

The Impact of Globalization on Economic Growth in ASEAN

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Abstract. The establishment of ASEAN (Association of Southeast Asian Nations) as one of the most highly-integrated regional organizations is the reflection of the process of globalization. This high integration is characterized by international cooperation in economic, social and political policies. One of the positive impacts of globalization itself is the increasing economic growth. However, this economic growth is disproportionately distributed among countries. In Southeast Asia, this is shown by the fact that the rising globalization in ASEAN is not always followed by the increase in economic growth. By using the KOF Index of Globalization that covers three main dimensions: economic integration, social integration, and political integration, this research paper looked into the impact of globalization on economic growth. Based on the panel data of six developing countries in ASEAN from 2006 to 2012, this research paper found that the overall index of globalization had positively and significantly impacted the economic growth in the region. Economic and political globalization also positively impacted the economic growth. However, the social globalization did not affect the growth. Inflation, infrastructure, quality of education, technological preparedness and government spending also had positive impact on economic growth.

Keywords: globalization, growth, openness, panel data

Abstrak. Pembentukan ASEAN (Association of Southeast Asian Nations) sebagai salah satu kawasan berintegrasi tinggi merupakan cerminan proses globalisasi. Integrasi tinggi ini dicirikan oleh adanya kerjasama internasional dalam kebijakan ekonomi, sosial dan politik. Salah satu dampak positif dari globalisasi adalah peningkatan pertumbuhan ekonomi. Namun hal ini tidak terdistribusikan secara merata pada negara-negara di dunia yang ditunjukkan dengan peningkatan tingkat globalisasi ASEAN tidak selalu diikuti oleh peningkatan pertumbuhan ekonominya. Penelitian ini menggunakan indeks globalisasi KOF yang meliputi tingkat globalisasi ekonomi, sosial dan politik untuk melihat pengaruh globalisasi terhadap pertumbuhan ekonomi. Dengan menggunakan data panel dari enam negara anggota ASEAN pada tahun 2006-2012, penelitian ini menemukan bahwa tingkat globalisasi mempunyai dampak yang positif secara signifikan terhadap pertumbuhan ekonomi. Tingkat globalisasi ekonomi dan politik juga ditemukan berpengaruh positif terhadap pertumbuhan ekonomi, namun globalisasi sosial tidak mempunyai dampak yang signifikan. Inflasi, infrastruktur, kualitas pendidikan, kesiapan teknologi dan belanja pemerintah juga memiliki dampak yang positif terhadap pertumbuhan ekonomi.

Kata kunci: globalisasi, keterbukaan, panel data, pertumbuhan

INTRODUCTION

Globalization refers to the increasing integration between the different actors (states, societies) in the world. Globalization is the process that increasingly merges the economy of many countries as well as encouraging global economy and globalizes the formulation of economic policies. In addition, globalization also refers to the appearance of global culture that means more and more people consume similar goods and services in many countries as well as using the same business language. Todaro and Smith (2006) stated that the economic definition of globalization as the increasing openness of the economics of one nation toward international trade, international flow of funds, and foreign direct investment. Dreher (2006) divided globalization into three aspects: economics, social, and political. The globalization in the economic aspect or economic globalization is the term that is used to define the increasing internationalization of goods and services market, financial system, companies, and industry. The cultural globalization is deemed as

the cultural convergence among countries. Last but not least, the political globalization is the convergence of political systems.

One of the characteristics of globalization is the existence of trade openness. The theory of growth stated that there was a positive correlation between trade openness and economic growth in the long term. In the traditional model of international trade, the trade openness in the autarky condition increases the production value in economy. In other words, the openness increases the efficiency of economy allocation. In the Ricardian model, with the increasing trade, countries that specialize in production will gain the advantage in terms of manpower productivity in comparison to other countries that do not have specialty, because these countries produce goods more effortlessly, while other experiences trouble. In the Heckscher Ohlin model, countries export goods that utilize their 'abundant' factor more intensively. With the ever-increasing economic openness, there is a shift in resources to the sector that utilize abundant factor and thus the total value of production increases (Deluna and Chelly, 2014).

