422	4.625	4.747	6.179	0.043**	0.146
Model 4. The impact of stock market and economic growth on real estate market $F_4 = 5.440$								
ARDL bound testing cointegration	**10%**		**5%**		**1%**		***p*-value**	
	I(0)	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**
F_4	2.566	3.742	3.071	4.373	4.227	5.798	0.002***	0.015**

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

3.3. ARDL bound testing cointegration

Next, the lag of variables is determined by using the Bayesian Information Criterion (BIC) model. The ARDL bound test approach suggested by Pesaran et al. (2001) is utilized for testing the cointegration in the long run. Its results are shown in Table 4.

It can be seen from Table 4 that the long-term cointegration among variables really exists in Model 1 and Model 4. Specifically, F_1 (5.324) and F_4 (5.440) are above the upper bound I(1) and significant at the 5% level. Meanwhile, F_2 (3.318) và F_3 (3.543) are under the upper bound I(1). It can thus be concluded that the ARDL approach is appropriate to examine Model 1 and Model 4 in the short run and the long run.

3.4. Coefficient estimation results

Results of analysing the correlation between stock market, real estate market, and economic growth in Vietnam using the ARDL approach are presented in Table 5.

Table 5 indicates that Model 1 and Model 4 are significant at one percent level. The results of the autocorrelation test show that there is no serial correlation. The heteroskedasticity test reveals that the models are free of heteroskedasticity issues. The Ramsey reset confirms they do not suffer from omitted variables.

Stability is also tested by using CUSUM squared. Figure 2 indicates that CUSUM squared is within the standard bound, with a significance level of 5%. It means that Model 1 and Model 4 have stability and validity.

Table 5. Coefficient estimation results

Variables	Model 1 (dependent variable: GDP)		Model 4 (dependent variable: REM)	
	Coef.	Prob.	Coef.	Prob.
Long-run results				
SME	1.337	0.002***	–0.004	0.765
FI	0.164	0.002***	0.118	0.390
REM	0.324	0.035**	–	–
GDP	–	–	0.249	0.518
GFC	–0.008	0.099*	–0.019	0.041**
Short-run results				
ΔSME	0.685	0.003***	-0.001	0.764
ΔFI	0.084	0.005***	-0.077	0.018**
ΔREM	0.166	0.067*	–	–
ΔGDP	–	–	0.075	0.544
ΔGDP(–1)	0.226	0.051*	–	–
ΔGDP(–2)	–0.417	0.000***	–	–
ΔGFC	–0.004	0.074*	–0.006	0.023**
ECM(–1)	–0.513	0.000***	–0.302	0.002***
Constant	0.026	0.000***	0.005	0.450
R-squared	55.60%		39.87%	
Significance level	Prob > *F* = 0.000***		Prob > *F* = 0.000***	
Autocorrelation test	Prob > chi2 = 0.798		Prob > chi2 = 0.875	
Heteroskedasticity test	Prob > chi2 = 0.305		Prob > chi2 = 0.210	
Ramsey reset test	Prob > *F* = 0.427		Prob > *F* = 0.239	

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

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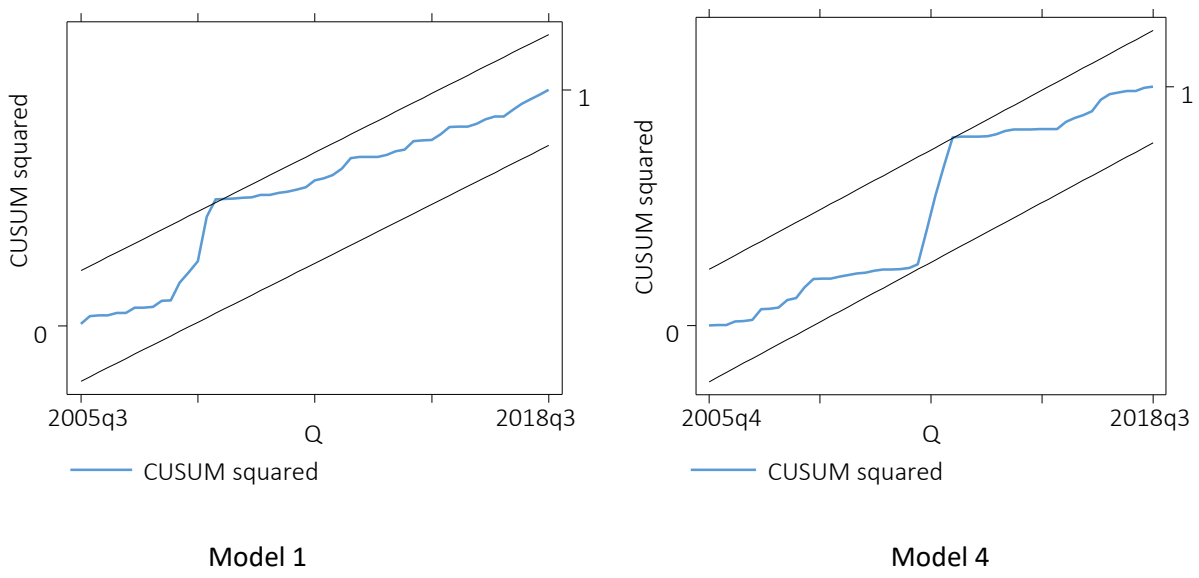

