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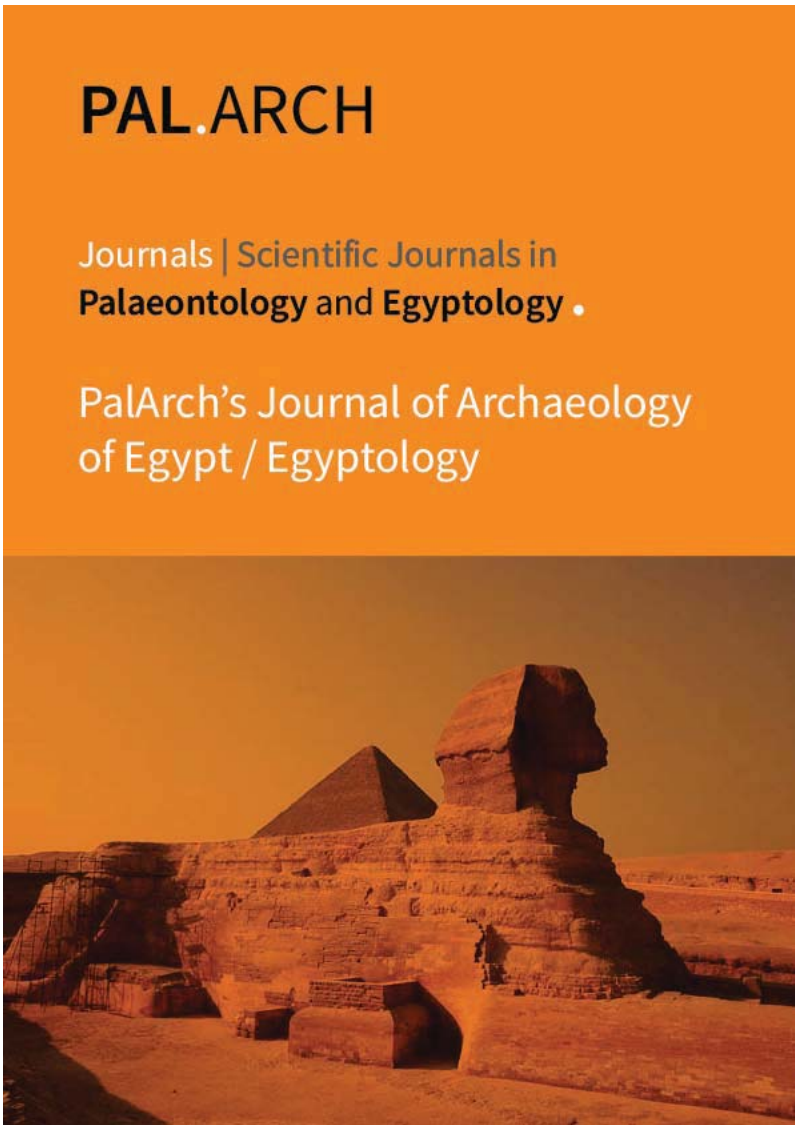

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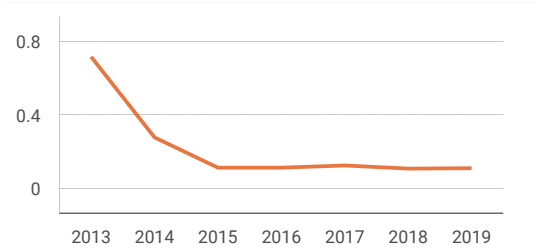

