



REAL EXCHANGE RATE AND ECONOMIC GROWTH: AN EMPIRICAL ASSESSMENT FOR VIETNAM



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ABSTRACT

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In theory, exchange rates and economic growth are regarded as having an indirect link via trade and capital investment. However, empirical investigation of this link in the context of one specific country has not hitherto been seriously considered, and Vietnam is no exception. It is essential that policy makers have insight into the extent to which exchange rates impact on their country's rate of economic growth. This paper aims to do so for Vietnam. By conducting a Vector autoregression (VaR) estimation, the Granger Causality test, and impulse response, the article aims to analyze empirically the effects of real exchange rates on economic growth in Vietnam from 2007 to 2017 using quarterly data. The results show a positive relationship between real exchange rates and economic growth. A one percentage point real depreciation in Vietnamese dong rates (VND) may lead to a 1.61923 percent growth in real gross domestic product (GDP) in this country, but this takes effect only during the first four periods (or lag 1). Moreover, The variance decomposition of forecast errors (FEVD) outcome also reveals that the real effective exchange rate (REER) made only a small contribution to GDP growth over the decade to 2017 compared to earlier periods.

Contribution/ Originality: This is one of very few studies that investigate the link between exchange rates and economic growth in Vietnam using real exchange rates in a VaR model.

1. INTRODUCTION

It cannot be denied that the exchange rate has been an economic issue of major concern, particularly in an open, integrated economy where trade conditions are facilitated and competition levels are increasing. The exchange rate is defined as the price of one currency in relation to another. This definition, however, indicates only the nominal value of one currency without evaluating its purchasing power. So, if researchers were to focus on the effects of the exchange rate on actual economic performance, REER seems to be a more reliable variable. This approach has been cited with approval in studies such as Cakrani (2014), Kogid *et al.* (2012), Rhodd (1993) and Eichengreen (2008).

The effects of real exchange rates on economic growth can be demonstrated through two transmission channels, including trade and investment (Cakrani, 2014). For the first, real exchange rate movements can cause change in domestic product competitiveness in the international market. Real undervaluation of the domestic currency is a typical example. If the exchange rate is genuinely undervalued, local export goods can become relatively cheaper than foreign products, and this can make domestic exports more competitive. Demand for local exports then tends to increase as export prices go down. It follows that if the elasticity of demand for exported

goods can outweigh the declining impact of price, the value of exports will increase. In addition, real undervaluation of the domestic currency will make imported goods relatively more expensive than domestic products, so reducing demand for imports. In consequence, the value of imports may decrease, the country's trade balance will improve, and GDP will grow. Likewise, investment and capital accumulation have a direct link with REER. If REER is undervalued, increased demand for export goods will tend to nudge domestic and foreign investors towards export industries.

Vietnam's substantial economic improvement since 2007 can be attributed to the opening its economy to global markets and engagement with international organizations. The country has implemented a flexible and stable exchange rate regime with the VND pegged to its eight major trading partners. Figure 3 shows that the nominal average value of VND - the nominal effective exchange rate (NEER) – devalued between 2007 to 2017 compared to a basket of foreign currencies. That notwithstanding, its real value appreciated significantly as illustrated by the increase in REER in Figure 2.

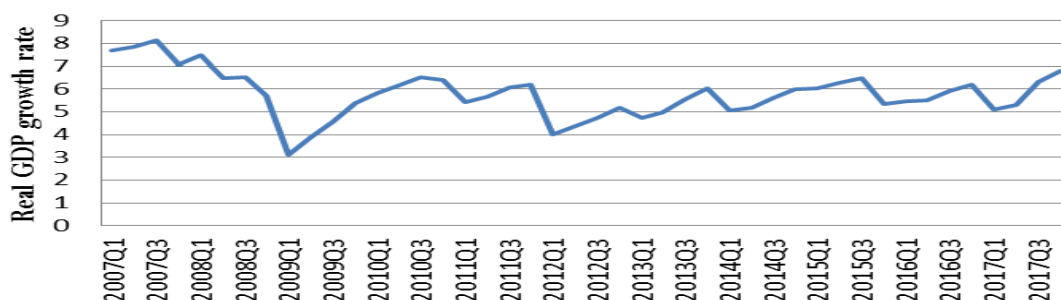


Figure-1. Vietnam's real GDP growth rate from 2007 to 2017.

