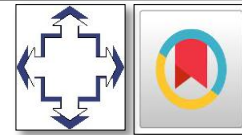


# Associative Study on Government Spending, Inflation, Trade Balance, and Gross Domestic Product



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## ABSTRACT

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Specifically, this study aims to examine the effect of macroeconomic indicators namely government spending, inflation and trade balance on PDB. The observation period from 1981-2017 is based on International Monetary Fund (IMF) documentation. Data analysis using the Error Correction Model (ECM). The results of the study: (1) in the short term and long term government spending significantly influence PDB; (2) in the short-run and long-run inflation affects PDB in the opposite way; (3) in the short term PDB is not affected by the trade balance, whereas in the long run the trade balance variable also has no effect on PDB with a negative slope and (4) the results of simultaneous tests of government expenditure, inflation, and the trade balance affect PDB.

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## 1. Introduction

As one indicator to assess the economic performance of a nation, optimal output growth is characterized by increased economic activity in which the service sector and the goods sector experience growth (Sukirno, 2011). However, there are still many countries that do not always achieve economic growth despite the increased production factors. There are even many countries where real output growth is low so that it has an impact on achieving economic growth (Sukirno, 2005). One of the roles of the government in maintaining the country's economy is through budgetary intervention through fiscal policy and government spending. Rahayu (2006) and Dumairy (2006) explain that fiscal policy can drive PDB.

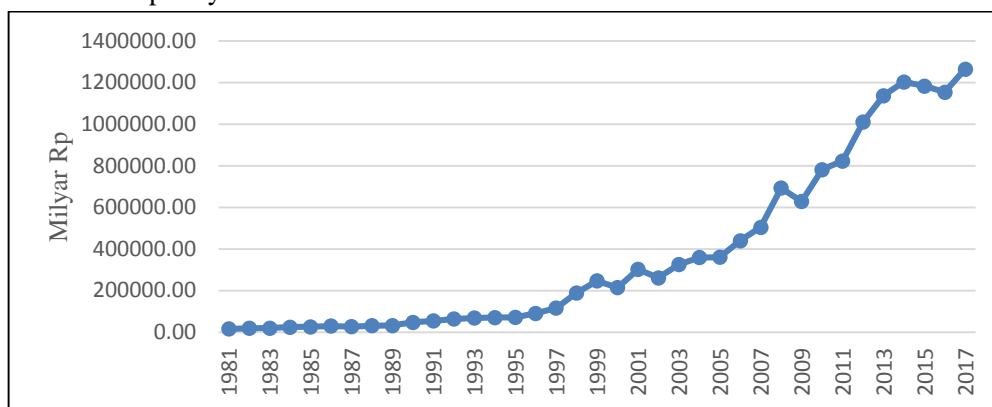


Figure 1. Government Expenditures  
Source: State Budget Note, 2019

Based on the data in Figure 1, every year government expenditure on routine and development expenditure has increased in order to improve the quality and number of government services. T-Test, expenditures are used for development activities which can create even better conditions. Although in a few years spending decreased as in 2000 by 32964 billion rupiahs from the previous year. This happens because the country's economy is not stable and the development target does not match the planned target.

Meanwhile, another macroeconomic problem that received attention in various countries was the problem of inflation. Unstable inflation results in the uncertainty of economic actors in making decisions that have an impact on reducing economic growth. According to Sukirno (2011) that inflation needs to be maintained and controlled in order to avoid hyperinflation that endangers the country.

