

Is There Competition in Budget Policy of Education and Defense in Indonesia?

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Abstract

This study aims to see whether competition occurs in determines defense budget policies and education budgets. This study uses a quantitative research method by the empirical mathematical model to see the effect of the defense budget policy on the education budget in Indonesia. From the regression results, it turns out that Indonesia's budget policies for defense and education have not reduced each other. This situation cannot be responded to well because the two budgets are still minimal compared to all national income and the entire budget. It is recommended that the defense and education budgets be increased because they relate to social welfare.

Keywords: Education budget; Defense budget; Social welfare; Defense economy.

1. Introduction

A country aims to maximize the welfare of its people. Welfare is not an easy concept because it is very related to humans but needs to be identified. With the growth in the economy, social welfare is expected to continue to increase. Development must create a sense of security and comfort among individuals and groups in carrying out their activities. So that they can increase their utilities maximally, including in improving social welfare, especially in the field of education. Talking about the topic of social welfare, of course, is strongly related to economic growth.

Caputo (1975) was one of the first researchers to look at the public policy implications of military spending and welfare. The results of Caputo's study, which looked at defense and welfare spending in four modern democracies State from 1950-to 1970, found a trade-off between defense spending and welfare spending, which is also found in a later study by Yildirim and Sezgin (2002). Indeed, it will be carried out further research to look at the impact of military spending on economic growth, as done by Hassan *et al.* (2003), Al-Yousif (2002), Shieh *et al.* (2002), and Kollias *et al.* (2004). Hirnissa *et al.* (2009)

Social welfare is a direct influence on economic growth. If economic growth declines, social welfare will also decline, and vice versa. In Antonakis (1999) opinion, this is not directly used as an entirely accepted fundamental theory. For this reason, it needs to be seen directly whether even though economic growth automatically increases social welfare. However, Antonakis (1999) says there is no basic theory of previous assumptions about the effects of externalities and relative productivity of labor and capital from each economic sector. The direction of the growth effect of these sectors is empirical questions rather than theoretical issues. The argument that has developed so far is that government spending can negatively or positively impact economic growth.

Russett (1982) suggests that it is necessary to look at the other side. Some social welfare analyses found that spending on education and health was a leading indicator of the government's commitment to social welfare. Russett looks at the relationship between military budgets and social welfare by looking at military spending on the one hand and health and education on the other. If the state increases resources for military activities without increasing total products, then the civil sector must pay for them with the benefits they should be able to obtain. It will result in a sharp cut in social investment expenditure. It will cause future generations to lose their best health or education due to the importance of efforts in the military field.

In the budgeting process for defense, many researchers believe that government power is very influential in determining the military budget. They found that this political influence was strictly related to the regime in power. Determination of military expenditure through political and bureaucratic processes exemplifies the impact of the interests of certain political groups and how the public sector mobilizes resources. Little research has been done to find the influence of the military regime in determining the budget for the military and the allocation of other resources. Some studies have even found that defense allocation is determined by different variables, not by the military's influence on the government (West and Thompson, 1990).

Indonesia is a country with 268 million people (2018), which is the largest Muslim-majority country globally. Indonesia is included in the ten countries with the largest economy. Indonesia's population has a median age of 28.8 years and is expected to exceed 318 million by 2045 (World Bank, 2019). Indonesia spends about 20 percent of its national budget on education. According to the National Education Law No.20/2003, the education budget is "Education funds in addition to education salaries, and official education fees are allocated a minimum of 20% of the national budget (APBN) in the education sector and at least 20% of the local budget (APBD). The state prioritizes the education budget of at least 20% of the APBN and APBD to meet national implementation needs" (Aulia, 2017). This law is stated in the fourth amendment to the 1945 Constitution Article 31, Paragraph (3). Nevertheless, "At least since 2008, the education budget is 20 percent, but it falls for small operations" (Prasetyo, 2012).

From all the explanations, there is competition between defense and social welfare expenditure policies in compiling the national budget, especially for education. This study aims to see whether there is an influence between defense budget policies and the education budget in Indonesia.

2. Method

This study uses a quantitative research method to see the effect of the defense budget on the education budget. The data was taken before implementing the obligation. The obligation that the education budget of 20% of all government expenditures in 2008. Although invited in 2003, the application began in 2008. Data sources were taken as secondary data from the world bank website, namely the World Development Indicator.

