Effect Of Investment-Savings Gap, Financial Development, And Government Fiscal Performance On Economic Growth In Indonesia

Sebastiana Viphindrartin, Fivien Muslihatinningsih, Mega Indah Sari

Abstract: Developing countries including Indonesia, generally still have limited capital to realize the development and increase econom ic growth. The amount of savings that is not balanced with the investment activity plan (saving investment gap) causes the investment implementation activities do not go according to plan. The gap between savings and investment can then be closed by the influx of funds from abroad. One alternative development financing through foreign debt. This study aims to analyze the effect of saving-investment gap variables, foreign debt and government expenditure on economic growth in Indonesia in 2004. Q1 - 2017.Q4. The method used in this study is the Error Correction Model (ECM) method. Based on the results of the analysis of the test show that in the short term the s aving-investment variable gap, foreign debt, and government expenditure have a positive influence on economic growth in Indonesia but are not significant. While the estimation results, in the long run, show different results where saving-investment gap variables and government expenditure have a positive and significant effect on economic growth in Indonesia, and foreign debt variables have a negative and significant influence on economic growth Indonesia.

Keyword: Saving-investment gap, external debt, government expenditure.

1. INTRODUCTION

Economic development is the main goal of the majority of countries in the world to increase the country's economic growth. Many indicators can support a country's growthor economic development process. One indicator that can support economic development activities is from the financial side which is considered as one of the engines driving economic growth or development.[1] Finance has a big and positive influence on economic growth through savings and investment.[2] Developing countries including Indonesia, generally still have limited capital to realize the development and increase economic growth. Overcoming the problem of limited capital can be done by fulfilling the needs of funds originating from within the country and abroad.[3] One of the funds from within the country comes from domestic savings. The capital limitation is caused by the difference or gap that occurs between domestic savings and investment in a country (saving-investment gap).[4] If funds from within the country are unable to finance the funds needed by a country, then they can obtain additional capital from abroad in the form of foreign loans and foreign direct investment.[5] Foreign loans are needed to encourage economic development activities and increase a country's economic growth.

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Foreign loans can be used to achieve two things, namely to close the gap in savings and investment, and to take advantage of cheap interest rates offered from foreign loan packages. [6] Indonesia is one of the countries that make foreign loans tocover funding in its economic activities. Indonesia's total external debt (ED) comes from government debt, central banks, and the private sector, including loans made by BUMN. One other effort made by the government to increase investment growth in Indonesia is to take expansionary fiscal policies. According to J.M Keynes, Expansive fiscal policy can be considered to encourage investment through increasing Aggregate Demand (Aggregate demand). Keynes argues that an increase in aggregate demand is needed to increase investment and will further encourage economic growth. This research is the same as the research conducted by Gocer et al., (2016) which is related to the impact of GIS on economic growth in 65 countries in the period 1981-2014, but in this study, the authors of the Foreign Debt and Government Expenditure by using quarterly data from 2004.Q1 - 2017.Q4, as well as locations in this study in Indonesia. In addition, the used method uses the error correction model (ECM) approach to the dependent variable in the long and short term. Based on the explanation described above, the formulation of the problem that arises is how much influence do saving- investment gap, foreign debt, and government expenditure have on economic growth in Indonesia? The purpose of this study is to find out how much influence the saving-investment gap, foreign debt, and government expenditure on economic growth in Indonesia.

2 LITERATUR OVERVIEW

Solow growth model (Solow growth model) explains that a country's economic growth is influenced by the capital stock, labor force growth, and technological progress.[7] Capital becomes an important factor in economic development activities which can increase a country's economic growth. The Solow model has explained that savings are an important determinant of steady-state (a state) where the economy of a

