

The Analysis of the Effect of Government Expenditure and Balance of Payment on Indonesian Economic Growth

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Keywords: Government Expenditure, Balance of Payment, Economic Growth.

Abstract: This research is aimed to analyze the effect of government expenditure and balance of payment on economic growth in Indonesia. The data used in this research is secondary time series data on government expenditure, balance of payment, and economic growth in Indonesia during the period of 1990 until 2017. Model of analysis used in this research is Auto regressive Distributed Lag (ARDL). This model is regression model that includes not only the value of variable explain current situation but also the value of the previous years. The research results show the government expenditure for the current year and one year before affects GDP with the probability of alpha 1 percent. Meanwhile balance of payment for current year affect GDP only at probability of alpha 10 percent, but the balance of payment for one year before has the effect on GDP at 5 percent of alpha. Based on the Long run test it is found that both government expenditure and balance of payment variables do not significantly affect GDP. Meanwhile for the Short run test it is found that government expenditure has a negative and significant effect on GDP at 5 percent of alpha. So far, the variable of balance of payment also has negative and significant effect on GDP at 1 percent of alpha. It is hoped that this research can contribute and give policy recommendation to the Government of Indonesia in the effort to increase economic growth and welfare of the people.

1 INTRODUCTION

During many years, the rate of global economic growth has increased compared to the previous periods. It seems there the contrast between developed and developing countries. The economy of developed countries is better compared to the developing countries. On the other hand, developing countries run with stable growth in terms of economic growth.

In terms of economic indicator especially the inflation rate, Indonesia experiences the increase in inflation rate above 5 percent since year 1970 up to economic crisis period. Not only in term of inflation rate, has the unemployment in Indonesia also showed increasing trend. In response to the economic performance shown by economic indicators, Indonesian government undertaken the macroeconomic policy in order to foster economic growth. This has been undertaken using both fiscal and monetary policies.

The Indonesian government policy has also focused on public finance sector via the control in government revenues and expenditures. Not only in

Indonesia, had majority of developing countries put more attention on budget deficit that becomes greater. The increase in budget deficit usually comes from reduction in government revenues. The increase in budget deficit is also aimed to force economic growth via fiscal policy in each country.

Suhartoko (2013) studied the relationship between budget deficit and balance of payment or well known by twin deficit. Traditional paradigm according to him predicted that there is no correlation between budget deficit and international balance of payment.

Furthermore, Baharumshah et al. (2017) studied the sustainability of fiscal policy in Malaysia. The result shows that the former fiscal policy makers had followed sustainable fiscal policy except when the economic crisis during short period. In this case, the government have to reduce the deficit if it exceed the certain level in order to ensure the sustainability in long-term. Specifically, it is found that the public debt after it exceeds 55 percent than gross domestic product (GDP) will have negative correlation with economic activities.

The development process in developing countries is undertaken with greater government expenditure compared to government revenue. Thus it needs more budget with greater external debts in order to fill the budget deficit. Suhartoko (2013) explained the close relationship between primary budget deficit with real economic growth with the correlation coefficient as much as 0.6.

Based on the data from International Financial Statistic (2018), it shows that balance of payment indicates the positive correlation with GDP. This can be proven by the Indonesian data for the period of 2004 to 2017 with the fluctuation. In year 2004, Indonesian balance of payment was USD 1,563 billion with GDP growth rate as much 5.03 percent. Then, in year 2009, the GDP had declined to be 4.62 percent but with the increased in balance of payment to be USD 10,628 billion. Then for the next many years, the GDP continuously fluctuates whereas the balance of payment experience deficit.

The government policy in financing economic development using debt especially external debts thus only benefit in the initial time of development. Thus, beside government put attention on economic growth, the future government debt also has to be considered by the government.

There are many researches on the fiscal policy and national such as the research by Badinger (2017), Baharumshah (2017), and Badinger (2015). This research put more focus on deficit budget. Secondly, the researcher does not find the study on balance of payment and economic growth in Indonesia.