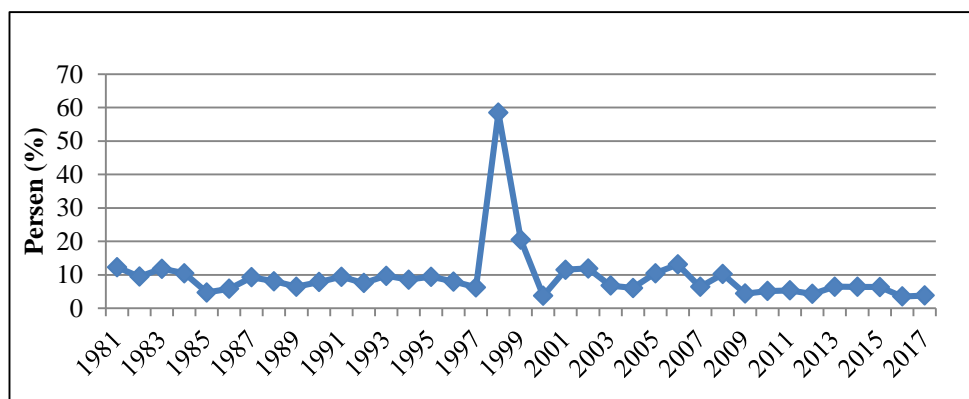


Figure 2. Indonesian inflation  
Source: Statistics Indonesia, 2019

Figure 2 shows the level of inflation in Indonesia in the 1981-2017 period which was quite volatile. Seen in Figure 2, the highest increase in Indonesian inflation occurred in 1998 which resulted in social unrest and political turmoil marked by the collapse of the new order. The increase in inflation was influenced by government fiscal and monetary policies, money growth and oil prices.

International trade in terms of boosting economic growth also has a very important influence. The higher the value of exports will increase public income, even if imports increase where the flow of imports used in measuring economic growth will have an impact on reducing GDP (Sabaruddin, 2015).

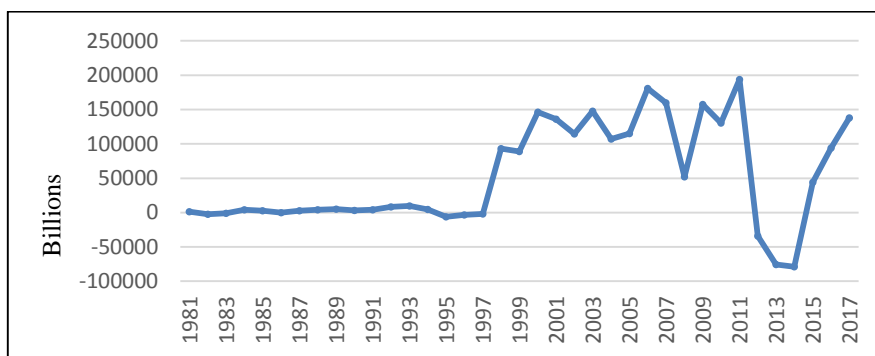


Figure 3. Trade Balance  
Source: World Bank, 2019

Figure 3 shows the condition of Indonesia's trade balance from 1981-2017. In 1981-1997 Indonesia's trade balance was stable, but after 2000 the trade balance began to fluctuate even the most alarming in 2012, 2013 and 2014 where Indonesia experienced a trade balance shock with a value of -33,958 to -79,083 billion due to depreciation real exchange rate. Rahardja & Manurung (2004) suggested that the level of welfare or economic growth of a community is reflected in the average income of the community at the national level.

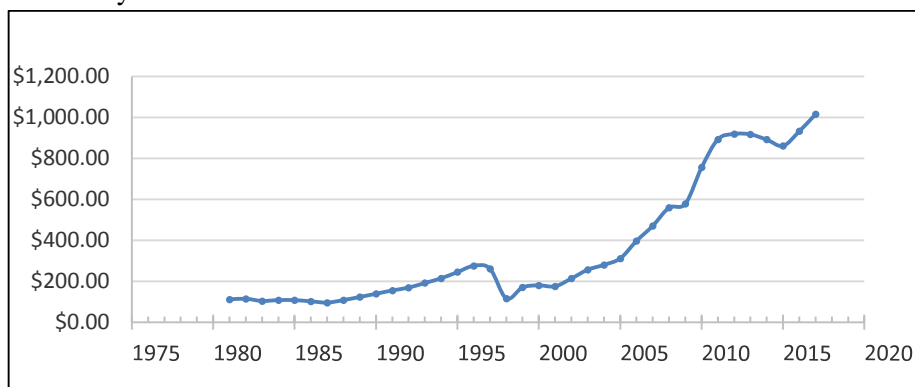


Figure 4. Gross Domestic Product  
Source: IMF (International Monetary Fund), 2019

The figure above shows that Indonesia's PDB is stable even though in 1998 the Indonesian economy slowed down 260 USD (1997) down to 115 USD. This condition was affected by the Asian financial crisis which caused inflation to soar so high that the PDB declined dramatically. Azwar (2016) explains that each government allocation to the procurement of goods and services (routine expenditure and development) has an impact on the Indonesian economy measured by growth indicators.

