



## The International Balance of Payments Role in the Economy of Indonesia

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### Abstract

*The balance of payments is an indicator of economic fundamentals. Balance of payment describes the ability of a country to gain foreign exchange and foreign payments. This study aimed to analyze the determinants of the balance of payments on the Indonesian economy. It used Thirlwall and Hussain models and also Duasa empirical model. This study used secondary data years 1987-2014, namely foreign exchange reserves, exports, foreign investment, the exchange rate and the real gross national income. The results showed that the performance of the balance of payments in Indonesia can be explained by the models shown in accordance with the hypothesis, but on several variables did not show a significant correlation.*

**Keywords:** Balance of payment, Thirlwall and Hussain, Duasa, Indonesia

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## INTRODUCTION

The economic development of a country at this time cannot be separated from the global economic conditions. The economic relations between countries become important factors that affect against the economic development of each country. At present, there is no single country in a state of autarky or the isolated state in the absence of economic relations with other countries (Sa'idy, 2013). This condition leads to competitiveness as a determining factor in the competition between countries in order to get benefit from the increasing openness of the world economy. The advantage of the opening of the world economy can be seen from the state of a country's balance of payments.

Balance of payments related to the ability of a country to absorb foreign exchange and foreign payment. The economy suffers when the balance of payments is always negative. International transactions which require foreign currency to pay imports and foreign debt payments and other transfers. The balance of payments can be affected also by domestic factors namely by the large amount of money in circulation. Money core as the addition of foreign reserves plus domestic credit. Meanwhile, this foreign reserves is a factor which will influence the balance of payments.

As generally assumed in the preparation of the balance of payments statistics in other countries, the Indonesia Balance of Payments or Indonesia's balance of payments (NPI) statistics is made with the following objectives: (1) to determine the role of the external sector in the economy; (2) to determine the flow of resources to another country; (3) to know the structure of the economy and trade; (4) to know the problem of foreign debt; (5) to determine changes in foreign exchange reserves and the potential

for pressure on the value of exchange; (6) as a source of data and information in formulating the budget to foreign exchange; and (7) as a source of data compilation of statistics national accounts (national accounts).

The foreign exchange reserves will always be seen in the balance of payments as the net difference between the current account in that it is determined by the value of exports and imports as well as the transfer of net services. In addition, the traffic flow net of capital is determined by the difference between the amount of income and expenditure of capital in and out of both government and private land. This study aimed to analyze the role of the balance of payments on the Indonesian economy by using by using the Thirlwall and Hussain model (1994) and analyze the determinants of Indonesia's balance of payments by using the Duasa empirical model (2004)

The balance of payments of a country is a systematic record of international transactions between residents of the country with the population of another country within a specified period (Nopirin, 1988). Economic transactions which are included in the Indonesia balance of payments is divided into two groups, namely: (1) The current account which consists of exports and imports of goods and service, income and current transfers; (2) The capital and financial accounts which consist of capital and financial account (Bank Indonesia, 2013).

Economic transactions which are recorded in the balance of payments was mainly due to the exchange or transfer of economic value between Indonesia residents and nonresidents. In one exchange, the Indonesian population gain / relinquish their ownership of economic value by giving / getting possession of more economic value from non-residents. As for transactions resulting from the transfer, an economic value

is given or received by the Indonesian people with no reply by other economic value.

An economic transaction, though without an exchange or transfer, can still be recorded in the balance of payments. The way of recording this transaction is more commonly known as imputed transaction. An example is the recording of the net earnings (excluding dividends) of foreign investment companies (PMA) in the component of reinvested earnings in the balance of payments.

In general, economic transactions which are included in the balance of payments can be divided into two groups (Krugman and Obstfeld, 2000: 1) goods, services, income and current transfers and 2) capital / financial.