Based on those research background and literature reviews, majority of research put more attentions on fiscal policy and national debt and also the movement in international trade. The research on government expenditure and balance of payment are still limited. Thus based on the above research background the researcher would like to study about "The Effect of Government expenditure and Balance of Payment on Indonesian Economic Growth".

2 LITERATURE REVIEW

Economic growth is defined as the change in economic activities in the economy that cause the goods and services produced increases (Sukirno, 2013). Conventionally, the economic growth of one country can be measured by the percentage increase in gross domestic product (GDP). It is also applied for regional economic growth by using the percentage increase in gross regional domestic product (GDRP). By measuring economic growth, it is also can be used

in evaluating the effectiveness of the economic policies.

GDP is one of the best measures in evaluating economic performance of one country. The aim of GDP is summarizing the economic activities in certain monetary unit during certain period of time. GDP can be measured using two approaches those are income and expenditure approaches (Mankiw, 2007).

The economy basically saves a certain amount of national income in order to increase capital goods that are not out of order. But, in order to foster the economic growth, it is needed new investment that is the additional in net capital stocks. This theory states that investment affects aggregate demand via increasing in production capacity. In this case the government expenditure has the role as one of investment given by the government in induce national income.

According to Ilyas (1989), the government expenditure relates to all of the expenditures that aimed to increase the welfare of overall society. Furthermore, according to Soediyono (1992), government consumption expenditure that usually called government expenditure or government purchase includes all of the expenditures where the government directly receives the compensation. In Indonesia, the government expenditure is allocated in National Budget (APBN) or Regional Budget (APBD). Every year, the budget is allocated into many sectors via the development program and activities (Suparmoko, 1998).

Furthermore, balance of payment can be defined as the systematic account that record the transaction undertake by the citizens include the organization and private sectors with foreign citizens in the period of one year. Balance of payment is useful because it shows the structure and composition of economic transaction and also international finance of one country. On the other hand, balance of payment is also the important indicator about the situation of the economy of one country.

When the balance of payment of a country deficit, this means that the citizens of the country has to pay more for the foreign citizens compared to the income from the payment of foreign citizens. Whereas the surplus shows vice versa condition. In addition, International Monetary Fund (IMF) and World Bank use balance of payment indicator as one of indicator in loan giving decision for a country.

The deficit of balance of payment is also can be caused by the domestic inflation. If the balance of payment experiences deficit then the international companies in the country have to adjust with the condition such as price, inventory, and stock

adjustment. The government has to undertake the policy in anticipating trade deficit by market measures and non-market measures. The market treatment is undertaken in order to anticipate deficit such as currency evaluation. Meanwhile Non-market treatment is such as tariff, quota, and currency control.

So far, there are many studies about the relation between government expenditure, balance of payment, and economic growth. Badinger (2017) in his research estimated the impact of fiscal institution on fiscal policy result, and also issues relate to the measurement and endogeneity with new method. The result showed that the countries with tight fiscal policy have high fiscal account and low output.

Lelis et al. (2018) found that the balance of payment is the problem for the economic growth in Brazil that cover the ratio between export and import income elasticity. Lelis et al. (2018) also found that export is more sensitive upon the change in real exchange rate.

On the other hand, Fatas et al. (2006) argued that the limitation in the budget cause low policy volatility and the limitation of fiscal reduces the response of fiscal policy on output shock. Fasanya et al. (2018) also found that import is cointegrated with relative price and income, and the optimal level of economic growth.

Furthermore, Maulana (2015) also studied the effect of foreign investment, net export, and deficit budget policy on the economic growth of ASEAN countries. The result shows that Foreign Direct Investment (FDI) and net export have a positive and significant relationship on economic growth in ASEAN countries. Whereas the variable of government budget deficit has a negative and significant affect on the economic growth ASEAN countries.

Nizar (2013) studied twin deficit from perspective balance of trade with VAR method. The result shows that budget deficit caused the increase in government expenditure by 1 percent of GDP that cause the equilibrium of balance of trade change.

