

## **Impacts of Macroeconomic Indicators on Economic Growth in Southeast Asia: A Panel Data Analysis**

A. T. Nguyen

**Anh Tru Nguyen**

The University of Newcastle, Newcastle, Australia

### **Abstract**

The article explores influences of macroeconomic indicators on economic growth in six developing countries in Southeast Asia for the past two decades (1997-2016) by employing a panel dataset. In both fixed-effect and random effect models, we found that export value and value added of manufacturing have positive influences on economic growth, while import value presents a negative and significant impact on economic growth in Southeast Asia. Our results also demonstrated that during the period of 1997-2016, economic growth of Indonesia was slower than that of its counterparts. However, in the same period, economic growth of Vietnam was faster than that of other countries in the region. For the fixed-effect model, we found that the unemployment rate presents a positive relationship with economic growth in Southeast Asia. Finally, fiscal and monetary policies are recommended to achieve targets in economic growth and sustainable development in Southeast Asia.

**Keywords:** Indicator; Economic Growth; Panel Data; Southeast Asia.

### **Introduction**

Economic growth is one of the most important targets for countries to achieve the strategy in sustainable economic development (Nguyen and Nguyen, 2017). However, a high growth of economy can lead to negative impacts on the society such as natural resources degradation and widening gaps between the rich and the poor (Tinh, 2012). Moreover, the rise in poverty and the decline in the progress of health and education of a country are results of inconsistent growth of gross domestic product (GDP) (Aziz and Azmi, 2017).

The Association of Southeast Asian Nations (ASEAN) has played an important role in the global economy in recent years. However, this organization has to deal with challenges in the economic integration such as the social and economic gaps between members (OECD, 2013). By 2016, total population, the total value of GDP, and GDP per capita of the ASEAN members accounted for 635 million people, US\$2,559,463 million, and US\$4,034, respectively (ASEAN, 2017). However, countries in Southeast Asia have to face recent issues, consisting of economic uncertainties associated with financial globalization, rapid urbanization, high levels of informal employment, and highly unequal gender division of labors (Cook and Pincus, 2014). Indeed, this region has been identified as one of the most vulnerable regions of the world due to effects of climate change and millions of people are still living in extreme poverty and they must work in climate-sensitive sectors (ADB, 2015).

There are various previous studies on factors affecting economic growth in Southeast Asia in recent years (Iwami, 2001; Anwar and Gupta, 2006; Aung et al., 2017; Mah, 2017; Rahman et al., 2017). However, none of these employs the fixed effect (FE) and random effect (RE) models to estimate influences of macroeconomic indicators on economic growth in Southeast Asia for the past two decades (1997-2016). This period is chosen to study since it covers occurrence of the Asian financial crisis in 1997 and the global financial crisis in 2007-2009. The FE and RE models are used to overcome limitations of the ordinary least square (OLS) model in terms of the linear functional relationship, data distribution, resilience to outliers, and independence

of observations. Therefore, it is necessary to carry out this research to narrow down the gaps of existing studies and more importantly, based on findings, affordable policies are recommended to the governments of Southeast Asian countries to facilitate economic growth.

The rest of this paper is organized as follows. Section 2 presents literature review. Methods are presented in section 3. Section 4 presents results and discussion. Finally, conclusion and policy implications are summarized in section 5.

## **Literature Review**

### **Concepts of economic growth**

According to Robinson (1972), economic growth can be defined as increases in aggregate product, either total or per capita, without reference to changes in the structure of the economy or in the social and cultural value system. Economic growth is a long-run concept, which is subjected to barriers such as excessive rise of population, limited resources, inadequate infrastructure, and inefficient utilization of resources. Economic growth can be obtained by using efficient resources as well as increasing the production capacity of a country (Haller, 2012). Economic growth is the continuous improvement in the capacity to meet the demand for goods and services, which are results of increasing production scale and improving productivity (BIS and DFID, 2011).