Transactions within the group (1) is part of the current account, while transactions in the group (2) is part of the capital and financial accounts. Those two groups outline the factors that affect the balance of payments. In other words, the balance of payments, on the one hand, is affected by the balance of transactions in goods through export and import variables, and on the other side, is influenced by factors affecting the balance of capital through the capital inflows and capital outflows. Ultimately, these factors could cause the balance of payments dynamics continuously. The dynamics can be seen in the situation that a current balance of payments can achieve deficit or surplus (disequilibrium) and at other times, the balance of payments can have a balanced position (balance or equilibrium) (Halwani, 2005; Hady, 2009).

The balance of International Payments equation is the sum of the current account surplus with NTMF (surplus Balance of Capital and Financial Account). By using Dornbusch, et al. mathematical substitution

process (2004). Therefore, the equation of balance of payments is written as follows:

$$\text{NPI Curve} \rightarrow \text{NPI} = \text{NTB} + \text{NTMF} \quad (3)$$

Where NTB (Current Account) depends on domestic and overseas revenues. NTMF (Balance of Capital and Financial Account) depends on real interest rates. Moreover, the increase in national income will worsen NTB. While the increase in interest rates above the world level would attract capital from outside and would improve NTMF.

If the capital mobility is perfect, with little difference in interest rates, it would trigger infinite capital flows. This shows that with the ultimate in mobility, the central bank cannot conduct an independent monetary policy in a fixed exchange rate system. If a country is implementing tight monetary policy by raising interest rates, then the owner of the portfolio around the world will flock to move their wealth for the benefit of the new interest rate.

This results in large capital inflows, the balance of payments experienced large surplus, Mankiw (2003). The desire of foreigners to buy domestic assets results in the tendency of exchange rate appreciation and force the central bank to intervene so that the exchange rate remains constant. Then the central bank will buy foreign currency using domestic currency. This intervention leads to the increase of the supply of the domestic currency. As a result, monetary contraction begins to turn around. The process will end when the interest rates in the country pushed back to the initial level.

Every effort independent monetary policy will lead to the movement of capital and the necessary interventions to get the interest rate back to the average of world's interest rate. In the regime of fixed exchange rates and perfect capital mobility, a country

cannot conduct an independent monetary policy. Interest rates cannot move out of the average prevailing in the international market.

In theory, there are three approaches that can be used to study the international balance of payments, namely: elasticity approach, absorption approach and the monetary approach. The third approach is broken down into two major approaches, namely the Keynes approach (elasticity approach and absorption approach) and Monetarists approach. The elasticity approach is centered on changes in the exchange rate as a modifier to improve the balance of payments imbalances. On the other hand, absorption approach is a combination of a combination of changes in income, expenses and exchange rate to restore external balance - the balance of payments (Jamli, 2001). Moreover, the monetary approach is an approach that considers that the balance of payments is a monetary phenomenon, in which there is a relationship between balance of payments and the money supply of a country (Chacoliades in Adamu and Otsede, 2009).

Keynesian, an economist, emphasizes aspects of the short-term, while the Monetarists emphasize the long-term aspect. The analysis of the short-term looks at the dynamics of change towards a new equilibrium. In the short-term analysis is also possible to look at the length of time required to achieve a new balance in case of shock that caused turmoil foreign reserves. Economic policy makers would need a clear time range to monitor the effectiveness of economic policies it chooses. Meanwhile, the long-term analysis analyzes the process of change from the old equilibrium towards a new equilibrium.

Fitri (2014) in a study entitled "The Analysis of Factors Affecting Current

Account: A Case Study of Indonesia in Year 1990-2011". This research was conducted with the aim of analyzing the factors affecting the Current Account Indonesia. The data used was secondary data obtained from Bank Indonesia and the IMF, namely Indonesia's current account balance, exchange rates, government spending, and growth of the world economy. The data used were annual data from 1990 to 2011. By using Ordinary Least Squares (OLS), the results of this study are there is a significant effect of rupiah exchange rate, while the government spending variables and global economic growth are not significant towards the current account in Indonesia in 1990-2011.

