

Factors Affecting Military Expenditure in Asean

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Abstract: This study aims to determine whether economic growth, unemployment and investment affect military spending in five ASEAN countries consisting of Indonesia, Malaysia, Singapore, Thailand and the Philippines in 2009-2019. This study uses secondary data with a period of ten years. Data obtained from the World Bank Indicators. This study uses panel data regression method with the selected model Fixed Effect Model. Based on the results of the analysis that has been carried out, it is obtained that there are two variables that affect military costs, namely economic growth and unemployment. Unemployment is the variable that has the most influence on military costs in the 5 Asean Countries. Meanwhile, investment has no effect on military spending. The ASEAN region is in a safe condition, so that military spending in ASEAN countries is quite stable from year to year. Political and economic stability in the ASEAN Region proves that increased investment does not encourage a significant increase in military spending.

Keywords: Economic Growth, Unemployment, Investment, Military Expenditure, Fixed Effect Model.

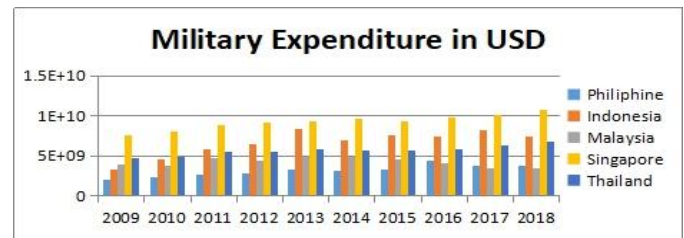
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I. INTRODUCTION

Military costs are one important factor for a sovereignty state, which maintains sovereignty and security from internal and external threats. This factor greatly influences economic growth and rates unemployment, with defense costs incurred by the state during fighting to defend state sovereignty and stabilize security country is not small. The addition of the state budget to military costs in countries that are waging a war. Conflict situation or warfare in a state results in economic turmoil in the state, this is due to the minimal level of security, resulting in production manufacturing, economic activity, economic actors stalled, which results the rate of economic growth decreases and adds to the unemployment rate.

Military costs are imposed by each country which is taken from the budget which is separated by country from the national income of each country for provide security against internal and external threats. Expending defense consists of production (or imports from other countries) tools and vehicles used in defense, repair and maintenance costs for equipment and vehicles, costs for restructuring and development (R&D) and civilian staff working in the defense field. If the country feels threatened, the country reduces investment which will reduce the welfare of the country to increase expenditure defense, the effect of defense spending on economics is one of the topics being discussed at this time. Many countries prioritize defense spending compared to reduced education, health and infrastructure.

The expenditure for military Singapore spent a lot of their money for military which reach 7 Trillions in 2009 and year by years their expenditure for military always increasing, in 2018 Singapore spent 10 Trillions for military, in 2009 the second place for most spent money for military was Thailand who reach 5 Trillions and the third place was Malaysia followed with Indonesia in the fourth place, but in 2010 the expenditure of military Indonesia increasing slightly being a second place which reach 4 Trillions for military and year by years their expenditure for military constantly increasing until 2018 (Figure 1).



Source : World Bank Data

Figure 1. Military Expenditure in USD

Some analysts claim that the Asian military modernization in particular Southeast Asia is a logical consequence of its economic growth. Five the main country in Southeast Asia called the big five, namely Singapore, Thailand, Indonesia, Malaysia and the Philippines are five countries with budgets highest defense in the region. These five countries experienced economic growth as a result of global trade and rising demand from China. In 2011 these countries received more capital flow large and continuing fiscal stimulus measures during the economic crisis global. As a result, during the global economic crisis, Southeast Asia was the area with the least negative impacts. The results of economic growth this makes the defense budget of Southeast Asian countries increase.

Starting with Adam Smith who has important ideas for the foundation economic basis and many economics also have thoughts and support a free market economy, because free market economy is the best mechanism for ensuring economic growth. Government asked not to interfere in the economy but asked to fulfill some basic tasks one of which is state security. While the government regulates public spending, neither does the government planning spending for developing countries (Mankiw, 2013).