Figure 2. Stability tests

4. DISCUSSION

In the short run and the long run, stock market (SME, FI) exerts a positive impact on economic growth (GDP), with a significance level of 1% (Table 5). That economic growth (GDP) was more affected by stock market efficiency (SME) than net trading value by foreign investors (FI) is an unprecedented finding (see Figure 3). It can be concluded that stock market efficiency (SME) and net trading value by foreign investors (FI) are essential to stimulate the economic growth in Vietnam. Hence, the hypotheses H_{1a} and H_{1b} are accepted. The positive effect of stock market efficiency (SME) has been also found in the studies of Carp (2012) and Fufa and Kim (2018). Concurrently, the positive impact of net trading value by foreign investors (FI) is also in line with what was reported by Mishra et al. (2010). This indicates that trading in stock market greatly contributes to the supply of medium- and long-term capital to the economy. In addition, stock market helps the stimulation of efficient investment and capital allocation. Consequently, although being nascent, Vietnam ese stock market has a positive impact on economic growth. This finding is meaningful to Vietnam, as well as other developing countries.

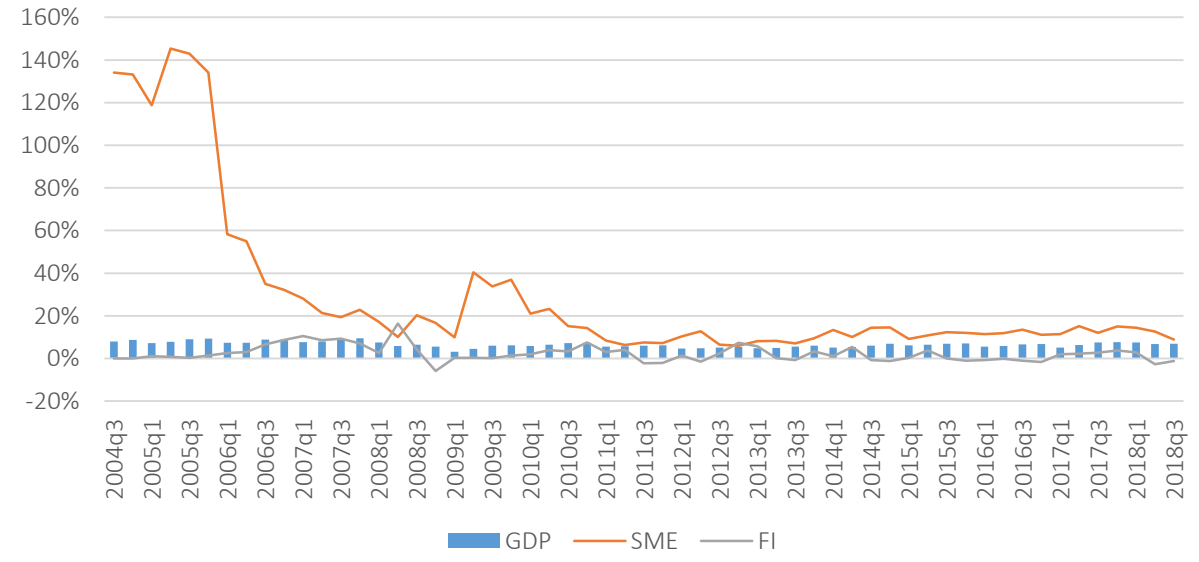

Figure 3. Stock market (SME, FI) and economic growth (GDP)