The process of globalization is growing in the past few decades. This is characterized by the increasing number of cooperation/integrated relations between countries in the world. The formation of cooperation groups between countries will benefit the member countries that can be seen from the free trade among countries as well as smoother capital and manpower flow between countries because the obstacles are keep being eliminated. The formation of ASEAN (the Association of Southeast Asian Nations) as a highly integrated regional economy is one of the reflections of the globalization process.

The countries in the world, particularly the members of ASEAN, have experienced an increasing level of KOF (Konjunkturforschungsstelle) globalization index. The index score that closer to 100 indicates that the globalization degree that is implemented by a nation is also higher. Table 1 shows that the ASEAN countries experience an increase in the KOF index score in 2012 in comparison to 2006. This indicates that the development of the globalization implementation in these countries was increasing.

There are some arguments from various research papers on the positive impact of globalization; one of them is the increase in economic growth. This argument is supported by the research papers that were conducted by Pelegrinova and Lancy (2013), Dreher (2006), Zhuang and Koo (2007), Kakar et al. (2011), Rao and Vadlamannati (2009), and Deluna and Chelly (2014), which found that globalization had a positive impact on the economic growth of countries in the world.

However, although globalization seems to have a positive impact on economic growth, the impact from the increase in income and economic growth is not equally distributed on every part of the world both in countries or regions within the countries. The research papers that were conducted by Bergh and Nilsson (2010); Ezcurra and Rodriguez-pose (2013), as well as Atif et al. (2012) found that the existence of economic liberalization as an impact of globalization tends to increase the income inequality.

From Table 1, we can see the development of globalization, economic growth, and income inequality from 2006 to 2012 in several ASEAN countries. While these ASEAN countries experienced an increase in the level of globalization, but it was not always followed with the growth and increase in Gross Domestic Product (GDP). The percentage of economic growth in both Cambodia and Vietnam is not larger in comparison to the seven years prior. In 2006, the GDP of Cambodia was at 10.77 %, which decreased to 7.31% in 2012, while the GDP of Vietnam was at 6.97% in 2006, which decreased to 5.24% in 2012.

Furthermore, in terms of income inequality, Table 1 showed that in general ASEAN countries experienced a decrease in the Gini index, which indicates that the income inequality was declining. However, this is not applicable for Indonesia and Malaysia, which instead experienced an increase in the Gini index/income

Table 1. The Development of Globalization, GDP growth, and Income Inequality in several ASEAN countries

Country	Year	Globalization (Index KOF)	GDP Growth (%)	Gini Index
Cambodia	2006	47.00	10.77	41.57
	2012	49.17	7.31	36.00
Indonesia	2006	57.50	5.50	35.70
	2012	57.39	6.26	41.00
Malaysia	2006	77.41	5.58	46.02
	2012	78.79	5.64	46.20
Thailand	2006	62.67	5.09	42.35
	2012	71.02	7.67	39.40
Philippines	2006	58.45	5.24	45.85
	2012	57.12	6.80	43.00
Vietnam	2006	43.64	6.97	35.80
	2012	49.12	5.24	35.60

Source: World Development Indicator (2015), ETH Zurich (2015)

inequality in comparison to the seven years prior. Both Indonesia and Malaysia experienced an increase in the level of globalization and economy, but at the same time also experienced an increase in income inequality.

Based on Table 1, it can be concluded that the level of globalization that is implemented by a country is not always followed with a high level of economic growth. In addition, the increase in globalization and economy is also not always followed with income equality. Currently, the globalization is unavoidable for countries in the world, which both directly and indirectly affect economic growth. However, globalization is also considered as a problem when the country suffers because the process of globalization triggers more economic problems and income inequality. According to Nissanke and Thorbecke (2010), income inequality decrease growth through various conditions. One of the conditions, as an example, is the diffusion social and political instability that trigger uncertainty and low investment as well as high transaction cost.