Larasati & Sulasmiyati (2018) explained that inflation has a partially negative impact which is very significant if it is associated with Indonesia's PDB. In contrast to Yudisthira & Budhiasa (2013)

which explains the effect of inflation on positive but not significant PDB. Mustika et al. (2015) explain that net exports/trade balance does not encourage PDB growth. Fadhilah (2018) explained that net exports had the opposite effect which was very significant when related to PDB.

Based on the theoretical basis and previous research, it can be stated that government spending is driving a country's economy, while the inflation rate is one of the factors to control the economy and the trade balance can determine the country's position in conducting international trade. Very strategically selected several macroeconomic indicators above in improving a country's economic performance, this research is directed to answer the research questions: (1) how does government expenditure affect PDB? (2) How is the inflation effect related to PDB? (3) What is the impact of the trade balance on PDB? (4) What is the implications of government spending, inflation and trade balance on PDB?

## **2. Literature Review**

### **Macroeconomics**

Sukirno (2011) explains in macroeconomic theory the whole problem of economic actors (producers and consumers). Whereas Sloman and Norris (2005) argued, macroeconomic problems related to inflation, trade balance, recession, unemployment, and government spending. More broadly Sujianto & Suryanto (2018) and Zakaria (2009) explained that economics included in the macro category examines government policies primarily related to national economic indicators such as national income levels, taxes, state spending, unemployment, inflation, investment, interest rates, money circulation, general commodity prices, debt and balance, and surplus deficits.

### **Gross Domestic Product**

Economic growth is the development of activities in the economy that encourage goods and services produced in the community to increase Sukirno (2011) and Sujianto (2018). According to Karlina (2017) that the rate of economic growth is a popular indicator of macro performance and the calculation is a deviation from GDP or PDB. Gross Domestic Product/PDB is the sale of all goods and services produced by a country both by state companies and foreign companies operating within that country at a certain time/period. PDB is an indicator to measure the strength of the State in a particular year in producing goods/services (Sukirno, 2005).

PDB is divided into two types: (1) PDB at current prices, namely the value of goods and services produced by a country in a given year is valued at the prices prevailing in that year and (2) PDB at constant prices, namely, the value of goods and services produced by a country in a certain year is valued according to the prices in force in the base year/year used as a benchmark price in other years. In calculating PDB figures there are three approaches that can be used, namely: (1) Production Approach is the sum of the total value of goods and services produced from 9 units; (2) Revenue Approach is a component of remuneration received by factors of production such as wages and salaries, land rent, capital interest, and profits. All components are added together before deducting income tax and other indirect taxes and (3) expenditure approach (Bank Indonesia, 2019).

### **Government Expenditures**

Government Expenditures reflected in the APBN are State Expenditures, which means that the obligations of the Central Government are recognized as deductions from net assets, consisting of Central Government expenditures and Transfers to Regions and Village Funds (Bank Indonesia, 2019). Sukirno (2011) as part of fiscal policy, government spending is very important to create

economic growth stability. Government Expenditures as a theoretical basis through the balance formula of the four sectors, namely:  $Y = C + I + G + (X - M)$ .

### **Inflation**

Inflation is a tendency to increase general and prolonged prices in an economy (Huda, 2009). According to Zakaria (2009); Karlina (2017); Larasati & Sulasmiyati (2018); Lubis (2014) inflation occurs when a country's economy weakens as can be seen from the continuously rising prices of important commodities. According to Gilarso (2004), inflation occurs due to factors, namely: (1) in terms of production (supply) for example due to war, crop failure, natural disasters, changes in production techniques and others. (2) In terms of demand (demand) due to excess or lack of public demand. (3) in terms of prices for example due to increases in salaries of civil servants and also because of increases in foreign exchange that affect prices of imported goods, (4) in terms of money, for example, due to the expansion of the money supply.