Classical thinking holds that spending increases the military might cramp economic growth. This argument based on the conclusions of the classical mind, that an increase in

the budget military spending will result in a decrease in the level of personal investment and domestic savings, and consumption levels will be lower, because lower gathering demand. This can be explained as follows. A budget increase that is higher than military expenditure will causing an increase in the interest rate, which will encourage investment out personal. Keynesians argue that increasing military burdens stimulate demand, increase electricity and increase spending government, and will make a positive external (Narayan and Singh, 2007: 395).

The Southeast Asian region is not free from threats from existing issues. Problems in the area to date still a problem, namely the case of Spratly Island and ethnic conflict Southeast Asia region. A problem that hangs in the area Southeast Asia itself is said to be one of the resulting problems technological advancements such as military modernization in Southeast Asia. Occur military modernization is considered a new threat to the country developed countries which are the basis of economic development in Asia Southeast.

The Spratly Island case is a problem related to the waters of the South China Sea. In this case there were six countries fighting over the ownership of Spratly Island, namely China, Taiwan, Malaysia, Vietnam, Brunei Darussalam and the Philippines. In this case it is explained that this relationship is related to the progress of military modernization from Southeast Asia related to the desire of each country contained in the Southeast Asian region which is the basis for saving in protecting his own country. This is a matter of regional tension, a shift from US military activity to Asia and an increase in China's presence in the South China Sea. In addition, the ability of Asia itself to modernize its military becomes an effort to increase the national defense budget and the economic supply side, creating a supply center for weapons (Simatupang, 2013).

The ability to spend on weapons carried out by countries in Southeast Asia is proof that this need is to protect each country's defense. It is also an effort to build cooperation in the ASEAN region. However, efforts to maintain defense in each country become a problem by themselves because strengthening each country without the communication and consultation of each member triggers an arms race that may be a new threat in the regional.

II. LITERATURE REVIEW

The cost of defense for security is one of the important things that must be managed by the state. In the modern security system, the sovereign state is believed to be the best "protector" for its people. The state has the primary responsibility to provide security and defend it from various threats (Bellamy, 2008). To fulfill this responsibility, military power is a necessity for a country.

This military power is needed to maintain sovereignty, support domestic orders, and avoid various threats. Budget

defense expenditure is separated by countries from their national income to provide security against internal and external threats. Defense expenditures consist of production (or imports from other countries) tools and vehicles used as defense, as well as repair and maintenance costs for equipment and vehicles used in national defense, costs for R and D activities for the benefit of national defense and for citizens military civilians and staff working in the defense field. The government regulates the budget for defense spending with the improvement of the welfare of the country separately, the aim is that if they feel threats from outside and insidthey will reduce the investment budget which will increase the welfare of the country and will increase the defense spending budget.

Endogenous growth theory, shows that government spending has an important impact on long-term growth rates. The effect depends on the size of government intervention and various components of public expenditure. In addition, various types of government spending have heterogeneous effects on economic growth. For example, improving public infrastructure, research and development in terms of economic development and growth, and improving the quality of public education are often seen as public products that have a positive effect on economic growth. On the other hand, observations about increasing government growth based on non-productive spending will be accompanied by negative effects on the country's economic growth and income. From this observation it has been given up to the hypothesis that the larger the size of government intervention will have a more negative impact. Endogenous growth theory provides the basis of the relationship between total military expenditure and expenditure in the long run, Pieroni predicts the relationship between military spending and economic growth, reversed or negative (Pieroni, 2009: 327).

Classical thinking holds that increasing military spending is likely to hamper economic growth. This argumentbased on the classical conclusion, that an increase in the budget for military spending will result in a decrease from the level of personal investment and domestic savings, and the level of consumption which will be lower, because demand is gathering lower. This can be explained as follows. An increase in the budget that is higher than military spending will cause an increase in the interest rate that will encourage private investment. Keynesians argue that increasing the military burden of stimulating demand, increasing electricity and increasing government spending, and will create a positive external (Narayan and Singh, 2007: 395).

