

CHAPTER IV

FINDINGS AND DISCUSSION

In this chapter we will discuss about demographics factors on foreign direct investment in five developing ASEAN Countries. The discussion covers statistical analysis, econometric analysis and economic analysis based on research estimation results. These are the following results of a Demographic factors on foreign direct investment in five developing ASEAN Countries.

4.1 Descriptive Analysis

4.1.1 Foreign direct investment in 5 ASEAN Countries from 2008-2015

Foreign direct investment is an investment made by a firm or individual from one country into business in another country. In this context, FDI scale is a country or a nation. FDI plays an important role for gross domestic product growth rate, larges FDI inflows are needed for a country to achieve a continuous economic growth. A high amount of FDI in one country bring advantages of advance technology, management practices, and assured markets. Foreign direct investment can be a good measurement of economic growth in one country.

Graph 4.1 Foreign direct investment in 5 ASEAN Countries 2008-2015

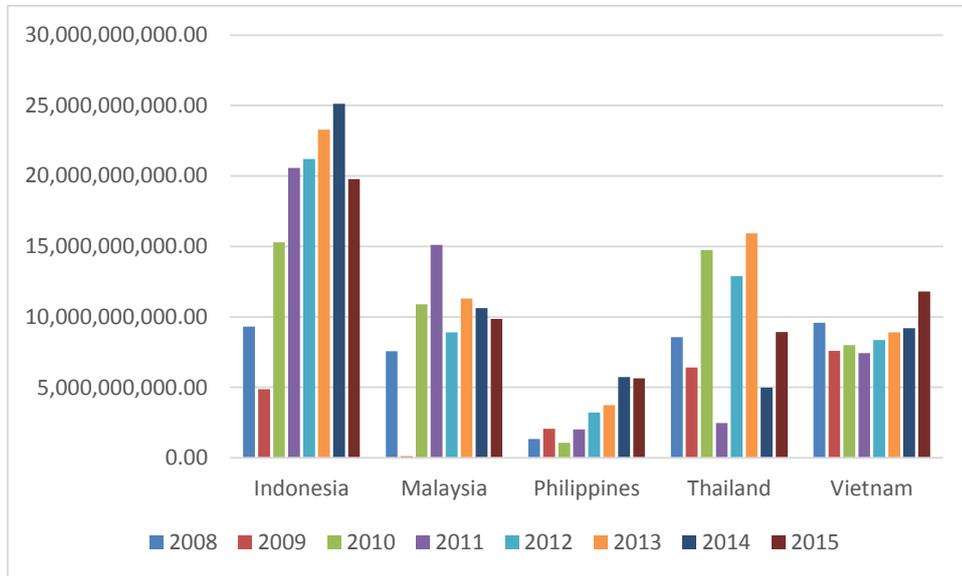
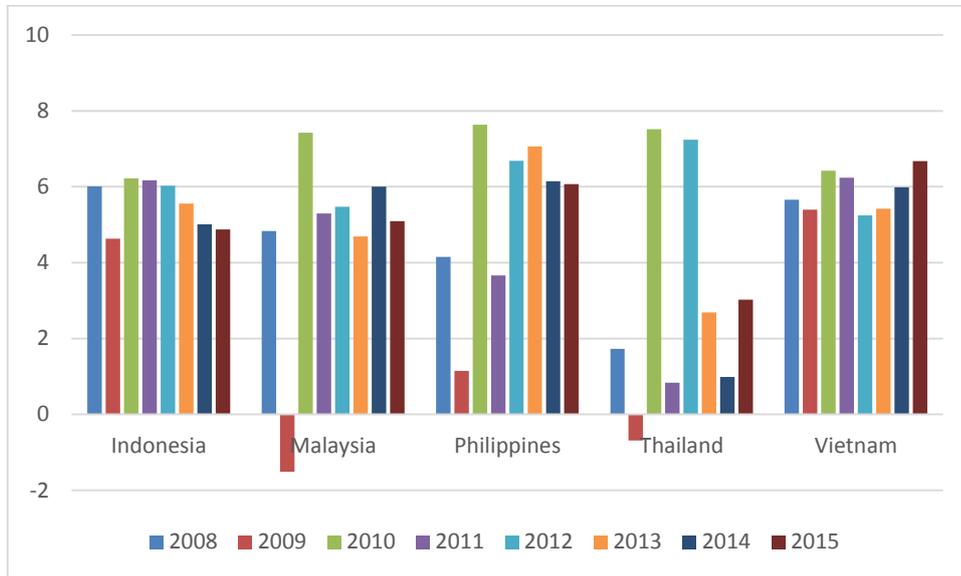