Based on the description of background and problem formulation, the purpose of this research is first and foremost to analyze the development of globalization level and economic growth in ASEAN. The second purpose of this research paper is to observe the influence of the level of globalization on economic growth in ASEAN countries. This research paper is expected to provide information and input in the policymaking of the effort to increase economic growth in ASEAN. The author also expects this research paper to provide contribution to the science as well as becoming references for further research on globalization level and economic growth.

RESEARCH METHODS

The type of data in this research is secondary data. The secondary data takes the form of panel data between 2006 and 2012 on six countries in ASEAN that comprise of Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. The data that is used in this research paper is obtained from various sources such as World Bank, World Economic Forum and ETH Zurich. The data compiling is executed by using Microsoft Office Excel 2013 and Eviews 6. The analysis method of this research paper comprises of descriptive analysis and data panel analysis with fixed effect method. The descriptive analysis is used to analyze the development of globalization level and economic growth in ASEAN.

This research paper used the gross domestic product (GDP) per capita to illustrate the economic growth of a country. The KOF globalization index is used to illustrate the globalization level that is implemented by a country. The KOF (Konjunkturforschungsstelle) globalization index is one of the standards that are used to observe the level of globalization implemented by a country. Globalization index is built from each variable (Table 2) and transformed into an index from the scale of 1 to 100, where 100 is the maximum score for a variable in 1970-2012.

This research paper also used the explanatory variables that are believed to influence economic growth. These variables consist of inflation rate, quality of infrastructure, quality of education, preparedness of technology, and government’s spending. The variable of education quality is the indicator of human capital. The preparedness of technology and infrastructure is used as the indicator of the advancement of technology. The variable is used in accordance with the endogenous growth model. Inflation is the level of sustainable change in terms of prices with the increase of inflation rate is believed to decrease output level. The government’s spending is one of the main components of GDP in addition to consumption, investment, and net exports. When government changes its spending, the change will influence the demand toward the output of economic goods and services.

The analysis method that is used in this research paper comprises of descriptive analysis and data panel analysis with fixed effect method. The data panel analysis with fixed-effect method is used to observe the influence of globalization level on the economic growth of ASEAN. The formula assumption to examine the influence of globalization level on economic growth is shown on formulation (1) and formulation (2). In formulating the formula assumption, the author adopted Dreher (2006) and then modified it and adding several explanatory variables in relation to economic growth. The formulations are below:

$$\ln\text{GDPCit} = \alpha_0 + \alpha_1\text{KOFit} + \alpha_2\text{INFLit} + \alpha_3\text{INFRit} + \alpha_4\text{EDUit} + \alpha_5\text{TECHit} + \alpha_6\text{GOVit} + \text{eit} \dots\dots\dots(1)$$

Table 2. KOF Globalization Index

Indicator and variable	Weights
Economic Globalization	[36%]
Actual Flow	(50%)
Trade (percentage of GDP)	(22%)
Foreign Direct Investment, stocks (percentage of GDP)	(27%)
Portfolio investments (percentage of GDP)	(24%)
Income payment to foreign nationals (percentage of GDP)	(27%)
Obstacles	(50%)
Hidden import barriers	(24%)
Mean tariff rate	(28%)
Taxes on international trade (percentage from current revenue)	(26%)
Capital Account Restrictions	(23%)
Social Globalization	[38%]
Data on personal contact	(33%)
Phone traffic	(25%)
Transfer (percentage of GDP)	(3%)
International tourism	(26%)
Population of foreigners (percentage from population)	(21%)
International letter (per capita)	(25%)
Data on flow of information	(35%)
Internet (per 1000 people)	(36%)
Television (per 1000 people)	(38%)
Newspaper trade (percentage from GDP)	(26%)
Data on cultural measurement	(32%)
Number of McDonald’s (per capita)	(44%)
IKEA store (per capita)	(44%)
Book trade (percentage from GDP)	(11%)
Political Globalization	[26%]
Number of ambassadors in a country	(25%)
Membership on international organization	(27%)
Participation on United Nations Security Council	(22%)
International treaties	(26%)

