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Determinants Affecting Economic Growth: The Case of Viet Nam

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Abstract

Economic growth can be seen as one of priorities of the Vietnamese Government in recent years. This article aims to investigate factors affecting economic growth of Viet Nam in the last 40 years (1977-2016). Our results demonstrated that share of exports, foreign direct investment, value added of agriculture, forestry and fishery sector, and ASEAN participation had positive impacts on economic growth, while imports negatively affected economic growth of Viet Nam. Lastly, policies are recommended to the Vietnamese Government to enhance economic growth.

Keywords: Determinants, Economic Growth, Viet Nam.

1. INTRODUCTION

Economic growth is an important factor for countries to achieve the target in sustainable economic development (Nguyen and Nguyen, 2017). A high growth of economy is a crucial target for many countries. However, economic growth generates adverse effects, including natural resources degradation and increasing gaps between the rich and the poor (Tinh, 2012). In addition, inconsistent growth of gross domestic product (GDP) leads to increasing poverty and decreasing the progress in health and education of a country (Aziz and Azmi, 2017).

Although there was a moderate growth in 2016, Vietnam's economy presented a favorable environment. Economic growth slightly decelerated by 5.9 percent due to the impact of the drought on agricultural output, cuts in oil production, and slowing external demand. Currently, inflation remains below the official target of 5 percent. Slowdown of import growth led to an increase of the current account surplus and foreign direct investment (FDI) inflows remain robust (World Bank, 2016).

Viet Nam's economy has presented numerous variations in the last more than 40 years. GDP per capita rose by more than 5 percent annually in 1992-1997, and again in 2000-2008. Overall, real GDP per capita increased by 2.97-fold over the years 1990-2009 (Yang *et al.*, 2015). However, the economy of this country has to face various obstacles such as macroeconomic and financial vulnerabilities and the increase of asset prices and ignite inflationary effects due to rapid monetary expansion (World Bank, 2016).

This article aims to examine determinants affecting economic growth of Viet Nam in the last 40 years (1977-2016). Next, policies are recommended to the Government to foster economic growth in both short and medium terms of Viet Nam.

The rest of this paper is organized as follows. Section 2 presents the literature review. Research methods are discussed in section 3. In section 4, we present results and discussion. Finally, conclusion and policy implications are summarized in section 5.

2. LITERATURE REVIEW

2.1 Concepts of Economic Growth

Economic growth is a long-run phenomenon, which is subjected to barriers such as excessive rise of population, limited resources, inadequate infrastructure, and inefficient utilization of resources. Economic growth is obtained by using efficient resources as well as increasing the production capacity of a country (Haller, 2012). Denison (1962) argued that economic growth is the increase of real GDP or GDP per capita measured in constant prices. There are four major determinants of economic growth, consisting of human resources, natural resources, capital formation, and technology (Boldeanu and Constantinescu, 2015).

2.2 Empirical Studies in Factors Affecting Economic Growth in the World and Viet Nam

Several studies examined factors affecting economic growth of countries all around the world. Acuna (2017) investigated external and internal factors contributing to economic growth of Chile in 2007-2016. His research showed that the decline in the rate of economic growth in Chile was influenced by external factor like the end of mining expansion, while the subsequent and persistently low growth rates can be interpreted by a combination of internal and external factors. A study by Anyanwu (2014) assessed factors affecting economic growth in Africa. The author concluded that, unlike in China, openness did not positively and significantly impact on Africa's growth and Africa imports more than exports.

Moreover, Aziz and Azmi (2017) studied factors affecting GDP growth in Malaysia. Their results addressed that FDI and female labor forces presented positive effects on GDP growth, but inflation negatively affected the growth of GDP. Filip (2015) examined economic growth and impact factors in 2000-2013 in Central and Eastern Europe. He argued that imports and domestic credit positively impacted on economic growth, while unemployment and low performance of banking sector presented negative relationships with economic growth. Likewise, a study by Oyeyemi and Awujola (2014) estimated determinants affecting economic growth of Nigeria. Their findings demonstrated that money supply, oil revenue, Federal Government expenditure, and foreign private investment had positive relationships with economic growth, while inflation rate, interest rate, and foreign exchange rates did not affect GDP growth.