Although there are many different studies regarding the defense-welfare trade-off, Russett (1982) review is the best-known beginning. Many studies do not use appropriate models to explain the trade-off of defense welfare. Mintz (1989) replicates the Russett model with data that has been disaggregated. It is believed that the Russett model is straightforward and offers the issue of defense welfare in a more understandable and suitable form for developing countries (Yildirim and Sezgin, 2002).

Russett looks at the relationship between military budgets and social welfare by looking at military spending on the one hand and health and education on the other. If the state increases resources for military activities without increasing total products, then the civil sector must pay for them with the benefits they should be able to obtain. There will be a sharp cut in social investment expenditure. It will cause future generations to lose their best health or education due to the importance of efforts in the military field (Russett, 1982).

Russett (1982) uses two systems of equations to analyze whether there have been trade-offs between military spending and health and education expenditures. His research produced negative signs for military spending on health and education expenditures. There is a trade-off between education (E) and defense expenditure (M) from the model formed, namely:

$$\frac{E_t - E_{t-1}}{E_{t-1}} = a - b \frac{M_t - M_{t-1}}{M_{t-1}} + e. \quad (1)$$

Then Russett developed the model into:

$$\% \Delta \text{education} = a - b_1 \% \Delta \text{military} + b_2 \Delta \text{health} + b_3 \Delta \text{housing} + b_4 \Delta \text{productivity} - b_5 \text{capacity} + b_6 \Delta \text{GNP} + b_7 \Delta \text{taxes} + b_8 \% \Delta \text{population under 18} + b_9 \% \Delta \text{enrollment} - b_{10} \text{battle deaths} - b_{11} \text{republican} + e \quad (2)$$

Mintz (1989) replicates the Russett model and makes it:

$$\% \Delta \text{education} = a + b_1 \% \Delta \text{housing} + b_2 \% \Delta \text{health} - b_3 \% \Delta \text{military} + b_4 \% \Delta \text{taxes} + b_5 \% \Delta \text{enrollment} (t-1) - b_6 \text{republican} (t-1) + b_7 \% \Delta \text{GNP} (t-1) + e \quad (3)$$

The model building is based on the Russett (1982) and Mintz (1989) models, which are also used by Yildirim and Sezgin (2002). Yildirim & Sezgin modified the Russett equation for several reasons. Russett uses the amount of change rate, not the level of expenditure. He assumes that the trade-off appears on the margin, which response up or down, not from the total budget. This approach will result in more substantial weighting than absolute changes.

We will prove the null hypothesis in this study, **H₀**: Military spending does not affect education expenditure. We will build the model in this study based on the modification of the Russett (1982) hypothesis and the model development of Mintz (1989) and Yildirim and Sezgin (2002).

3. Results and Discussion

The trade-off argument between spending on health, education, and the military as a significant component of the government budget is still ongoing. All these empirical results vary significantly by country due to each country's different historical, economic, political, and social backgrounds. But until now, there has been no consensus through these studies. The main argument still exists today is that defense spending is believed to reduce economic growth because it reduces public expenditure on human resource formation, especially in poor and developing countries. (Yildirim and Sezgin, 2002)

The opinions of the researchers can be summarized as follows: There is a negative trade-off reported by several studies, namely by Russett (1982) and Deger (1985). On the other hand, it is possible that defense spending contributes to the formation of human resources in education and health (Ram, 1993). There is an increase in expertise and physical education, especially in developing countries (Benoit, 1978). On the other hand, defense spending contributes to education and health. It is stated by Ram (1993) and Benoit (1978). Defense expenditures allow specific physical training and skills. Another argument is that there is no relationship between expenditure

defense welfare Russett (1982), Mintz (1989), Davis and Chan (1990) and Frederiksen and Looney (1983). These results show differences, proving that the ruling regime determines systematic budgeting.