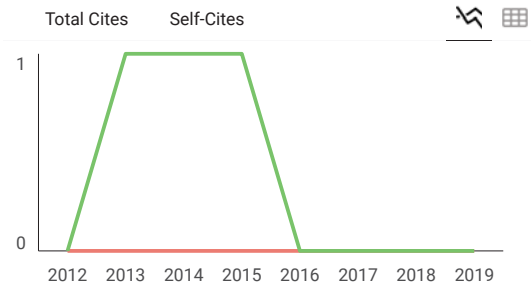

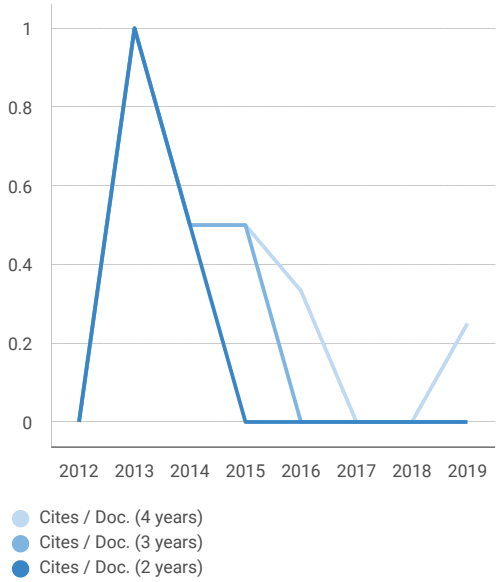

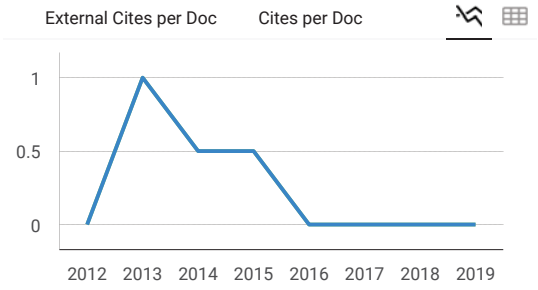

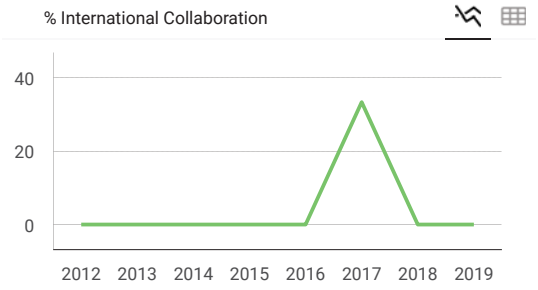

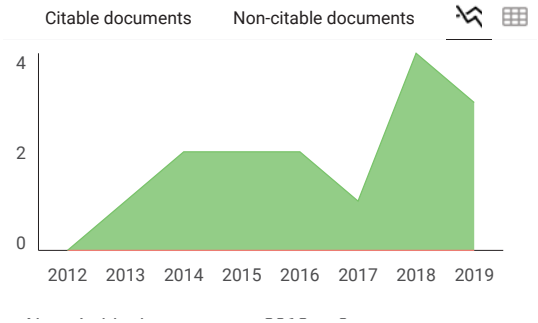

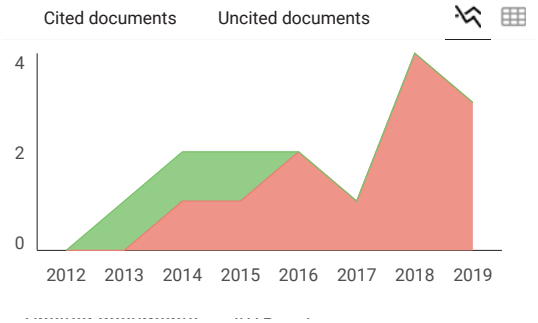

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ARTICLES

CULTURAL QUALITIES OF SALAFI WOMEN IN POST-ARAB SPRING IN JORDAN: A PILOT STUDY

Dr. Shatha Sakher 1-17

PDF

THE ROLE OF HIGHER EDUCATION IN ECONOMIC DEVELOPMENT IN IRAQ

Assist. Prof. Dr. Mustafa Kademi Najaf Abadi, Ayad Shamkhi Jaber 18-44

PDF

A PRAGMATIC STUDY OF DECEPTION IN AMERICAN POLITICIAN'S SPEECH

Aseel Kareem Mohammed Al-Tamimi, Prof. Dr. Qasim Obayes Al-Azzawi 45-68

PDF

THE EFFECT OF USING THE MANTLE OF THE EXPERT STRATEGY ON ACHIEVEMENT AND DECISION-MAKING FOR FIRST GRADE INTERMEDIATE STUDENTS IN MATHEMATICS