Inflation is expressed in the rate of inflation (Naf'an, 2014). Kurniawan (2014) explains the types of inflation according to their degree divided into four namely: mild inflation <10%, 10% - 30% (moderate inflation), 30% - 100% (high inflation) and Hyperinflation > 100%.

### **Balance of trade**

The trade balance is the difference between import and export activities in countries in international trade (Kurniawan, 2014). In international trade activities, the trade balance is also commonly referred to as net exports. Rahardja & Manurung (2004); Mustika et al. (2015); Fadhilah (2018) and Adriani (2008) explain that net exports are the difference between the value of exports and imports. The trade balance is an important indicator in an economy because it can describe foreign exchange earnings and foreign exchange expenditures. Foreign exchange is capital which influences the sustainable development of a country.

Exports according to Rahmawati (2016) are activities of removing goods from customs areas, and goods that have been transported or will be loaded in transportation vehicles to be removed from customs areas. Whereas import is the entry of goods in a country from a foreign country whether done by a private sector, a government or an individual. The factors influencing the trade balance are real exchange rates and domestic income (Hapsari & Kurnia, 2018).

### **Relationship between Government Expenditures and GDP**

Expenditures by the government have a relationship with GDP that can be identified through the equation, namely:  $Y = C + I + G + (X - M)$ , where the budget intervention policy on government spending policies that can affect the Gross Domestic Product. According to Anggraeni (2017); Azwar (2016; Nasir & Sari (2015); Nurlina (2015) there is evidence that there is a positive influence between government spending on GDP.

### **Relationship between Inflation and GDP**

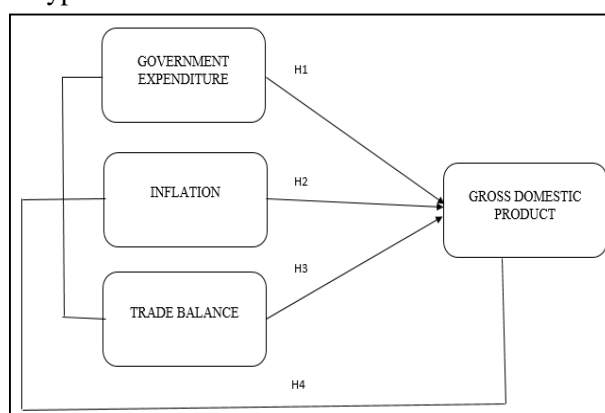
Inflation is closely related to a country's economic growth. The cause of inflation is slowing economic growth in which economic actors experience uncertainty in making decisions, investment in production is reduced and domestic products are unable to compete in the international market. Research conducted by Karlina (2017); Larasati & Sulasmiyati (2018); Lubis (2014) explain that inflation has a negative impact on GDP, with a significant impact. The study is different from Yudisthira & Budhiosa (2013), where inflation has a positive impact on PDB, but cannot be statistically accounted for.

### Relationship of the Trade Balance to GDP

The relationship of PDB with the trade balance is reflected in the trade balance. Where (X) exports will make a positive contribution to PDB while imports (I) will make a negative contribution. The study of Mustika et al. (2015) explains that net exports have no significant effect on the economy as measured by PDB growth. Relevant studies as research by Fadhilah (2018) and Adriani (2008) explain, the export-import or trade balance has no effect but in a long period this activity has a negative impact if associated with PDB with the assumption of a drastic decline in the trade balance in 2012-2015.

### Framework for Thinking and Hypotheses

Departing from the relevant theories and previous research, the following is stated about the framework of thinking and hypothesis of this research.



H1: Government spending has a significant effect on *PDB*.

H2: Inflation affects *PDB*.

H3: Trade Balance has an impact on *PDB*.

H4: Government Spending, Inflation, and Trade Balance have implications for *PDB*.

### 3. Research Method

This study uses a quantitative approach because it tests hypotheses and utilizes numerical data, with associative type considering it is a study that examines the effect or impact of certain variables on other variables as stated by Sugiyono (2013). The population of this study is data on research variables collected from the Ministry of Finance documentation, the Central Statistics Agency, the World Bank and the IMF. The sample used is the annual report from 1981-2017 on each variable.

