# THE ANALYSIS EFFECT OF DEBT, CREDIT AND INCOME TO SAVING-INVESTMENT GAP IN INDONESIA 2000-2015

**FONNY SEPTIANI**
*1210514022*

## ABSTRACT

*The aim of this research is to analyze the effect of Foreign debt, Gross Domestic Product and Domestic Credit to Saving-investment Gap in Indonesia during 2000-2015.while also seeing how the relationship and influence of other macroeconomic variables such as Debt, GDP and credit to the saving-investment gap in the short and long term.This study uses time series for 15 years in the quarterly data 2000q1-2015q4. This study uses a Single Equationapproach - Error Correction Model (ECM). Results of the study in the short term is variable of credit is significant and positive relationship on the saving-investment gap in Indonesia. While variable of Debt and GDP not significantly to the saving-investment gap in the short term. In the long term variable of GDP haspositive effectand significantlyto saving-investment gap in Indonesia. And then variable of Debt and credit a significantly and negative effect on the saving-investment in the long term.*

**Keywords: Saving-Investment Gap , Foreign Debt and Single Equation- ECM**

## INTRODUCTION
### 1.1 Background Problem

Countries experiencing a savings-investment gap is a common occurrence in various countries of the world. The phenomenon of a country experiencing a savings-investment gap is a common problem in many countries in the world. At any given time, a country might be able to meet the investment needs of domestic savings, but at other times the possibility of domestic savings can not meet the needs of investment or savings-investment gaps (saving-investment gap). If this happens, then the required capital inflows from abroad (capital inflow) to close the existing gaps. Foreign capital inflows is an important role in the economic development of a country, especially for developing countries as an additional (supplement) for their domestic savings and increase domestic investment. The emergence of these ideas, from the fact that in developing countries, where they generally face the problem of saving-investment gap.

The saving-investment gap will adversely affect the economy of a country, if not covered by capital inflows from abroad. At the time of the economic condition of a country attractive to foreign investors, the capital will be easy to get in but when the economic situation is considered to be worse, so quickly withdrawn capital from those countries. If the amount of capital that is drawn very big, of course, will shake the country's economy, as experienced by Mexico. Not long ago, it would also tend to occur in Indonesia because Indonesia is also a policy of free foreign exchange system. As is known that, in an open economy,

investment is no longer only come from domestic savings alone, but can be sourced from the foreign sector and the government sector. As a result, investment is not always equivalent to the savings can be higher or lower. In other words, the savings and investment gap can arise in an open economy.

Savings-investment gap is equivalent to the current account deficit [(S-I) = (X-M)]. This identity shows that the internal imbalances that shortage of savings will be overcome by the external imbalances is the current account deficit. In other words, changes in the behavior of exports and imports will be equal to the change of behavior of domestic savings and investment (Roubini, 2006). Furthermore, the current account deficit will cause capital inflows from abroad because of the deficit requires capital inflows to balance the balance of payments. This shows that the savings-investment gap is closely related to capital flows.

The high economic growth in Indonesia, does not describe that growth is a business unit owned by the majority of the Indonesian people. Instead, growth is a business unit owned by foreign conglomerates. Similarly, the increase in income per capita Indonesia does not show the income of every citizen of Indonesia recovered. GDP is owned by foreigners whose contribution is quite large.

Therefore, in the literature of economic development when a country experiences a savings-investment gap, the country needs net capital inflows to close the gap between savings with investment. Based on the theory of economic growth

Solow, to reach a level of capital / capital guaranteed (steady-state capital) and to maintain a steady level of economic growth, the level of domestic savings should be high to justify the investment so that the production process can be sustained and the level of output can be increased (Mankiw, 1997). Meanwhile, according to Harrod-Domar growth theory, a country's economic growth will be hampered if the country's economy is experiencing a shortage of capital. Therefore, the gap between saving and investment need to be addressed, so that economic growth can take place.

## 1.2 Research Objectives

Based on theabove problems, theobjectivesof this researchare:
1. To analyze the effects of foreign debt on saving-Investment gap in Indonesia during the period 2000-2015
2. To analyze the effects of national income on saving-investment gap in Indonesia during the period 2000-2015
3. To analyze the effects of domestic credit on saving-investment gap in Indonesia during the period 2000-2015

## THEORETICAL FRAMEWORK
## 2.1 Literature Review and Theoretical Framework

This chapter will explain the previous study that have similar theme that will support the result of this study and also basic theories about National Income, foreign debt and domestic Credit. In this study, analysis effect of Debt, Income and Credit to Saving-investment Credit in

indonesia was based on theories that relevant to the research that supports the creation of scientific research results. This study also used previous studies as a reference.