Economic growth is the process of changing the country's economic conditions on an ongoing basis towards better conditions for a certain period. Economic growth can also be interpreted as a process of increasing economic production capacity that is realized in the form of an increase in national income. The existence of economic growth is an indication of the success of economic development in people's lives. Economic growth shows the growth of production of

goods and services in the economic region at certain time intervals. The higher the rate of economic growth, the faster the process of increasing regional output so that the prospects for regional development are better. By knowing the sources of economic growth, priority development sectors can be determined. According to [Todaro and Smith \(2011\)](#) there are three main factors or components that influence economic growth, namely capital accumulation, population growth, and technological progress.

Economic growth is something that is often associated with human development. High economic growth is a target in development. For developing countries According to UNDP ([Ginting, 2008](#)) states that until the end of 1999 human development is determined by economic growth. 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 so that it will change the national income better which give positive effect on military expenditure. Research conducted by [Abdel-Khalek, et. al \(2019\)](#) concerning the relationship of economic growth and military expenditure in India. This study shows the following: There was no causal link between military expenditure and economic growth in India, during the period indicated.

Unemployment is one of the social factors variables that can affect economic growth in a region. Unemployment that continues to increase will have a direct impact on social and economic problems that will affect economic growth.

According to [Sukirno \(2004\)](#), unemployment is the number of workers in the economy who are actively looking for work but have not found one. Whereas unemployment rate according to BPS is the percentage of the number of people entering the workforce (aged 15 years and over) who are looking for work and not getting it.

One of the causes of unemployment is increasing in new labor that occurs every year, while employment does not increase. In addition, the time needed for workers to find jobs that are in accordance with their desires and expertise is another factor that causes unemployment ([Mankiw, 20](#)). One important factor that determines the prosperity of the community is the level of income. Community income reaches a maximum if full employment levels are realized. Unemployment will reduce people's income, and this will reduce the level of prosperity they achieve ([Sukirno, 2004](#)).

Unemployment causes the level of prosperity of the community is not optimal while the ultimate goal of development is to create prosperity and welfare of the community. If the unemployment rate in a region is high, it will hamper 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 happen the country will decrease the allocation for Military Spending to help

citizen that's why Unemployment has negative effect on Military Spending.

Investment is defined as expenditures or expenditures from capital investors or companies to buy capital goods and also equipment to improve capabilities producing goods and services available in the economy. Investment is the current expenditure to buy tangible assets (land, houses, cars, etc.) or also financial assets that aim to generate greater income in the future, the following also says that investment is an activity related to business sources withdrawals (funds) are used to obtain current capital goods, and with this capital new product flows will be generated in the future ([Huagen, 2001](#)).

[Benoit \(1973\)](#) theorized that the negative impact of the military budget would increase the resources used for military purposes, meaning that they would reduce the resources available for investment and production in the civilian sector. This is especially so in developing African countries which are usually short-lived. This effect, if significant, will be very important especially where the military budget has high contents and this will reduce the share of imported capital goods and products needed or not for civil investment ([Egwaikhide and Ohwofasa, 2009](#)).

Military spending can have a positive or negative effect on savings and investment. It can be said that if an increase in military spending is funded by taxes and, if this expenditure decreases in the future, the saving trend can increase. But in developing countries, increasing new income, for example from increasing taxes, is very difficult, so military spending can be funded by increasing inflation and reducing savings ([Dunne and Uye, 2010](#)). Investment activities make it possible the community continues to increase economic activities and opportunities work, increase national income and increase the level of prosperity Public.

III. RESEARCH METHODOLOGY

The analysis technique used in this study is qualitative analysis and quantitative analysis. Qualitative analysis was carried out using a variety of literature studies, books, and articles in accordance with this research topic which were used as a reference. Furthermore quantitative analysis uses the econometrics model to explain the relationship between variables. This study uses data from 5 ASEAN countries including Indonesia, Malaysia, Singapore, Thailand, the Philippines, the observation period chosen was 2009 to 2019 and this study uses panel data.

[Hsiao \(1986\)](#), noted that the use of panel data in economic research has several main advantages over cross section and time series data. First, it can give the researcher a large number of observations, increase the degree of freedom, the data has a large variability and reduce the collinearity between the explanatory variables, which can produce efficient econometric estimates. Second, panel data can provide more information that cannot be provided only by cross section or time series data. And Third, panel data can

provide a better solution in dynamic change inference than cross section data.