Table 4.1.1 shows foreign direct investment from five countries for each year. Based on the table we can conclude that each year FDI is fluctuated for each country. In 2014 Indonesia reaches the highest FDI, in that year lot of investment aiming towards mining, food industry, transportation.

4.1.2 Gross domestic product growth in 5 ASEAN Countries from 2008-2015

In this study the writer use GDP growth rate. GDP growth rate tend to show welfare and economic activities in a country.

Graph 4.2 Gross domestic product growth in 5 ASEAN Countries from 2008-2015



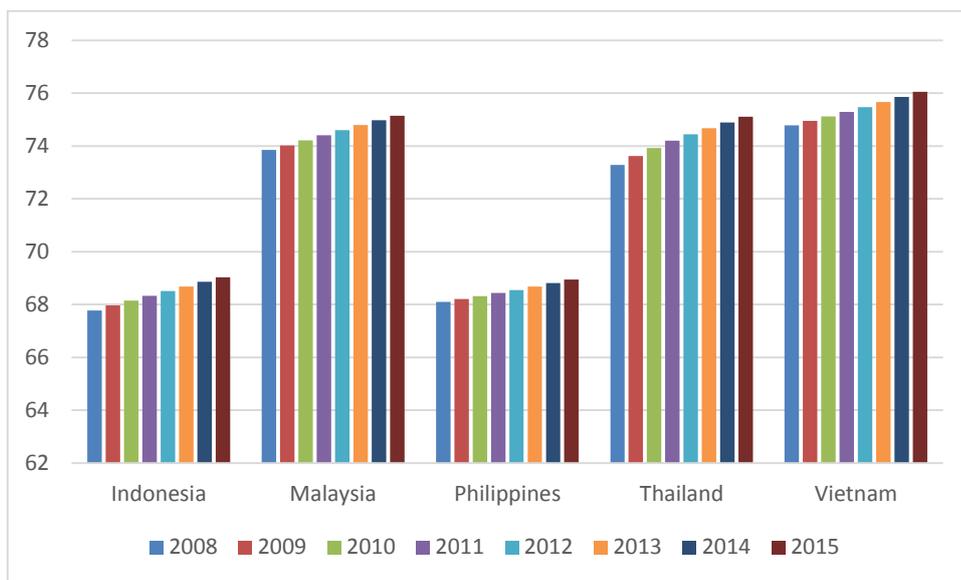
In table 4.1.2, Indonesia show a sustainable growth rate overtime meanwhile for other countries tend to fluctuate. In the end of 2015, Vietnam had 6% growth rate which is the highest GDP growth rate. Meanwhile Thailand have the lowest growth rate in 2015 at the point of 3%. The difference of growth rate for each countries can be caused by economy or political condition for each countries that disabled the growth.

4.1.3 Life expectancy in 5 ASEAN Countries from 2008-2015

This study use life expectancy as a parameter of health status of the population for a country. According to Badan Pusat Statistik life expectancy is an approximate length of year on average person live and calculated from the

moment the person is born. High life expectancy indicates a productive population of the country. Moreover, the longest an individual live resulting for more individual to work and producing goods or services. Life expectancy in this case attract investment from foreign country.