### **Empirical studies in factors affecting economic growth**

There are a number of studies in factors affecting economic growth. Sendeniz-Yuncu et al. (2018) examined the relationship between stock index futures markets development and economic growth by employing time-series methods for 32 developed and developing countries. They found that there is a correlation between stock index future markets development and economic growth in middle-income countries with relatively low real per capita GDP and there is a contrast outcome for the countries with high real per capita GDP. Likewise, Suliman et al. (2018) tested the association between foreign direct investment (FDI) and economic growth in the Economic and Social Commission for Western Asia (ESCWA) countries from 1980-2011, by using the Generalized-Method of Moments (GMM). They argued that broad based and sustainable economic growth can be achieved by increasing the share of FDI inwards. A study by Ghartey (2018)

investigated the role of financial development and economic growth in Barbados, Jamaica, and Trinidad and Tobago by applying the stepwise Granger causality method. His results addressed that economic growth has been a piston to facilitate real financial development in the short-run in all three countries. In the long-run, factor loadings present a similar outcome in Jamaica and mixed results for Barbados and Trinidad and Tobago.

Further, Anyanwu (2014) assessed determinants affecting economic growth in Africa for the past three decades (1980-2010). He concluded that domestic investment, net official development assistance (ODA) inflows, education, government effectiveness, urban population, and metal prices positively and significantly influence economic growth of Africa, and unlike China, openness does not positively and significantly affect Africa's growth. A study by Kharusi and Ada (2018) examined the relationship between government external borrowing and economic growth in Oman for the period 1990-2015. Results showed that there is a negative correlation between external debt and economic growth and gross fixed capital positively impacts on growth performance of this country. Similarly, Akram (2017) estimated effects of public debt on economic growth in Sri Lanka for the period 1975-2014 by employing the Autoregressive Distributed lag Model (ARDL) technique. His results stated that public debt positively affects economic growth, but debt servicing presents a negative influence on GDP per capita and investment. Abugamea (2017) assessed effects of education on economic growth in Palestine over the period 1990-2014 by using the ordinary least square (OLS) model. Results demonstrated that education contributes about 11 percent to economic growth of this country. However, secondary school enrollments negative affect economic growth because of the weakness of Palestinian economic sectors and a lower productivity of labor.

There are various studies in factors affecting economic growth in Southeast Asia in recent years. Suryahadi (2012) examined the relationship between poverty reduction and economic growth in Indonesia before and after the Asian financial crisis. He found that growth of the service sector had the largest contribution to poverty reduction in both, rural and urban areas, while the impact of economic growth on poverty reduction did not change between two periods. Likewise, Rahman (2017) estimated impacts of macroeconomic indicators on economic growth in Malaysia for the past four decades

(1976-2016) by using a time-series dataset. Results stated that oil prices, foreign direct investment, and export are significant to affect economic growth, while there is no indication of causality between inflation on any of the variables. A study by Aung et al. (2017) analyzed the relationship between economic growth and environmental pollution in Myanmar over the period 1970-2014. They concluded that there is a positive correlation between carbon dioxide (CO<sub>2</sub>) emissions and GDP in this country. However, trade and financial openness have inverse relationship with CO<sub>2</sub> emissions and this implies that trade liberalization and financial openness may improve the environment quality in Myanmar in the long run. Likewise, Anwar and Gupta (2006) studied the relationship between financial restructuring and economic growth in Thailand for the period of 1998-2003. They found that exports positively impact economic growth and improvements in communication technology enhance finance rather than trade liberalization. Finally, Yang et al. (2015) investigated effects of exports, multinational corporations (MNCs), and the share of state-owned enterprise (SOE) production on economic growth in Vietnam for the past decade (1996-2006). They concluded that exports and the presence of MNCs are positive determinants boosting economic growth. Provinces, where own a higher ratio of SOE production, have higher economic growth.