Source: Author's calculation and graph from IFS and SBV.

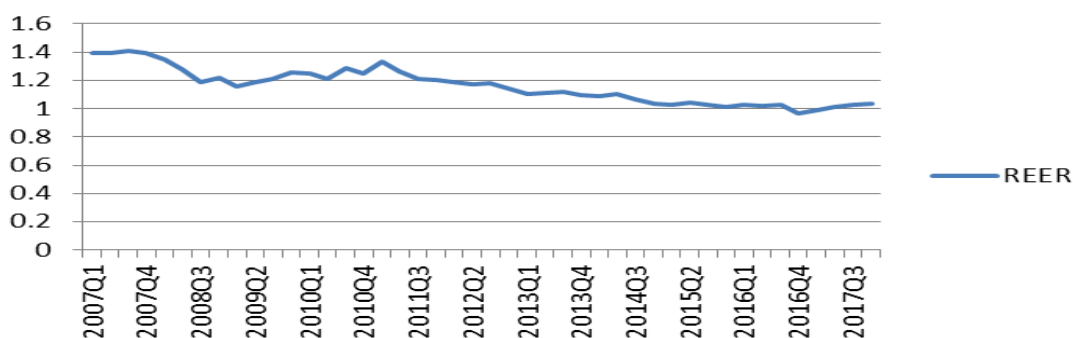


Figure-2. VND Real Effective Exchange Rate 2007Q1-2017Q4

Source: Author's calculation and graph from IFS data.

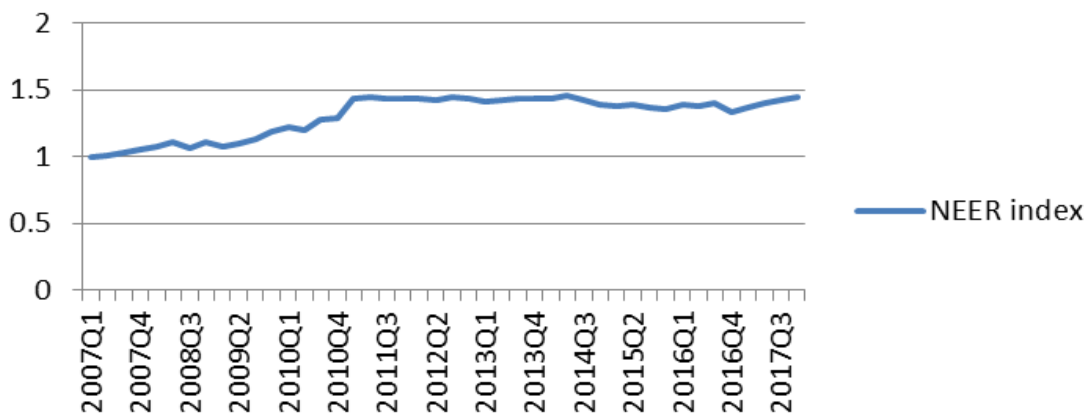


Figure-3. VND Nominal Effective Exchange Rate NEER 2007Q1 -2017Q4.

Source: Author's calculations from IFS data.

2. LITERATURE REVIEW

Studies by Paul (1978) and Edwards (1986) concluded that currency devaluation causes a contractionary effect on economic growth. This is confirmed by Atkins (2000), Kamin and Rogers (2000), and Bahmani-Oskooee and Miteza (2006). By contrast, Gylfason and Schmid (1983) found that domestic currency devaluation can have an expansionary effect on GDP.

A study by Dollar (1992) of 95 Asian and Latin American economies revealed that a stable, real exchange rate devaluation policy in an open economy can significantly remediate below-par economic performance. Hausmann *et al.* (2005) posited that an increase in investment and trade together with a decline in REER may lead to an acceleration of economic growth. However, Álvaro (2005) employed panel and time-series data from sixty countries from between 1965 and 2003 to find that while undervaluation generally retards economic growth, small-to-moderate REER can actually improve it in certain circumstances. Álvaro also theorized that the higher the exchange rate misalignment, the more economic growth will be hindered.

