

## Triple Deficit Hypothesis: Has it happened in Indonesia ?

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### Abstract

The purpose of this study is to analyze the causal relationship of triple deficit hypothesis between budget deficit, current account deficit, and saving-investment gap in Indonesia. Budget deficit is a deficit that occurs when state revenue is smaller than the country's larger expenditure. Whereas the current account deficit is a condition of the current account balance that has a deficit due to a smaller export value compared to imports of a country coupled with a net outflow of a country. The savings gap is the inability of domestic savings to finance non-financial investments due to the small amount of domestic savings while the need for domestic investment is quite large. So this deficit phenomenon is known as triple deficit. By using Vector Autoregression (VAR) method and time series data from the year 2003:Q1-2016:Q4, this study shows that budget deficit and current account deficit have one-way relationship, budget deficit and saving-investment gap have one-way relationship and current account deficit and saving-investment gap not have causality or one-way relationship.

**Keywords:** triple deficit hypothesis, budget deficit, current account deficit, saving investment gap, vector autoregression (VAR)

### Introduction

The balance that occurs in a country both internally and externally can improve a country's economic prosperity. In general, both developed and developing countries experience problems with internal balance seen in the balance of the budget and the balance of savings-investment, and external balance can be seen in the current account balance. Budget deficit is a deficit that occurs when government revenue is smaller than the spending. Whereas the current account deficit is a condition of the current account balance that has a deficit due to a smaller export value compared to imports of a country. The savings gap is the inability of domestic savings to finance non-financial investments due to the small amount of domestic savings while the need for domestic investment is quite large. So this deficit phenomenon is known as triple deficit.

There are two approaches that explain the existence of this triple deficit, namely the Keynesian approach and the Equivalent Hypothesis approach (Akbas, 2016). To explain further about this triple deficit, it can be described through identity equations which represent the basic theory of the relationship between the budget deficit, the current account deficit and the savings gap by referring to the following national income equation:

$$Y = C + I + G + (XM) = C + S + T \dots\dots\dots (1)$$

Therefore, equation (1) can also be described as follows:

$$I + G + X = S + M + T \dots\dots\dots (2)$$

With the help of equation (1), the relationship between the budget deficit, the current account deficit and the savings gap can be described as follows:

$$(X - M) = (S - I) + (TG) \dots\dots\dots (3)$$

Akbas (2014) also found that the triple deficit hypothesis in Turkey using the Vector Autoregression (VAR) approach, which was caused by several macroeconomic factors such as low levels of implementation and accompanied by the amount of government spending, unfavorable foreign trade so that net exports experienced a deficit and low savings rates.

The main concept regarding the government budget or state budget for income and expenditure is the occurrence of a budget / deficit of the budget. At a low level of income, the budget tends to experience a deficit (negative budget surplus), because government spending exceeds or is greater

than the revenue. While at a high income level, the budget tends to be a surplus, because government revenue greater than spending (Dornbusch, 2008: 220). While, Current account is a country's record net export (trade balance). The current account balance will experience a deficit when imports continue to increase, while export activities tend to decline (Hardiani, 2013). So that, to cover the current account deficit, surplus budget from the government Budget is needed. However, government's revenues, which are generally always lower compared to expenditure, will cause an increase in the budget burden which will have an impact on the increase in the budget deficit. Thus, the transaction deficit has a positive effect on the budget deficit, because the increase in the current account deficit will cause an increase in the budget deficit.

The saving gap (saving-investment gap) that occurs in developing countries is usually negative. This is because the amount of domestic savings is low, but domestic investment needs to increase each period following the population growth and market needs so that there is a saving gap where  $S - I < 0$  or  $S < I$ . The low savings in financing this investment certainly requires an injection of funds. If savings are greater than investment, there will be a surplus that will be able to increase government revenue and be able to finance government spending or deficits and vice versa. So that, savings gap has a positive effect on the budget deficit. The gap in savings that occurs will be in line with the current account deficit. According to Akbas (2016), the savings gap has a significant influence on the current account deficit. Based on the identity equation  $S - I = X - M$  shows that internal imbalances, namely the savings gap will be in line with the current account deficit. In other words, changes in saving behavior will be the same as changes in the behavior of exports and imports of goods and services. So, the savings gap has a positive effect on the current account deficit.