country will have large capital stock and a high level of output Based on a study conducted by Chakraborty and Nunnenkamp (2006) that foreign debt has a positive effect on economic growth in developing countries. This study is following Keynesian where the policy of increasing the expenditure budget obtained from foreign budgets is significantly related to economic growth and an increase in the increase in aggregate demand as a further influence of raising capital. According to Lipsey et al, 1995 (in Setiasmoko, 2008) said that raising capital must be able to produce self-correction feedback that will reflect to saving-investment gap. In contrast to the classical and Neo-Classical views, discussing foreign problems only increases the economy in the short term and is not significant in the long run (Oskooee et al., 2012). Weisskopf, 1972[3] also discusses reasons for domestic and negative savings on the country's economic growth. This is because, in practice, foreign capital that is the country causes saving-investment gap increase (Forgha et. al., 2014). The theory developed by Chenery and Carter is a development of the Harrod-Domar theory in which theories are grouped into four thoughts (Basri, 1995). First, foreign capital can be utilized by developing countries as a significant base to trigger an increase in investment and economic growth. Second, to maintain and maintain a higher level of economic growth, substantial changes and changes in the structure of production and trade are needed. Third, foreign capital can play an important role in mobilizing financial resources and structural transformation. Fourth, it will take place (even though the incoming capital becomes more productive). According to George (1992: 133), pragmatic foreign debt became a boomerang for the recipient country (the debtor). The economy in the recipient countries does not get better, but can be destroyed. This is one of the conclusions from the results of his research which shows that in the 1980s capital flows flowed from advanced industrial countries, which are generally creditor countries, to developing countries in the form of official development assistance), export credit, and private capital flows, such as bilateral and multilateral assistance.

3 MODEL SPESIFICATION AND DATA

The scope of this research is in Indonesia, where the variables used in this study include the gross domestic product (GDP) as the dependent variable which is a proxy for economic growth. As for the influencing variables (independent variables), namely saving-investment gap (SIG) which is the difference between domestic savings with domestic investment, foreign debt or external debt (ED), and government expenditure or government expenditure (GE). The type of data used is quarterly data from 2004.Q1 to 2017.Q4. The model in this study uses the research model specifications as follows:The method used in this study is an econometric model with acointegration approach and a dynamic model of the main factors that influence economic growth with the Error Correction Model (ECM) approach. Testing with the ECM method is carried out with several stages including stationarity test, cointegration test, ECM

$$PE_t = f(SIG, ED, GE) \quad (1)$$

The model is transformed into the econometric equation so that it becomes:

$$PE_t = \beta_0 + \beta_1 SIG_t + \beta_2 ED_t + \beta_3 GE_t + e_t \quad (2)$$

4 METHOD AND FINDINGS

estimation.

Stationary Test

The data stationarity test can use the Dickey-Fuller test (DF) or Augmented Dickey-Fuller test (ADF) which is used to detect whether the data is stationary or not by comparing the ADF statistical value with the critical value of the Mackinnon statistical distribution. If the statistical absolute value of the ADF is greater than the critical value, the data can be said to be stationary and the data is not stationary when the absolute value of the ADF statistic is smaller than the critical value. Data stationarity tests can be tested through the following models:

$$-1 \leq p \leq 1 \quad (3)$$

Where et is a confounding variable that is random or stochastic with a zero average, a constant and non-interconnected variant as an assumption of the method of ordinary least squares (OLS). If the value of p = 1, then the random variable or stochastic variable Y has the unit root (unit root) and if the time series data has unit-roots, then the data is not stationary. A clearer explanation can be seen from the results of the unit root test below.

$$Y_t = Y_{t-1} + e_t$$

Table 1

Stationary Test Augmented Dickey Fuller at Level

Variabel	t-Statistik ADF	Nilai Kritis MacKinnon (5%)	Prob.	Ket.
GDP	-3.263020	-2.916566	0.0217	Stasioner
SIG	-1.638624	-2.915522	0.4564	Tidak Stasioner
ED	-0.186442	-2.915522	0.9336	Tidak Stasioner
GE	-2.751683	-2.917650	0.0723	Tidak Stasioner

After the data from the research, variables are not stationary at the level, then before going to the next stage, the variable data must be stationary first so that the variable data in the study becomes valid and following the criteria in testing the ECM model.

Table 2

Stationary Test Augmented Dickey Fuller at First Different

Variabel	t-Statistik ADF	Nilai Kritis MacKinnon (5%)	Prob.	Ket.
GDP	-6.732443	-2.916566	0.0000	Stasioner
SIG	-9.805964	-2.916566	0.0000	Stasioner
ED	-6.524075	-2.916566	0.0000	Stasioner
GE	-7.933981	-2.917650	0.0000	Stasioner

Based on the results of the data stationarity test that has been done on each research variable, and has passed the unit

root test at the same level, namely 1st Different, the data used is stationary. So that for the next stage it can be continued with a cointegration test and reset the data using the Error
Correction Model (ECM) model.

