

# The Effect of Government Debt on Indonesia's Economics Growth

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## ABSTRACT

The current development in Indonesia had changed the structure of the budget, because an increased in government expenditure had caused budget deficits. One of solutions to overcome budget deficit is debt. During the period 2014-2017 the government debt profil had an average growth of 13%, which was higher than the average of economic growth. This study aims to analyze the effects of government debt on the Gross Domestic Product (GDP) via three types of government expenditure during the period of 1981-2017. The method used in this research was Two Stage Least Square with the simultaneous regression. The result show that government debt had significant effect on capital and regional expenditure, but did not significantly influence employee expenditure. Meanwhile, the capital and regional expenditure had significant effects on GDP. The highest multiplier effect affecting GDP was regional expenditure.

**Keywords** : Budget Deficit, GDP, Government Debt, Government Expenditure

## I. INTRODUCTION

The existence of urgent needs such as health, education and infrastructure caused the government to carry out development. In order to finance development, the government requires a lot of budget. This condition causes Indonesia's deficit budget. The government have to find other sources of financing. Some of common method used to finance is debt.

During the period 1981-2017 the amount of government debt nominally continued increase, especially in 1998 which increased by 130% due to the phenomenon of the monetary crisis. Futhermore, the increase in nominal debt began to look significant again in 2014-2017. The debt in 2015 reached 20% of the total debt in the previous year. This value was the highest nominal debt increase since the global crisis that occurred in 2008. Based on its ratio of Gross Domestic Product (GDP), the value of government

debt in 2014-2017 also have an increasing tends. Until the 2017 the ratio of government debt to Indonesia GDP was 29.4%.

Debt is expected to encourage economic growth in Indonesia through various productive activities, both in terms of demand and supply. In macroeconomic theory, if demand and / or supply increases, it will encourage a new balance with a higher level of output. Aggregate demand with the function  $Y = C + I + G + (X-M)$  can be influenced by government expenditure, so that the greater government expenditure will increase national income from the demand side. The type of government expenditure is very important to pay attention, because productive government expenditure will subsequently encourage increased output through aggregate supply.

From the supply side where  $Y = (K, L)$ , government debt can mean capital accumulation especially if it is

used to finance the construction of infrastructure needed in the supply chain. So increasing government debt will drive supply curves that will increase national income.

Although debt was often used as a source of funding to cover budget deficits, the use of debt needs to be considered. The effect of government debt had a different impact on GDP. Based on Keynesian theory, when there is an expansion policy it will encourage an increase in the budget deficit and government debt. In line with this, agregat demand will increase which encourages increased consumption, investment and economic growth (Szabo, 2013).

The second opinion from Ricardo who stated that there was no relationship between budget deficit and government debt on economic growth. This is because the fiscal expansion policy will encourage the government to increase taxes due to a large budget deficit burden, so that the level of consumption falls and increased economics growth due to debt will compensated by an increase in taxes (Chang and Chiang, 2012).

The last opinion related on the relationship between government debt and economics growth is based on the crowding out principle or Neoclassical growth theory. In neoclassical theory it is explained that an increase in the budget deficit and government debt can trigger a decline in economic growth as a result of increase in interest rates, a decrease in investment and a decrease in formation of capital (expansive policies will increase current public consumption and decrease the level of investment, so that income and economic growth has deaceased). This phenomenon shows that debt can endanger future generations with declining income and economic growth in some countries that have excess debt (Mencinger et.al 2014; Boldeanu and Tache 2016; Allegret et.al 2016).

The different in effect caused by debt on economic growth depends on the condition of the country.

Mencinger et.al (2014) explain that the level of debt that could reduce economic growth was at the level of 80% of GDP in some ex-member countries of the Eurozone, while 53-54% for countries newly joined with the Eurozone.

Although the topic of debt had been studied, there had been some significant differences between this study and the previous. In general, research on the relationship of government debt both domestic and foreign to macroeconomic variable such as GDP, was often analyzed directly without looking at the relationship with policy taken by the government. As is well known, debt is used to finance the budget deficit and to carry out development in which the debt will be spent by the government and will ultimately have an impact on economic growth.