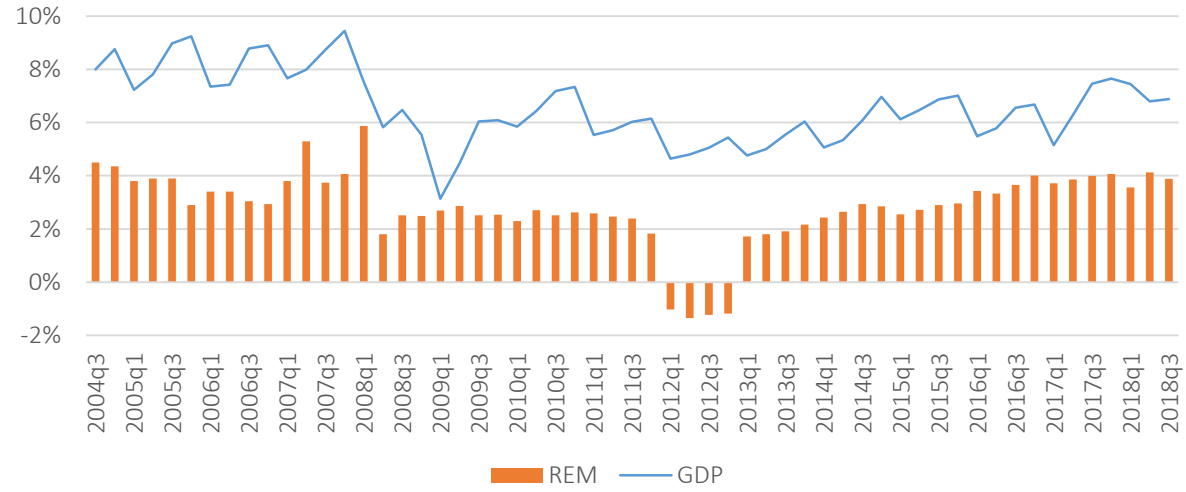

Figure 4. Real estate market (REM) and economic growth (GDP)

In the short run and the long run, real estate market (REM) is positively associated with economic growth (GDP) (see Figure 4). Thus, real estate market has also significantly contributed to the stimulation of economic growth. This means that the hypothesis $H2_a$ is accepted. This finding is consistent with what have been claimed by Miller et al. (2011) and Schmalz et al. (2016). This reveals that developments in the housing market help the real estate holders facilitate the access to capital via mortgage-backed securities, raise their expenditures and investments, which, in turn, boost the economy. It can thus be concluded that real estate is important in fostering the economic growth in Vietnam. This finding is also essential for Vietnam, as well as other developing economies.

In the short run, the influence of net trading value by foreign investors (FI) on real estate market (REM) is negative and significant at the 5% level (see Figure 5). Despite being contradictory to earlier scholars, this finding really fits the context in Vietnam. In particular, its stock market is quite young with limited and volatile trading value by foreign investors. Further, more investments from foreign investors leads to a tendency to the rise in investments by domestic ones. Nevertheless, the instability of trading value by foreign investors (especially when the economy experiences difficulties) exerts a negative impact on stock market as well as income of domestic investors, so they will limit their investments in real estate market, decreasing its capital flow and eventually the market.

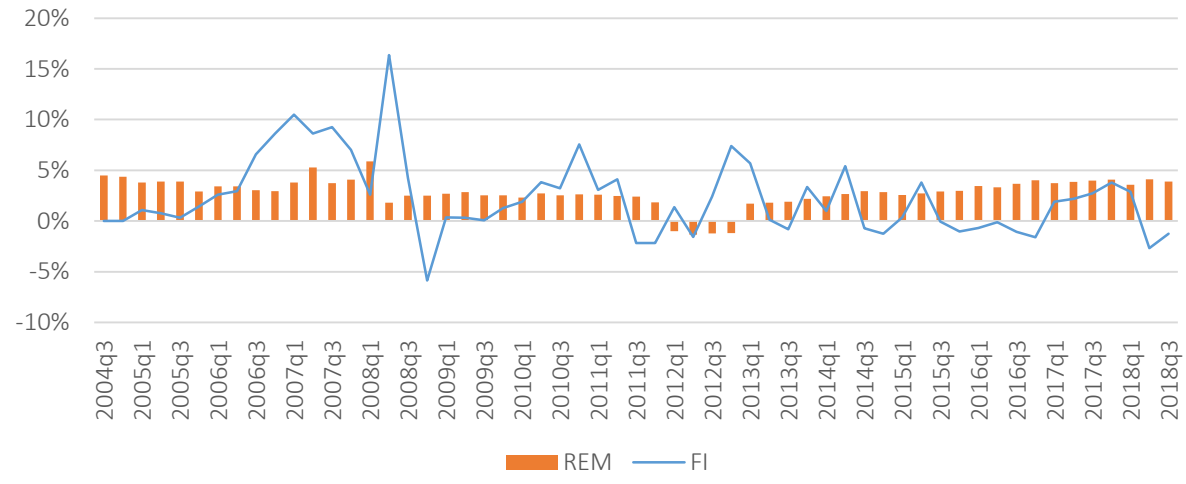

Figure 5. Real estate market (REM) and net trading value by foreign investors (FI)