## **Methods**

### **Data and Sources**

A panel dataset for effects of determinants on economic growth in Southeast Asia is gathered from the database released by the World Bank (WB) and the Food and Agriculture Organization of the United Nations (FAO). Due to limitations in human and financial resources, six developing countries in Southeast Asia, including Indonesia, Malaysia, Myanmar, the Philippines, Thailand, and Vietnam, are chosen for the study. A panel dataset is collected for the past two decades (1997-2016). Thus, a total of 120 observations are entered for data analysis. The panel data is used for this research because of the following advantages: (1) it benefits in terms of obtaining a large sample, giving more degree of freedom, more information, and less multicollinearity among variables; and (2) it may overcome constraints related to control individual or time heterogeneity faced by the cross-sectional data (Baltagi, 2005; Hsiao, 2014).

### Data Analysis

In this study, the fixed effect (FE) model and random effect (RE) model are employed to estimate impacts of determinants on economic growth in Southeast Asia. Panel estimation techniques are used to overcome limitations of the OLS model. If we omit variables and these variables are correlated with other explanatory variables in the model, then the FE model presents advantages. Further, this model assists to control for differences in time-invariant and unobservable characteristics which can affect economic growth. If we have no omitted variables and these variables are uncorrelated with the explanatory variables in the model, then the RE model is useful. In this model, the individual-specific effect is a random variable which is uncorrelated with explanatory variables (Schmidheiny, 2016).

The equation for the FE and RE models can be specified as follows:

$$Y_{it} = \alpha_i + \beta A_{it} + \lambda E_{it} + \varphi F_{it} + \rho X_{it} + \mu G_{it} + \gamma P_{it} + \mathbf{z}R_{it} + \boldsymbol{\omega}D_{it} + \delta_t + \boldsymbol{\varepsilon}_{it} \dots\dots\dots(1)$$

$$(i = 1, \dots, N; t = 1, \dots, T_i) \dots\dots\dots(2)$$

where:

$Y_{it}$  denotes GDP

$\alpha_i$  is the fixed effect

$\beta, \lambda, \varphi, \rho, \mu, \gamma, \mathbf{z}$ , and  $\boldsymbol{\omega}$  are parameters to be estimated

$E_{it}$  represents the export value

$P_{it}$  represents import value

$F_{it}$  represents foreign direct investment

$U_{it}$  represents the unemployment rate

$L_{it}$  is the inflation rate

$A_{it}$  represents the value added of agricultural, forestry, and fishery sector

$M_{it}$  is the value added of manufacturing sector

$D_{it}$  denotes dummy variables

$\delta_t$  presents the trend rate of change over time  $t$

$\boldsymbol{\varepsilon}_{it}$  denotes the error term.

**Table no. 1.** Description of Covariates in the FE and RE Models

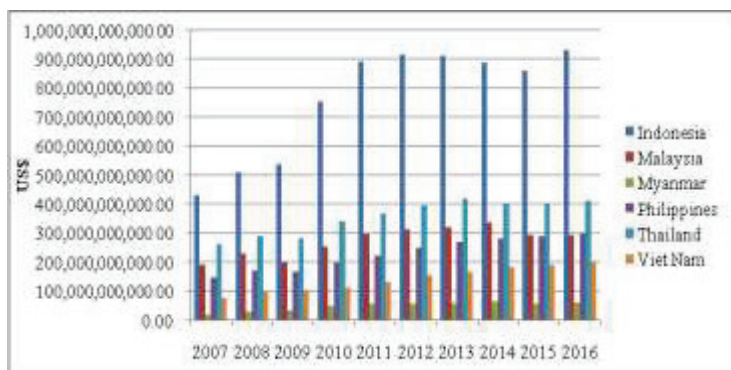
Variable Definitions	Label	Unit	Expected Signs
Dependent variable: GDP	Y	US\$	
Covariates:			
Export value	E	US\$	+
Import value	P	US\$	-
FDI	F	US\$	+
Unemployment rate	U	%	+/-
Inflation rate	L	%	+/-
Value added of agriculture, forestry, and fishery	A	million US\$	+
Value added of manufacturing	M	million US\$	+
Indonesia dummy (1=Indonesia and 0=Otherwise)	D <sub>1</sub>		+/-
Vietnam dummy (1=Vietnam and 0=Otherwise)	D <sub>2</sub>		+/-