The sampling technique uses purposive sampling using the following provisions: (1) 37 years of data period from 1981-2017, (2) Government expenditure data and rupiah-denominated trade balance data, (2) Inflation data in the form of a percentage, (3) Data with GDP USD money.

Data analysis using ECM where before data processing is done, the data is transformed first so that the scale of the data analyzed is the same, then the first step taken is the prerequisite test that is a stationary test using the Augmented Dickey-Fuller (ADF) test with the condition that the prob value is 0, 05 then the stationary data (Sujianto & Suryanto, 2018)) and cointegration test using the Johansen Cointegration Test approach. The second step is the short-term regression test (ECM), the third step is the linearity test and the fourth step is the long-term equation test with OLS regression. After that, the significance test is a partial test and simultaneous test on research variables.

#### 4. Results and Discussion

##### 1. Prerequisite Test

The prerequisite test in this study uses the stationarity test and cointegration test with the following data processing results.

Table 1: Stationary Test and Cointegration Test

Series	Scores	Prob
D(GOV_EKS,2)	-	0.000
D(INFLASI,2)	-	0.000
D(NER_PER,2)	-	0.000
D(PDB,2)	-	0.000
Trace Statistic	119.8952	0.000
Critical Value (0.05)	47.8561	
Max-Eigen Statistic (0.05)	66.1572	0.000
Critical Value (0.05)	27.5843	

Based on the stationarity test, it is obtained that the prob value is smaller than  $\alpha = 0.05$  in the second *difference* so that it can be concluded that the data is stationary. Whereas in the cointegration test there is a long-term relationship based on a Statistical Trace value that is greater than the critical value, as well as a Max-Eigen Statistics value that is greater than the critical number.

##### 2. Regression in the Short Term (ECM)

Based on the results of data processing, it can be stated that there is a positive influence on government expenditure (GOV) and the trade balance (NER), while inflation (INF) has a negative effect as in the following equation.

$$D(\text{GDP}, 2) = 0.004665 + 0.406731(\text{GOV}) - 0.06619(\text{INF}) + 0.021976(\text{NER})$$

While the probability value of each variable are: trade balance (0.4377), inflation (0.0000), government spending (0.0166).

##### 3. Classical assumptions

###### a. Normality

Normality is used in seeing residual values, whether they are normally distributed or not normally distributed.

Table 4. Statistical Test Results

Variable:	Coefficient	Prob
NER_PER	-0.022501	0.5539
INFLASI	-0.086680	0.0286
GOV_EKS	0.958493	0.0000
C	2.53E-07	1.0000
Jarque-Bera	5.366786	
Probability	0.068331	
Centered VIF:		
NER_PER	1.028336	
INFLATE	1.161667	
GOV_EKS	1.186323	
Obs*R-squared	15.67077	
Prob. Chi-Square(9)	0.0741	
<i>Breusch-Godfrey Serial Correlation LM Test:</i>		
Obs*R-squared (1 <sup>st</sup> )		
Prob. Chi-Square(1 <sup>st</sup> )	20.78407	
Obs*R-squared (2 <sup>st</sup> )	0.0000	
Prob. Chi-Square(2 <sup>st</sup> )	3.610953	



	0.1644
F-statistic	237.9264
Prob(F-statistic)	0.000000

Source: Secondary Data, Processed

Based on table 4 the JB figure is 5.366796 (prob = 0.068331) which means this value is greater than 5% or 0.05. Thus it can be stated that the residual has a normal composition so that subsequent testing is feasible.

b. Multicollinearity

This test is carried out to determine that the regression statistical equation whether there is a perfect correlation or not between independent variables. To detect the presence of multicollinearity can be seen from the value of Variance Inflation Factor (VIF) if not more than 10 then the model is free from multicollinearity. Based on the results of VIF data processing in table 4 shows that there is no VIF value > 10, so in the H0 study was accepted, and the equation was determined to be free from multicollinearity and meet the requirements for the next test.

c. Heteroskedasticity

Heteroscedasticity test results (Table 4), where the Chi-Square probability (0.0741) >  $\alpha$  (0.05) H0 is accepted, that the research data is no heteroscedasticity.

d. Autocorrelation

The results of autocorrelation testing (table 4), that the probability (0.0000) <  $\alpha$  (0.05) so that there is enough evidence of autocorrelation. Handling if there is an autocorrelation by increasing the standard of differentiation at the first different level. After the model is estimated with level 2 differentiation so that the results obtained that the probability value of 0.1644 after being estimated. Probability values greater than 0.05, it can be concluded that there is no autocorrelation problem in the model.