Source: Dreher 2006, ETH Zurich 2015

$$\ln\text{GDPCit} = \beta_0 + \beta_1\text{KOF1it} + \beta_2\text{KOF2it} + \beta_3\text{KOF3it} + \beta_4\text{INFLit} + \beta_5\text{INFRit} + \beta_6\text{EDUit} + \beta_7\text{TECHit} + \beta_8\text{GOVit} + \text{eit} \dots\dots\dots(2)$$

The formulation (1) examines the influence of globalization level overall on economic growth and formulation (2) examines the influence of globalization level from the economic, social, and political aspects on economic growth. KOFit is the overall globalization index. KOF1it, KOF2it, and KOF3it are the sub-index that consists of economic, social, and political globalization. GPCit is the economic growth approach that is GDP per capita with US Dollar as the unit. Other variables that are believed to influence economic growth consists of inflation (INFLit) and government's spending (GOVit) with percent as the unit, the quality infrastructure (INFRit), the preparedness of technology (TECHit), and the quality of education (EDUit) with index as the unit. ϵ_{it} is error term, α_0 and β_0 are intercepts and α_n and β_n shows estimated the parameter of co-efficiency ($n= 1, \dots, 8$).

RESULT AND DISCUSSION

One of the roles of the government in supporting the The development of globalization level according to KOF globalization index can be seen on figure 1. During 2006-2012, the globalization level of the developing countries in ASEAN increased. However, the globalization level on the average decreased in 2007 and 2008. Malaysia is the country with the highest KOF globalization index, followed by Thailand, Indonesia, and the Philippines, as well as Vietnam and Cambodia. According to Zuang and Koo (2007), a country with the highest globalization level indicates

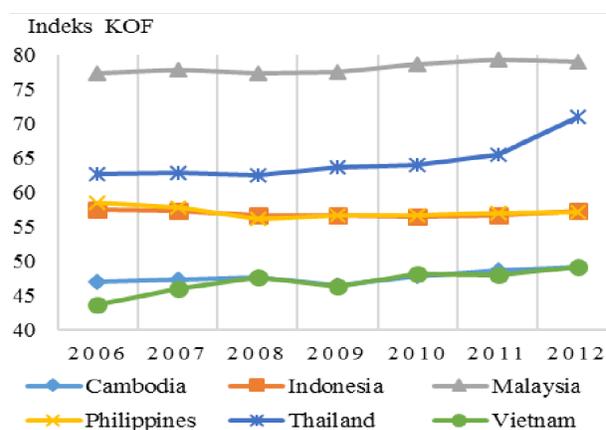


Figure 1. The development of KOF globalization level of ASEAN countries in 2006-2012

Source: ETH Zurich 2015, compiled

that the country is the most competitive among other countries. Therefore, Malaysia can be said as the most competitive country in comparison to Cambodia, Indonesia, the Philippines, Thailand, and Vietnam.

The globalization level of these developing countries in ASEAN is relatively low when compared to the globalization level of other countries in the world. This can be observed on Table 3 that shows the position of several countries in the world in the context of globalization level. On the overall globalization level index, Ireland is the country with the highest

Table 3. The globalization level position of several countries in the world in 2012

Position	Country	Globalization Index	Position	Country	Economic Globalization
1.	Ireland	91,30	1.	Singapore	95,69
2.	Netherlands	91,24	2.	Ireland	92,59
3.	Belgium	91,00	3.	Luxembourg	91,12
4.	Austria	90,24	4.	Netherlands	90,33
5.	Singapore	87,49	5.	Malta	90,31
6.	Sweden	86,59	6.	Belgium	87,99
7.	Denmark	86,30	7.	UAE	87,77
8.	Portugal	86,29	8.	Estonia	87,39
9.	Switzerland	86,04	9.	Hungary	86,35
10.	Finland	85,64	10.	Finland	84,77
ASEAN countries					
26.	Malaysia	79,05	24.	Malaysia	80,30
41.	Thailand	71,02	46.	Thailand	71,55
86.	Indonesia	57,39	69.	Cambodia	63,62
88.	The Philippines	57,13	71.	Vietnam	62,64
119.	Cambodia	49,17	84.	Indonesia	59,65
120.	Vietnam	49,17	108.	The Philippines	54,57