*Note: US\$ means United States Dollar*

## Results and Discussion

### Economic growth in Southeast Asia: An overview

In Southeast Asia, Indonesia is predicted to be the fastest growing economy with an average annual growth rate by 6 percent over the period of 2014-2018, followed by the Philippines with 5.8 percent. Economic growth of two countries is the result of rising domestic demand, strong infrastructure spending, and reforms in economic structure. In the same period, real GDP of Malaysia and Thailand is projected to increase by 5.1 percent and 4.9 percent annually, respectively. Both countries should improve productivity to overcome the middle-income trap. The growth of Singapore is predicted to rise by 3.3 percent per annum and this reflects a sustainable development of the economy by increasing productivity and innovation. Real GDP growth of Lao PDR is predicted to increase by 7.7 percent, followed by Cambodia and Myanmar with 7 percent for each. Economic growth of Vietnam is projected to rise by a smaller rate compared to their counterparts due to slower external demand from advanced economies and weak macroeconomic management policies (OECD, 2013).

**Fig. no. 1.** GDP Values of Selected Countries in Southeast Asia

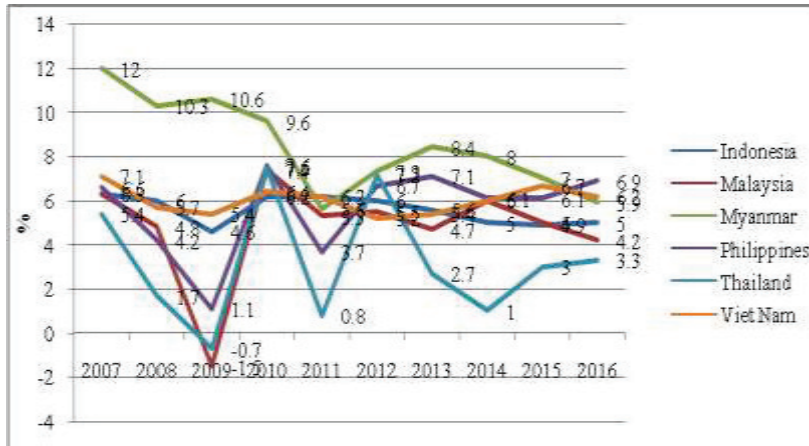
**Source:** World Bank, 2018

GDP of six countries tended to increase over a past decade (2007-2016), in which the strongest value of GDP belongs to Indonesia, followed by Thailand, the Philippines, Malaysia, Vietnam and Myanmar. For example, by 2016, GDP of Indonesia reached more than US\$932 billion, followed by Thailand (US\$411 billion), the Philippines (US\$304 billion), Malaysia (US\$296 billion), Vietnam (US\$205 billion) and Myanmar (US\$63 billion) (Fig. no. 1).

For a decade (2007-2016), annual growth rates of GDP in Southeast Asian countries strongly fluctuated, especially in Malaysia, Thailand, and the Philippines. For instance, starting at 6.3 percent in 2007, GDP growth rate of Malaysia significantly fell to minus 1.5 percent in 2009. In the same period, annual GDP growth of Thailand rapidly dropped by more than 6 percent from 5.4 percent in 2007 to minus 0.7 percent in the next two years. Annual GDP growth of Myanmar decreased by more than a doubled from 12 percent in 2007 to below 6 percent in 2016. Over the period of 2009-2011, annual GDP growth of countries tended to decline because of negative effects from the global financial crisis (Fig. no. 2).



**Fig. no. 2.** Annual GDP growth of selected countries in Southeast Asia



Source: World Bank, 2018

### Influences of determinants on economic growth in Southeast Asia

The average value of GDP of six countries accounts for US\$202 billion. The average values of export, import, and FDI account for US\$86.8 billion, US\$82.1 billion, and US\$5.1 billion, respectively. The average unemployment and inflation rates account for 2.8 percent and 7.3 percent, respectively. The average value added of agriculture, forestry, and fishery account for US\$26.2 billion, while the value of manufacturing reached more than US\$48 billion (Table no. 2).