Rasha Ghani Hashem 69-88

PDF

THE ADAPTATION OF KHAZ'AL AL-MAJIDI'S SEDRA: PERSONAL AND POLITICAL MOTIVES

Fazel Asadi Amjad, Salam Hasan Makki Mutleb 89-106

PDF

BEGGING AND DISABILITY: VIEWPOINTS OF JORDANIANS

Dr. Rodaina Khader AlTarawneh 107-125

PDF

A REVIEW ON THERMAL CONDUCTIVITY OF ETHYLENE GLYCOL/WATER BASED NANOFLUID

Bhrant Kumar Dandoutiyaa, Arvind Kumarb 126-139

PDF

A STUDY OF AGILE INTRODUCTION IN MANO TRANSFORMATION

1Atul Narain, Dr. Pratibha Garg 140-152

PDF

THE SUBLIMINAL FIXATIONS IN DESIGN AND THEIR EFFECTS ON SOCIETY

Ass. Prof. Dr. Mustafa GÜNAY 153-166

PDF

AN ANALYTICAL STUDY OF THE REALITY OF THE LABOR MARKET AND UNEMPLOYMENT IN IRAQ FOR THE PERIOD 2003-2013

Haitham Sahi Jadaan , Dr.Bouabid Anis 7009-7032

PDF

TRENDS CHANGE IN RELIGIOUS AND BELIEF LIVING OF THE KHMER PEOPLE IN TRA VINH PROVINCE

Nguyen Quang Hung, Vu Hong Van 7033-7042

PDF

THE EFFECT OF THE KOLB MODEL ON DEVELOPING THE TECHNICAL COMPUTER DESIGN SKILLS OF STUDENTS OF THE DEPARTMENT OF FAMILY EDUCATION AND ART PROFESSIONS

Prof. Dr Amera Khalil Al-Amery, Asst. Prof. Dr. Salah al-Din Qadir Ahmed, Ansam Safa Najm Abdullah 7043-7051

PDF

RESTORING PEACE AND ADOPTING RESILIENT STRATEGIES FOR CULTURAL TOLERANCE: PAKISTAN'S EFFORTS IN COUNTERING VIOLENT RELIGIOUS EXTREMISM (CVRE) IN PAKISTAN

Prof. Dr. Umbreen Javaid, Prof. Dr. M. Iqbal Chawla 7052-7063

PDF

PAKISTANI MINORITIES: ARE THEY PROTECTED BY OR PERSECUTED BY THE CONSTITUTION?

Abdul Ghaffar Korai, Imam Uddin, Imtiaz Ahmed Memon, Ahad Ghaffar, Abdul Samad 7064-7076

PDF

A MISSING HALF OF THE MICROFINANCE- SOCIAL PERFORMANCE MANAGEMENT IN MICROFINANCE INSTITUTIONS

Madiha Riaz, Nausheen Syed, Zobia Bhatti, Asma Noureen, Saeed-Ur-Rahman, Shafqat Abbas 7077-7093

PDF

THE EFFECT OF DEFENSE SPENDING ON PRIVATE INVESTMENT IN INDONESIA BASED ON HISTORICAL DATA FOR THE PERIOD 1981-2010

Posma Sariguna Johnson Kennedy 7094-7102

PDF

REACTION TIME TEST INNOVATION OF TABLE TENNIS PERFORMANCE: AIKEN VALIDITY

Hary Widodo, Tomoliyus, Fauzi, Salvator Nahimana 7103-7110

PDF

ARTIFICIAL INTELLIGENCE: A WAY TOWARDS EFFECTIVE ACTIVITY BASED CLASSROOM

Pranjal Das, Nil Ratan Roy 7111-7117

PDF

THEORETICAL CRIMINAL LAW AND CRIMINAL JUSTICE PRACTICE

Abdul Ghaffar Korai, Javed Ahmed, Ahad Ghaffar, Abdul Samad, Imtiaz Ahmed Memon 7118-7129