This research uses panel regression models below (Gujarati, 2003):

$$ME_{it} = f(INV_{it}, GDP_{it}, UNE_{it}) \dots\dots\dots 1$$

$$ME_{it} = \alpha + \beta_1 INV_{it} + \beta_2 GDP_{it} + \beta_3 UNE_{it} + e_t \dots\dots\dots 2$$

equation 2 it is converted into logarithmic form, to get the elasticity coefficient as follows:

$$\text{Log } ME_{it} = \alpha + \beta_1 \text{Log}INV_{it} + \beta_2 \text{Log}GDP_{it} + \beta_3 \text{Log}UNE_{it} + e_t \dots\dots\dots 3$$

Where : ME_{it} is military expenditure, INV_{it} is investment, GDP_{it} is Gross Domestic Product Growth, and UNE_{it} unemployment. The coefficient values (β_1 , β_2 and β_3 indicate the number of elasticity), and e_t is the residual value.

The model used in this study is the Fixed effects Model. Fixed effects model assumes that there are different effects between individuals. The difference can be accommodated through the difference in the intercept. Therefore, in the fixed effects model, each parameter is unknown and will be estimated using a dummy variable technique which can be written as follows:

$$Y_{it} = \alpha + i\alpha_{it} + X'_{it}\beta + \varepsilon_{it}$$

$$\begin{bmatrix} y_1 \\ y_1 \\ \vdots \\ y_n \end{bmatrix} = \begin{bmatrix} \alpha \\ \alpha \\ \vdots \\ \alpha \end{bmatrix} + \begin{bmatrix} i & 0 & 0 \\ 0 & i & 0 \\ \vdots & \vdots & \vdots \\ 0 & 0 & i \end{bmatrix} \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \vdots \\ \alpha_n \end{bmatrix} + \begin{bmatrix} x_{11} & x_{21} & x_{p1} \\ x_{12} & x_{22} & x_{p2} \\ \vdots & \vdots & \vdots \\ x_{1n} & x_{2n} & x_{pn} \end{bmatrix} \begin{bmatrix} \beta_1 \\ \beta_2 \\ \vdots \\ \beta_n \end{bmatrix} + \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \vdots \\ \varepsilon_n \end{bmatrix}$$

This technique is called Least Square Dummy Variable (LSDV). Besides being applied to individual effects, LSDV can also accommodate systemic effects of time. This can be done by adding a dummy time variable in the model.

IV. RESULT AND DISCUSSION

After performing panel data regression, the next step is to choose the best model. Model selection is done by Chow Test and Hausment Test.

Table 1. 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 2020

Based on Table 1, it can be seen that the probability value is less than 0.05 indicating the condition of the rejection of Ho. In this case, Ho is the Common Effect Model which is

better than the Fixed Effect model. Probability value is 0.000, then with a 95% confidence level it can be concluded that for data that has a fixed effect model, it is more suitable to be used.

Table 2. Hausman Test

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

Source: Author's 2020

Based on Table 2, it can be seen that the Prob value which is smaller than 0.05 indicates the condition of the rejection of Ho. In this case, Ho is the random model, which is better than the Fixed Effect model. Because the probability value is 0.044, with a 95% confidence level, it can be concluded that for this model the fixed effects model is more suitable to be used.

After selecting the model, the selected model is tested for classical assumptions. The classical assumption test used in linear regression with the Ordinary Least Squared (OLS) approach includes linearity, autocorrelation, heteroscedasticity, multicollinearity and normality tests. However, not all classical assumption tests have to be performed on every linear regression model using the OLS approach.

In the test assumptions panel data used are heteroscedasticity test and multicollinearity test. The results of this test are shown in Table 1 and Table 2.

Table 3. 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 2020

It shows in Table 3 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 $\alpha = 5\%$, 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 heteroskedasticity problem.