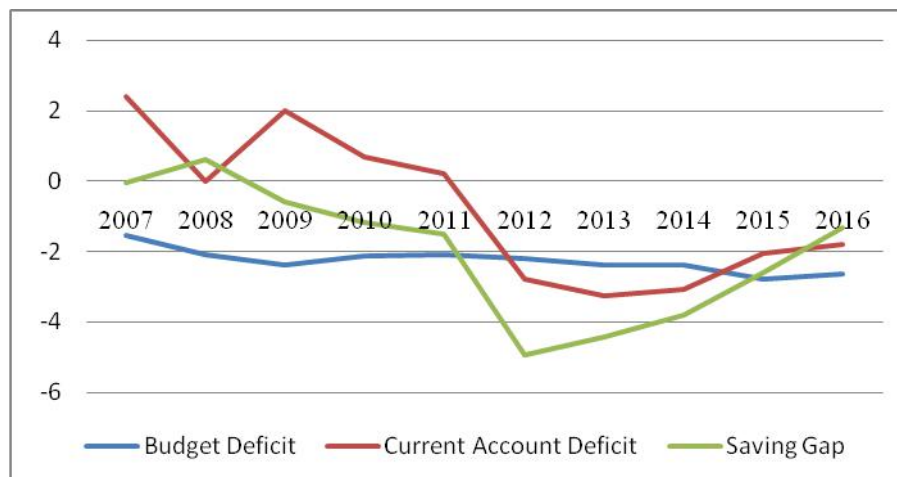


Figure 1 The data of the Budget Deficit, Current Transaction Deficit, and Saving Gap in Indonesia in 2007-2016

Based on Figure 1, it can be seen that the State Budget (APBN), current account, and savings tend to experience a deficit from 2007 to 2016. Viewed from the budget side, the budget deficit tends to increase every year. The current account balance in 2012 to 2016 also shows a deficit in the current account. Furthermore, it can be seen from the savings that there is a gap in domestic savings because the amount of domestic savings is smaller than investment financing. It can be seen that the phenomenon occurred, where in 2013 the decrease in saving gap this year was not in line with the budget deficit and the current account deficit, because this year the budget deficit and the current account deficit actually increased from the previous year of - 2.38 percent and -3.26 percent. Next in 2014 and 2015 there were also discrepancies as happened in 2013, where when the budget deficit experienced an increase but the current account deficit and saving gap actually decreased

In Indonesia, there is tendency that the condition of budget deficit, current account deficit and savings gap or the triple deficit hypo-thesis condition applies. This condition is important to be

analyzed because it will show its effect on the balance both internal and external and also the occurrence of the triple deficit hypothesis has proven the instability economy of a country.

### Methods

The data used in this study are secondary data from Bureau Center of Statistics (BPS), the Ministry of Finance of the Republic of Indonesia and Fred Economic Data from 2003: Q1-2016: Q4.

Vector Autoregression (VAR) is used to analyze the relationship of the system of time series variables (time series) and to analyze the dynamic impact of the interference factors contained in the system variables. Vector Autoregression (VAR) is one of the analytical tools that is not only useful to see the causality relationship between variables, but also can be used to determine the projection model (Ariefianto, 2012: 112). VAR analysis is also a very useful analytical tool, both in understanding the interrelationships between economic variables, and in the formation of a structured economic model.