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Position	Country	Social Globalization	Position	Country	Political Globalization
1.	Austria	91,54	1.	Italy	97,52
2.	Singapore	90,83	2.	France	97,51
3.	Switzerland	90,80	3.	Austria	96,76
4.	Netherlands	90,53	4.	Belgium	96,51
5.	Ireland	90,50	5.	Spain	96,17
6.	Belgium	90,05	6.	United Kingdom	95,93
7.	Cyprus	88,41	7.	Sweden	94,86
8.	Canada	88,36	8.	Brazil	94,23
9.	Denmark	86,79	9.	Netherlands	93,52
10.	France	86,50	10.	Egypt	93,46
ASEAN countries					
34	Malaysia	74,65	35	Indonesia	87,57
63	Thailand	62,93	42	The Philippines	85,34
129	Philippines	40,04	52	Malaysia	83,70
141	Indonesia	34,36	56	Thailand	81,99
150	Vietnam	31,64	116	Cambodia	61,67
164	Cambodia	26,74	129	Vietnam	55,78

Source: ETH Zurich (2015)

globalization level at 91.30. Singapore, one of the ASEAN countries with the highest revenue, sits at the 5th position with the globalization index at 87.49. Among the developing countries in ASEAN, Malaysia is the country with the highest level of globalization and ranked 26th. Meanwhile, Thailand is at 41th, followed by Indonesia at 86th and the Philippines at 88th, Cambodia and Vietnam each at 119th and 120th.

In the level of economic globalization, Singapore is on the top rank as the country with highest level of economic globalization at 95.69. Malaysia is at 24th in the world yet holds the first position among other developing countries in ASEAN. Malaysia also has the highest level of social globalization and ranked 34th in the world. Indonesia is the country with the highest level of political globalization among other developing countries in ASEAN at 35th in the world. Different globalization levels from the three globalization components in each countries illustrate which aspects that these country prioritized. Indonesia, for example, is ranked 84th in terms of economic globalization and 141th in social globalization, but possess a very high level in political globalization. This indicates that Indonesia gave priority on the political aspects when compared to economic and social aspects. These ASEAN countries could increase the level and the quality of globalization from the economic, social, and political aspects in relation to the commitment to implement ASEAN Community in 2015.

Figure 2 indicates the growth of GDP per capita in 2006-2012. Based on Illustration 2, Malaysia

is the country with relatively highest revenue per capita among other countries, followed by Thailand, Indonesia, The Philippines, Vietnam, and Cambodia. In 2009, several countries such as Cambodia, Malaysia, The Philippines, and Thailand on the average experienced a decrease in revenue per capita from 2008. The declining globalization level and revenue per capita, among others, was caused by the global crisis that stemmed from the supreme mortgage financial crisis in the United States in 2008. According to Huwart

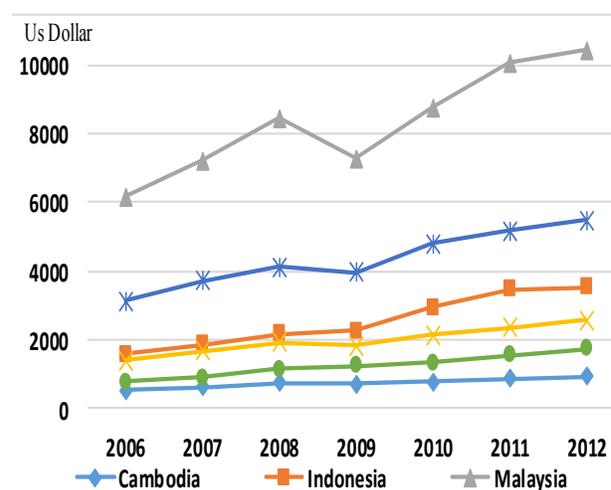


Figure 2. The Development of GDP per Capita of several ASEAN countries in 2006-2012

Source: World Bank 2015, compiled

and Verdier (2013), the financial crisis in 2007-2008 influenced many countries in the world at the same time and triggered global economy crisis. This crisis seriously affected financial globalization where on a certain level was strengthened with the risk in relation to banking activity and financial market that led to countries' financial imbalance.

