CHAPTER V

RESULT AND DISCUSSION

A. Data Causality Test

The data causality test in this study uses the classic assumption test. The classic assumptions used in this study are multicollinearity and heteroscedasticity tests.

1. Heteroskadasity Test

Heteroskedesticity test aims to test whether in the regression model there is a variance in variance from the residuals of one observation to another. If the residual variant of one observation to another is fixed, then it is called homokesdacity and if different is called heteroskedacity. The method used to detect the presence of heteroscedasticity in this study is the White test. Heteroscedasticity can be seen from the probability of Obs * R-square, if the probability of Obs * R-square test white is less than 0.05, also we can see the probability each variable is less than 0.005 there is a heteroscedasticity problem. Heteroscedasticity test results are as follows:

Table 5.1

Heteroskedasity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.20E+11	8.92E+10	1.349541	0.1838
LOG(INV)	5.15E+09	4.12E+09	1.250528	0.2174
LOG(GDP)	-1.03E+10	5.23E+09	-1.968631	0.0550
LOG(UNE)	2.22E+09	1.38E+09	1.612886	0.1136

Source:Author's Estimation Eviews 7

Table 4.3 above shows that the probability value of INV is 0.2174, probability value of GDP is 0.0550 and the probability of UNE is 0.1136 which is greater than the α value of 0.05, because the probability value is greater than α = 5%, also the Prob of each Variable was higher than 0.05 then H0 is accepted and rejects H1 so it can be concluded that in this model there is no heterokedasticity problem.

2. Multicollinearity Test

A multicollinity test was performed to determine whether there was a significant correlation between two or more independent variables in the regression model. Detection of multicollinity was carried out using a partial correlation test between independent variables. By looking at the correlation coefficient (r) between the independent variables, it can be decided whether the data is affected by multicollinity or not, by testing the correlation coefficient between the independent variables. The results of multicollinity testing using the correlation test (r) can be seen as follows:

Table 5.2

Multicollinearity Test

	LOG(INV)	LOG(GDP)	LOG(UNE)
LOG(INV)	1.000000	0.785082	0.476266
LOG(GDP)	0.785082	1.000000	0.552316
LOG(UNE)	0.476266	0.552316	1.000000

Source:Author's Estimation Eviews 7

Can be seen in Table 4.4 above, showing that there are no variables that have a correlation value above 0.85, it can be concluded that the regression model used does not have multicollinity problems in other words in this study there is no correlation between the independent variables.

B. Panel Data Analysis Test Results

1. Chow Test

According to Agus Widarjono (2009: 238-239) the chow test is a test to determine a fixed effect or common effet model that is more appropriate to be used in estimating panel data. The results of the Chow Test in this study used eviews 8 with the following results:

According to (Iqbal, 2015) a chow test was conducted to compare or choose which model was the best between CE and FE. To determine a better model between CE and Fe seen from the probability value (prob), for cross-section F. if the value is> 0.05 then the selected model is CE but if the value is <0.05 then the selected model is FE

Table 5.3

Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	26.123880	(4,42)	0.0000
Cross-section Chi-square	62.466262	4	0.0000

Source:Author's Estimation Eviews 7

Based on table 4.1 above, it can be seen that the profitability value of Cross section F is 0.0000 or <0.05 then H0 is accepted and rejects H1 which means this research uses the Fixed effect approach and continues to the Hausman test.

2. Hausman Test

Hausman Test is a test conducted to determine the use of the method between Random Effect or Fixed Effect. Hausman test results with a probability value of less than 0.05 is significant that means rejecting the null hypothesis. So the Fixed Effect method should be used to manage panel data. And conversely, if the Hausman test produces a probability value of more than 0.05 or accepts the null hypothesis then the Random method The best effect to use.

Table 5.4

Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.097813	3	0.0440

Source:Author's Estimation Eviews 7

Based on the results of Table 4.2 above hausman testing is the value obtained from the random cross-section probability is 0.0440 which

means that the results are more than the significance value of > 0.05 which means that the model chosen is the Fixed Effect Model.