Anh *et al.* (2016) examined the relationship between corruption and economic growth in Viet Nam. Their results indicated that corruption negatively affected economic growth. However, indirect impacts of corruption on economic growth via education and investment channels were positive. Similarly, Luu *et al.* (2017) estimated the relationship between FDI and economic growth in Viet Nam. Authors found that the increase of FDI led to the rise in economic growth and vice versa, economic growth contributed to enhance FDI capital. A study by Minh (2009) investigated the impact of demographic change on economic growth of Viet Nam in the last 30 years. She concluded that the change in demographics contributed to 15 percent of economic growth during the last five years and the aged population had no negative impacts on Vietnam's economic growth. Likewise, Nguyen and Nguyen (2017) examined the influence of domestic savings on economic growth of Viet Nam during 1986-2015. Their results showed that, domestic savings, investment and dependency ratio did not affect economic growth. However, in the long run, dependency ratio had a negative impact on the growth.

Further, a study by Quy (2016) examined the relationship between foreign aid and economic growth in Viet Nam. His research indicated that there was a negative relation between foreign aid and economic growth because of ineffective usage of aid and corruption. Thanh and Dai (2016) studied constraints of economic growth in Viet Nam. Their results found that a poor business environment, an underdeveloped infrastructure, failures related to information externalities, learning externalities and coordination failures, were barriers which leading to slowdown of economic growth. Tung and Thanh (2015) investigated the relationship between inflation and economic growth in Viet Nam in 1986-2013. Results showed that inflation had a negative impact on economic growth and the Government should facilitate investment and improve the effectiveness of investment to enhance economic growth.

3. METHODOLOGY

3.1 Data and Sample

Secondary data for this study is gathered from databases of General Statistics Office of Viet Nam (GSO) and international organizations such as the World Bank (WB), the International Labor Organization (ILO), and the Food and Agriculture Organization of the United Nations (FAO). Specifically, data in GDP value, shares of exports and imports of goods and services in the total GDP, value of FDI, inflation rate, total number of labors, the rate of Official Development Assistance (ODA) in total Gross National Income (GNI), value added of agriculture, forestry and fishery sector, the World Trade Organization (WTO) participation, and the Association of Southeast Asian Nations (ASEAN) participation of Viet Nam for the last 40 years (1977-2016) has been collected to analyze.

3.2 Data Analysis

3.2.1 Descriptive Statistics

Descriptive statistics are employed to describe characteristics of variables in the model through computing mean, standard deviation (SD), minimum (min), and maximum (max).

3.2.2 Generalized Linear Model (GLM)

In this research, GLM is applied to estimate determinants affecting economic growth of Viet Nam in the last 40 years (1977-2016). GLM is chosen because it allows for non-linearity through the use of high order polynomial and produces a better fitting for complex relationships between a response and a set of independent variables (Khouloud *et al.*, 2017). GLM is estimated by the Stata MP 14.2 software.

Specification of GLM can be defined as follows:

$$g(E(y_i)) = \mu_i + \varepsilon_i \text{ where } \varepsilon_i \sim N(0, \delta^2) \quad (1)$$

$$\mu_i = \beta_0 + \sum_{j=1}^p \beta_j X_{ij} \quad (2)$$

Where: g is a link function; y_i denotes the dependent variable (GDP value); μ_i represents a sum of linear predictor; ε_i is a random error term with zero mean; β_0 is an intercept; β_j are parameters to be estimated; and X_{ij} represent covariates (share of exports and imports, value of FDI, etc.).

Nine independent variables, including share of exports, share of imports, FDI value, inflation rate, total labors, rate of ODA received, value added of agriculture,

forestry and fishery sector, WTO participation, and ASEAN participation, are chosen to estimate factors affecting economic growth in Viet Nam for the last 40 years (1977-2016). To enhance accuracy of the estimation, the dependent and all quantitative independent variables are calculated by the natural logarithm (Ln) (Table 1).