In a working paper produced by the World Bank on Growth and Development, Eichengreen (2008) focused on the role of REER in facilitating growth if controlled at stable and appropriate levels. Such may strengthen a country's capacity for expanded GDP, while creating more jobs, increasing savings, and attracting foreign investment. This is particularly so in export-oriented economies.

Virginia Di Nino and Massimo (2011) addressed the question of whether undervaluation or overvaluation of a domestic currency can negatively impact GDP. This study argues that there is a strong, positive link between domestic currency undervaluation and growth in developing countries, but a relatively weak one for advanced economies.

Kappler *et al.* (2011) collected data from 128 observations since 1960 to study the macroeconomic effects of exchange rate shock using an augmented panel autoregressive model. The results illustrate that current account balance can be strongly affected by an appreciation in the exchange rate. If there is an appreciation in the exchange rate, there will be a decline of three per cent on current account balances over a timeframe of three years. This deterioration occurs due to a reduction in real export volume with unchanged import values. Finally, the report confirmed that such impacts are more evident in developing countries.

Glüzmann *et al.* (2012) analyzed the determinants of GDP by evaluating different components of GDP including the impacts of domestic currency changes on trade and investment. The conclusion was that undervaluation can result in significant effects on investment and employment, rather than on trade.

Stracca *et al.* (2016) investigated 150 economies post-Bretton Woods. By including capital flows and growth rates of official reserves in developing countries with pegged exchange rate regimes, the model shows that a real appreciation in the domestic currency can reduce annual real GDP growth rate considerably, and vice versa.

Besides the general literature, there are also country-specific studies. Kogid *et al.* (2012) applied annual data using 37 observations from Malaysia in 1971 to analyze the impacts of exchange rates on economic growth using an ECM-based ARDL model. The results show a long-run causality link between nominal, real exchange rates, and economic growth. It then suggests ways to develop stable and sustainable economic growth based on a systematic exchange rate as an element of monetary policy.

By contrast, Cakrani (2014) employed a vector error correctional model (VECM) in a study on a small open economy in Southeast Europe and found no significant level of impact by the real exchange rate on economic growth. It was therefore considered unnecessary to take this variable into consideration when developing long-term or short-term policy instruments.

Su and Wu (2017) investigated the link between the change in RMB in China and real GDP over the long-term (1951 to 2014) by conducting a VaR method estimation. The empirical results showed no clear evidence for correlations between changes in the value of the renminbi (RMB) value change and real GDP. Before 1993, the

depreciation of RMB was related to increase in real output. Post-1993, this relationship became negative. Consequently, results are neither consistent nor obvious when viewed over different time periods.

AbuDalu *et al.* (2014) made an empirical assessment of the relationship between macroeconomic variables and real output growth in the ASEAN-5 economies: Malaysia, Indonesia, Philippines, Thailand and Singapore. ARDL approach with co-integration test is used to investigate the impact of real effective exchange rate, domestic interest rate, inflation rate, money supply, net foreign assets and terms of trade on the real GDP growth rate. The results showed that domestic money supply is the greatest factor affecting real GDP, followed by REER which has both long- and short-term effects on the ASEAN-5's real GDP growth rates.

In the case of Bangladesh, Razzaque *et al.* (2017) found differences between the long-run and short-run effects of exchange rate changes on GDP. Over the long run, real exchange rate depreciation of 10 percent may cause a rise of 3.2 percent in GDP. Over the short run, the same level of real depreciation would lead to about a half percent decline in aggregate output. The author also blames these differences for the contradictory effect of rising inflation, so this should be taken account of when implementing this policy.

With the VAR model and Granger causality test, Selimi and Selimi (2017) revealed a positive long-run relationship between the real exchange rate and Macedonia's economic growth in a model including real GDP as a dependent variable, and other independent variables such as REER, consumer price index (CPI), trade openness, monetary aggregate, current account balance, real interest rates and a dummy variable showing the effects of the global financial crisis (GFC). Moreover, the study provides support for the current fixed exchange rate, rather than a floating exchange rate which it found was likely to involve greater costs than benefits.