3. Best Model Analysis

The selection of this model uses an analysis test between the Common Effect, Fixed Effect, and Random Effect models which are explained in the description of the table below.

Table 5.5

Model Estimation Results

Variable Dependent: Military Expenditure	Model		
	Common Effect	Fixed Effect	Random Effect
Constanta	1.515.465	7.265.815	5.902.459
Prob	0.0001***	0.0964**	0.0502***
LOG (INV)	1.060.835	-0.16212	-0.03016
	0.0005***	0.4419*	0.8816*
LOG (GDP)	-0.61537	0.897518	0.781358
	0.1312*	0.0034***	0.0084***
LOG (UNE)	-0.23905	-0.35031	-0.26655
	0.00000***	0.0231***	0.00000***
R2	0.782571	0.937664	0.665573
F-Stat	5.518.783	9.025.188	3.051.618
Prob (F-Stat)	0.000000	0.000000	0.000000
Durbin-Watson Stat	0.585754	1.081.979	0.858708

*Note: *: significant at the 10% level, **: significant at the 5% level, ***: significant at the 1% level Source: The results of panel data processing using the E-views program*

Based on the model specification test that has been done using the Chow test and the Hausman test, both of them suggest using the Fixed Effect model. The Fixed Effect model was chosen because it has the probability that each independent variable from Fixed Effect is more significant than the Random Effect or Common Effect, where each independent variable is not significant. In addition, the reason for choosing the Fixed Effect model can also be seen from the coefficient of determination that is seeing how much the independent variables affect the dependent variable. The coefficient of determination (R-square) resulting from the Fixed Effect model estimation is equal to 0.93 which is greater than the Common and Random Effect models.

C. Panel Regression Model Estimation Results

After conducting statistical tests to determine which model will be chosen in the study, it can be concluded that the Fixed Effect model that will be used in this research is the panel data model approach that only combines time series data and cross section data. In this model, time and individual dimensions are not considered, so it is assumed that the behavior of state data is the same in various time periods. The following table shows the results of the estimated data with a total of six ASEAN observations over the period 2009-2018 (10 years).

Table 5.6

Fixed Effect Model Estimation Results

Variable Dependent : ME		
Variable	Coefficient	Probability
LOG (INV)	-0.16212	0.4419
LOG (GDP)	0.897518	0.0034
LOG (UNE)	-0.350313	0.0231
Fixed Effect		
_INDONESIA—C	0.376264	
_MALAYSIA—C	-0.202751	
_SINGAPORE—C	0.178837	
_THAILAND—C	-0.309255	
_PHILIPHINE—C	-0.043095	
R Squared	0.937664	
F-Stat	9.025.188	
Prob. F Stat	0	
Durbin-Watson Stat	1.081.979	

*Note: *: significant at the 10% level, **: significant at the 5% level, ***: significant at the 1% level*

Source: The results of panel data processing using the E-views program

From the estimation results above, a panel data analyst model can be made of the factors that influence military spending in the five ASEAN member countries, which are summarized as follows:

$ME_{it} = \alpha + \beta_1 \text{Log}(INV)_{it} + \beta_2 \text{Log}(GDP)_{it} + \beta_3 \text{Log}(INV)_{it} + e_t$

Where:

ME = Variabel dependen (Military Expenditure

α = Constanta

β_{12345} = Coefficient variabel 1,2,3,4,5

Log INV = Investment

Log GDP = GDP (Economic Growth)

Log UNE = Unemplyment

i = Indonesia, Malaysia, Singapore, Thailand, , Philliphine

t = 2009-2018

Where the following results are obtained:

MEit = α + β1 Log(INV)it + β2 Log(GDP)it + β3 Log(UNE)it + et

Meit = 7.265.815 + (-)0.16212 Log(INV)it + 0.897518 β2 Log(GDP)it + (-) 0.350313 Log(UNE)it + et

Explaination :

α : The value of 7.265.81 can be interpreted that if all the independent variables (Investment, GDP, Unemployment) are considered constant or unchanged the military expenditure inflows will be 7.265.81 percent.