## 2.2 Literature Review

As a developing country, the influence of foreign investment is essential to economic growth in Indonesia. Foreign investment is seen as more effective to stimulate the economy. foreign capital, especially foreign debt factually placed as the main source of development financing, although normatively should be placed as an additional source. This fact led to hidden dangers, which is inherently attached to the development pattern that encourages foreign capital. If the position of a greater dependence, the greater the associated risks that must be faced by the global economic system in the form of dependence on foreign capital, especially foreign debt. National income also affect the system of his investment if the higher national income, the investment will increase correspondingly increased domestic savings so that we can regulate investment savings gap that occurs.

Therefore, a much-needed analysis of several factors such as foreign debt, Gross Domestic Product and domestic savings in order to stabilize the savings and investment gap, which is useful as an appropriate policy recommendations for the government. Due to the conditions of balance of savings and domestic investment will help boost economic growth and create sustainable growth in the long term so as to improve the welfare of the community. Economic growth conditions fluctuate causing a condition that oversaving domestic savings and domestic investment underinvestment. These conditions gave birth to the savings investment gap that may affect the Indonesian economy.

Based on research Gruber and Kamin (2008) shows that, GDP positive effect on SI Gap amounted to 0,017 with significance level of 10%. This is supported by Chinn and Prasad (2014) and supported also by Chinn and Ito (2012). While Bussiere, Fratzscher and Muller (2014) showed the opposite result Their results showed that the coefficients of the three variables are large and significant, only a negative influence on the SI Gap. While variable positive influence on the foreign debt Saving-Investment Gap at 0.069 and the significance level of 10%. For domestic credit showed a negative correlation (-0.029).

Similarly, the variable quality of government institutions, negative effect, the better the quality index of the state government, the more foreign investment so as to attract capital inflows into the saving investment gap down. The study by IMF (International Monetary Fund) in 46 countries with panel models that were done separately between savings and investment, starting in 2000-2015 showed that growth in real GDP per capita has positive influence both the savings (0.58) and investment (0, 69). Variable positive effect of foreign debt to savings (0.01) but a negative influence on investment (-0.19). While credit variables (% GDP) negative effect on savings (-4.97) and investment (-2.38). Of variable dependency ratio, indicate that these variables negatively affect savings (-0.44) and investment (-0.09) . The result carried

out this year by 1998.1-2014.4: shows that, revenue negatively affect the savings-investment gap in Indonesia amounted to -0.0315, as well as foreign debt, negatively affect the saving-investment gap of -0.713. Recently, domestic credit variable positive effect on the gap worth 0.0299..

## RESEARCH METHOD
### 3.1 Type and Sources of Data

The data used in this research is secondary data and have periodic nature (time series). The selected data are the GDP, Foreign Debt and Credit in the period 2000 to 2015. The data used in this study comes from Indonesian Cnetral Bank.

### 3.2 Method of Analysis

Error correction model can be used to explain why economic agents face an imbalance in the context of that phenomenon desired by economic actors are not necessarily the same as what the real and the corresponding need to make adjustments as a result of differences in actual phenomena encountered over time. Furthermore, by using the ECM can be analyzed theoretically and empirically whether the resulting model is consistent with the theory or not (Isnowati, 2002).

To examine the effect of GDP, foreign debt and credit to saving-investment gap, the model can write as below:

S-I Gap = f (GDP, DEBT, CREDIT) (3,1)

Where:

S-I gap = Saving-Investment gap

GDP    = National Income

DEBT  = Foreign Debt

CREDIT  = Domestic Credit

$e\_t$    = Error Term

Furthermore, equation (3.1) will be estimated using Ordinary Least Squares (OLS) and dynamic approach Single Equation Error Correction Model (ECM). The second use of this model to explore long-term and short-term factors that influence saving-investment Gap.