PDF

INTRODUCTION TO LAW AND LEGAL REASONING

Abdul Ghaffar Korai, Javed Ahmed, Ahad Ghaffar, Abdul Samad, Imtiaz Ahmed Memon 7130-7142

PDF

A CRITICAL REVIEW OF STRATEGIES FOR PEACE BUILDING IN SCHOOL ADOLESCENTS

Muhammad Nasir Khan, Ehsan Ali, Khalil Akhtar, Syed Shahid Hussain 7143-7149

THE EFFECT OF DEFENSE SPENDING ON PRIVATE INVESTMENT IN INDONESIA BASED ON HISTORICAL DATA FOR THE PERIOD 1981-2010

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PDF

ABSTRACT

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Key Words: Defense Expenditure, Private Investment, Interest Rates, National Taxes

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INTRODUCTION

Defense expenditure is a public budget allocated for purposes related to a country's defense programs. The amount is strongly related to the economic capacity of a country and the level of priority in the development program. According to the Ministry of Defense in Adi et al, explains that the budget is a financial work plan that is systematically regulated, covering the maximum amount of expenditure needed to finance the interests of the country in a certain period, with estimated income that may be received in the future (W, Hasan D, Suryanto J, & Darmawan, 2007).

Defense spending is one of the costs that must be incurred by the government. From a theoretical point of view, an increase in government spending has two consequences for private investment. First, an increase in government

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Defense spending is one of the costs that must be incurred by the government. From a theoretical point of view, an increase in government spending has two consequences for private investment. First, an increase in government

spending must be financed which can lead to a higher demand for capital from the government, which can trigger an increase in interest rates. This will reduce the amount of savings available to private investors and also reduce the rate of return on private investment (crowds-out effect). Second, public spending can have a favorable impact on private investment (crowds-in), for example, the government invests in infrastructures such as roads, ports, and so on. The existence of these infrastructure facilities can increase the productivity of the private sector and has the potential to improve the business environment (Rahman, Ullah, & Jebran, 2015)(Ahmed, 2000).

Several studies show both conditions (Prasetyo, 2020)(Nepram, Singh, & Jaman, 2021). Basar et al conducted a study to see the crowding-out impact of government spending on private investment in Turkey. The results obtained show that total government spending and transfer payments have a positive impact on private investment which is by the crowding-in hypothesis. Government investment spending encourages private investment to enter (Basar, Polat, & Oltulular, 2011). Njuru et al conducted a study to determine the impact of government spending on private investment in Kenya. Research findings indicate that both routine and development spending has an undesirable impact on private investment. Public spending reforms have deterred private investor activity (Njuru, Ombuki, Wawire, & Okeri, 2014).

Rahman et al conducted a study to examine the impact of various components of government spending on private investment in Pakistan during the period 1974 to 2010. The results show that the real impact of government spending depends on the type of expenditure being considered. Government spending on agriculture, health and transport, and communications together with inflation represent a crowding-in (positive) impact on private investment in the long run, while spending on public services and debt servicing represents a crowding-out (negative) impact on private investment. Spending on education and defense is not significantly associated with private investment (Rahman et al., 2015).

Economics and defense provide reciprocal relationships. Benoit is an early researcher who found that the defense budget has a positive impact on economic growth (Benoit, 1978). This finding is supported by many other researchers. But many scientists also disagree with these results and are still being debated by experts to date. The defense budget is significant for economic players from the defense programs carried out. The impact is the creation of security for all commercial agents so that they can work optimally. Theoretically, the defense budget will encourage economic growth, even though there is an impact of opportunity cost as a result of competition with policy choices on other welfare budgets. Economic actors must feel safe in commercial activities but want the defense budget issued does not provide high economic pressure. Thus, it is necessary to know whether defense budget policies can suppress the economy, especially investment.