In another recent study in Nigeria, Okonkwo *et al.* (2017) applied 37 observations to a sample from 1970 to 2010 to test the existence of causality among the variables, including GDP, New Gold Inc (NGD)/United States Dollar (USD) exchange rate, government expenses, and oil revenue. The variance decomposition in the VaR model indicates that the exchange rate makes the greatest contribution to economic performance compared to other variables. This study suggests Vietnam should consider depreciating the domestic currency to promote its international competitiveness.

For Vietnam, even though there have been several studies on the determinants of economic growth since its adoption of the open economy policy, most focus on the impacts of the trade balance or direct foreign investment on GDP (Thanh (2015), Anwar and Nguyen (2010) and Tru (2018)). On the other hand, many researchers also analyze the relationship between the exchange rate and trade balance. However, there seems to be little in the way of empirical studies of the direct relationship between the REER rate and GDP. Nguyen (2015) and Huyen (2018) are two recent works on the subject: the first illustrating the impacts of domestic currency depreciation on inflation and trade balance (individually rather than on economic growth as a whole); the second one the effects of exchange rate policy on Vietnam's macroeconomic stability using the nominal effective exchange rate.

In summary, there remains a gap in literature to be filled given the paucity of Vietnam-specific research on this subject, particularly the absence of any study that included REER as a comprehensive indicator of the country's competitiveness in order to test the theoretical link between REER and growth in GDP.

3. RESEARCH METHODOLOGY EMPIRICAL FRAMEWORK AND DATA DESCRIPTION

3.1. Methodology and Empirical Framework

This article applies an analytical framework to the relationship between real output and exchange rates as developed by Rhodd (1993). In Rhodd's model, the goods market is represented by:

$$Y = C + I + G + X - M \quad (1)$$

or alternatively:

$$Y - C - G = I + X - M \quad (2)$$

$$S = I_d + I_f \quad (3)$$

where Y , C , I , S , G , $X-M$, r , e stand for total expenditure, consumption expenditure, domestic investment expenditure, savings, government spending, net exports or foreign investment (I_f), and the domestic interest rate and exchange rate respectively.

$$S = S(Y, r) \quad (4)$$

In Equation 4, S has a positive link with Y and r . If Y increases, S will grow. If r increase, S will grow as well.

$$I_d = I_d(Y, r) \quad (5)$$

In Equation 5, domestic investment has a positive relationship with Y , but domestic investment has a negative relationship with r . If Y increases, domestic investment will increase. However, if r increases, domestic investment will decrease. Thus, from Equations 4 and 5, we can see that monetary policy relating to interest rates and domestic credit will also contribute strongly to the growth of Y .

$$I_f = I_f(Y, e) \quad (6)$$

In Equation 6, the net contribution of the rest of the world is said to have a negative relationship with domestic income because an increase in Y may stimulate imports and reduce $X-M$ and have a direct link with the exchange rate. It can be seen from this, besides an indicator of monetary policy in the above equation, the growth of aggregate output is also affected by an indicator of external factors including the exchange rate.

The equilibrium condition Equation 3 on the goods market can be written in the linear form thus:

$$S_0 + S_1Y + S_2R - I_{d0} - I_{d1}Y - I_{d2}r - I_{f0} - I_{f1}Y - I_{f2}r = 0 \quad (7)$$

On the monetary market, the equilibrium condition is written:

$$M_d = M_s$$

While M_d has a positive link with Y , it has a negative relationship with r . If r increases, money demand will decrease. The above equation would then be written as:

$$L_0 + L_1Y + L_2r = M_s \quad (8)$$

On the foreign exchange market according to Rhodd (1993), as income level Y gets higher, the trade balance will become worse because of the reduction of imports under a fixed exchange rate regime. Capital flows can help improve the trade balance in the short run, but its effect is not clear over the long run. The equilibrium condition in this case can be written as:

$$T_0 + T_1Y + T_2E + F_0 + F_1Y + F_2r - B = 0 \quad (9)$$

Equation 7, 8, 9 can be shown in matrix form:

$$\begin{bmatrix} S_1 - I_{d1} - I_{f1} & S_2 - I_{f2} & 0 \\ L_1 & L_2 & 0 \\ T_1 + F_1 & F_2 & -1 \end{bmatrix} \begin{bmatrix} Y \\ r \\ B \end{bmatrix} = \begin{bmatrix} -S_0 + I_{d0} + I_{f0} + I_{f2}e \\ M_s - L_0 \\ T_0 - T_2e - F_0 \end{bmatrix} \quad (10)$$

Y can be determined from Equation 10. The empirical model will be built up depending on those factors that capture a measure of monetary policy, fiscal policy and external impacts. Therefore, the model should include independent variables including exchange rate, government spending, and money supply (or domestic credit or interest rate). Moreover, Edwards (1986); Upadhyaya and Upadhyay (1999) include terms of trade as an indicator of net export in a small open economy. Trade openness is presented as an indicator of external impact on local economic growth in this context by Selimi and Selimi (2017). Aggregate output is illustrated by real GDP as a dependent variable.

To avoid the heterogeneity and to make the data more smooth, all the variables in the model are taken with the natural logarithm. The specification of the empirical model can be now written as:

$$\ln \text{REALGDP}_t = \beta_0 + \beta_1 \ln(\text{REER}) + \beta_2 \ln(\text{CREDIT}) + \beta_3 \ln \text{GOVEXP} + \beta_4 \ln \text{TRADE} + v_t,$$

Where \ln is the natural logarithm, t denotes time; and REALGDP, REER, CREDIT, GOVEXP, TRADE accordingly presents for Real Gross Domestic Products, Real Effective Exchange Rate, Domestic Credit, Government Expenditure and Trade Openness. The error term is represented by v ; $\beta_1 \beta_2 \beta_3 \beta_4$ are the coefficients of the model, particularly β_4 that captures the effect of real depreciation of the domestic currency on real output growth. v_t : being the error term.

3.2. Data Description

The data in the model are quarterly from 2007Q1 to 2017Q4, which includes 44 observations. The data are collected and processed from different sources. Real GDP growth rate data are calculated from quarterly GDP growth rate figures collected from the annual publications of the State Bank of Vietnam (SBV), and quarterly consumer price index figures are from the International Financial Statistics (IFS). The result of the calculation is shown in Figure 1.

REER data are calculated in the following equation, allowing it to show its real effect on economic growth better than the nominal effective exchange rate (NEER):

$$\text{REER}_i = \text{NEER}_i \frac{\text{CPI}_i^W}{\text{CPI}_i^{\text{Home}}} \quad (11)$$

$$\text{REER}_i = \text{NEER}_i \frac{\text{CPI}_i^W}{\text{CPI}_i^{\text{Home}}}$$

where CPI_i^W and $\text{CPI}_i^{\text{Home}}$ are, respectively, the weighted average consumer price index of Vietnam's main trading partners, and Vietnam itself. NEER data are not available from IFS for Vietnam, calculations will be based on the bilateral exchange rate between Vietnam and its major trading partners: China, the European Union (EU), the US, Korea, Japan, Thailand and Singapore; and their relative trade weight in Vietnam's total trade volume. Thus:

$$\text{NEER}_i = \sum_{j=1}^n e_{ij} \cdot w_j$$

Where e_{ij} is bilateral exchange rate index between USD and the currency of each main trading partner, and w_j is the trade weight of each major trading partner. Trade weight is measured by the percentage of total trade volume of each major trading partner in Vietnam's total trade volume. REER data are presented after calculation and graphed as per Figure 2. Government expenditure data are available as a percentage of GDP from the World Bank each year. These can be converted to absolute figures. Annual data will then be changed to quarterly data using the interpolation method in EViews. Domestic credit data are calculated from monthly domestic credit statistics taken from the International Monetary Fund (IMF) in local currency, then converted to USD at the prevailing exchange rate. The trade openness index is calculated based on the ratio between the sum of quarterly exports and imports to quarterly GDP which are available on IFS.