The initial step is to reduce the formation of an empirical model equation (3.1) resulting in the following equation:

$$\Delta SI_t = \alpha_0 + \alpha_1 \Delta GDP_t + \alpha_2 \Delta DEBT_t + \alpha_3 \Delta CREDIT_t + e_t \quad (3,2)$$

or in the form of a log-linear be:

$$lnSI_t = \alpha_0 + \alpha_1 lnGDP_t + \alpha_2 lnDEBT_t + \alpha_3 lnCREDIT_t + e_t \quad \ldots\ldots\ldots (3.3)$$

Furthermore, the decline Error Correction Model (ECM) following the formulation of a Single Equation developed by Best (2008). The basic model analysis of single equation in this study are as follows:

$$\Delta Y_t = \alpha_0 + \alpha_i \Delta X_{i_t} + \beta_1 Y_{t-1} + \beta_2 X_{i_{t-1}} + \varepsilon_t \quad (3.5)$$

then the equation (3.5) adjusted by the variable used in research as follows :

$$\Delta SI_t = \alpha_0 + \alpha_1 \Delta GDP_t + \alpha_2 \Delta DEBT_t + \alpha_3 \Delta CREDIT_t + \beta_1 SI_{t-1} + \beta_2 GDP_{t-1} + \beta_3 Debt_{t-1} + \beta_4 Credit_{t-1} + \varepsilon_t \quad (3.6)$$

or

$$\Delta SI_t = \alpha_0 + \alpha_1 \Delta GDP_t + \alpha_2 \Delta DEBT_t + \alpha_3 \Delta CREDIT_t - \beta_1 (SI_{t-1} - \beta_2 GDP_{t-1} - \beta_3 Debt_{t-1} -$$

$$\beta_4 Credit_{t-1}) + \varepsilon_t$$
(3.7)

The dependent variable in this case is SIgap while the independent variable. X1 is GDP, X2 is Debt and X3 is Credit. Variable bracketed is error correction model. If $(SI_{t-1} - \beta_2 GDP_{t-1} - \beta_3 Debt_{t-1} - \beta_4 Credit_{t-1}) = 0$, then dependent variable and independent variable are in equilibrium. $\alpha_1, \alpha_2, \alpha_3$ is the estimated short-term effects caused by the increase of independent variable to dependent variable. While β1 will describe how the corrections were done by the equation back into balance. β2, β3, and β4 will estimate the long-term effects that will explain how much dependent variable changes due to increased independent variable. To determine the standard error and convidence level of total long-term effects between independent variable and dependent variable can be done through a transformation Bewly regressionthat will estimate:

$$\Delta Y_t = \alpha_0 + \beta_1 Y_{t-1} + \beta_2 X_{it} + \alpha_1 \Delta X_{it} + \varepsilon_t$$
(3.8)

adjusted for variables used, then

$$\Delta SI_t = \alpha_0 + \beta_1 SI_{t-1} + \beta_2 GDP_t + \beta_3 Debt_t + \beta_4 Credit_t + \alpha_1 \Delta GDP_t + \alpha_2 \Delta Debt_t + \alpha_3 \Delta Credit_t + \varepsilon_t$$
(3.9)

The next step is to predict the $\Delta SI_t$ which will be used to estimate :

$$\Delta Yt = \alpha_0 + \delta_0 \Delta Y_t + \delta_1 X_{i_t} - \delta_2 \Delta X_{i_t} + \mu_t$$

adjusted for variables used, then

$$\Delta SI_t = \alpha_0 + \delta_0 \Delta SI_t + \delta_1 GDP_t + \delta_2 Debt_t + \delta_3 Credit_t - \delta_4 \Delta GDP_t - \delta_5 \Delta Debt_t - \delta_6 \Delta Credit_t - \mu_t$$
(3.10)

Equation (3.10) also will explain how the relationship between independent variable and dependent variable in the long term.

## EMPIRICAL RESULT

### 4.1 Unit Root Test

In using ECM before performing cointegration test, it is first necessary to test stationary or unit root test of the data by using the Augmented Dickey-Fuller (ADF test), wherein if the probability value is less than alpha 5 percent then the data is stationary. The degree of integration testing will also be performed if the data is not yet stationer at the level stationary.