In order to observe the influence of globalization level on the economic growth in ASEAN, firstly the author conducted chow examination to discover the best model with pooled least squares or fixed effect. The results of the chow examination indicate that the best model would be the fixed-effect method. The second step was to conduct econometric criteria examination to find out whether the model was free from multicollinearity, autocorrelation, and heteroscedasticity problems and followed by normality test.

The results of the multicollinearity examination on the two models indicated that there was no correlation co-efficiency that was bigger than R2. Therefore, it can be concluded that there were no significant multicollinearity problem. The next step was to conduct the autocorrelation examination with observing the Durbin-Watson score, where the score of Durbin-Watson statistics on the first model was between $dU(1,84) < DW(2,01) < 4-dU(2,15)$ that indicated there were no autocorrelation problem. Meanwhile, for the second model, the score of Durbin-Watson statistics was at $dL(1,09) < 1,96 < dU(1,98)$ that meant there were no decision whether there were autocorrelation or not. The heteroscedasticity examination could be seen on the sum squared resid score where this fixed-effect model already used the GLS-SUR (seemingly unrelated regressions) weighting that could overcome

the problems of autocorrelation and heteroscedasticity on models (Timm, 2002; Juanda, 2009). The normality test indicated the score of Jarque-Bera probability that was insignificant, the probability score was larger from $\alpha = 5\%$ and thus it can be concluded that this model would distribute normally.

The R2 score on the two formulas indicated a variety in economic growth that can be explained by free variables of 99.47 % for the formula (1) and 99.93% formula (2), while the rest was by other variables outside the model. The R2- Adjusted of formula (2) is bigger than formula (1) so therefore in conducting interpretation on other variables that influence economic growth using results from formula (2) regression.

The globalization index variable significantly and positively influenced the growth of GDP per capita in ASEAN countries on real degree 1%. This matches the hypothesis that stated how globalization would give positive impact toward economic growth. The results of model estimation showed 0.03 score on co-efficiency, which indicates that the increase of globalization level index overall as big as 1 unit will increase the growth of GDP per capita of 0.03% or ceteris paribus. This is in line with the research that was conducted by Dreher (2006); Zuang and Koo (2007) that found that globalization would have an impact on the increase of economic growth. Leita0 (2012) also found that economic growth positively correlate with every component of globalization index.

After conducting the estimation in order to discover the impact of overall globalization level toward economic growth, the next step would be an estimation to observe the impacts of each globalization aspect on economic growth. The globalization aspects comprise

Table 4. The Estimation Results of the Influence of Globalization Level on the Economic Growth of ASEAN

Variable	Model 1		Model 2	
	Co efficiency	Probability	Co efficiency	Probability
The level of overall globalization	0.029430	0.0000**		
The level of economic globalization			0.009980	0.0000**
The level of social globalization			0.001823	0.1237
The level of political globalization			0.071568	0.0000**
Inflation rate	0.006811	0.0000**	0.006048	0.0033**
The quality of infrastructure	0.225552	0.0000**	0.322023	0.0000**
The quality of education	0.160154	0.0000**	0.072439	0.0086**
The preparedness of technology	0.256197	0.0000**	0.056906	0.0299*
Government's spending	0.088152	0.0000**	0.072110	0.0000**
R-squared		0.994688		0.999275
Adjusted R-squared		0.992740		0.998939
Prob(F-statistic)		0.000000		0.000000
Durbin-Watson stat		2.012950		1.921305
Sum squared resid (weighted)		32.58582		29.97630
Sum squared resid (unweighted)		0.418901		0.219065

Notes : **Significant on real degree 1%; *Significant on real degree 5

of economic, social, and political globalization. The economic globalization index was found to be significantly and positively influenced the growth of GDP per capita on real degree of 1% with the co-efficiency score of 0.01. This means that an increase in the index of economic globalization level of 1 unit will increase the growth of GDP per capita of 0.01%, *ceteris paribus*. This matches the research hypothesis where an increase in the economic globalization level will encourage economic growth of ASEAN. This is also in line with the research conducted by Ying et al. (2014) that found economic globalization to positively influence the economy of ASEAN countries in 1970-2008.