Table 4. 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 2020

Table 4 shows that the correlation between independent variables. The correlation between independent variables has a correlation of less than 0.8 which indicates that the above model is free from multicollinearity.

Table 5. 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	9.025188	
Prob. F Stat	0.000000	
Durbin-Watson Stat	1.081979	

Source: Author's 2020

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:

$$\text{LogMEit} = \alpha + \beta_1 \text{LogINVit} + \beta_2 \text{LogGDPIit} + \beta_3 \text{LogUNEit} + \text{et}$$

$$\text{Log MEit} = 7.265.815 - 0.1621 \text{LogINV} + 0.8975 \beta_2 \text{LogGDP} - 0.3503 \text{LogUNE} + \text{et}$$

The value of 7,265.81 can be interpreted that if all independent variables (Investment, GDP, Unemployment) are considered constant or unchanged, the average military spending is 7,265.8.

Table 5 shows that investment has no effect on increasing the military budget. At the beginning of economic development, developing countries need political stability to create economic growth. Research conducted by Benoit (1978) supports the view of military spending. Benoit found a positive correlation between military spending and economic development in 44 developing countries during the period between 1950 and 1965. High economic growth through investment required a sizeable military budget. Likewise for countries with low military budgets, this will result in low investment and economic growth. The end of the cold war between the two global power blocs, the Soviet Union and the United States, has reduced the threat of world conflict and tension. There is now a growing belief that the so-called peace dividend should be distributed to all

developing countries in order to encourage the governments of each country to convert wasteful and wasted military spending into social and economic expenditure items that are truly beneficial. truly productive (Todaro & Smith, 2011).

This research was conducted in the 2009-2019 period which shows that the ASEAN Region is in a safe condition, so that military spending in ASEAN countries is quite stable from year to year. Political and economic stability in the ASEAN Region proves that increased investment does not encourage a significant increase in military spending.

The value of 0.897518 can be interpreted that when the GDP level increases by 1 percent, the inflow of Military Expenditure increases by 0.897518 percent assuming the inflow of Military Expenditure remains constant. The results of this study are in accordance with research conducted by Lobont, et al (2019). The results of his research conclude that economic growth is the cause of the increase in military spending in the long term. The results show that GDP per capita is the main cause of military spending. By Granger's test, the two-way relationship is statistically significant, as per capita military spending is also a larger cause of per capita GDP growth, and per capita GDP growth appears to be a stronger cause of per capita military spending growth.

This study is in accordance with Wagner's theory, namely that government spending is an endogenous variable of economic development. This is supported by the results of Salih's research (2011) that real GDP growth per capita has a direct relationship with the share of government spending on GDP. Likewise, increasing economic growth in the ASEAN Region will increase government spending, and one of them is spending on the military.

The relationship between unemployment and military spending is indicated by a value of -0.350313 which means that when unemployment increases by 1 percent, the inflow of military spending decreases by 0.350313 percent, assuming that the inflow of military spending remains constant. If in an economy there is a lot of unemployment, the government will increase fiscal policy in improving the people's economy to create jobs. The impact of increasing fiscal on the productive economy will certainly reduce the budget for military spending (the limited development budget of a country requires the government to prioritize the productive economy). Unemployment causes countries in the ASEAN Region to divert some of their military spending to social welfare expenditures or increase public and private investment in other more productive sectors.

Reducing military spending to increase economic productivity is much more beneficial because it will reduce the main short-term macroeconomic problem, namely reducing the number of unemployed. Reducing unemployment has an impact on reducing the number of poor people, and ultimately will encourage economic growth.

The F-statistic result is 90.25188 with a significance level of 0.000000. Because the significant level is less than 0.05, then H_0 is rejected and H_1 is accepted. So it can be concluded that the accumulated Economic Growth, Unemployment and Investment (simultaneously) affect Military Expenditures or in other words this research model is feasible to use (goodness of fit is met), and for the results of Adjust R Square is 0.92 which means 92% of the independent variables (investment, economic growth and unemployment) have an effect on military spending and 8% are influenced by variables outside the model.

V. CONCLUSION

Based on the results of the above study, 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)

Based on the results of the above study, 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).

Based on the results of the above study, 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).

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