In providing defense expenses, an alternative way is to increase taxes. Taxes that are too high will undoubtedly affect investment growth. Thus, it should also be reviewed whether the withholding tax can reduce expenditure. The

entire description above stimulates curiosity to see whether the influence of military spending, interest rates, and national taxes has an impact on private investment. This research is an extension of the previous study of the author in the case of Indonesia, where the result is, changes in the defense budget have a detrimental effect on investment by period inertia (Kennedy, 2016). In this study, we add national tax and interest rate variables that are very important to influence private investment (Mankiw, 2010).

METHOD

Defense spending can disrupt private investment. But actions to cut military spending cannot cause the investment level to be higher. Because cutting military spending only affects consumption and social investment, not on productive private investment. The small effect of crowding-out due to the military budget in developing countries is still minimal because the military still uses fewer resources than all the substantial private investment. But conventional assumptions must be considered, namely an increase in the supply side is even more important than demand, especially for growth purposes for developing countries. Based on Benoit's findings(Benoit, 1978), the provision of defense budgets is still needed and has not significantly affected the economic downturn in developing countries. However, several studies show that defense spending can cause the crowd out.

The flexible investment acceleration model from Peter Clark (Clark, 1979) is the basis of the thinking of Mintz & Huang(Mintz & Huang, 1990)(Mintz & Huang, 1991), assuming that investment is a function of national income and capital stock in the previous year. Mintz & Huangand, McDonald & Eger use this model to explain the relationship between defense and investment expenditures (Mintz & Huang, 1991)(McDonald III & Edger III, 2010). Model formation begins by constructing a flexible accelerator investment variable, *I,* as a function of output *Y* from the previous period and capital stock, *K,* from the last period. Next, the formation of this investment model is expanded by incorporating defense expenditure into the model.

Taking into account the replacement investment model, the replacement of depreciated capital is expected to respond to current and past output linearly. Gross investment, I, represented as the distribution of delays in production plus a constant number, multiplied by the capital stock in the past, are:

$$I_t = \sum_{i=0}^{\infty} \beta_i \Delta Y_{t-i} + dK_{t-1}$$

From the neoclassical approach, gross national product income is the sum of consumption (*C*), investment (*I*), government expenditure (*G*), and net exports (*EX-IM*), then the national income model, namely:

$$Y = C + I + G + (EX - IM)$$

I assume that the private sector (*P*) is the sum of consumption, investment, and net exports. Then the government sector, *G*, is divided into military expenditure (*M*) and expenditure for non-military (*N*). Thus, the equation can be written as:

$$Y = P + N + M$$

By the law of distribution, the rate of change in Y is equal to the number of rates of change for each P, M, and N, or the first difference. The primary difference Y is the number of these three components, namely:

$$\Delta Y = \Delta P + \Delta N + \Delta M$$

The above equation is included in a flexible accelerator investment model (equation 1), can be shown in the following models:

$$I_t = \sum_{i=0}^{\infty} \beta_1 \Delta P_{t-i} + \sum_{i=0}^{\infty} \beta_2 \Delta M_{t-1} + \sum_{i=0}^{\infty} \beta_3 \Delta N_{t-i} + dK_{t-1}$$

If both parties are divided by Y, which is the proportion of each variable to GDP, give the following results:

$$\frac{I_t}{Y_t} = \alpha + \sum_{i=0}^{n} \beta_1 \frac{\Delta P_{t-i}}{Y_t} + \sum_{i=0}^{n} \beta_2 \frac{\Delta M_{t-i}}{Y_t} + \sum_{i=0}^{n} \beta_3 \frac{\Delta N_{t-i}}{Y_t} + \beta_4 \frac{dK_{t-1}}{Y_t} + \varepsilon$$

(Mintz & Huang, 1990)(Mintz & Huang, 1991)

I= real domestic private investment in constant prices; Y= real GDP at constant prices; P= real personal output at constant prices; N= real non-military expenditure in constant prices; M= the expenditure of real military defense at constant prices; K= the net value of the depreciation of real capital at a constant price, and n is the optimal lag determined empirically.