Graph 4.3 Life Expectancy in 5 ASEAN Countries from 2008-2015



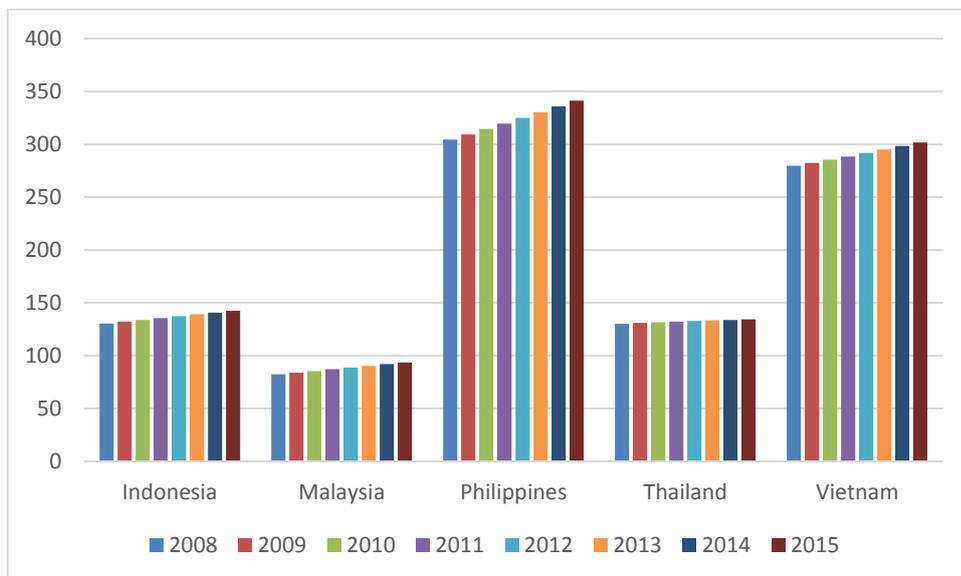
In Table 4.1.3, all five countries have an increasing trend. This trend conclude that each year the quality of health for those 5 countries is getting better and better. Malaysia and Vietnam are the two highest in the life expectancy, for Vietnam the life expectancy average year is 75. Philippines has the lowest life expectancy amongst other country.

4.1.4 Population density in 5 ASEAN Countries from 2008-2015

Population density is a measurement of population per unit area or unit volume; it is a quantity of type number density. It is frequently applied to living

organisms, and most of the time to humans. It is a key geographical term. In simple terms population density refers to the number of people living in an area per kilometer square. Several of the most densely populated territories in the world are city states, microstates and dependencies. These territories have a relatively small area and a high urbanization level, with an economically specialized city population drawing also on rural resources outside the area, illustrating the difference between high population density and overpopulation.