4. EMPIRICAL RESULTS

4.1. Stationary Test of Time-Series Data

Checking whether the time-series data is stationary can be considered as a first step in any time-series data analysis. If non-stationary data are used in the VaR model, the outcome will be biased. This study tests the stationarity of the data when conducting the ADF test. Table 1 provides the results of unit root tests with intercept;

and with intercept and trend. It is apparent that the variables including unreeled, lnreer, lncredit and lntrade are not stationary at level but stationary at the one per cent and five per cent level of significance, when taking the first difference. These variables are found to be I(1) at one per cent and five per cent level of significance while lngovexp is found to be I(2).

Table-1. Unit root tests.

Variables	ADF test with Intercept		ADF test with Intercept and Trend	
	t- statistic	p -value	t- statistic	p -value
DlnREALGDP	-3.596616*	0.0000	-4.192337*	0.0000
DlnREER	-3.596616*	0.0000	-4.192337*	0.0000
DlnCREDIT	-3.639407*	0.0000	-4.252879*	0.0003
DdlnGOVEXP	-3.639407*	0.0003	-4.252827*	0.0019
DlnTRADE	-3.523623**	0.0131	-4.211868*	0.0001

*: statistical significance at 1%

** : statistical significance at 5%

Source: Authors' calculation using EViews 9.0.

4.2. VAR Estimation

The optimal lag length is selected based on different criteria: LR (sequential modified LR test statistic), AIC (Akaike information criterion), HQ (Hannan-Quinn information criterion). The result from lag length selection criteria in Table 2 reveals that the optimal lag order should be one. Thus, the model is a VAR(1) model.

Table-2. Lag length selection criteria.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	183.29545509768	NA	9.25e-11	-8.914773	-8.703663*	-8.838442
1	221.03125314828	64.15086	4.95e-11*	-9.551563*	-8.284903	-9.093579*
2	237.75240553005	24.24567	7.96e-11	-9.137620	-6.815411	-8.297983
3	269.35001770397	37.91713*	6.74e-11	-9.467501	-6.089742	-8.246210

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: Authors' calculation using EViews 9.0.

Table 3 indicates that the coefficient of lag one of REER is found to be statistically significant at five per cent (0.0249), implying that there exists a positive relationship between REER and real GDP. This means that if REER increases by one per cent or the domestic currency depreciates by per cent in real terms, this may lead to 1.61923 per cent growth in real GDP. In addition, CREDIT and real GDP also has a positive long run relationship at a significance level of one per cent. A one per cent increase in credit may improve real GDP by 0.255752 per cent. Meanwhile, the existence of TRADE and GOVEXP do not play important roles because of their relative insignificance in the estimation model. These results seem to be consistent with the outcomes of other studies by Razaque *et al.* (2017) and Okonkwo *et al.* (2017).

Table-3. Unrestricted VAR estimation result.

Variables	Coefficient	Std. Error	t-Statistic	Prob
DLNREALGDP(-1)	0.013445	0.178648	0.075260	0.9401
DLNREER(-1)	1.619238**	0.715744	2.262314	0.0249
DLNGOVEXP(-2)	-0.050953	1.120559	-0.045471	0.9638
DLNCREDIT(-1)	0.252738*	0.052864	4.780868	0.0000
DLNTRADE(-1)	0.255754	0.196294	1.302911	0.1943

*: statistical significance at 1%

** : statistical significance at 5%

Source: Authors' calculation using EViews 9.0.

4.3. Granger Causality Tests

Table-4. Granger Causality Test Results.

Hypothesis	Observations	Chi-sq	Prob
1.Real GDP does not cause REER	41	0.021899	0.8824
2. REER does not cause Real GDP		5.118066	0.0237
3.Real GDP does not cause CREDIT	41	3.985278	0.0459
4. CREDIT does not cause Real GDP		22.85670	0.0000
5.GOVEXP does not cause Real GDP	41	0.002068	0.9637
6.Real GDP does not cause GOVEXP		0.18366	0.666
7.TRADE does not cause Real GDP	41	1.697578	0.1826
8.Real GDP does not cause TRADE		2.626015	0.1051

Source: Author 's calculations.