Dabelko and McCormick (1977) looked at the impact of changes in military spending in several countries from 1950 to 1972. There is an opportunity cost for the education and health of the entire sample in all years. But with a weak magnitude. In their study, Harris *et al.* (1988) believe that defense spending can compete with financial expenditures for other activities, especially education and health, from the research of twelve Asian countries. It contrasts with (Adebiyi and Oladele, 2005) findings, which conducted regression analysis for the relationship between military spending and education in Nigeria in 1970 and 2003, which showed positive and statistically significant results. Yildirim and Sezgin (2002) reported mixed results, namely negative, positive, and no relationship, depending on the variables tested. They state a trade-off between defense and welfare spending, namely a negative trade-off between defense and health, but a positive relationship between defense and education, concluding that there is competition between education spending and health in the budgeting process.

Fitzgerald (2006) studied 1992 the relationship between active soldiers and their wealth accumulation. He found a disincentive relationship between the length of time spent on active military duty and the ability of veterans to have future wealth, including preparing for medical expenses. Lai and Thyne (2007) looked at the negative effects of civil war on education spending from 1980 to 1997. They concluded that the civil war destroyed the education system, with support for the reallocation of education funds to military spending during the civil war high. Hirmissa *et al.* (2009) examined the relationship between military, education, and health spending in eight Asian countries, namely Malaysia, Indonesia, Singapore, Philippines, Bangladesh, Nepal, Sri Lanka, and South Korea. The empirical results provide findings that there is a reciprocal relationship detected, except in the case of Malaysia and Sri Lanka. Then it implies that there is a long-term relationship between defense, education, and health spending across all country samples (Hirmissa *et al.*, 2009).

Research from Aghion *et al.* (2014) examines the relationship between military threats and expansion of basic education, using panel data from the last 150 years in several European countries since the postwar period. This study finds empirically that investment in education increases in response to military threats.

Based on the hypothesis from Russett (1982) which states there is a trade-off between education (E) and defense expenditure (M), as in equation (1). From the model, we can see that the increase in the military budget can reduce the education budget. It depends on whether the state wants to sacrifice its educational programs to increase defense without trying to increase national production.

The model of education function is derived from the hypothesis above without going through a strict model formation. Following Russett (1982), that replicated Mintz (1989) and Mintz and Huang (1990), as well as Yildirim and Sezgin (2002), the model was modified as follows:

$$\left(\frac{\Delta Edu}{Edu_{t-1}} \right) = a + b_1 \left(\frac{\Delta Y}{Y_{t-1}} \right)_{t-1} + b_2 \left(\frac{\Delta M}{M_{t-1}} \right) + b_3 \left(\frac{\Delta T}{T_{t-1}} \right) + b_4 \left(\frac{school}{school_{t-1}} \right)_{t-1} \quad (4)$$

Which can be rewritten as follows:

$$gedu_t = \alpha + \beta_{41} ggdpt_{t-1} + \beta_{42} gmil_t + \beta_{43} gtax_t + \beta_{44} gschool \quad (5)$$

This model shows that education spending varies depending on the state of the national economy. GDP (Y) growth variables are used as a control variable. The inclusion of military budget growth $\Delta(M/Y)$ is suspected that there will be a sharp cut in the education budget (edu) when the military budget is increased. The tax variable is included in the model because the government budget is also determined by the source of financing obtained, which is dominantly from tax (T). When funding sources increase, the competition for determining the education and military budget is not too high. This education offers will also increase when education consumption increases, which is proxied through years of the adult population.

The model (5) above is applied to Indonesian data. These data can be seen in the graph below:

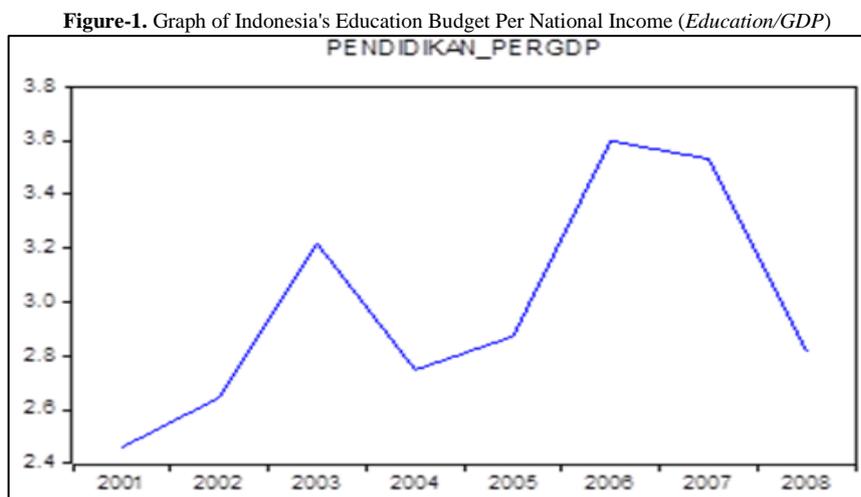
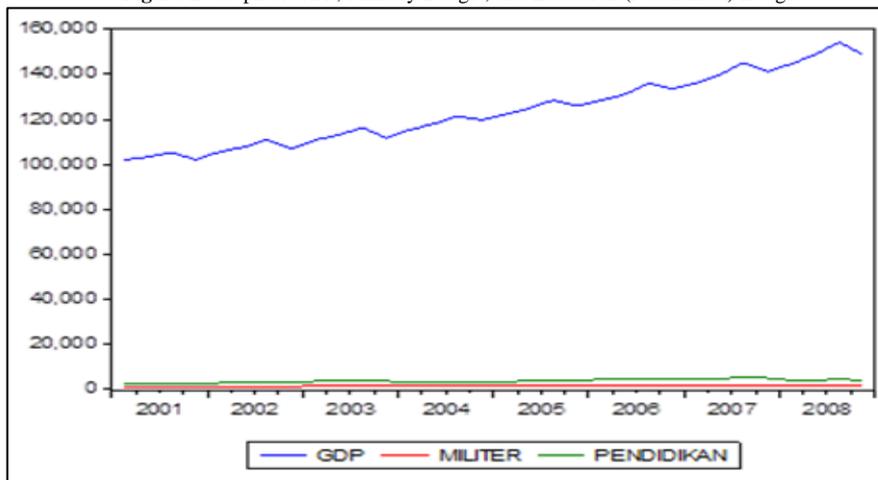


Figure-2. Graph of GDP, Military Budget, and Education (Pendidikan) Budget



All data included in the model had passed all classic assumptions. The assumptions of normality, heteroscedasticity, autocorrelation, and multicollinearity. The regression results using reviews are in the following table:

Table-1. Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001677	0.000958	-1.750242	0.0914
GROWTH_1	0.047591	0.026227	1.814609	0.0807
DMIL	2.648627	0.521674	5.077169	0.0000
DSCHOOL	421.9753	867.0324	0.486689	0.6304
DTAX	0.032059	0.013852	2.314454	0.0285
R-squared	0.521505	Mean dependent var		0.000498
Adjusted R-squared	0.450617	S.D. dependent var		0.002468
S.E. of regression	0.001829	Akaike info criterion		-9.627020
Sum squared resid	9.04E-05	Schwarz criterion		-9.397999
Log likelihood	159.0323	Hannan-Quinn criter.		-9.551106
F-statistic	7.356721	Durbin-Watson stat		1.776662
Prob(F-statistic)	0.000383			

Source: (Data processing results)

From the table, the equation model is:

$$gedu_t = -0,0017 + 0,0476growth_{t-1} + 2,6486mil_t + 0,0321gtax_t + 421,9753gschool + \epsilon_t \dots\dots\dots (6)$$

The results above show that all the independent variables affect the dependent variable except the "school" variable, which is a proxy of the number of the adult population having an education. This variable does not affect due to not too fluctuating data in each period. At the same time, the variables of changes in economic growth, military budget, and taxes have a significant positive effect on changes in the education budget.

These results explain that economic growth can increase the education budget, and tax increases can also increase the education budget. Also, there is no competition for spending budgets between education and the military, providing a positive relationship. It shows that the increase in the military budget does not cause a decrease in the education budget. It is possible because the two budgets are still small, where the military budget is the lowest, but the portion of both is still tiny compared to GDP.

4. Conclusion

The study results can conclude that Indonesia's budget policies for defense and education have not reduced each other. This situation cannot be responded to well because the two budgets, the defense and education budget, are still minimal compared to all national income and the entire national budget provided per year. Suggestions for policymakers are that the two budgets must be increased because they are related to the community.

References

Adebisi, M. A. and Oladele, O. (2005). *Public education expenditure and defence spending in Nigeria: An empirical investigation*. Department of Economics, University of Lagos: Akoka-Yaba, Nigeria.