β 1 : The value of -0.16212 can be interpreted that when investment per capita rises by 1 percent then the military expenditure inflows increases by -0.16212 percent assuming the military expenditure inflows remain.

β2 : The value of 0.897518 can be interpreted that when the level of GDP rises by 1 percent then the inflows of Military Expenditure increase by 0.897518 percent assuming the Military Expenditure inflows remain.

β3 : A value of -0.350313 can be interpreted that when unemployment rises by 1 percent then military expenditure inflows increase by -0.350313 percent assuming military expenditure inflows remain.

As for the estimation results above, a panel data model can be made for remittance inflows between six countries in ASEAN which is interpreted as follows:

Intercept Indonesia	=7.265815	+	0.376264	
			7.642079	
Intercept Malaysia	=7.265815	+	(-0.20275)	
			7.063065	
Intercept Singapore	=7.265815	+	0.178837	
			7.444652	
Intercept Thailand	=7.265815	+	(-0.30926)	
			6.95655	
Intercept Philipphine	=7.265815	+	(-0.0431)	
			7.222715	

In the estimation model above, it can be seen that the Fixed Effect model estimation produces different intercepts from each country, this indicates that the Fixed Effect model is accepted because there are differences in the intercept and the equations on the slope remain the same between countries and between times. The value of the intercept in the country of Indonesia is 7.642079; The intercept value in the country of Malaysia is 7.063065; country of Thailand amounting to 6.95655; the country of Singapore in the amount of 7.444652; and the country of Philipphine in the amount of 7.222715.

D. Classic Assumption Test

1. F Test

This test is done by comparing the calculated F value with F table or looking at the probability value (prob.) Of the table. If the probability

value < 0.05 then reject H0 and it can be concluded that the independent variable simultaneously influences the dependent variable. If the probability value> 0.05, then accept H0 and it can be concluded that there are no independent variables that affect the dependent variable.

the F-statistic result is 90.25188 with a significant level of 0.000000. Because the significant level is less than 0.05, H0 is rejected and H1 is accepted. Then it can be concluded that Economic Growth, Unemployment and Investment gathered (simultaneous) affect the Military Expenditure or in other words the research model is feasible to use (goodness of fit fulfilled), and for the result of Adjust R Square was 0.92 means the 92% variable indepent has effect on dependent variable.

2. T Test

T test is used to determine whether there is an influence of each independent variable individually (partial) on the dependent variable tested at a significance level of 0.05. If the probability is smaller than 0.05 then the result is that there is an influence of the independent variable individually on the dependent variable.

In addition it can be with other indicators, namely if the value of t arithmetic> t table, then reject H0 and it can be concluded that the independent variable influences the dependent variable. If the value of t arithmetic <t table, then accept H0 and it can be concluded that the

independent variable does not affect the variable The results of the hypothesis testing using the t test are as follows:

Table 5.6

T Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.265815	4.272875	1.700451	0.0964
LOG(INV?)	-0.162120	0.208824	-0.776346	0.4419
LOG(GDP?)	0.897518	0.288671	3.109132	0.0034
LOG(UNE?)	-0.350313	0.148584	-2.357676	0.0231

Source:Author's Estimation Eviews 7

This test is carried out to see the significant influence Economic Growth, Unemployment and Investment on Military Expenditure in 5 ASEAN Countries in term 2009-2018.

1. Economic Growth

   This test was conducted to see the significant influence of Economic Growth on Military Expenditure in 5 ASEAN Countries in term 2009-2018.

   Based on Table 4.5 above, it appears that Economic Growth shows influence on Military Exoenditure. By seeing the probability value 0.0034, which means it is smaller than the value of $\alpha = 0.05$ and looking at the Coefficient value of 0.897518, it can be concluded that H0 is rejected and H1 is accepted, which means that the Economic Growth variable has a positive effect on Military Expenditure.