The Granger Causality test in a VaR environment is conducted to examine whether there is a causality link between these variables. The result from Table 4 shows that second and fourth null hypotheses can be rejected (p value < 5 per cent), which means that REER and CREDIT can cause GDP but the alternative hypothesis cannot occur. As the same time, all remaining null hypotheses cannot be rejected (p value > 5 per cent), which means that GOVEXP and TRADE cannot cause any change in real GDP.

4.4. Impulse Response Function

Figure 4 illustrates the reaction of real GDP to the shock of REER. This impact only lasts during the first four periods, or at lag one rather than at later periods, or at lag two or lag three, which means that the response of real GDP to REER is only short-term.

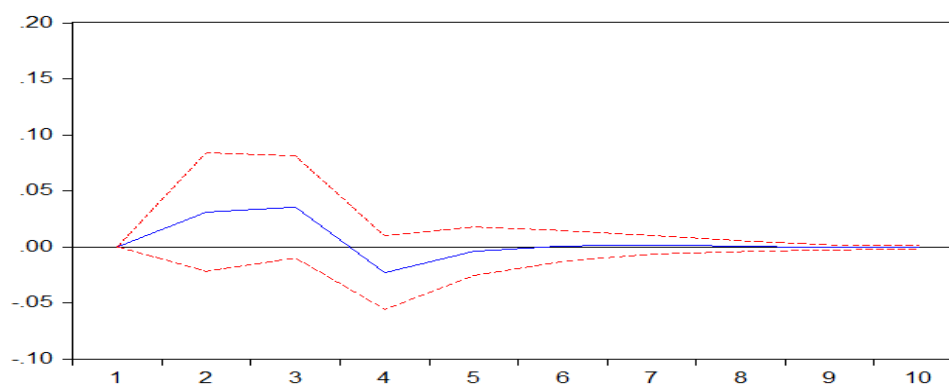


Figure-4. Response of real gross domestic products to real exchange rate shocks

Source: Authors' calculation using EViews 9.0.

Table-5. Variance Decomposition of DLNIMP.

Period	S.E.	DLNREALGDP	DLNREER	DDLNGOVEXP	DLNCREDIT	DLNTRADE
1	0.122557	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.164363	55.69737	3.566245	0.434053	26.66412	13.63821
3	0.178830	49.99720	6.966345	0.374511	24.97949	17.68245
4	0.181598	48.51502	8.356695	0.626258	24.32023	18.18180
5	0.181977	48.35001	8.369079	0.768830	24.25857	18.25351
6	0.182033	48.35034	8.365664	0.769685	24.26424	18.25007
7	0.182066	48.33324	8.372030	0.769492	24.26253	18.26271
8	0.182072	48.33186	8.372521	0.769946	24.26169	18.26398
9	0.182074	48.33111	8.373294	0.769951	24.26147	18.26417
10	0.182074	48.33098	8.373315	0.769997	24.26142	18.26429

Source: Author' calculations.

4.5. Variance Decomposition

Variance decomposition shows which shock is the greatest contributor to the change of a variable through time (a ten-month period in this instance). Table 5 demonstrates that besides the influence of itself in previous periods at around 50 per cent, real GDP is affected by other two main variables: CREDIT and REER. CREDIT is the second contributor to the movement of real GDP at around 24 per cent, and REER is the third-most important factor accounting for eight per cent.

5. CONCLUSION

The results of this research reveal that a change to the real exchange rate can lead to a positive effect on real GDP. This means that if REER increases by one per cent, or real depreciation of the domestic currency is one per cent, real GDP will be improved by 1.61923 per cent. Further, while the statistics show no level of significance in the causality link between government expenditure and real GDP, there is nevertheless a strong link between domestic investment and real GDP at a one per cent level of significance. In fact, the outcome illustrates that a one per cent increase in credit may improve real GDP by 0.255752 per cent. Moreover, according to variance decomposition results, REER is not the strongest contributor in the model to the development of real GDP. At around eight per cent, the real exchange rate is ranked as the third factor, following real GDP itself in previous years, and domestic investment. The impulse-response function also shows that this effect cannot extend longer than the first four periods, so it can be said to have only a short-term impact.