Cointegration Test

Estimated results after going through the test station and the degree test, cointegration tests were carried out. Cointegration tests are performed to test whether the regression residues produced are stationary or not. The regression that uses non-stationary time series data is likely to produce spurious regression. Correct regression occurs if the coefficient of determination is independent but has no meaning (Widarjono, 2013: 216). This is a two-time series of data shows that there is a trend. One of the commonly used cointegration tests is the Engle-Granger cointegration test. Engle Granger's cointegration test first regresses the equation:

$$Y_t = \beta_0 + \beta_1 X_t + e_t \quad (4)$$

Then get the residual, from the residual, then test the ADF with the following equation:

$$\Delta u_t = \beta_1 + u_{t-1} \quad (5)$$

$$\Delta u_t = \beta_1 u_{t-1} + \sum_{i=2}^{p} ai \Delta u_{t-i-1} \quad (6)$$

From the estimation results, the ADF statistical value is then compared to the critical value. ADF statistical value is obtained from the coefficient, if the statistical value is smaller than the critical value, the observed variables are co-integrated or have a long-term relationship and vice versa if the statistical value is greater than the critical value then the observed variable is not cointegrated.The cointegration test can be seen by looking at the value of error correction term (ECT) which is represented by U whether it is stationary at the level or not. The value of U indicates whether there is a balance in the model or not.

Table 3

ECT Estimation Results at Level

Variabel	t-Statistik ADF	Nilai Kritis MacKinnon (5%)	Prob.	Ket.
U	-4.078968	-2.915522	0.0022	Terkointegrasi

The model in this study is said to be in a balanced condition if the U value is zero. Table 4.3 shows that the ADF statistic t value of the variable U is -4.078968 and the probability value is 0.0022, where the value indicates that the variable U is stationary at the level. This indicates that the independent variables, namely GIS, ED, and GE variables are co-integrated and have a long-term relationship so that testing can be carried out to the next stage, namely the short-term ECM estimation stage.

Error Correction Model (ECM)

Estimation using this method, then there are two (two steps) where if two Y and X variables are not stationary but are cointegrated, the relationship between can be agreed with the ECM model for me:

$$\Delta Y_t = \alpha_0 + \alpha_1 \Delta X_t + \alpha_2 U_t + e_t \quad (7)$$

where $U_t = Y_{t-1} - \beta_0 - \beta_1 X_{t-1}$

In this case, the coefficient α1 is the short term coefficient, while β1 is the long term coefficient. The α1 imbalance correction coefficient in the form of absolute values explains how fast the time needed to get a balance value.Based on this equation, the short-term Engle-Granger ECM econometric model can be written as follows:

$$DY_t = \beta_0 + \beta_1 DX_t + \beta_2 DX_t + \beta_3 DX_t + \beta_4 U_{t-1} + e_t \quad (8)$$

Where:

Y = dependent variable
X = independent variable
D = first different, show short-term relationships U
= error correction term

The equation is transformed into a log form, so it can be written as follows:

$$\Delta PE_t = \beta_0 + \beta_1 \Delta LogSIG_t + \beta_2 \Delta LogED_t + \beta_3 \Delta LogGE_t + \beta_4 U_{t-1} + e_t \quad (9)$$

While for the long term as follows:

$$PE_t = \beta_0 + \beta_1 LogSIG_t + \beta_2 LogED_t + \beta_3 LogGE_t + e_t \quad (10)$$

The following are the results of the long-term ECM test presented in Table 4:

Table 4

Long Term ECM Estimation Results

Independent	Koefisien	Probabilitas
C	18.67394	0.0495
LOGSIG	0.019929	0.0015
LOGED	-1.233691	0.0136
LOGGE	0.047677	0.0046
Adjusted R-squared	0.174762	
Prob (F-statistik)	0.004582	

$$PE_t = 18.67394 + 0.019929\ LogSIG_t - 1.233691\ LogED_t + 0.047677\ LogGE_t$$

The results of the ECM estimation, in the long run, show the results that the GIS variable has a positive and significant relationship to economic growth in Indonesia. The GIS variable has a coefficient of 0.019929 with a probability value of 0.0015 which is smaller than the critical value of 0.05 (α = 5%). ED variable has a coefficient of -1.233691 with a probability value of 0.0136 which is smaller than the critical value of 0.05. The results of the analysis of government expenditure or government expenditure (GE) variables indicate that in the long run, the GE coefficient value is 0.047677 with a significant level of 0.0046. Short-term ECM estimation results can be seen in Table 5 below:

Table 5
Short Term ECM Estimation Results.