Investment decreases with the increase in interest rates, so there is an expectation that there is a negative relationship between the two variables. The model formed also wants to see the effect of taxes that are thought to provide a negative correlation with investment. To capture it all, assuming the depreciation of the capital stock is zero, the model is written in the form of:

$$investy_t = \alpha + \beta_1 \sum_{i=0}^{n} dprivy_{t-i} + \beta_2 \sum_{i=0}^{n} dmily_{t-i} + \beta_3 \sum_{i=0}^{n} dnmily_{t-i} + \text{int}_t + taxy_t + \varepsilon_t \quad (7)$$

$investy_t$= total real investment per real term GDP in period t, $dprivy_t$= change in real private sector expenditure per GDP in period t, $dmily_t$= change in defense sector real expenditure per real GDP in period t, $dnmilyt$= change in non-real expenditure sector defense per real GDP in period t, int_t= interest rate in period t, and $taxy_t$= tax per real GDP in period t.

The single economic model mentioned above belongs to an econometric problem and will be tested using multiple linear regression in the time series method (Johnston & DiNardo, 1997)(Gujarati, 2003).

RESULTS

The model is formed using flexible accelerators which assume investment is a function of the difference between national income and capital stock in the previous year. These variables are incremental or are variable changes. Mintz

& Huang developed this model to examine the effect of military spending on private investment (Mintz & Huang, 1990)(Mintz & Huang, 1991).

The data used is quarterly time series data, from 1981 as the first quartile to the 2010 period as the last (fourth) quartile, as many as 120 observation data. It will be seen whether real private investment/real GDP is affected by real military expenditure/real GDP, changes in real non-military/GDP spending, real private sector output/real GDP changes, real national tax/real GDP, and interest rates.

Based on all the independent variable data, we analyze whether they influence private investment as the dependent variable. Regression method is Generalized Least Square, using first and third order autoregressive. The autocorrelation problem has been eliminated seen by the Durbin-Watson value. Heteroscedasticity and multicollinearity tests have been skipped and fulfill classical assumptions. The reverse AR Root data is smaller than zero, indicating there is no autocorrelation. The Granger Causality analysis shows that between variables do not have a relationship that affects and is influenced. Thus, this single model can be used. From the regression results are obtained as follows:

Table 1 Effect of Defense Spending, National Tax and Interest Rate on Private Investment in Indonesia (In Real Output, 1981-2010)

Parameter	Coefficient	Standar Error	Significant
Constant	0.3152**	0.0844	0.05
Changes in private sector	0.3072***	0.0348	0.01
Changes in military sector	-0.4837**	0.2299	0.05
Changes in non military sector	-0.0453**	0.0233	0.05
Interest Rates	-0.0016**	0.0007	0.05
National Taxes	-0.1483*	0.0885	0.10
Dummy	-0.0879**	0.0250	0.05
AR(1)	0.6162***	0.0736	0.01
AR(3)	0.3411***	0.0730	0.01
R^2	0.7945		
Inverted AR Roots	<0		
Prob F	0.000000		
DW	2.14		

Note: ** * Statistically significant at the 0.01 level; ** statistically significant at 0.0 5 levels; * statistically significant at level 0.1. The dummy variable is used to differentiate the period before and after the crisis (worth 1 in the period 1999-2010, in addition to this period, is worth 0). All data has passed stationary testing.

Source: Data Processing Results.

From result table above, we can explain that:

Changes in the output of the private sector significantly affect private investment output positively;

Changes in defense spending have a negative impact on private investment output;

Changes in non-military expenses adversely affect private investment output;
Interest rates negatively affect private investment output. An increase in interest rates causes a decrease in private investment output, and vice versa;

The amount of national tax also has a negative impact on private investment output. The increase in national tax will affect the decrease in consumption and production, thus causing a decline in private investment output, and vice versa.

The negative effect of increasing military spending and changes in non-military spending is giving crowding-out to private investment, according to generally accepted results in the literature. Smith used data for 14 major OECD countries between 1954 and 1973, testing the hypothesis that reduced investment has become a large opportunity cost of military spending in the postwar period. The results show the negative effect of military spending on investment (Smith, 1980). Na Hou et al continued the study of the effect of military spending on investment in 13 selected OECD countries during the 1971-2012 period by applying the Smith Demand-Side model. The empirical results reveal that military spending drives investment (Hou & Chen, 2014). Malizard discusses the impact of military spending on private investment in France, for the period between 1980 and 2010. It is revealed that military spending urges private investment, according to generally accepted results in the literature (Malizard, 2015).