According to Rosadi (2012: 213), VAR is a system of equations that shows each variable as a linear function of a constant with the lag value of the variable itself, and the lag value of other variables in the system of explanatory variables in the VAR includes the value of the lag of all variables no, no. In a VAR system requires identification of the restrictions to achieve equality through interpretation of equations. The research model using the VAR standard model is described as follows:

$$BD_t = \sum_{i=0}^n \alpha_i BD_{t-i} + \sum_{i=0}^n \beta_i CAD_{t-i} + \sum_{i=0}^n \gamma_i SIG_{t-i} + U1_t \dots \dots \dots (4)$$

$$CAD_t = \sum_{i=0}^n \alpha_i CAD_{t-i} + \sum_{i=0}^n \beta_i BD_{t-i} + \sum_{i=0}^n \gamma_i SIG_{t-i} + U3_t \dots \dots \dots (5)$$

$$SIG_t = \sum_{i=0}^n \alpha_i SIG_{t-i} + \sum_{i=0}^n \beta_i BD_{t-i} + \sum_{i=0}^n \gamma_i CAD_{t-i} + U5_t \dots \dots \dots (6)$$

Where

BD: Budget Deficit (Budget Deficit)

CAD: Current Account Deficit

S-I G: Saving-investment Gap

### Results

Tabel 1 Granger Causality test

Pairwise Granger Causality Tests

Date: 11/04/18 Time: 17:22

Sample: 2003Q1 2016Q4

Lags: 10

| Null Hypothesis:               | Obs | F-Statistic | Prob.  |
|--------------------------------|-----|-------------|--------|
| CAD does not Granger Cause BD  | 46  | 1.33946     | 0.2641 |
| BD does not Granger Cause CAD  |     | 2.40410     | 0.0367 |
| SIG does not Granger Cause BD  | 46  | 2.46084     | 0.0330 |
| BD does not Granger Cause SIG  |     | 0.98101     | 0.4838 |
| SIG does not Granger Cause CAD | 46  | 1.89449     | 0.0948 |
| CAD does not Granger Cause SIG |     | 1.46139     | 0.2119 |

#### Causality between Budget Deficit and Current Transaction Deficit in Indonesia

Based on the results of the Granger Causality test, it can be seen that the budget deficit does not affect the current account deficit, while the current account deficit affects the budget deficit, so that there is a one-way relationship between the current account deficit and the budget deficit. This is evidenced by the probability of a budget deficit in the current account deficit of  $0.2641 > 0.05$ , and the

probability of a current account deficit in the budget deficit of  $0.0367 < 0.05$ . This means budget deficit did not affect the current account deficit, while current account deficit affected the budget deficit.

The absence of a relationship between the budget deficit and the current account deficit in Indonesia due to the budget deficit conditions in 2007 to 2011 tended to experience deficit, while the current account deficit in 2007 to 2011 experienced a surplus. Then in 2012 to 2016 the budget deficit tended to increase, but besides that in 2012 to 2016 the current account deficit showed a deficit and decline. Thus it can be seen that the budget deficit did not affect current account deficit, while the current account deficit affect the budget deficit.

The results of this study are not in accordance with the opinions expressed by the Keynesian approach which reveals that the budget deficit has a positive relationship with the current account deficit, because when there is a budget deficit, it will reduce the current account surplus which ultimately shows a worsening of external balance. However, the results of this study are in accordance with the opinion expressed by Akbas (2014) in his research entitled "Testing the Validity of Hypothesis Triple Deficit for Turkey: Asymmetric Causality Analysis" by using data during the period 1960-2012, that there is a one-way relationship between the transaction deficit running with a budget deficit, while the budget deficit has no effect on the current account deficit in Turkey.