**Tabel 5.2**
**Result of *unit root test* in level *First Difference***

| Variabel | Test Statistic | 1% Critical Value | 5% Critical Value | 10% Critical Value | Probability | Information |
|---|---|---|---|---|---|---|
| SIGap | -6.736 | -4.124 | -3.488 | -3.173 | 0.0000 | Stationary |
| GDP | -8.244 | -4.124 | -3.488 | -3.173 | 0.0000 | Stationary |

| | | | | | | |
|---|---|---|---|---|---|---|
| DEBT | -6.861 | -4.124 | -3.488 | -3.173 | 0.0000 | Stationary |
| CERDIT | -7.255 | -4.124 | -3.488 | -3.173 | 0.0000 | Stationary |

After testing the unit root test for all variables consist of SIGap, GDP, DEBT and CREDIT shows all the variables stationary at first difference level seen by the probability worth 0.0000 this means t-statistic is less than the critical value at level Mackinnon1%, 5% and 10%.

## 4.2 Cointegration Test

Cointegration test is done by first ensuring that all variables used in the model has the same degree of integration. From the test results of all data in this study have the same degree of integration. Therefore, cointegration test can be performed. Based on the test results it is known that all the variables stationary integrated on the same degree that the degree 1, it could be passed on Johansen cointegration test using a statistical test for Cointegration. The results of data processing can be seen in Table 5.3.

**Table 5.3**
**Result of Johansen Cointegration Test**

| Maximum rank | Parms | LL | Eigenvalue | Trace statistic | 5%critical value |
|---|---|---|---|---|---|
| 0 | 20 | -1364.3346 | . | 60.0932 | 47.21 |
| 1 | 27 | -1345.5321 | 0.45476 | 22.4882* | 29.68 |
| 2 | 32 | -1338.7049 | 0.19767 | 8.8337 | 15.41 |
| 3 | 35 | -1335.1663 | 0.10787 | 1.7566 | 3.76 |
| 4 | 36 | -1334.288 | 0.02793 | | |

In Table 5.3 shows that this methods based on the relationship between the rank of a matrix with characteristic root that will generate trace statistical value compared to the critical value. Cointegration tests in this study to validate the use of methods Single Equation ECM integrated in degrees 1. From Johansen cointegration test results in the table above can be seen that each of the variables in this study there is arelationship long-term equilibriumin the first degree.

## 4.3    Lag Test

Determination of the amount of lag is essential in ECM methods that are sensitive to changes in the number of long lag. Determination of  lag for each variable based on the criteria of likehood ratio (LR), Final Prediction Error (FPE), Akaike

Information Criterion (AIC), Hannan Quin Criterion (HQC) and Schwarz Information Criterion (SIC).

**Table 5.4**
**Result of Lag test**

| Variabel | Lag | LL | LR | Df | P | FPE | AIC | HQC | SIC |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SI Gap | 4 | -249.409 | 5.4258* | 1 | 0.020 | 282.251* | 8.48029* | 8.54855* | 8.65481* |
| GDP | 3 | -724.126 | 11.826* | 1 | 0.001 | 2.0e+09* | 24.2532* | 24.3214* | 24.4105* |
| DEBT | 1 | -152.065 | 240.24* | 1 | 0.000 | 9.95064* | 5.13549* | 5.1628* | 5.2053* |
| CREDIT | 3 | -218.916 | 5.6369* | 1 | 0.018 | 98.7758* | 7.43053* | 7.48513* | 7.52763* |

The results of the determination of the optimal interval on the degree of error of 1% shows the difference in lag is optimal for each variable which in this study on Lag4 SIgap variable, the variable GDP on Lag3, Lag1DEBT variable, and the variable CREDIT at Lag3. The test results will then be used in a method that will be done is Single Equation ECM.

Classic assumption test is performed to determine the condition of the existing data in order to determine the most appropriate analysis model used. Classic assumption test in this study consisted of autocorrelation test, heteroscedasticity test, and test formalities. The data obtained is to determine the extent of the influence of the variables between Gross Domestic Product, foreign debt and Domestic credit affect the economic growth seen in the Saving Investment Gap.