The variable of political globalization index was found to significantly and positively influence the growth of GDP per capita on real degree of 1% with 0.07 of co-efficiency. This means that for every increase of the index of political globalization level of 1 unit will increase the growth of GDP per capita of 0.07%, *ceteris paribus*. This is in line with the research hypothesis where the level of political globalization will increase economic growth. However, this is not fitting with the research conducted by Ying et al. (2014) that found political globalization to not significantly influence the economic growth of ASEAN.

The variable of social globalization was found to be not influential toward economic growth. However, the research conducted by Ying et al. (2014) found that social globalization negatively affected economic growth. The social globalization level that was found to be not significantly influential toward economic growth could be because the level of social globalization was very low. The ASEAN member countries, in general, prioritize their economic and political interests, as seen from the comparison of the three globalization sub-index. The results of this research also indicated that economic and political globalization was more effective than social globalization in increasing the economic growth of ASEAN countries. The governments of ASEAN countries could be more active in promoting international trade and FDI as well as increasing the participation in international organizations. However, ASEAN countries still have the chance to increase the social globalization level. The increase on social globalization could be done with policies to increase tourism activities to ASEAN countries and also increasing the spread of Internet access and increasing the development of international books that also indirectly affect the quality of education.

The variable of inflation rate significantly and positively affected the growth of GDP per capita on the degree of 1 percent with 0.01 co-efficiency. This means that increase of 1 percent in inflation will increase the growth of GDP per capita as big as 0.01 %, *ceteris paribus*. This is not in line with the research hypothesis that inflation will have negative impact on economic growth. However, this is in line with the findings of Mallik and Chowdhury (2001) that there was a long-term positive connection between GDP growth and inflation for several South Asian countries such as

Bangladesh, India, Pakistan and Sri Lanka. The results of the research conducted by Mallik and Chowdhury (2001) showed that medium level of inflation would be very much beneficial toward growth.

The relation between the price level and output/economic growth can be illustrated with the curve balance of the relation between aggregate supply AS and aggregate demand AD, where with the assumption of AS curve that is fixed, the changes in the market balance of goods and services as well as money that will change AD curve (such as government's spending and the increase in the nominal value of money) will change the new AD-AS balance, where the output increase in parallel with the increasing level of price. The inflation rate that influence economic growth positively can also be observed from unemployment rate. The Phillips curve theory explains the negative relation between inflation and unemployment rate. The higher the unemployment rate, the lower the rate of wage inflation. Dornbush et al. (2008) explained this with the assumption that the economy is in the balance condition with stable prices and natural employment rate. When there was an increase of the circulation of money, both prices and wages, the economy returns to balance. The Phillips curve shows that with the increase of wages, the unemployment rate will decrease. This will trigger the level of wages to move higher. The wages will start to increase, as well as prices, and in the end the economy will return to the full employment rate from output and unemployment.

The increase of the quality of infrastructure index of 1 unit will increase the growth of GDP per capita of 0.32%, *ceteris paribus*. According to Bottini et al. (2015), infrastructure directly influence the aggregate output through contribution toward GDP and as additional input on the production process for other sectors. Indirectly, the increase in the productivity of the total production factor through reducing transportation cost and other costs will allow a more efficient input utilization. Therefore, infrastructure can be considered to be the additional factor for economic growth.

Dissou and Didic (2013) stated that the maintenance of the quality of public infrastructure will positively impact the growth through the enhancement of durability of private capital. The increase of the maintenance of government infrastructure allow private sector to conduct economization for their capital maintenance and allocate their investment capability to other use that increase the growth impact. Decent infrastructure also found to be able to increase the access to health and education, which makes the impact of infrastructure toward growth is getting bigger.