Ücler empirically examines the relationship between military spending and private investment for the period 1975-2014 in Turkey. The empirical findings show that there is a positive relationship between military spending and private investment (crowd-in) in the long run, but there is no causal relationship between military spending to private investment (Üçler, 2016). Kollias et al discussed the relationship between military spending and the rate of growth and investment spending. The findings do not show uniform results across the three sub-samples of income groups of the observed countries (Kollias & Paleologou, 2019). Dunne et al discuss the effect of military spending on growth. He found that the data did not show a strong relationship between military spending and either investment or growth (Dunne & Smith, 2019).

As many experts' state, defense spending is part of a country's expenditure which is used, among others, to buy and produce equipment to increase military capability and strength. The allocation of resources for national defense has important economic consequences, especially for developing countries that have relatively few resources compared to the economies they want to develop. The supply-side effect of defense spending is primarily

technological advances caused by military research and development programs that are often heavily dependent on public funding. Such technological advances and innovations, through a spillover mechanism, can increase productivity and thereby stimulate growth. On the other hand, this defense spending also has a retarding effect on growth mainly through crowding-out growth-promoting variables, such as investment which has been shown by several studies.(Martí Sempere, 2016)(Dunne & Smith, 2019).

Sensitivity analysis of reaction changes in the private sector, changes in military spending and changes in non-military expenditures and national interest rates and taxes, in influencing the output of private investment, can be analyzed through the level of elasticity shown in Table 2:

Table 2. Elasticity Variables That Involved on Investment

Variable	Multiplier Effect	Average Elasticity
Changes in private sector	$d(invy)/d(dprivy_t) = 0,3073$	E (10) = 0,0205 E (5) = 0,0174
Changes military sector	$d(invy)/d(dmily_{t-1}) = -0,9920$	E (10) = 0,0026 E (5) = $-1,774*10^{-5}$
Changes in non-military sector	$d(invy)/d(dnmily_t) = -0,0895$	E (10) = 0,0050 E(5)= -0,0006
Interest Rates	$d(invy)/d(int_t) = -0,0012$	E (10) = -0,0569 E (5) = -0,0472
National Taxes	$d(invy)/d(taxy_t) = -0,0012$	E (10) = -0,0983 E(5)= -0,0748

Note: E(10) is an average elasticity to private investment output of the last ten years (2001 to 2010); E(5) is an average elasticity to private investment output of the last five years (2006 to 2010).

Source: Result of Data Processing.

The impact of changes in the private sector, the military sector, non-military sector, and national interest and tax rates in Indonesia is not elastic to change private investment.

CONCLUSION

Changes in private sector output have a significant positive effect on private investment output. But we also found that changes in defense spending, non-military spending, national taxes, and interest rates had a negative impact on private investment, but were not too elastic. The defense spending causes an additional need for the government budget which causes an increase in the tax burden and budget deficit. Increased tax collection will reduce private consumption. Meanwhile, the budget deficit needs to be financed by debt, thus causing competition with the private sector which also needs it. This can lead to an increase in interest rates. Both can lead to lower private-sector spending on investment. This result is evidenced by the negative influence of the interest rate and investment tax. Also, we see the tax impact is more elastic than the interest rate in Indonesia's case.

REFERENCES

Ahmed, H. (2000). Crowding-out and crowding-in effects of the components of government expenditure. Contemporary Economic Policy, 18(1), 124–133. https://doi.org/10.1093/cep/18.1.124

Basar, S., Polat, Ö., & Oltulular, S. (2011). Crowding out effect of government spending on private investments in turkey: a cointegration analysis. Sosyal Bilimler Enstitüsü Dergisi Journal of the Institute of Social Sciences, 7(8), 11–20.