Graph 4.4 Population density in 5 ASEAN Countries from 2008-2015

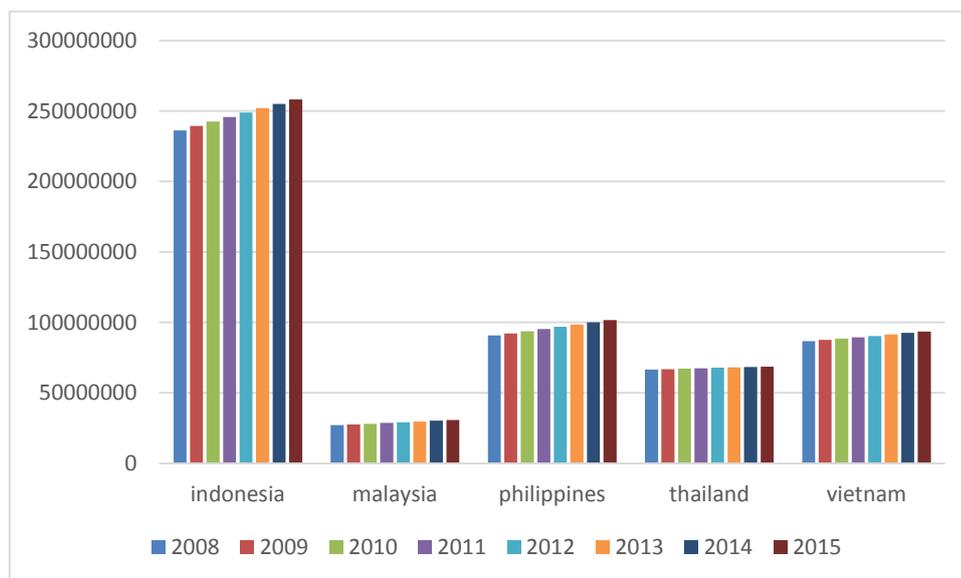


In Table 4.1.4, all five countries have an increasing trend. This trend conclude that each year the population density people per square for land area in 5 countries is getting crowded. Philippines population density is the most highest amongst all, for Malaysia it is the lowest. Meaning Malaysia resident is quite distributed and not focused on one place.

4.1.5 Total Population in 5 ASEAN Countries from 2008-2015

Total Population is influenced by birth rates, mortality rates, the number of people coming in, and the number of people who leave the area. Population growth is a change in the number of populations residing in an area at a certain time. The Asian region is the region with the highest population compared to other countries.

Graph 4.5 Total Population in 5 ASEAN Countries from 2008-2015



Most of the trend is increasing each year. Indonesia have the largest population for each year and in the 2015. Malaysia population is the lowest among all countries. Indonesia have the biggest population amongst ASEAN Countries. Thailand population growth is the lowest. Population is one of the key factor for market-seeking FDI

4.2. Estimation Result

This research use Panel Data Regression Model to analyze the Impact of GDP Growth rate, life expectancy, Population density, Total Population on foreign direct investment in ASEAN Countries. Panel data regression consist of two estimation approach, which is fixed effect model and random effect model. To determine the estimation approach, Hausman test must be applied. The test is shown below:

Table 4.1 Hausman test result

Prob>chi2	α
0.0505	0.05

Source: Estimation result

Based on the Hausman test result, the prob>chi2 value is 0.0505 and bigger than α value which is 0.05. We can conclude that the estimation approach that used in this research is random effect model.

Table 4.2 Robust Random Effect

(1)

	ln_fdi
gdpgrowth	0.239*
	(0.123)
ln_totpop	0.946***
	(0.0598)
density_pop	-0.00514***
	(0.000779)
Life_ex	0.169***
	(0.0251)
_cons	-6.930**
	(2.928)
R^2	0.6292
N	40

Source: Estimation result

***** p<0.01, ** p<0.05, * p<0.1**

4.3. Statistical Analysis

4.3.1 T Test

T statistic test used to see whether the independent variables in the model partially have a significant effect on the dependent variable.

Table 4.3 T Table

Degree of Freedom	α
	0.01
Df=n-k-1 N=40;k=4	+/-2.7238

Source: Estimation Result

Explanation:

N: Observation

K: Total parameter

Table 4.4 T Statistic

Variable	T Statistic	H_0
gdpgrowth	1.94	rejected
ln_totpop	15.81	rejected
Density_pop	-6.60	rejected
Life_ex	6.72	rejected

Source: Estimation Result

T Statistic Interpretation:

- **GDP growth (gdpgrowth)**

Based on estimation result, GDP growth variable t statistic value is 1.94. With 5% significance level, the t table is +/-2.0301, But with 10% significance level the t table is +/-2.7238. GDP growth variable t statistic value is bigger than t table. H_0 is rejected, it can be concluded that GDP Growth variable has a significance and positive impact on foreign direct investment partially.

- **Total population (ln_Totpop)**

Based on estimation result, Total Population variable t statistic value is 15.81. With 5% significance level, the t table is +/-2.0301. Total Population variable t statistic value is bigger than t table. H_0 is rejected, it can be concluded that Total Population variable has a significance and positive impact on foreign direct investment partially.

- **Population density (density_pop)**

Based on estimation result, population density variable t statistic value is -6.60. With 5% significance level, the t table is +/-2.0301. Population density variable t statistic value is bigger than t table. H_0 is rejected, it can be concluded that population density variable has a significance and Negative impact on foreign direct investment partially.