Table 1. Description of variables

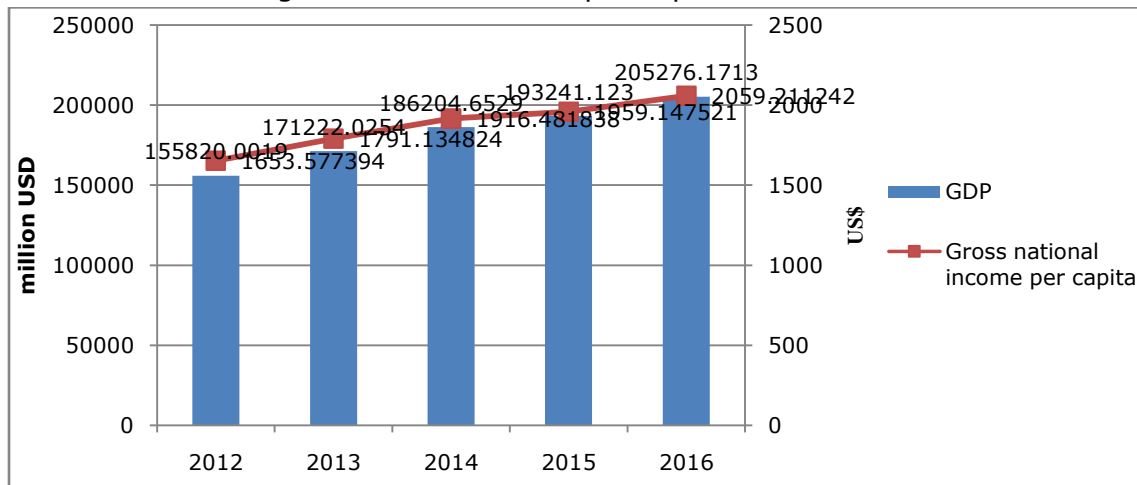
Variable definitions	Labels	Unit	Expected signs
Dependent variable: GDP value	Y	million USD	
Covariates:			
Share of exports of goods and services	X ₁	%	+
Share of imports of goods and services	X ₂	%	-
Value of FDI	X ₃	USD	+
Inflation rate	X ₄	%	-
Total labors	X ₅	person	+/-
Rate of ODA received	X ₆	%	+/-
Value added of agriculture, forestry and fishery sector	X ₇	million USD	+
WTO participation (1=Participate and 0=Otherwise)	D ₁		+
ASEAN participation (1=Participate and 0=Otherwise)	D ₂		+

Note: USD means United States Dollar

4. RESULTS AND DISCUSSION

4.1 An Overview in Socio-economics of Viet Nam

Figure 1. GDP and GNI per capita of Viet Nam



Source: FAO, 2018

Note: Retrieved 30 April 2018, from <http://www.fao.org/faostat/en/#data/MK>

Both GDP and GNI per capita of Viet Nam tended to increase for five years (2012-2016). The average growth of GDP of Vietnam accounted for 7.1 percent (or USD49.4 billion). At the same period, GNI per capita rose by 5.6 percent (or USD406), which is a result of the increase in GDP and a slight growth in total population. These outcomes reflect the improvement in livelihood of Vietnamese people in recent years (Figure 1).

By 2016, the agriculture, forestry and fishery sector contributed 16.32 percent to the economy; 32.72 percent came from the industry and construction sector; and the rest (40.92 percent) made by service sector. Export and import turnover of goods reached USD176.6 billion and USD174.8 billion, respectively. Number of labor force aged 15 and above accounted for 54.4 million people. The proportion of labors working in agriculture, forestry and fishery, industry and construction, and services accounted for 41.9 percent, 24.7 percent, and 33.4 percent, respectively. The unemployment rate accounted for 2.3 percent (General Statistics Office, 2017).