4. OLS Long-Term Regression Test

Based on table 4, the form of the regression analysis equation with the OLS method, namely:

$$PDB_t = 2.53E-07 - 0.086680 (INF_t) + 0.958493 (GOV_t) - 0.022501 (NP_t) + \mu$$

From the estimation results, in the long run, the probability for the INF variable is 0.0286, GOV is 0.0000 and NP is 0.5539.

5. Significance Test

a. Partial Test (T-Test)

Based on table 4  $t_{count}$  of government expenditure variable is 24.902289 > 2.03452  $t_{table}$ , with a probability value of 0.0000 < 0.05 means the variable government expenditure has a significant effect on GDP. While the calculated inflation variable is -2.289775 > 2.03452 table but negative, and for the probability value of 0.0286 < 0.05, this indicates that the inflation variable has a significant negative effect on GDP. In the trade balance variable shows the t-count value of -0.598071 is smaller than the table value of 2.03452 with a probability value of 0.5539 > 0.05 means that the trade balance variable has no effect on GDP, instead, it causes a negative supply of GDP.

b. Simultaneous Test (F Test)

Based on table 4, the value of  $F_{count}$  is 237.9264 while the  $F_{table}$  with a level of  $\alpha = 5\%$  is 2.56. Thus  $F_{table} > F_{table}$  (237.9264 > 2.89), then also seen from the probability value that is equal to 0.00 million which is smaller than the significance level of 0.05 so that H0 is rejected. This shows that the variables of government expenditure, inflation, and trade balance together (simultaneously) have a significant effect on *gross domestic product*.



## Discussion

The results of the study show that government spending has a significant effect on PDB, both using testing in the short term and even long term. The results of this study support the study of Anggraeni (2017), Azwar (2016), Nurlina (2015) and Putra (2017). The high increase in national income as a result of increased government spending is due to the multiplier effect of government spending not only in the government investment sector but also in both development and government consumption expenditure (Nasir & Sari, 2015).

In relation to inflation, both the short term and the long term have a significant negative effect on PDB. This research supports the study of Karlina (2017), Larasati & Sulasmiyati (2018) and Lubis (2014), that high inflation causes less productive investment, decreases the level of economic activity, more unemployment, domestic products cannot compete in international markets, imports increase, and the balance of payments position will deteriorate.

Research results on the trade balance show that in the short term the trade balance does not affect PDB. Likewise, in the long run, the trade balance has no effect on PDB instead it gives a negative value. Judging from the Coefficient value of -0.022501, it means that every 1% increase in the trade balance has an impact on the decline in PDB in the range of 0.22%. This result is relevant to the research of Fadhilah (2018) and Mustika *et al.* (2015).

## 5. Conclusion

Based on the analysis of the data and discussion, it can be concluded that spending by the government has a positive effect on PDB, and this result is significant both in the short and long term. In the short and long term, there is a negative effect of inflation on PDB. This result is significant so that high inflation can reduce productive investment, domestic products are too expensive to be able to compete in international markets and have the effect of the country's economic erosion which is marked by a decline in the rate of economic growth.

While the trade balance in the short term does not have a significant effect where the value of the probability of the trade balance is above the critical value, and in the long run the trade balance has no effect on the trade balance because it is negative in its *coefficient*. This situation occurs because the trade balance is fluctuating and shock has decreased in a few years on research. Furthermore, empirical evidence found that together spending by the government, inflation and the trade balance affect PDB.

It is recommended to the government, in this case, Bank Indonesia as a government agency that handles monetary problems (monetary authority) to further strengthen financial literacy programs by involving higher education personnel to control inflation at the district/city, provincial and even national level. Financial literacy by involving higher education is intended to add knowledge that to increase PDB requires hard work at all levels of society without exception.

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