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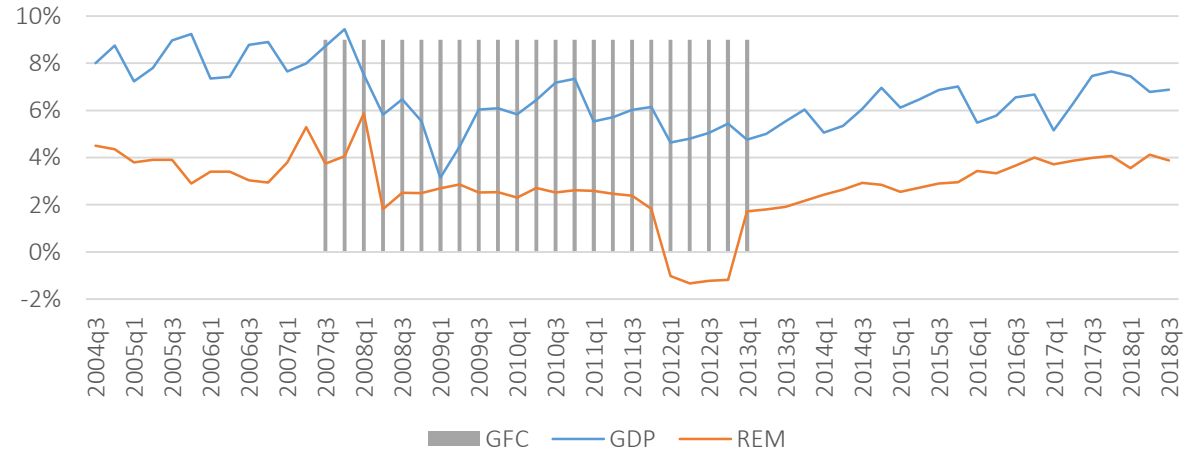

Figure 6. Real estate market (REM), economic growth (GDP), and global financial crisis (GFC)

In the short run and the long run, economic growth (GDP) and real estate market (REM) are negatively affected by global financial crisis (GFC) (see Figure 6). This finding is aligned with the reality that Vietnam has been integrated into the global economy, so being influenced by global financial crisis is unavoidable. Indeed, global financial crisis causes lots of predicaments to the world economy and Vietnam. Particularly, production and business activities face many difficulties; it is hard for real estate industry to access the capital, so economic growth and real estate market significantly fall. Hence, the hypotheses H_{4c} and H_{4d} are accepted. This finding corroborates what Kroszner et al. (2007), Hui and Chan (2014), Pan and Mishra (2017). More importantly, this is first empirical evidence on the negative influence of global financial crisis on economic growth and real estate market in the developing countries like Vietnam. Therefore, it is meaningful to the developing countries like Vietnam.

CONCLUSION

The findings reveal that economic growth is positively associated with stock market and real estate market. With respect to stock market, the result that economic growth (GDP) is more influenced by stock market efficiency (SME) than net trading value by foreign investors (FI) is a novelty of this study. Furthermore, economic growth (GDP) and real estate market (REM) are negatively influenced by global financial crisis (GFC). More than that, real estate market (REM) is negatively influenced by net trading value by foreign investors (FI) in the short run. Thus, there is a close relationship between stock market, real estate market, and economic growth in Vietnam. In addition, the key role of global financial crisis cannot be denied in this correlation. These findings are significantly meaningful to the economies around the world, especially to the developing countries like Vietnam.

Based on these findings, Vietnamese government can develop the appropriate policies for a sustainable development of stock and real estate market in the combination with the stimulation of economic growth, for instance: (1) the government should establish the policies that develop stock market effectively, particularly concentrating on attracting national, as well as foreign investors, into Vietnamese stock market, thereby improving the stock market efficiency and net trading value by foreign investors and most notably boosting the economic growth; (2) policies should be formulated to actively manage and constantly develop real estate market and meet its actual demands; (3) the government should also make use of the opportunities created by global economic integration, with forecast improvements to reduce the negative impact of unusual situations in the global economy (global financial crisis, etc.).

The study has greatly succeeded in finding the first empirical evidence on the correlation between stock market, real estate market, and economic growth. However, the paper has some limitations; to be specific, some variables, which may significantly drive this correlation, such as bank credits, human, and physical capital, have not been examined. This may be an interesting proposal for future studies.

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