4.2 Determinants Affecting Economic Growth of Viet Nam

Table 2. Characteristics of factors affecting economic growth in Viet Nam

Variables	Mean	SD	Min	Max
GDP value	50012.7	61155.6	1884.6	205276.2
Share of exports	40.3	30.9	0	93.6
Share of imports	45.2	31.5	0	91.1
Value of FDI	2.88e+09	3.78e+09	-80000	1.26e+10
Inflation rate	3.4	5.2	-1.7	23.1
Total labors	3.11e+07	2.16e+07	0	5.64e+07
Rate of ODA received	2.3	1.8	0	5.9
Value added of agriculture, forestry and fishery sector	10149.1	10363.7	804.5	33500.3
WTO participation (1=Participate and 0=Otherwise)	0.2	0.4	0	1
ASEAN participation (1=Participate and 0=Otherwise)	0.5	0.5	0	1

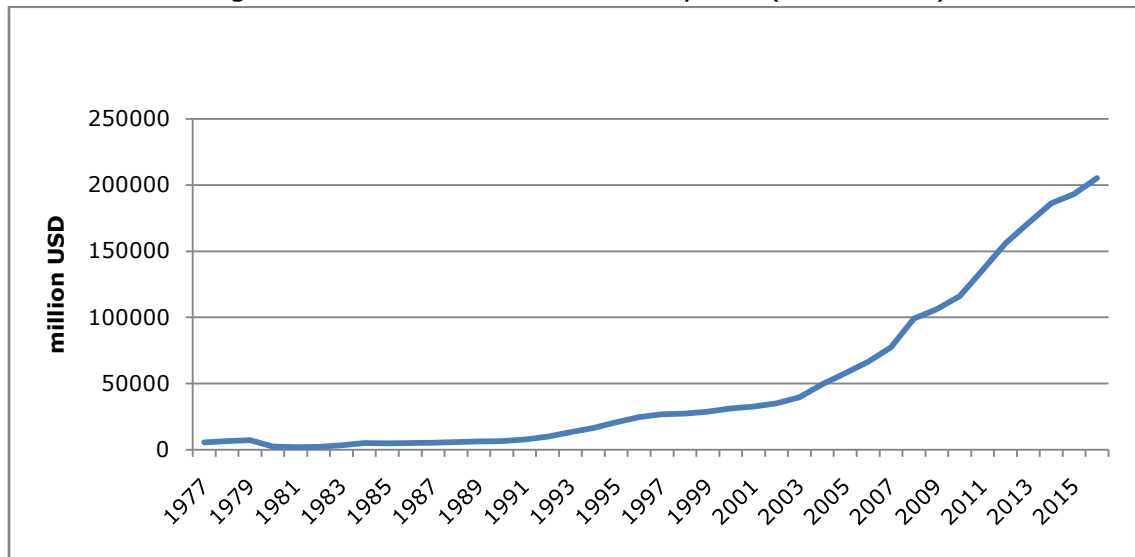
Source: Survey data in 40 years (1977-2016)

Note: SD means standard deviation

For 40 years (1977-2016), the average value of GDP of Viet Nam reached USD50 billion and the share of exports and imports in total GDP accounted for 40.3 percent and 45.2 percent, respectively. These imply that Viet Nam is a net importing country. The average value of FDI accounted for USD2.88 billion.

The average of inflation rate reached 3.4 percent and during the last 40 years (1977-2016), inflation rate presented a high volatility. For example, the minimum of inflation rate accounted for -1.7 percent, while the maximum value reached more than 23 percent. Total labors of Viet Nam accounted for 31.1 million people. The average rate of ODA received accounted for 2.3 percent in total GNI. The average value added of agriculture, forestry and fishery sector reached USD10.1 billion (Table 2).

Figure 2. GDP of Viet Nam for 40 years (1977-2016)



Source: Survey data in 40 years (1977-2016)

For 40 years (1977-2016), GDP of Viet Nam tended to go up. For a decade (1977-1986), we can recognize that GDP of this country remained stable at low levels because in this period, Viet Nam has still applied the planned central economy which has presented weaknesses such as low productivity, poor performance and weak competition. After implementing the renovation (*Doi Moi*) in 1986, Viet Nam's economy has presented a moderate growth due to transformation from the planned central economy into the market-oriented economy. Especially, from 2005 onwards, Viet Nam's economy presented a significant increase (Figure 2).