### **Causality between Budget Deficit and Saving Gap in Indonesia**

Based on the results of the Granger Causality test, it can be seen that the budget deficit affects the savings gap while the saving gap does not affect the budget deficit, there is a one-way relationship between the budget deficit and the savings gap. This is evidenced by the probability of a budget deficit in the savings gap of  $0.0330 < 0.05$ , and the value of the probability of the savings gap to the budget deficit is  $0.4843 > 0.05$ . This means that budget deficit affect the gap in savings, while saving gap did not affect the budget deficit in Indonesia. This is because at the time of the increase in the savings gap does not have an impact on budget conditions that cause the budget to experience a deficit. In addition, the gap in savings can be overcome by foreign loans or other domestic financing that has no impact on the budget deficit in Indonesia.

The absence of a relationship between savings gap and budget deficits in Indonesia is caused by the condition of the gap in budget savings and deficit that tends to fluctuate. It can be seen in 2008 that the savings gap has a surplus, which means that the value of savings is greater than the value of investment and while the budget deficit has increased. Then in 2009-2012 the saving gap experienced a very sharp increase, while the budget deficit experienced a fluctuating value. In the year 2013-2016, the savings gap shows a downward trend in each year but the budget deficit tends to fluctuate so that the condition of the budget deficit experiences instability.

The results of this study are not in accordance with the opinion expressed by the Keynesian approach which reveals that the savings gap has a positive relationship with the budget deficit, because when there is a saving gap it will cause the budget to increase the investment and cause an increase in the budget deficit and deteriorating internal balance. However, this research is in line with the opinion expressed by Akbas (2016) in his research entitled "Current Account Deficit, Budget Deficit, and Saving-Investment Gap: Is the Twin or Triple Deficit Hypothesis a Valid in G & Countries?" Using the 1994 period data 2011 shows that there is a one-way relationship between the budget deficit and the savings gap, while the savings gap does not affect the budget deficit in G7 countries.

### **Causality between the Current Transaction Deficit and the Savings Gap in Indonesia**

Based on the results of the Granger Causality test, there is no causality relationship. Where the current account deficit does not affect the savings gap and the savings gap does not affect the current account deficit. This is evidenced by the probability of a current account deficit in the savings gap of  $0.0949 > 0.05$ , and the probability value of the savings gap to the current account deficit is  $0.2119 > 0.05$ . This means that during the study period the current account deficit did not affect the savings gap, and the saving gap did not affect the current account deficit in Indonesia.

The absence of a relationship between the current account deficit and the savings gap in Indonesia is because in 2007-2011 the current account balance experienced a surplus which meant that the current account balance showed a positive trend while the savings gap increased. Then in 2012-2016, the current account balance experienced a fluctuating deficit which caused instability. While the saving gap in 2012 experienced a very sharp increase and in 2013-2016 it still showed a negative trend, but the value of the deficit tended to decline every year.

The results of this study are not in accordance with the opinion expressed by the Keynesian approach which states that the current account deficit has a positive relationship with the savings gap, because when the current account deficit occurs it will reduce the surplus in the current account balance which ultimately shows a worsening of external balance. The results of this study are also in accordance with the opinions expressed by Akbas (2014) in his research entitled "Testing the Validity of the Triple Deficit Hypothesis for Turkey: Asymmetric Causality Analysis" by using data during the period 1960-2012, that there is no causal relationship between deficits Current account with a savings gap in Turkey.

## Conclusions

Based on the analysis used in the study, by using VAR model, it can be concluded that there is unbalance condition of budget deficit, current account deficit and saving gap. Based on the results of the Granger Causality Test, it is found that the budget deficit and the saving gap have a one-way relationship, while the current account deficit and saving gap do not have causality or one-way relations. Based on the results, it suggest that the Government must control and make appropriate policies to reduce the rate of budget deficit, the current account deficit and the savings gap in Indonesia due to disruptions both internal and external economy condition by increasing revenue, expenditure, foreign trade as well as savings and investment in order to achieve prosperity and stability in the economy. And also it is better for the Government to have the policies in controlling and increasing domestic savings through interest rates which is an important instrument to increase savings rate , because it will increase investment and reduce the savings gap.

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