**Table no. 2.** Characteristics of determinants affecting economic growth in Southeast Asia

Variable	Mean	SD	Min	Max
GDP	2.02e+11	2.08e+11	0	9.32e+11
Export value	8.68e+10	7.13e+10	8.74e+08	2.34e+11
Import value	8.21e+10	6.61e+10	1.91e+09	2.50e+11
FDI	5.15e+09	5.43e+09	-4.55e+09	2.51e+10
Unemployment rate	2.87	1.75	0.5	8.1
Inflation rate	7.35	10.22	-1.7	58.4
Value added of agriculture, forestry, and fishery	26295.72	26654.85	3499.21	125410
Value added of manufacturing	48187.44	47508.18	415.13	196891.9
Indonesia dummy (1=Indonesia and 0=Otherwise)	0.16	0.37	0	1
Vietnam dummy (1=Vietnam and 0=Otherwise)	0.16	0.37	0	1

**Source:** Author's calculation using STATA software, version 14.2

*Note:* SD denotes standard deviation

Results in regression for impacts of macroeconomic determinants on economic growth in Southeast Asia by the FE model are presented in Table no. 3. F-value and P-value account for 21.88 and 0.000, respectively imply the fitness of the model. Overall R-squared is equal to 0.68, which suggests that 68 percent of variation in economic growth can be explained by independent variables in the model.  $U_i$  presents unobserved heterogeneity. Correlation ( $u_i, Xb$ ) is equal to -0.22 implies that unobserved heterogeneity has a negative relationship with explanatory variables in the model.  $\sigma_u$  is equal to 0.46 and this reflects that the estimate of standard deviation between variables is equal to 0.46.  $\sigma_e$  is equal to 1.04 and this implies that the estimate of standard deviation within variables is equal to 1.04.  $\rho$  is equal to 0.16 and this suggests that variation of variance due to the error term accounts for 16 percent (Table no. 3).

**Table no. 3.** Regression of the FE Model

Variable	Coef.	Std. Err.	t	P-value
LogExport value	6.63***	1.08	6.10	0.000
LogImport value	-9.24***	1.16	-7.95	0.000
LogFDI	0.02	0.06	0.31	0.756
LogUnemployment rate	0.89*	0.49	1.81	0.074
LogInflation rate	0.06	0.37	0.17	0.863
LogValue added of agriculture, forestry, and fishery	1.73	2.02	0.86	0.393
LogValue added of manufacturing	3.91	0.87	4.47	0.000
Indonesia dummy (1=Indonesia and 0=Otherwise)	-2.74***	0.99	-2.75	0.007
Vietnam dummy (1=Vietnam and 0=Otherwise)	1.66***	0.34	4.88	0.000
Constant	13.67**	6.57	2.08	0.041
Number of observations	120			
Number of groups	20			
F(9, 91)	21.88			
Prob > F	0.000			
Correlation (u <sub>i</sub> , X <sub>b</sub> )	-0.222			
R-squared:				
Within	0.683			
Between	0.709			
Overall	0.680			
Sigma_u	0.46			
Sigma_e	1.04			
Rho	0.16			

**Source:** Author's calculation using STATA software, version 14.2

**Notes:** Significant at 1%(\*\*\*), 5%(\*\*), and 10%(\*), respectively

Export value, import value, unemployment, value added of manufacturing, Indonesia dummy, and Vietnam dummy variables are statistically significant, while FDI, inflation, and value added of agriculture, forestry, and fishery are not significant. Export value, unemployment and value added of manufacturing have positive impacts on economic growth. By contrast, import value negatively affects economic growth. If export value increases by a US\$, then economic growth rises by 6.6 US\$, ceteris paribus. If unemployment rate grows by one percent, then economic growth increases by 0.8 US\$, ceteris paribus. If value added of manufacturing increases by a million US\$, then economic growth rises by US\$3.9 million, ceteris paribus. If import value increase by a US\$, then economic growth decreases by 9.2 US\$, ceteris paribus. Economic growth of Indonesia is lower than that