Varabel Independen	Koefisien	Probabilitas
C	-0.013104	0.8478
D(LOGSIG)	0.005324	0.2321
D(LOGED)	0.598993	0.4142
D(LOGGE)	0.149166	0.8701
U(-1)	-0.333311	0.0015
Adjusted R-squared		0.137820
Prob (F-statistik)		0.021655

$$\Delta PE_t = -0.013104 + 0.005324\,\Delta LogSIG_t + 0.598993\,\Delta LogED_t$$

The estimation results show that GIS has a positive influence on economic growth in Indonesia with a coefficient of 0.005324 and a probability value of 0.2321 (where the probability value is greater than the critical value 0.05). The ED variable has a positive influence on economic growth in Indonesia with a regression coefficient of 0.598993 with a significant level of 0.4142 (where the significant value is greater than the critical value 0.05). The estimation results show that GE has a positive influence on economic growth in Indonesia with a regression coefficient of 0.149166 with a significant level of 0.8701 (where the significant value is greater than the critical value 0.05).

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The Long Term

The results of the ECM estimation, in the long run, show the results that the GIS variable has a positive and significant relationship to economic growth in Indonesia. The GIS variable has a coefficient of 0.019929 with a probability value of 0.0015 which is smaller than the critical value of 0.05 (α = 5%). This shows that when there is a change in the increase in the GIS variable by 1%, it will increase economic growth by 2%.Based on the results of the analysis above, it shows that there is a discrepancy with the theory used. According to Solow's economic growth theory, the increase in the savings rate will push the rate of economic growth to a higher level and have a positive effect on investment and capital accumulation in the short term, but the savings rate is only a point that has no influence on the long-term economy long because it is only temporary. The estimation results are in line with the research conducted by Gocer et al., (2016) that the effect of savings on economic growth is positive and statistically significant in developing countries that have savings on investment but have negative and insignificant effects on developing countries that have an investment in savings. The ED variable has a coefficient of -1.233691 with a valueof the probability of 0.0136 which is smaller than the critical value of 0.05. This shows that when ED increases by 1%, economic growth will decrease by 1.36%. These results are in line with research conducted by Weisskopf, 1972 (in Hadiputri, 2012) which also argues that foreign debt causes a decline in domestic savings and has a negative impact on a country's economic growth. This is because, in practice, foreign capital that enters the country causes GIS to increase (Forgha et. Al., 2014). Todaro (2000) specifically argues that the savings-investment gap can be a cause of foreign debt. If the accumulation of domestic capital decreases, foreign capital is needed to process these domestic resources. Todaro calls it imported capital. Research conducted by Weisskopf, 1972 (in Hadiputri, 2012) is in line with the research conducted by Kharusi and Ada (2018), and Muqorrobin (2015) which states that there are negative and significant effects of foreign debt on economic growth. The results of the analysis of government expenditure or government expenditure (GE) indicate that in the long term the GE coefficient value is 0.047677 with a significant level of 0.0046 which means that the change in GE by 1% will result in a change in GDP of 4.8%. This is in line with the Keynesian theory which argues that an increase in aggregate demand is needed to increase investment where government spending is used to encourage investment activities and will subsequently be able to encourage economic growth. Mankiw (2006) also explained that government expenditure is one component in aggregate demand because if government spending increases, aggregate demand will increase. Increasing demand means economic growth. The Short TermThe estimation results show that GIS has a positive influence on economic growth in Indonesia with a coefficient of 0.005324 and a probability value of 0.2321 (where the probability value is greater than the critical value 0.05). This means that in the short term the saving-investment gap has no effect on the size of economic growth in Indonesia. This happens because in actual conditions there has been a surplus of GIS, which has caused national savings to not be used optimally for investment activities which can later encourage economic growth. The ED variable has a positive influence on economic growth in Indonesia with a regression coefficient of 0.598993 with a significant level of 0.4142 (where the significant value is greater than the critical value 0.05). this means that in the short term the external debt is horrified to not affect the size of economic growth in Indonesia. This is consistent with the views of Classical and Neo-Classical economists who argue that foreign debt only increases economic growth in the short term and does not have a significant impact in the long term (Oskooee et al., 2012). Classical/neoclassical economists describe when there is an increase in foreign debt where the function is to finance government expenditure, it will only have a positive effect in the short term but does not have a significant effect. GE variable has a non-significant effect with a positive
coefficient. So that this is not following the hypothesis and theoretical concepts used in this study. The estimation results show that GE has a positive influence on economic growth in Indonesia with a regression coefficient of 0.149166 with a significant level of 0.8701 (where the significant value is greater than the critical value 0.05). this means that in the short term the external debt is horrified to not affect the size of