**4.4 Classical Assumption Test**

**Tabel 4.4**
**Result of Classical Assumption Test**

| Classical Assumption | Parameter Test Value | Test Result |
|----------------------|----------------------|-------------|
| Autocorrelation | Probability Obs* R-Squared = 2.02> 0,05 | No autocorrelation |
| Heterokedastisity | Probability Obs* R-Squared = 0.2277> 0,05 | No Heteroscedastisity |
| Multicollinearity | Highest Correlation between independent variables 0.792820 | No Multicollinearity |

## 4.5 Estimation Results of Single Estimation Equation ECM

Estimation in Single Equation ECM methods shown to see the relationship of short-term and long-term between the variables in the GPD, Foreign Debt and Domestic Credit to Saving-Investment gap in Indonesia. To find out how to balance short-term and long-term, the study continued in the single equation ECM. But before reading the test results of short-term estimates must be confirmed before the estimation is compliant models *best linear unbiased estimation* (BLUE).

ECT is the residual value of the results in the form of new variables that remain. Lag 4 periods of residual value in the equation can be interpreted as a balance errors *(error correction component)* from the previous time period (t-4). That means the value of the coefficient ECT is -0.0362352 showed the amount of short-term fluctuations in the balance to be corrected towards balance in the long term. The ECM odel also explains the changes Saving-investment gap as a result of the change of variables GDP, foreign and Domestic Debt Credit in the long term would be offset by the error correction component in the four previous periods.

Based on the data, the results indicate the following equation

$$\Delta SI_t = -0.1177951 + 0.0000232\Delta GDP_t + 0.1598568\Delta DEBT_t +$$

$$(29.9196) \qquad (0.0000471)$$
$$(0.6582266)$$

$$1.102117\Delta CREDIT_t - .0314856 SI_{t-4} + 0.0000126 GDP_{t-3}$$

$$(0.2068678)\ast\ast\ast$$
$$(0.143147) \qquad (0.000015)\ast\ast\ast$$

$$+0.0844658 Debt_{t-1} - 0.01218371\ Credit_{t-3}$$

$$(0.3689396)\ast\ast\ast \qquad (0.0721756)\ast\ast\ast$$

$$\Delta SI_t = -0.1177951 + 0.0000232\Delta GDP_t + 0.1598568\Delta DEBT_t +$$

$$(29.9196) \qquad (0.0000471)$$
$$(0.6582266)$$

$$1.102117\Delta CREDIT_t - .0314856\ (\ SI_{t-4} - 0.0004001 GDP_{t-3}$$

$$(0.2068678)\ast\ast\ast$$
$$(0.143147) \qquad (0.000015)\ast\ast\ast$$

$$-2.6826803 Debt_{t-1} + 0.0010735\ Credit_{t-3})$$

$$(0.3689396)\ast\ast\ast$$
$$(0.0721756)\ast\ast\ast$$

\* is significant at 10%

\*\* is significant at 5%

\*\*\* is significant at 1%

(...) = standar error

The number of domestic credit has significant and positive relationship towards SIgap, that increase in domestic credit of 1% or Rp.1 will raise the saving-investment gap amounted 1.102117%. In the short term an increase in Domestic Credit causes increasing in output and money supply implies a positive influence, the increase in money supply not directly increase the level of use of money to demand for goods and services, so the company will be motivated to increase production. This situation makes

the domestic economy affect Indonesia's economic performance in the investment sector. The increase in the domestic economy and the economy of Indonesia in the field of investment sectors affect the Saving-Investment gap in the short term.

From the equation we can see.0000232estimates the short term effect of an increase in GDP on saving-investment gap that means a one unit increase in Debt immediately produces a .0000232 unit increase in Saving-Investment Gap, Increases in GDP will cause deviations from this equilibrium, with .0314856of the deviation corrected in each subsequent time period, saving-investment gap will then increase to correct this disequilibrium. The long term effect estimates that .0004001 is a one unit increase in GDP has on saving-investment gap. Increases in GDP also influence the long term equilibrium relationship cause saving-investment gap will respond by increasing a total of .0004001 points, This suggests that when GDP increased Rp.1 it will increase the Saving-Investment Gap. This long term effect will be distributed over future time periods according to the rate of .0314856. In the long-term these conditions shows that GDP has a positive effect to saving-investment Gap.This result is appropriate with the theory that changing of GDP will changing amount of saving-investment gap. The result ofthis studies same as the result of previous studies that Gruber and Kamin(2008), that GDP has a significant positive relationship with the saving-investment gap.