## II. METHODS AND MATERIAL

This study used secondary data of time series period 1981-2017. Data obtained from World Bank and Indonesia's Ministry of Finance. The method used was Two Stage Least Square with the simultaneous regression. The effect of government debt on Indonesia's economic growth was analyzed through the types of employee expenditure, capital expenditure and regional expenditure. Based on economic theory an increase in government expenditure would increase a country's output. This was explained by the following structural equation

$$\begin{aligned} LnEmployee_t &= \alpha_0 + \alpha_1 LnTax_t + \alpha_2 LnNonTax_t + \\ &\alpha_3 LnFDI_t + \alpha_4 GDP_t + \alpha_5 LnGFCF_t + \\ &\alpha_6 Debt_{t-1} + \alpha_7 D.Debt_{t-1} + \varepsilon_t \\ LnCapital_t &= \alpha_0 + \alpha_1 LnTax_t + \alpha_2 LnNonTax_t + \\ &\alpha_3 LnFDI_t + \alpha_4 GDP_t + \alpha_5 LnGFCF_t + \\ &\alpha_6 Debt_{t-1} + \alpha_7 D.Debt_{t-1} + \varepsilon_t \\ LnRegional_t &= \alpha_0 + \alpha_1 LnTax_t + \alpha_2 LnNonTax_t + \\ &\alpha_3 LnFDI_t + \alpha_4 GDP_t + \alpha_5 LnGFCF_t + \\ &\alpha_6 Debt_{t-1} + \alpha_7 D.Debt_{t-1} + \varepsilon_t \\ LnGDP_t &= \alpha_0 + \alpha_1 LnC_t + \alpha_2 LnEmployee_t + \\ &\alpha_2 LnCapital_t + \alpha_2 LnRegional_t + \\ &\alpha_3 LnGFCF_t + \alpha_4 LnExport_t + \alpha_5 LnImport_t + \\ &\varepsilon_t \end{aligned}$$

Where :

- $LnEmployee_t$  = Natural logarithm of employee expenditure
- $LnCapital_t$  = Natural logarithm of capital expenditure
- $LnRegional_t$  = Natural logarithm of regional expenditure
- $LnTax_t$  = Natural logarithm of tax revenue
- $LnNonTax_t$  = Natural logarithm of non tax revenue
- $LnFDI_t$  = Natural logarithm of Foreign Direct Investment
- $LnGFCF_t$  = Natural logarithm of Gross Fixed Capital Formation
- $Debt_t$  = Ratio debt to GDP
- $D.debt_t$  = Dummy with rasio debt to GDP, 1: 2014-2017 period, 0: 1981-2013 period
- $LnC_t$  = Natural logarithm of house hold consumption
- $LnExport_t$  = Natural logarithm of export good and services
- $LnImport_t$  = Natural logarithm of import good and services
- $\alpha_t$  = coefficient of the variables.
- $\varepsilon_t$  = error term.

Regional expenditure is all state expenditure allocated to the regions to finance regional needs in the context of implementing decentralization. The existence of Indonesia's regional autonomy policy in 2001 gave regional freedom to regulate and manage their respective autonomous regions.

TABLE I. FACTORS THAT INFLUENCE GOVERNMENT EXPENDITURE

Variables	Elasticity		
	LnEmployee	LnCapital	LnRegional
GDP	0.6	1.49	0.37
$Debt_{t-1}$	0.10	-1.26***	0.53
$D.debt_{t-1}$	0.83	5.92***	6.44***
LnFDI	-0.10**	-0.22*	0.35***
LnGFCF	0.13	-0.42*	-0.37
LnNonTax	0.05	0.22*	0.51***
LnTax	0.51*	0.66	0.66***
Cons	0.04	0.025	2.02
R-squared	0.72	0.42	0.99
Prob (F-Statistic)	0.000	0.000	0.000

Notes :

\*\*\* Significant at 1%, \*\*Significant at 5%, \*Significant at 10%

### III. RESULTS AND DISCUSSION

#### a. Factors That Influence Government Expenditure

According to Minister of Finance Regulation No.101/PMK.02/2011 concerning Budget Classification states that employee expenditure is compensation in the form of money and goods given to civil servants, state officials, retirees and honorary employees who will be appointed as employees of the scope of government both on duty inside and outside the state, in order to support the duties and functions of government organizational units.