- Aghion, P., Jaravel, X., Persson, T. and Rouzet, D. (2014). *Education and military rivalry*. Harvard University and CIFAR.
- Al-Yousif, Y. K. (2002). Defense spending and economic growth: Some empirical evidence from the Arab Gulf region. *Defense and Peace Economics*, 13(3): 187-97.
- Antonakis, N. (1999). Guns versus butter: A multi-sectoral approach to military expenditures and growth with evidence from Greece, 1960-1993. *Journal of Conflict Resolution*, 43(4): 501-20.
- Aulia, D. (2017). *Penggunaan anggaran pendidikan Indonesia*. Kompasiana, 19 Mei.
- Benoit, E. (1978). Growth and defence in developing countries. *Economic Development and Cultural Change*, 26(2): 271-80.
- Caputo, D. A. (1975). New perspectives on the public policy implications of defense and welfare expenditures in four modern democracies: 1950-1970. *Policy Sciences*, 6: 423-46.
- Dabelko, D. and McCormick, J. M. (1977). Opportunity costs of defence: Some cross-national evidence. *Journal of Peace Research*, 14(2): 145-54.
- Davis, R. D. and Chan, S. (1990). The security-welfare relationship: Longitudinal evidence from taiwan. *Journal of Peace Research*, 27(1): 87-100.
- Deger, S. (1985). Human resources, government education expenditure, and the military burden in less developed countries. *The Journal of Developing Areas*, 20(1): 37-48.
- Fitzgerald, K. G. (2006). The effect of military service on wealth accumulation. *Research on Aging*, 28(1): 56-83.
- Frederiksen, P. and Looney, R. (1983). Defense expenditures and economic growth in developing countries. *Armed Forces and Society*, 9(4): 633-45.
- Harris, G., Kelly and Pranowo, M. (1988). Trade-offs between defence and education/health expenditures in developing countries. *Journal of Peace Research*, 25(2): 165-77.
- Hassan, M. K., Waheeduzzaman, M. and Rahman, A. (2003). Defense expenditure and economic growth in the SAARC countries. *The Journal of Social Political and Economic Studies*, 28(3): 275-82.
- Hirnissa, M., Habibullah, T. and Baharom, M. S. (2009). The Relationship between Defense, Education and Health Expenditures in Selected Asian Countries. *International Journal of Economics and Finance*, 1(2): 149-55.
- Kollias, C., Manolas, G. and Paleologou, S. Z. (2004). Defense expenditure and economic growth in the European Union: a causality analysis. *Journal of Policy Modeling*, 26(6): 553-69.
- Lai, B. and Thyne, C. (2007). The effect of civil war on education, 1980-97. *Journal of Peace Research*, 44(3): 277-92.
- Mintz (1989). Guns versus butter: A disaggregated analysis. *The American Political Science Review*, 83(4): 1285-93.
- Mintz and Huang, C. (1990). Defense expenditures, economic growth, and the peace dividend. *American Political Science Review*, 84(4): 1283-93.
- Prasetyo, G. (2012). Membongkar "Kebohongan" Anggaran Pendidikan 20 Persen? : Available: <https://edukasi.kompas.com/read/2012/07/04/13575176/>
- Ram, R. (1993). *Conceptual linkages between defense spending and economic growth and development: A selective view*. In *Defense spending and economic growth*, edited by James E. Payne and Anandi P. Sahu. Routledge: New York.
- Russett, B. (1982). Defense expenditures and national well-being. *American Political Science Review*, 76(4): 767-77.
- Shieh, J. Y., Lai, C. C. and Chang, W. Y. (2002). Endogenous growth and defense expenditures: A new explanation of the Benoit hypothesis. *Defense and Peace Economics*, 13(3): 179-86.
- West, R. and Thompson, S. (1990). *Impact of military expenditures on economic development, interim synthesis report submitted to the agency for international development by the fletcher school of law and diplomacy*. Tufts University.
- World Bank (2019). *The promise of education in Indonesia*. Clearance Center, Inc: Danvers.
- Yildirim, J. and Sezgin, S. (2002). Defense, education and health expenditures in turkey, 1924-96. *Journal of Peace Research*, 39(5): 569-80.