Determinants affecting economic growth of Viet Nam are presented in Table 3. Value of log likelihood is equal to 48.4, the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) account for -1.92 and -110.45, respectively and these imply fitness of the model. Both AIC and BIC are used to measure fitness of the model, which adjust the number of parameters to compare across models. Thus, smaller values of AIC and BIC reflect a better model fit (Table 3).

Table 3. Estimation of factors affecting economic growth in Viet Nam

Variables	Coefficients	OIM Standard Error	z	P- value
LnShare of exports	0.342**	0.138	2.48	0.013
LnShare of imports	-0.241***	0.086	-2.81	0.005
LnValue of FDI	0.008*	0.004	2.04	0.041
LnInflation rate	0.010	0.021	0.47	0.640
LnTotal labors	-0.016	0.010	-1.56	0.119
LnRate of ODA received	-0.000	0.057	-0.01	0.994
LnValue added of agriculture, forestry and fishery sector	1.166***	0.054	21.27	0.000
WTO participation (1=Participate 0=Otherwise)	and -0.029	0.072	-0.40	0.687
ASEAN participation (1=Participate 0=Otherwise)	and 0.148*	0.071	2.06	0.039
Constant	-0.475	0.427	-1.11	0.267
Number of observations	40			
Log likelihood	48.48			
AIC	-1.92			
BIC	-110.45			

Source: Survey data in 40 years (1977-2016)

Note: *, **, and *** mean statistical significance at the 1%, 5%, and 10%, respectively

Share of exports has a positive impact on economic growth. If share of exports rises by 1 percent, economic growth increases by USD340 thousand, *ceteris paribus*. This suggests the importance of exports to Vietnam's economy. By contrast, imports negatively affect economic growth. Specifically, 1 percent of the increase in imports leads to the decline of economic growth by USD241 thousand, *ceteris paribus*. That means Viet Nam's economy tends to go down if imports of goods and services increase (Table 3).

FDI presents a positive influence on economic growth of Viet Nam. If FDI increases by USD1, then economic growth rises by USD8,000, *ceteris paribus* (Table 3). This reflects the important role of FDI in economic growth of Viet Nam. Our results are consistent with Vu (2008), Trinh and Nguyen (2015), and Luu *et al.* (2017).

Value added of agriculture, forestry and fishery sector also has a positive effect on economic growth of Viet Nam. Data showed that if value added of this sector rises by USD1 million, then economic growth increases by USD1.1 million (Table 3). This suggests the importance of agriculture, forestry and fishery sector to Viet Nam's economy since currently this sector still contributes about 17 percent in total GDP and employs nearly 42 percent of total labor forces.

A positive sign of ASEAN participation implies that after participating in the ASEAN, probability in economic growth of Viet Nam is higher than that of non-participation by 14.8 percent (Table 3). This implies positive impacts of regional integration on Viet Nam's economy.

We found that inflation rate is not statistically significant, while Trinh and Nguyen (2015) claimed that inflation rate had a negative relationship with economic growth of Viet Nam. We also found that rate of ODA received is not significant, but Quy (2016) concluded that foreign aid negatively affects economic growth.

5. CONCLUSION AND POLICY IMPLICATIONS

This article seeks impacts of factors on economic growth of Viet Nam in the last 40 years (1977-2016). We found that share of exports, imports, FDI value, value added of agriculture, forestry and fishery sector, and ASEAN participation are statistically significant, while the rest covariates (inflation rate, total labor, rate of ODA received, and WTO participation) are not significant. Share of exports, FDI value, value added of agriculture, forestry and fishery sector, and ASEAN participation presented positive influences on economic growth. However, share of imports negatively impacted on economic growth.

To enhance economic growth, the Government should focus on fostering exports of goods and services, reducing imports of goods and services, encouraging FDI inflows, improving productivity, efficiency, and value of agriculture, forestry and fishery sector, and expanding the cooperation with ASEAN members. However, the target in economic growth should be balanced with implementing social and environmental goals to ensure a sustainable development.

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