3 METHODOLOGY

This research is aimed to verify and analyze the effect of government expenditure and balance of payment on economic growth in Indonesia both in long-run and short-run. Meanwhile the urgent of the research is to give the policy recommendation to the government both regional and national on how the effect of government expenditure and balance of

payment on Indonesian economic growth. Furthermore, the innovation is hoped is the policy recommendation in the effort to increase economic growth and the welfare of society.

The scope of this research is Indonesia. The variables used are GDP as the dependent variable, meanwhile government expenditure (GE) and balance of payment (NP) as the independent variables. The focus of methodology is on the effects of the variables. So far, the researcher also test and verify the causality relationship between government expenditure and economic growth in Indonesia.

In order to analyze the data, the data used is time series data that covers government expenditure, balance of payment, and economic growth during the period of 1990 to 2017. The data sources are from Indonesia Statistic Board (BPS), World Bank, and other institutions.

The model used in this analysis is *Auto Regressive Distributed Lag Model* (ARDL). This model is the regression mode that can explain well the economic variables. Meanwhile, the *Auto Regressive Distributed Lag Model* is the regression model that ensure not only the current variables but also the previous one with the model of distributed lag model with introducing one or more in the variables in the past (Gujarati, 2003:233). Thus the ARDL Model in this research is:

The form of ARDL:

$$\Delta \text{LNPD} = \beta_0 + \sum_{i=1}^k \beta_1 \Delta \text{LNPD}_{t-1} + \sum_{i=0}^k \beta_2 \Delta \text{LNGE}_{t-1} + \sum_{i=0}^k \beta_3 \Delta \text{LNPN}_{t-1} + \theta_1 \text{LNPD}_{t-1} + \theta_2 \text{LNGE}_{t-1} + \theta_3 \text{LNPN}_{t-1} + e_t, \dots \dots \dots (1)$$

Where LNPD is natural logarithm of economic growth that is measured in term of percent, LNGE is natural logarithm of government expenditure that is measured in term of the amount of government expenditure in billion rupiah per year, and LNPN is natural logarithm of balance of payment.

4 RESULTS AND DISCUSSIONS

Based on the estimation procedures as explained in the research method, the first step undertaken is stationarity test in order to verify whether the variables are stationary at level i.e. I(0), first different i.e. I(1) or second different i.e. I(2). According to stationarity test using Philips Perron (PP) test, thus the results of stationarity is as in Table 4.1 below:

Table 4.1 The Results of Stationarity Test Based on Phillips-Perron test statistic

Variable	At Level	First-Difference	Results
	Prob.*	Prob.*	
GDP	0.0104	0.0000	I(0)
LOGBP	0.5734	0.0001	I(1)
NP	0.5254	0.0014	I(1)

Note: Significant at alpha of 0.05.

Source: Estimation Result.

Based on Table 4.1 it can be seen that there is the difference in level of stationarity of the variables where only GDP stationary at level, whereas LOGBP and NP are stationary at first difference.

Furthermore, Lag Length Criteria estimation conducted by determining optimal lag. The lag is used in order to see the time needed for Y response. The appropriate choice of lag can be chosen using Schawrtz-Bayesian Criteria (SBC), Akaike Information Criteria (AIC) or other information that has smallest criteria. In this research the optimal lag is chosen based on AIC value. By looking at AIC criteria then it can be chosen the lag that gives the best model that is at lag 1.

Table 4.2 The Result of Length of Optimal Lag (Lag Length Criteria)

Lag	LR	AIC	SC	HQ
0	NA	57.97712	58.12438	58.01619
1	118.2003*	52.81711*	53.40614*	52.97338*
2	10.39969	52.95536	53.98616	53.22883
3	6.076845	53.27130	54.74387	53.66197
4	6.481176	53.43210	55.34644	53.93998

Source: Estimation result.

The next step is cointegration test for the model. This test is aimed to determine whether the nonstationary variables are cointegrated or not. Based on Pesaran et al. (2001), the cointegration test used in this research is Bound Test Cointegration.