As per Graph 3, during the ten years from 2007 to 2017 the nominal average value of VND declined by almost 50 per cent, illustrated by the increasing NEER index from one to nearly 1.5. This devaluation of the domestic currency is expected to boost the competitiveness of local exports and retard import volumes, so improving the balance of trade and GDP. However, what we can in fact see from REER data in Graph 2 is that the real value of VND has appreciated approximately by 40 per cent, accounting for a decline in the REER index from 1.4 to one. From Equation 11, in the situation of an increasing of NEER, we can attribute the decline of VND to a higher average domestic inflation rate compared to that of Vietnam's major trading partners (as per figure 5 below). Ultimately, the effects of VND nominal devaluation have been eroded by the impact of escalating inflation in Vietnam during this period.

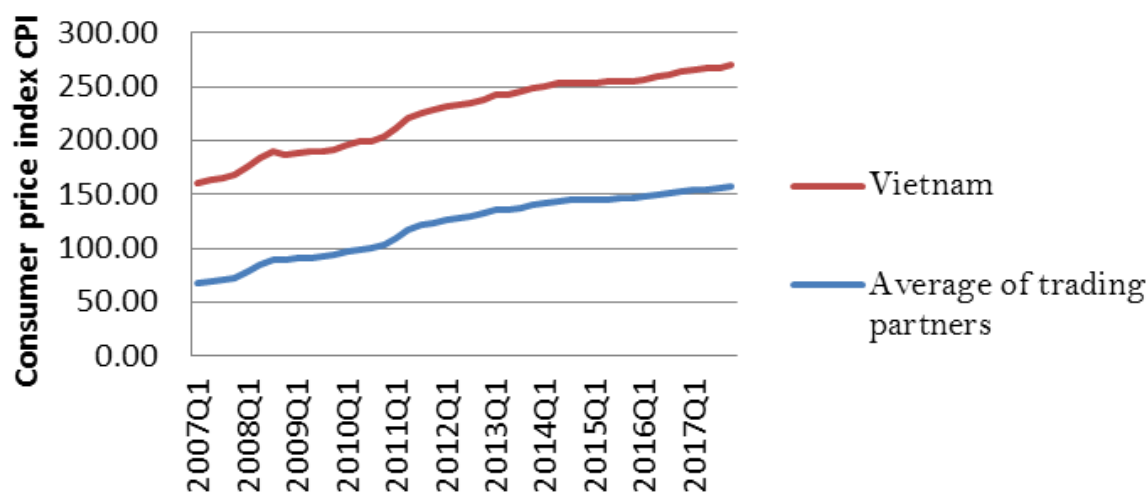


Figure-5. CPI of Vietnam and other trading countries.

According to the results of this research, in order to stimulate the economy to grow, there should be a real depreciation in the domestic currency, rather than a real appreciation. Some policy implications can be drawn from this.

First, in order to improve Vietnam's competitiveness as well as maintain the positive impact of REER on GDP, it will be necessary to implement monetary policy in which inflation can be controlled at a reasonable level compared to major trading partners.

Second, as shown by variance decomposition analysis, besides depending on real GDP in previous stages, domestic credit plays the most important role in improving economic growth in Vietnam, rather than the exchange rate. Thus, the government should concentrate more on expanding credit to different economic sectors by applying an interest rate policy that encourages domestic investment.

Third, the impacts of trade openness do not help to improve economic growth. This conclusion is the same as that of Huyen (2018) and Nguyen (2015). Therefore, domestic currency devaluation policy seems not to have been an effective economic tool to accelerate economic growth in the integrated decade. Other solutions to improve efficiency in domestic production industries should therefore be taken into consideration, rather than depending on the benefits of exchange rate policy.

The last recommendation is directed at government spending. As shown in the Granger Causality analysis, this variable has no significance in enhancing economic growth. Thus, decreasing government expenditure can help to reduce overall financial burdens on the economy, which may in turn encourage the government to focus more on domestic investment.

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