of its counterparts by 2.7, *ceteris paribus*. In contrast, economic growth of Vietnam is higher than that of other countries by 1.6, *ceteris paribus*. From 2014 onward, economic growth of Indonesia tended to slow compared to this of its counterparts. For example, by 2016, economic growth of Indonesia accounted for only 5 percent annually, while the growth of the Philippines, Vietnam, and Myanmar accounted for 6.9 percent, 6.2 percent, and 5.9 percent, respectively. On the other hand, inflation rate in Indonesia is higher than that of other countries. For instance, by 2016, inflation rate of Indonesia reached 3.5 percent, while the rate of Malaysia, the Philippines, and Thailand accounts for 2.1 percent, 1.8 percent, and 0.2 percent, respectively. In both the short-run and long-run, inflation rate has a negative and significant impact on the Indonesian economy (Yuliadi and Rose, 2017) (Table no. 3).

Results suggest that economic growth in Southeast Asia over the period of 1997-2016 heavily depends on the growth of exports and the manufacturing sector. A positive relationship between unemployment and economic growth in this region implies that the velocity of population growth is higher than that of economic growth. For example, during a decade (2007-2016), the annual average growth of population in Malaysia accounted for 9 percent, while the annual average economic growth of this country rose by 7 percent. In the same period, population of Myanmar grew by 14 percent, while the GDP rose by 5 percent. Population of Vietnam grew by 14 percent, while the GDP increased by 10 percent. Indeed, results also reflect that the economy of Southeast Asian countries has been transformed from labor-intensive sectors such as agriculture, textile and garment, and handicraft into manufacturing sectors which tend to use automatic technologies, rather than human. High unemployment economies often have low inflation rates. For instance, by 2016, inflation rate of Malaysia, the Philippines, and Thailand accounted for 2.1 percent, 1.8 percent, and 0.2 percent, respectively and these imply a little volatility in goods and service prices in the economy of these countries (Table no. 3).

**Table no. 4.** Regression of the RE Model

Variable	Coef.	Std. Err.	z	P-value
LogExport value	6.44***	0.97	6.63	0.000
LogImport value	-8.76***	1.01	-8.59	0.000
LogFDI	0.01	0.06	0.26	0.796
LogUnemployment rate	0.67	0.47	1.42	0.155
LogInflation rate	-0.22	0.28	-0.78	0.438
LogValue added of agriculture, forestry, and fishery	0.51	0.80	0.64	0.520
LogValue added of manufacturing	3.89***	0.74	5.19	0.000
Indonesia dummy (1=Indonesia and 0=Otherwise)	-1.92***	0.56	-3.39	0.001
Viet Nam dummy (1=Vietnam and 0=Otherwise)	1.68***	0.33	5.09	0.000
Constant	15.99***	4.27	3.74	0.000
Number of observations	120			
Number of groups	20			
Wald chi2(9)	250.20			
Prob > chi2	0.000			
Correlation (u <sub>i</sub> , X)	0 (assumed)			
R-squared:				
Within	0.679			
Between	0.762			
Overall	0.694			
Sigma_u	0			
Sigma_e	1.04			
Rho	0 (fraction of variance due to u <sub>i</sub> )			

**Source:** Author's calculation using STATA software, version 14.2

*Note:* Significant at 1%(\*\*\*)

Wald chi2 and P-value account for 250.2 and 0.000, respectively imply the fitness of the model. Overall R-squared is equal to 0.694, which suggests that 69.4 percent of variation in economic growth can be interpreted by independent variables in the model. U<sub>i</sub> presents unobserved heterogeneity. Correlation (u<sub>i</sub>, X) is assumed to equal to zero and this implies that there is no relationship between unobserved heterogeneity and explanatory variables in the model. Sigma u is equal to zero and this reflects that the estimate of standard deviation between variables is equal to zero. Sigma\_e is equal to 1.04 and this implies that the estimate of standard deviation within variables is equal to 1.04. Rho is equal to zero and this suggests that there is no variation of variance due to the error term (Table no. 4).