- **Life Expectancy (Life_ex)**

Based on estimation result, Life expectancy variable t statistic value is 6.72. With 5% significance level, the t table is +/-2.0301. Life expectancy variable t statistic value is bigger than t table. H_0 is rejected, it can be concluded that life expectancy variable has a significance and Positive impact on foreign direct investment partially.

4.3.2 F Test

The F test is used to see whether the independent variables in the model simultaneously have a significant effect on the dependent variable.

Table 4.5 F Table

F statistic	H_0	Explanation
9.50	rejected	$\alpha = 0.05$

Source: Estimation Result

Table 4.6 F statistic

Df1 (k-1)	Df2 (n-k)	F table
		$\alpha = 0.05$
3	36	2.67866711

Source: Estimation Result

Explanation:

N: Observation

K: Total Parameter

Based on f statistic test result, the F statistic in this model is 9.50. With a 5% significance level. The F table is **2.67866711**. The F statistic is bigger than F table. Rejecting H_0 . This states that all independent variable simultaneously have a significance effect on the dependent variable. In conclusion, GDP growth, Total Population, Population density, Life Expectancy have a significance impact on foreign direct investment

4.3.3 Coefficient determination (R^2)

Coefficient of determination or r-squared is intended to see how much the ability of independent variables in the model explains the dependent variable. Based on the results of estimation, this study r-squared value is 0.6292. With the amount of r-squared, this value shows that 62.92% of the independent variable can explain the dependent variable in this model. And the rest, amounting to 37.08% is explained by other factors outside the model.

4.4 Classical Assumption in Regress Analysis

4.4.1 Multicollinearity test

Multicollinearity is a problem found in Independent variables who have close ties or mutual relationships. Multicollinearity can be detected by looking at correlation between independent variables. If the correlation between variables is more than 0.8, it can be said that there is a Multicollinearity problem in the model (Gujarati & Porter, 2009).

Table 4.7 Multicollinearity Test Result

	ln_fdi	gdpgrowth	Tot_pop	Density_pop	Life_ex
ln_fdi	1.0000				
gdpgrowth	0.4665	1.0000			
Tot_pop	0.2796	0.2108	1.0000		
Density_pop	-0.2777	0.2649	0.2747	1.0000	
Life_ex	0.1195	-0.1372	-0.6698	-0.2102	1.0000

Source: Estimation result

Based on the results of Multicollinearity test in the table above, it shows that there is no correlation value between independent variables is greater than 0.8. This shows that there is no Multicollinearity problem for variables in the research model.

4.4.2 Heteroscedasticity Test

The problem of heteroscedasticity is more common in cross section data compared to time series data. To overcome the problem of the possibility of heteroscedasticity, then GLS (Generalized Least Square) estimation is used. According to Gujarati & Porter (2009) the regression results using random effect model is an estimate made with generalize least square (GLS) is a variable transformation so that it meets the least squares standard assumption, where the estimation results from GLS are homoscedastic so that in the GLS method there are no problems heteroscedasticity. Where the distribution of data becomes constant or there are no outliers in the data. The random effect model free from other classic assumptions and the resulting estimation is consistent and distributed normally or produce unbiased estimates (Jeffrey. M. Wooldridge, 2012)

4.4.3 Autocorrelation Test

Autocorrelation test is used to determine the correlation between members of one observation with another different period / time. Random effect model according to (Jeffrey. M. Wooldridge, 2012) has advantages compared to fixed effect models and pooled least square where there is no correlation between errors term, namely error terms in a certain period does not correlate with variables that exist in other periods so that there is no problem of autocorrelation. Whereas according to (Gujarati & Porter, 2009) on the model random effect there is no correlation of errors individually and there is no autocorrelation between unit cross section and time series.

4.5 Economic Analysis

4.5.1 Intercept value

Based on regress equation above, we can obtain the intercept value which is -6.930311. This intercept value shows that without being affected by other independent variables, FDI will decreasing about 6.93%, *ceteris paribus*.