Debt variables that showed a negative effect to saving-investment gap. The short term effect estimates 0.1598568 that an increase in debt on saving-investment gap that means a one unit increase in Debt immediately produces a 0.1598568 unit increase to Saving-Investment Gap. Increases in Debt will cause deviations from this equilibrium, with

.0314856of the deviation corrected in each subsequent time period, saving-investment gap will then increase to correct this disequilibrium. The long term effect estimates that 2.6826803 is a one unit increase in Debt has on saving-investment gap. Increases in Debt also influence the long term equilibrium relationship cause saving-investment gap will respond by increasing a total of 2.6826803 points that suggest showed a significant variable is negative, The results showed a significant variable is negative, which means the variable Debt increased by 1% it will decreased to Saving-Investment Gap, This long term effect will be distributed over future time periods according to the rate of .0314856. In the long-term estimation for Debt variables that showed a negative effect to saving-investment gap. The results showed a significant variable is negative, It shows that the result different from previous studies. Based on Bussiere, Fratzscher and Muller (2014), which shows the variable of Debt positive effect to savings-investment gap. Basically, the growth of debt increasing in output and saving-investment gap. so the results above differ from previous studies, which in previous studies when the variable of debt increases it will influence to increasing of saving investment gap variables, while this data showed increasing in foreign debt will be influence to decreasing in saving-investment gap.

Variable of GDP, Debt and Credit is significantly affect to saving-investment gap at the level of significance 1 percent or 5 percent in the long run, where GDP has a positive relationship where every increasing in GDP will affect the increasing of the Saving-Investment gap. The result of this studies same as with the result of previous studies thatGruber and Kamin (2008). This is supported by Chinn and Prasad (2014) and supported also by Chinn and Ito (2012). And then the variableof credit has a negative relationship where every increasing on

creditit will decrease in the Saving-Investment Gap. The result of this studies same as with the result of previous studies thatBussiere, Fratzscher and Muller (2014). Moreover the variable of Debt also has a negative relationship where every increasing on debt it will decrease in saving-investmant gap, but the result of this studies differ with the result of previous studies that Bussiere, Fratzscher and Muller (2014).

## CONCLUSION

From this research, the estimation results show if Domestic Credit increasing Rp.1 will raise the Saving-Investment Gap amounted to 1.102117% in short-term. This means that the value of ECT coefficient of -0.0362352 % indicates that the balance of short-term fluctuations will be corrected towards balance in the long term, in which the adjustment R-square occurs at 0.6090in the next period. Model ECM also explain changes in economic growth as a result of the change of variables GDP, Debt and Domestic credit in the long term would be offset by the error correction compenent on four previous period.

In the short-term, positive effect implies an increasing in domestic credit to Saving-Investment gap, indirectly we have to reduce the amount of credit in order to make Saving-Investment gap in Indonesia not increased. Increasing Domestic credit influence to Saving-Investment gap in the short term.

In the estimation of the long-term, the variables of GDP, Debt and Credit has a significant to Saving-Investment Gap. GDP variable has a significant and positive relationship to the Saving-Investment gap. This shows that when the Gross Domestic Product (GDP) increased by Rp.1 it will increase the Saving-Investment Gap at .0004001 % in period. The Variable of Debt

has a significant and negative relationship to the Saving-Investment Gap. If the Debt increased by 1% it will decrease to Saving-Investment gap at 2.6826803%. The variable of Credit has a significant and negative relationship to Saving-Investment Gap variables in the long run, that means Credit increased by 1% it will decrease in Saving-investment Gap at .0010735 %. This long term effect will be distributed over future time periods according to the rate of .0314856%.The result of this studies same as with the result of previous studies in GDP and credit variables except in Debt variables, this variables differ from previous studies in long term.

## RECOMMENDATION

Based on the analysis and discussion of the result of testing the hypothesis put forward some suggestions that may be useful for:

Due to macroeconomic variables has the affect to the movement Saving-Investment gap in Indonesia (SIgap), the government and monetary authorities should maintain the stability of the macroeconomic variables .The government should be concerned about increasing in debt and credit because of rising debt and credit will affect to reduced Saving-Investment gap. The government should be able to stabilize increasing of debt from year to year as well and then the government can be control increasing of credit to reduced saving investment gap for economy becomes stable.