Export value, import value, value added of manufacturing, Indonesia dummy, and Vietnam dummy variables are statistically significant, while the rest of the variables are not significant. Export value and value added of manufacturing have positive relationship with economic growth. However, import value negatively influences on economic growth. If export value increases by a US\$, then economic growth rises by 6.4 US\$, *ceteris paribus*. If unemployment rate grows by one percent, then economic growth increases by 0.8 US\$, *ceteris paribus*. If value added of manufacturing increases by a million US\$, then economic growth rises by US\$3.8 million, *ceteris paribus*. If import value increase by a US\$, then economic growth declines by 8.7 US\$, *ceteris paribus*. Economic growth of Indonesia is lower than that of its counterparts by 1.9, *ceteris paribus*. In contrast, economic growth of Vietnam is higher than that of other countries by 1.6, *ceteris paribus* (Table no. 4).

### **Discussion**

In both models, we found that export value and value added of manufacturing have positive influences on economic growth, while import value presents a negative and significant impact on economic growth in Southeast Asia. Our results also addressed that over the past two decades (1997-2016), economic growth of Indonesia was slower than that of its counterparts. However, in the same period, economic growth of Vietnam was faster than that of other countries in the region. For the FE model, we found that the unemployment rate presents a positive relationship with economic growth in Southeast Asia. Results also stated that FDI, inflation, and value added of agriculture, forestry, and fishery are not statistically significant.

Our findings in impacts of exports on economic growth are consistent with conclusions of Yuliadi and Rose (2017), Rahman (2017), and Yang et al. (2015). In addition, results in the relationship between inflation and economic growth are homogeneous to the argument of Rahman (2017). However, we found that FDI is not statistically significant, while Yuliadi and Rose (2017) and Rahman (2017) argued that FDI had a positive impact on economic growth in Indonesia and Malaysia. Differences in outcomes can be explained by differences in selection of research sites and methodologies. In terms of research sites, their studies are carried out in the national level (Indonesia and Malaysia), while our research focuses on six countries in

Southeast Asia. For methodologies, we employ the FE and RE models, while Yuliadi and Rose (2017) used the error correction model, and Rahman (2017) employed unit root, stationary, and co-integration tests to estimate effects of determinants on economic growth.

### **Conclusion and Policy implications**

The article seeks impacts of macroeconomic indicators on economic growth in six developing countries in Southeast Asia for the past two decades (1997-2016) by employing a panel dataset. In both models, we found that export value and value added of manufacturing have positive influences on economic growth, while import value presents a negative and significant impact on economic growth in Southeast Asia. Our results also demonstrated that during the period of 1997-2016, economic growth of Indonesia was slower than that of its counterparts. However, in the same period, economic growth of Vietnam was faster than that of other countries in the region. For the FE model, we found that the unemployment rate presents a positive relationship with economic growth in Southeast Asia. Results also stated that FDI, inflation, and value added of agriculture, forestry and fishery are not statistically significant.

Southeast Asian countries are not exceptional cases in effects of the Asian financial crisis in 1997 and the global financial crisis in 2007-2009. Therefore, the fiscal policy and monetary policy should be considered to achieve targets in economic growth and sustainable development in Southeast Asian countries. For example, exports and the manufacturing sector should be facilitated because these are drivers to enhance economic growth. However, imports should be either reduced or substituted by domestic goods and services to ensure economic growth. Budget balances and low public debt are key components to ensure effectiveness of the fiscal policy. During the Asian financial crisis, the fiscal policy of Indonesia and the Philippines presented weaknesses and as a consequence, these countries have to face sovereign debt problems and restructured their debt. Thailand and Malaysia also presented signs of weaknesses. Government spending of Malaysia was positive before the Asian financial crisis, but it has turned to negative value since then (Tang et al., 2010). Clearly, we can recognize the importance of exchange rate flexibility and credible policy frameworks after the Asian and global financial crisis. Emerging

economies face obstacles due to their underdeveloped financial systems and vulnerability to volatile international capital flows (Morgan, 2013).

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