2. Unemployment

This test was conducted to see the significant influence of Unemployment on Military Expenditure in 5 ASEAN Countries in term 2009-2018.

Based on Table 4.5 above, it appears that Unemployment shows influence on Military Expenditure. By seeing the probability value 0.0231, which means it is smaller than the value of α = 0.05 and looking at the Coefficient value of -0.350313, it can be concluded that H0 is rejected and H1 is accepted, which means that the Unemployment variable has a negative effect on Military Expenditure.

3. Investment

This test was conducted to see the significant influence of Investment wth on Military Expenditure in 5 ASEAN Countries in term 2009-2018.

Based on Table 4.5 above, it appears that Investment shows influence on Military Expenditure. By seeing the probability value 0.4419, which means it is Higher than the value of α = 0.05 and looking at the Coefficient value of -0.162120, it can be concluded that H1 is rejected and H0 is accepted, which means that the Investment has no effect on Military Expenditure.

3. Coefficient of Determination (R2)

This coefficient of determination measures the percentage of the total dependent variable (Y) explained by the independent variable in the regression line. The coefficient of determination is applied in this study because there are more than two independent variables. The coefficient of determination is only between 0 and 1, if a result> 0.5 is obtained, the model used can be said to be convincing in estimating. If the number generated is large, the better the model used in describing the relationship between independent and dependent variables According to Widarjono (2010: 19), the Fixed Effect model can be seen that the value of Adjusted R-square shaped in this study is 0.927274 which indicates that the ability of the variable independent (Economic Growth, Unemployment and Investment) in explaining the dependent variable (Military Expenditure) is 92.7274% the remaining 7.2726% is explained by the variables not included in this study

E. Interpretation

Panel data regression analysis that has been carried out aims to determine whether Economic Growth, Unemployment and Investment affect Military Expenditure in 5 ASEAN Countries in term 2009-2019. Based on the chow test which is a test to determine a model that is more suitable between common effects, fixed effects, or Random Effects, the chosen model is the Fixed Effect estimation model

1. Economic Growth and Military Expenditure

   Based on the results of the above study using the application of Eviews 7, it can be explained that the Economic Growth variable has a positive effect on Military Expenditure. The profiled value is 0.0034 at a profitability value of less than 0.05 so that the Economic Growth variable influences the level of Military Expenditure

   The results of research on Economic Growth and Military Expenditure are supported by the theory from Ginting that Economic growth is closely related to the increase in goods and services produced in the community, so that the more goods and services produced, the welfare of the community will increase which give positive effect on Military Expenditure (Ginting, 2008)

2. Unemployment and Military Expenditure

   Based on the results of the above study using the application of Eviews 7, it can be explained that the Unemployment variable has a negative effect on Military Expenditure. The profiled value is 0.0231 at a profitability value of less than 0.05 so that the Unemployment variable influences the level of Military Expenditure

   The results of research on Unemployment and Military Expenditure are supported by the theory from Sukirno that If the unemployment rate in a region is high, it will be almost the achievement of economic development goals. The income of the community is reduced so that the purchasing

power of the people decreases, education and health which are basic needs to improve the quality of human beings also cannot be fulfilled, when it happens the country will decrease the allocation for Military Spending to help citizen that's why Unemployment has a negative effect on Military Spending (Sukirno, 2004).

3. Investment and Military Expenditure

Based on the results of the above study using the application of Eviews 7, it can be explained that the Investment variable no effect on Military Expenditure. The profiled value is 0.4419 at a profitability value of higher than 0.05 so that the Investment variable unfluences the level of Military Expenditure

The negative relationship between investment and military costs from the results obtained is the same as research conducted by Aiyedogbon, John Olu-Coris from his research shows that the effect is not significant between investment and military costs (Aiyedogbon, 2011)