Table 4.3 The Results of Cointegration Test (Bound Test Cointegration)

F-statistics: 7.122981	Critical Values		Conclusion
	Lower Bound I(0)	Upper Bound I(1)	
1% significance level	5.15	6.26	
5% significance level	3.53	4.42	Cointegrated
10% significance level	2.91	3.69	

Source: Estimation result.

Estimation of ARDL model conducted in this research is to know the effect of government expenditure and balance of payment on Indonesia economic growth. Table 4.4 shows the estimation of Lag model of ARDL (1 1 1).

Table 4.4 Estimation Result of ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PDB(-1)	0.195168	0.167178	1.167426	0.2561
LOGBP	-16.47604	5.024013	-3.279459	0.0036***
LOGBP(-1)	16.12030	4.923485	3.274165	0.0036***
NP	-1.93E-10	9.42E-11	-2.047406	0.0533*
NP(-1)	2.15E-10	9.39E-11	2.284646	0.0328**
C	10.75386	7.027147	1.530616	0.1408
R-squared	0.458516		Durbin-Watson stat	2.472707
Adjusted R-squared	0.329591		F-statistic	3.556459
			Prob(F-statistic)	0.017406

Note: ***, **, * significant at 1%, 5%, 10% level of alpha.

Source: Estimation Results.

Based on the estimation, it can be seen that there are many independent variables that have the effects on GDP those are current government expenditure and the lag of government expenditure with the probability of 1 percent. For the variable of balance of payment for the current year has the effect on GDP by 10 percent alpha, but the balance of payment for the previous year has the effect on GDP at level of alpha 5 percent.

The ability of the regression mode in explaining the relation between dependent and independent variables can be seen from coefficient of determination as much as 0.329591. This means that government expenditure for the current year and one year before and also balance of payment for current year and one year before explain the model by 32.9 percent.

The Long-run and Short-run Effects

Based on the cointegration bound test, then it is found the long-run equilibrium in this analysis that affects Indonesian GDP. The result of long-run and short-run analysis can be seen by Table 4.5 below.

Table 4.5 The Long Run Model

Dependen Variable: PDB				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGBP	-0.442007	0.641691	-0.688816	0.4985
NP	2.69E-11	7.71E-11	0.348800	0.7307
C	13.36411	8.394936	1.591925	0.1263

Note: ***, **, * significant at 1%, 5%, 10% level of alpha.

Source: Estimation results.

The estimation results as in Table 4.5 shows that both the variable of government expenditure and balance of payment do not have significant effect on GDP. But even though the government expenditure and balance of payment do not affect GDP in the long-run, the reality is reverse in short-run. Table 4.6 shows the estimation results for the short run.

Table 4.6 Short Run Model

Dependen Variable: D(PDB)				
Variable	Coefficient	Std. Error	t-Statistic Prob.	
D(LOGBP)	-16.476043	4.490927	-4.719676	0.0001
D(NP)	-1.93E-108	2.20E-11	-2.352704	0.0285
CointEq(-1)*	-0.8048320	0.141042	-5.706330	0.0000

Note: ***, **, * significant at 1%, 5%, 10% level of alpha.
Source: Estimation Results.

5 CONCLUSIONS

Based on the research findings, it can be concluded that generally, the government expenditure for the current year and one year before has the effect on GDP with the probability of 1 percent. The balance of payment in current year affect the GDP only by 10 percent, but balance of payment of the previous year affects the GDP by 5 percent. Based on long run test, it is found that both the variable of government expenditure and balance of payment do not affect GDP significantly. But for the short run test, it is found that the government expenditure has a negative and significant effect on GDP by alpha of 5 percent. The variable of balance of payment has a negative and significant effect on GDP by alpha of 1 percent.

ACKNOWLEDGEMENT

This research is part of my research project with Assistant Professor Research Skim funded by Centre for Research and Social Work (LPPM) of Syiah Kuala University. The research project is under year 2019 funding resources from Syiah Kuala University Own Income (PNBP) 2019.

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