The government should stimulate foreign investment to Indonesia in order to create a favorable investment climate in Indonesia so that foreign investors are interested to invest in Indonesia. If Increased foreign investment in Indonesia will increase investment, the

government also must control increase in domestic savings cause if domestic savings and investment can be controlled the saving-investment gap can be reduced. For the next research, to deepen this study by adding other variables and extend the research data, to provide results that are more accurate and better.

## REFERENCES

Aghion, P., 2009. *When Does Domestic Saving Matter for Economic Growth?*,Harvard University and Institute for Fiscal Studies (IFS). USA.

Aizenman, J.,2007.*Surfing the Waves of Globalization: Asia and Financial Globalization in the Context of the Trilemma*. ADB Economics Working Paper Series 180, Asian Development Bank.

Bank Indonesia., *Statistik Ekonomi Dan Moneter Indonesia*, Publikasi Bank Indonesia tahun 2000-2015.

Chinn, M. D., and Ito H., 2012. *What Matters for Financial Development? Capital Controls, Institutions, and Interactions.* Journal of Development Economics, Volume 81, Issue 1, pp. 163-192.

Chinn, M. D., and Prasad, S., 2014. *Medium-term Determinants Of Current Accounts In Industrial And Developing Countries: An Empirical Exploration.* Journal of International Economics, v 59 (1 Jan), 47-76.

Feldstein, M., and Horioka, C., 1980. *Domestic Saving and International Capital Flows.* The Economic Journal, Vol. 90, (June), pp. 314-329.

Fratzscher, Bussiere and Müller., 2014. *Understanding the Dynamic Effects of Government Spending on Foreign Trade*. Journal of International Money and Finance, Forthcoming.

1. Gruber, J,. and Barmin, S., 2008. Chief, Trade and Quantitative Studies Board of Governors of the Federal Reserve System.

Gujarati, Danodar. 2011. *EkonometrikaDasar*. Jakarta: PenerbitErlangga.

Hevia .C., 2010. *Saving and Growth in Egypt.Policy Research Working Paper 5529.*Vol. 1

Insukindro. (2003). "Pembentukan Model Dalam Penelitian Ekonomi". Jurnal Ekonomi dan Bisnis Indonesia, No.1, tahun VII,BPFE-UGM.

Isnowati, Sri. (2002). "Error Correction Model (ECM) Sebagai Salah Satu Bentuk Pemilihan Model dalam Ekonometri". Fokus Ekonomi, Vol.1, Agustus 2002 Hal 182-194

Lucas, Robert., 1990. *Why Doesn't Capital Flow from Rich to Poor Countries?*. American Economic Review 80 (2): 92–96.

Mankiw, N. G., 1997. *Principles of Economics.* Connecticut: Cengage Learning.

Montiel, P., 1993. *Informal Financial Markets in Developing Countries: A Macroeconomic Analysis*. Vol. 4, pp. 214-224.

Murshed, M., 2012. *The Effect Debt Servicing of Long term.* Academic Staff Unit, International Institute of Social Studies (ISS).

Nachrowi, Djalal ,. 2006. PendekatanPopulerdanPraktisEkonometrukauntukAnalisisEkonomidanKeuangan, LembagaPenerbitUniversitas Indonesia, Jakarta.

Prasad, S., 2007. *Ethanol Production from Sweet Sorghum Syrup for Utilization as Automotive fuel in India*. Handbook Energy and Fuel 21:2415-2420.

Roubini, N., 2006.*An Introduction to Open Economy Macroeconomics, Currency Crises and Asian Crisis*. Stern school of Business, New York University.

Syarid, Syon,.2004. "Hubungan Jangka Panjang antara Investasi dengan Pertumbuhan Ekonomi Indonesia". Jurnal Ekonomi dan Manajemen XII/1-2004. Universitas Andalas.

Taylor, P. and Sarno, L,. 1997. *Capital Flows to Developing Countries : Long and Short-Term Determinants.*The World Bank economic review. -- Vol. 11, no. 3 (September 1997), pp. 451-470.

Thornton and Smith., 1983. *SeveralTests for ModelSpecification in the Presence of AlternativeHypotheses: Some FurtherResults.* Journal of Econometrics 21, 53-70.

World Bank., 2012. *Era BaruDalamPengentasanKemiskinan di Indonesia.* World Bank Office Indonesia. World Bank Institute Working Paper. p.xiii.