The variable of quality of education was found to be significantly and positively influenced the growth of GDP per capita on real degree of 1% with 0.07 co-efficiency. This means that for every increase of the quality of education index of 1 unit, it will increase the growth of GDP per capita of 0.07%, *ceteris paribus*. This is in line with the research hypothesis that the quality of education positively influences economic

growth. This is also in line with the research conducted by Dreher (2006) as well as Zuang and Koo (2007) where secondary and tertiary education positively correlates to the economic growth.

Education is important in a country development. Education provides qualitative and quantitative human capital that is required in development process. With production and the spread of knowledge function, education encourages countries to follow and develop modern manufacturing technology that in the end is used for production process. Education is one of the important components of human capital, the improvement in terms of education status is one of the sources of people's income increase. The increase of education level is one of the effective policy instruments to decrease unemployment and poverty especially in developing countries (Mercan and Sezer, 2014).

The variable of technological preparedness significantly and positively influence on the real degree of 1% toward the growth of GDP per capita of 0.06. This means that for every increase of technological preparedness index of 1 unit, it will increase the growth of GDP per capita of 0.06%, *ceteris paribus*. This is in line with the research hypothesis that is the preparedness in technology positively influences economic growth. The same thing is found by Branch (2010) where the variable of technological preparedness was found to be significantly and positively influential toward economic growth per capita. In the development of the global world nowadays, technology becomes more and more important for businesses to increase their productivity. Among main sources of foreign technology, foreign direct investment (FDI) plays important role, especially for countries with lower levels of technological preparedness (WEF 2015).

Mankiw (2007) stated that one of the policies to encourage economic growth is to encourage advancement in technology. Many public policies can be designed to encourage advancement in technology. Most of the policies can encourage the private sector to channel resources to innovation in technology. Governments can also be more active in promoting certain industries that are the keys for rapid advancement in technology.

The variable of government's spending significantly and positively influenced the growth of GDP per capita on the degree of 1% with 0.07 co-efficiency. This means that for every increase of government's spending of 1 percent will increase the growth of GDP per capita of 0,07%, *ceteris paribus*. This matches the research hypothesis where the government's spending will increase economic growth. Enache (2009) found that fiscal policy could increase GDP growth by increasing government's spending on productive sectors.

The government's spending could increase economic growth through fiscal policy with the allocation of government's spending to build infrastructure that is required by the people as well as policies in development. Moudud (1999) stated that government's spending could be divided into consumption spending (spending on goods and services) and spending on public investment such as spending on infrastructure,

education, public health, and research development, as well as other spending that encourage economic growth. A number of empirical studies found that the increase in public investment significantly decrease the cost and increasing the profits of business economy, so therefore increasing long-term growth.

CONCLUSION

ASEAN experienced an increase in the globalization level between 2006 and 2012. Malaysia was the country with the highest globalization level and GDP per capita among other developing countries in ASEAN. The overall globalization level, economic and political globalization was found to be positively influential toward economic growth. Other variables that positively influence economic growth were inflation rate, the quality of infrastructure, the preparedness in technology, the quality of education, and government's spending. However, the social globalization level was found to be not significantly influential toward economic growth.

Based on both the development and the position of globalization level of ASEAN countries that still relatively low, the increase in globalization level especially in the aspects of economic and social globalization can still be conducted. The increase in the level of economic globalization can be done with the increase in terms of actual flow such as the increase of trade volume, FDI, and portfolio investment as well as reducing barriers and taxes in international trade.

The increase in social globalization can be done with the increase in international tourism, the improvement of infrastructure in communications such as Internet that will increase the Internet usage in the society. The increase in economic and social globalization in the end will increase the GDP of ASEAN countries.

The increase in the economic growth in ASEAN can be done through the improvement of the level of economic globalization, the level of political globalization, the preparedness of technology, the quality of infrastructure, the quality of education, and government's spending, as well as the management of inflation rate.

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