Whereas capital expenditure is expenditure for the acquisition of assets and/or adding value of fixed assets/ other assets that provide benefits for more than one accounting period and exceeds the minimum capitalization limit of fixed assets determined by the government.

The effect of government debt and other variables on government expenditure are shown in table 1. Based on table 1 the variable of economic growth had a positive influence on the increase in three types of government expenditure, this is in accordance with Azwar (2016). The higher economic growth of a country indicates that government revenue will increase, thus encouraging an increase in government expenditure. However, economic growth variable in the employee expenditure, capital expenditure and regional expenditure did not have a significant effect. This could be caused by the level of revenue was still not optimal both in terms of tax and non-tax.

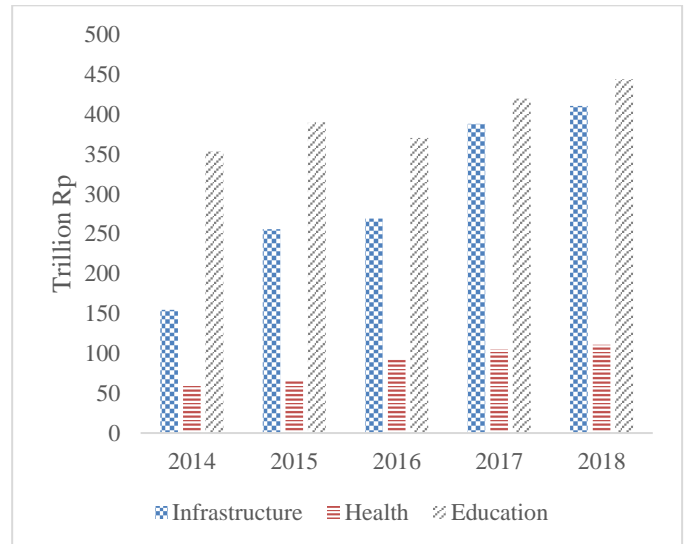
Variable tax and non-tax revenues had various effects on the three types of expenditure. Tax revenue had a significant effect on increasing employee expenditure. When tax revenue increases 1%, it will increase

employee expenditure by 0.51%, ceteris paribus. While non-tax revenue had a significant effect in increasing capital expenditure with an elasticity value of 0.22, which means that when non-tax revenue rises 1% it will increase capital expenditure by 0.22%, ceteris paribus. On regional expenditure the types of tax and non-tax revenue had a significant effect on increasing regional expenditure. Both had elasticity value of 0.51 for non-tax revenue and 0.66 for tax revenue.

Debt at the time periode 2014-2017 had various effect in types of government expenditure. In the type of employee expenditure, debt on that period had a positive but not significant effect. This indicates that the used of debt was not prioritized for employee expenditure needs. In other two types of expenditure, government debt in the period of 2014-2017 had a significant effect at the 1% level. The effect on capital expenditure had an elasticity value of 4.66 while the regional expenditure had an elasticity value of 6.97.

The real form of increased expenditure on regional could be seen through government policies that focus on development that comes from regions. During the period 2014-2017 development policies originating from regions were intensively implemented. The realization of village fund grew by an average of 50%, even in 2016 it increased 120% to Rp. 46.7 trillion (Ministry of Finance, 2019).

While the real form of increased capital expenditure were shown based in an increase in the amount of budget for infrastructure, education and health. During the periode 2014-2017, the amount of infrastructure budget increased significantly. The average growth for the infrastructure budget for the year was 30% with the biggest increase in 2015 reaching 65% from the previous period. Whereas the education and health budget respectively grew by an average of 6% and 17%.