4.5.2 The impact of GDP growth to FDI

Based on the estimation result, the GDP growth rate coefficient value is 0.239 with a 10% significance level. This coefficient value shows that GDP growth rate have positive and significance impact on FDI in five ASEAN

Countries. Every 1 percent increase on GDP growth rate will increase 0.239 % on FDI, *ceteris paribus*.

(Li & Liu, 2005) regression results stated that GDP growth has a significant and positive impact on FDI Inflows in the recipient economy. The coefficient of log (GDP) and trade all positive and statistically significant suggesting that FDI inflows are determined by the market size and openness to the trade of the host country. The policy implication of this study are relative straightforward. As FDI and economic growth have become increasingly endogenous related, the promotion of human capital, technological capabilities, and economic development will lead to more FDI inflows. One of their models show the increase on FDI Inflow about 0.053% for each 1 percent increase on GDP growth

4.5.3 The impact of Total Population to FDI

Based on the estimation result, the total population coefficient value is 0.946 with a 5% significance level. This coefficient value shows that total population have positive and significance impact on FDI in five ASEAN Countries. Every 1 percent increase on total population will increase 0.946 % on FDI, *ceteris paribus*.

This result is supported by previous research (Alsan et al., 2006) use total population as a variable as a population health determinants of FDI inflows in low- and middle-income countries. Using total population can portrayed as proxy for market size other than GDP per capita. She found that total population as an

indicator of market size are positive and strongly significant with a contribution of every 1 percent increase in total population will increase 0.912 percent on FDI. The result of the study is also highly significant at the 1% level. Using China and India to point out the advantages of a large populations. Large populations provide a big market for MNEs ' goods and services, have a big workforce and a vast base of skills. Admission to higher education organizations is highly competitive in these country and only those with high potential are admitted. The research findings indicate that MNEs may consider a country's population as a factor in their choice to invest in a nation. A big population involves a big middle class with expenditure power and an appetite for MNE's products and services. (Aziz & Makkawi, 2012)

4.5.4 The impact of Population density to FDI

Based on the estimation result, the Population density coefficient value is - 0.0051 with a 5% significance level. This coefficient value shows that Population density have negative and significance impact on FDI in five ASEAN Countries. Every increase of 1 unit on population density will decrease -0.0051% on FDI, *ceteris paribus*.

(Gonzalez, 2017) Stated that Population density was a very important negative indicator to explain FDI; the analysis could imply that the bigger the influence of this variable, the lower the chances for investment there will be for the affected countries; this first finding could set an important paradigm among the rest of the demographic indicators, given the fact that growing populations in

smaller territories are not attracting FDI. From the demographic variables, Population density shows the highest importance value, with a contribution of 8.8% and a negative coefficient, replicating the exact same trend that they observed in the general analysis and in the developed cluster.

(Akin, 2009) also founds that population density are not promoting FDI with a significance and negative result. Every 1 unit increase in population density will decrease -0.002 of FDI. Population density also increase overhead cost because of the high land prices, bottleneck in public goods, higher cost of mobility, and increasing rate of crime.

4.5.5 The impact of life expectancy to FDI

Based on the estimation result, the life expectancy coefficient value is 0.168 with a 5% significance level. This coefficient value shows that life expectancy have positive and significance impact on FDI in five ASEAN Countries. Every 1 year increase on life expectancy will increase 0.168% on FDI, *ceteris paribus*.

(Alsan et al., 2006) adding life expectancy to the FDI model for 74 countries and the result is demonstrating that health is statistically significant determinant for gross FDI Inflows at the 1% level. The result shows that every additional year of life expectancy increase FDI inflows by about 9%. This result finding are consistent with the view that health is an integral component of human capital for developing countries and suggest that the payoff to improved population health is also likely to include an elevated rate of FDI Inflows. When

the investor is not convinced by the country's health status, this is seen as an unattractive investment as an investor. Foreign investors obviously conform to the health standards of their host country, acknowledge the excellence of excellent health and its beneficial impact on prospective employees, bring more money into the investment