Benoit, E. (1978). Growth and Defence in Developing Countries. Economic Development and Cultural Change, 26(2), 271–280.

Clark, P. K. (1979). Investment in the 1970s: Theory, Performance, and Prediction. Brookings Papers on Economic Activity, 10(1), 73–124. https://doi.org/10.2307/2534305

Dunne, J. P., & Smith, R. P. (2019). Military Expenditure, Investment and Growth. School of Economics Macroeconomic Discussion Paper Series, (01). https://doi.org/10.1080/10242694.2019.1636182

Gujarati, D. N. (2003). Basic Econometric (L. Sutton & A. Bright, eds.). Boston: McGraw-HiII/lrwin.

Hou, N., & Chen, B. (2014). Military expenditure and investment in OECD countries: Revisited. Peace Economics, Peace Science and Public Policy, 20(4), 621–630. https://doi.org/10.1515/peps-2014-0031

Johnston, J., & DiNardo, J. (1997). Econometic Methods. In McGraw-Hill (4th ed.). California: McGraw-Hill.

Kennedy, P. S. J. (2016). The relations of defense budget with investment: Evidence from Indonesia. International Journal of Economics and Financial Issues, 6(6 Special Issue), 115–119.

Kollias, C., & Paleologou, S. M. (2019). Military spending, economic growth and investment: a disaggregated analysis by income group. Empirical Economics, 56(3), 935–958. https://doi.org/10.1007/s00181-017-1379-2

Malizard, J. (2015). Does military expenditure crowd out private investment? A disaggregated perspective for the case of France. Economic Modelling, 46, 44–52. https://doi.org/10.1016/j.econmod.2014.10.049

Mankiw, N. G. (2010). Macroeconomics (Seventh; S. Dorger, ed.). New York: Worth Publishers.

Martí Sempere, C. (2016). What Is Known About Defence Research And Development Spill-Overs? Defence and Peace Economics, 29(3). https://doi.org/10.1080/10242694.2016.1239364

McDonald III, B., & Edger III, R. J. (2010). The Defense-Growth Relationship : An Economic Investigation into Post-Soviet States. Peace Economics, Peace Science and Public Policy, 16(1), 1–26.

Mintz, A., & Huang, C. (1990). Defense Expenditures, Economic Growth, and the "Peace Dividend." American Political Science Review, 84(4), 1283–1293. https://doi.org/10.2307/1963264

Mintz, A., & Huang, C. (1991). Guns versus Butter : The Indirect Link. American Journal of Political Science, 35(3), 738–757.

Nepram, D., Singh, S. P., & Jaman, S. (2021). The Effect of Government Expenditure on Unemployment in India: A State Level Analysis. Journal of Asian Finance, Economics and Business, 8(3), 763–769.

https://doi.org/10.13106/jafeb.2021.vol8.no3.0763

Njuru, S. G., Ombuki, C., Wawire, N., & Okeri, S. (2014). Impact of Government Expenditure on Private Investment. Researchjournali's Journal of Economics, 2(8), 1–19.

Prasetyo, P. E. (2020). The Role of Government Expenditure and Investment for MSME Growth: Empirical Study in Indonesia. Journal of Asian Finance, Economics and Business, 7(10), 471–480. https://doi.org/10.13106/jafeb.2020.vol7.no10.471

Rahman, M. U., Ullah, I., & Jebran, K. (2015). Effects of Government Expenditure on Private Investment: Evidence from Pakistan. J. Basic. Appl. Sci. Res, 5(2), 14–23. Retrieved from www.textroad.com

Smith, R. P. (1980). Military expenditure and investment in OECD countries, 1954– 1973. Journal of Comparative Economics, 4(1), 19–32. https://doi.org/10.1515/peps-2014-0031

Üçler, G. (2016). Testing the relationship between military spending and private investments: Evidence from Turkey. Theoretical and Applied Economics, 23(3), 307–318.

W, A., Hasan D, Suryanto J, & Darmawan. (2007). Kebutuhan Dana Pengembangan Pertahanan Nasional. Jakarta: Lembaga Ilmu Pengetahuan Indonesia.

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