**Figure 1 : Infrastructure, Health and Education Budget 2014-2018**

The effect of Foreign Direct Investment (FDI) on capital expenditure and employee expenditure had a negative and significant value. This showed that FDI could substitute government expenditure. The greater the FDI that enters Indonesia, it will reduce employee expenditure and capital expenditure. However FDI did not significantly effect regional expenditure. One of the reason was that FDI entering Indonesia tends to be centered in urban areas.

Another variable that influence the government expenditure was Gross Fixed Capital Formation (GFCF). In capital expenditure and regional expenditure GFCF was able to substitute for government expenditure because the higher GFCF value would reduce the capital and regional expenditure. However, GFCF had not been able to substitute government expenditure. This was because investment in the form of GFCF was capital intensive, not labor intensive.

**b. Factors that Influence Economics Growth**

The effect of debt on economics growth was analyzed through the type of expenditure incurred by the government. Debt was needed to cover the budget deficit resulting from the value of spending that was

greater than revenue. Based on the analysis, the capital and regional expenditure had a positive and significant value at 1% level. That was, an increase in the capital and regional expenditure were able to increase Indonesia's economics growth.

Capital expenditure could reduce high economic costs through the provision of adequate physical and non-physical infrastructure. The positive effect of regional expenditure indicates that the development program from the regions was the right policy. While the employee expenditure had to be constrained due to significant multicollinearity with economic growth.

TABLE 2. FACTORS THAT INFLUENCE ECONOMICS GROWTH

Variables	Elasticity	P-value
LnCapital	0.01	0.090**
LnEmployee	0.001	Constrained
LnRegional	0.02	0.05**
LnC	0.51	0.000***
LnGFCF	0.25	0.000***
LnExport	0.13	0.000***
LnImport	-0.12	0.000***
Cons	0.002	0.353
R-squared	0.86	
Prob(F-Statistic)	0.00	

Notes :

\*\*\* Significant at 1%, \*\*Significant at 5%, \*Significant at 10%

The elasticity of capital expenditure was 0.01, which means that when capital expenditure increases by 1%, Indonesia's economic growth will increase by 0.01%, ceteris paribus. The elasticity of another government expenditure such as regional was 0.02 . It indicates that when regional expenditure rises by 1% than Indonesia's economic growth will increase by 0.02% ceteris paribus.

In addition to the types of expenditure, a significant variable increasing Indonesia's economics growth was household consumption. When the level of

household consumption rises by 1% it would encourage an increase in economics growth by 0.51%, ceteris paribus. Based on data from Badan Pusat Statistik (BPS 2019) the level of household consumption always had a high contribution to the formation of national income. During the period of 2014-2017 the average consumption of Indonesian households contributed 54% to the Gross Domestic Product.

Gross Fixed Capital Formation becomes a variables that had a significant effect on increasing Indonesia's economics growth. When GFCF increases by 1% economics growth would increase by 0.25%, ceteris paribus. Export and import had significant effect on Indonesia's economic growth. The elasticity of exports and imports were 0.13 and 0.12 respectively. It means, when export increases by 1% economics growth would increase by 0.13%, ceteris paribus. Otherwise, when import good and services increases by 1 % than economics growth would decrease by 0.12, ceteris paribus.

#### IV. CONCLUSION

Government debt on the period 2014-2017 significantly affected capital expenditure dan regional expenditure but did not significantly influence employee expenditure. Meanwhile, the capital dan regional expenditure had significant effects on GDP. The highest multiplier effect affecting GDP was regional expenditure.

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- Cite this article as :**  
Trian Hutaria, Bambang Juanda, Yeti Lis Purnamadewi, "The Effect of Government Debt on Indonesia's Economics Growth", *International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET)*, Online ISSN : 2394-4099, Print ISSN : 2395-1990, Volume 6 Issue 5, pp. 125-130, September-October 2019. Available at doi : <https://doi.org/10.32628/IJSRSET196523>  
Journal URL : <http://ijsrset.com/IJSRSET196523>