economic growth in Indonesia. This is in line with the research conducted by Hasnul (2015) that government spending has a positive impact on economic growth in the short term. This is possible is a signal where government spending is not a cause of economic growth, as suggested by Wagner's law.

5 CONCLUSION

Based on the results of the analysis using the multiple series data regression equation through the Error Correction Model (ECM) method that has been done to determine the effect of saving investment gap, foreign debt, and government expenditure on economic growth in Indonesia in 1995Q1 - 2017Q4, it can be concluded that:

1. The savings-investment gap has a positive and significant effect on economic growth in Indonesia in the long run but is not significant in the short term.
2. Foreign debt has a positive and statistically significant influence on economic growth in Indonesia in the long run, but foreign debt has no significant effect in the short term.
3. Government expenditure has a positive and statistically significant influence on economic growth in Indonesia in the long run. Whereas in the short term government spending does not have a significant influence.

REFERENCES

[1] Worell, Mamingi and Weekes.2016. Saving-Investment Gap In Emerging Market and Developing Economies: An Exploratory Study. Paper: XLVIII Annual Monetary Studies.

[2] Caporale, G.M., Rault, C., Sova, A.D. and Sova, R. (2015), Financial Development and Economic Growth: Evidence from New European Members, International Journal of Finance and Economics, 20, 1, 48- 60.

[3] Hadiputri, Astary Pradipta. 2012.Analisis faktor-faktor yang mempengaruhi Kesenjangan Tabungan dan Investasi Domestik di Kawasan ASEAN 5+3. Skripsi: Institut Pertanian Bogor.

[4] Adom and Elbahnasawy. 2014. Saving Investment Gap and Economic Growth in Developing Countries: Simulated Evidence from Selected Countries in Africa. British Journal of Economics, Management & Trade: 4(10).1585-1598.

[5] Anoruo, E. 2001. Saving-Investment Connection: Evidence From The ASEAN Countries. American Economist, 45: 46-53.

[6] Sanuri. 2005. Beberapa Aspek Pokok Pinjaman Luar Negeri. Jakarta: BI.

[7] Mankiw, Gregory N. 2006. Macroeconomic, sixth edition. New York: Worth Publisher.

[8] Gocer, Akin, and Alatas. 2016. The Effects of Saving-Investment Gap on Economic Growth in Developing Countries: A Clustering and Panel Data Analysis. Journal Theoretical and Apllied Economics: volume XXII, No. 2(607), Summer, pp. 157-172.

[9] Oskooee, Hegerty, and Wilmeth. 2017. The Saving-Investment Gap and Income Inequality: Evidence from 16 Countries. Journal of Developing Areas: Volume 46, No. 2.

[10] Setiasmoko, Gayuh. 2008. Faktor-faktor yang mempengarui Kesenjangan Tabungan-Investasi Indonesia Periode 2000.1 – 2006.12. Skripsi: Universitas Jember.

[11] Hasnul, A., G. 2015. The Effect of Goverenment Expenditure on Economic Growth: The Case od Malaysia. Munich Personal RePEc Archive.

[12] Forgha, Mukete, dan Forbe. 2014. External Debt, Domestic
Investment and Economic Growth in Cameroon (A System Estimaton Approach). Journal of Economics Bibliography, Vol. 1, December 2014, Issue 1.

[13] Todaro, Michael. 2000. Ekonomi Untuk Negara Berkembang. Jakarta: Bumi Aksara.

[14] Widarjono, Agus. 2013. Ekonometrika Pengantar dan Aplikasinya. Yogyakarta: UPP STIM YKPN.