Effendy (2014) analyzed Indonesia's balance of payments in the short term and long term which can be explained using Keynesian approach (the elasticity and absorption) and the monetary approach. In the monetary approach, foreign exchange reserves as a proxy of the payment balances were used and the Keynesian approach of was implemented to analyze the exchange rate and Gross Domestic Product (GDP) to determine its effect on the balance of payments. By using Error Correction Model (ECM), the results from this study show that the level of the exchange rate brings positive and significant effect in the short term and long term. In addition, GDP contributes positive and significant effect on the balance of payments in the short term. While the inflation variable and interest rates do not significantly affect the balance of payments in the short term and long term.

Flood (1977), in his study entitled "Growth, Prices, and the Balance of Payments", using the keywords of inflation, relative prices and sectoral growth. This study used a descriptive analysis using the theory of equilibrium. The analysis of this study is the growth of the industrial sector increased in

relative prices. Changes in prices, exchange rate adjustment, and balance of payments have some impact on real changes in the economy and monetary sector.

Thirlwall and Hussain (1982) with a study entitled "The Balance of Payments Constraint, Capital Flows and Growth Rate Differences between Developing Countries" analyzed capital flows, relative prices of exports and imports and elasticity. The study states that the trade growth of 0.6% per year growth in capital of 0.05% per year growth in imports is not offset by growth in exports. Atesoglu (1994) in his research with the title "Exports, capital flows, relative prices, and economic growth in Canada" analyzed exports, capital flows relative prices and economic growth in Canada with the moving average analysis and regression analysis. The results of the study reveal that the growth of exports and growth in the relative price of an important influence on economic growth in Canada and the flow of capital is not an important influence on economic growth in Canada.

Atesoglu (1997) with his study entitled "Balance of payments-constrained growth models and its implications for the United States", reveal the integration of real income and real exports by Johansen Cointegration analysis. It shows that the real income and real exports are positively cointegrated. Loria (2003) with a study entitled "The Mexican Economy: Balance-of-Payments-Constrained Growth Model: The Importance of the Exchange Rate, 1970-1999" used the balance of the current account, trade balance, services and transfer Weighted factorial two-stage least squares in her research. The results of the study reveal that the contemporary economy does not follow the policy of protection and expansionary demand to affect the economic development. Monetary policy

and the changes of it have a low impact on inflation.

Warijan (2007) examined the Monetary Variables Influence on International Reserves in the Balance of Payments of Indonesia in 1980.1-2004.4. The variables used were domestic credit, real GDP, domestic prices and domestic interest. Regression analysis results Domestic credit, real GDP, domestic and domestic interest rates have a positive influence on the real exchange rate and also positive effect on international reserves. Again, a research by Duasa (2004) analyzed the balance of payments of Malaysia with the Monetarists and Keynesians approach on the foreign exchange reserves, real GDP, domestic credit, interest rates, inflation, exchange rate. The results show that the trade balance (TB / Trade balance) in Malaysia supports the Keynesian view, while Official Reserve Transaction balance (ORTB) supports the view of both Keynesians and Monetarists.

Aliyu (2007) examined the factors that influence the demand for exports and imports and the stability of Nigeria's balance of payments in the period 1970-2004. This study used cointegration and error correction model (ECM). The results show that there is significant causal relationship between the two models, namely model of export demand and import export demand model. In addition, in order to achieve stability in Nigeria balance of payments, the adjustments to the exchange rate are needed.

Muhammad (2010) investigated the factors that affect the balance of trade with a case study in Pakistan. The purpose of this study was to explore the factors that influence the trade balance deficit in the short-term and long-term using *Johansen co-integration approach* and *Error correction model* (ECM). The results show that the income from abroad, foreign direct investment/ foreign

capital, domestic household consumption and the exchange rate have a significant effect on the trade balance. Kennedy (2013) conducted a research on the factors that affect the balance of payments in Kenya between 1963 to 2012. The methods used were the cointegration and ECM. The results show that the fluctuations in the balance of payments is influenced by the level of trade, the movement of the exchange rate and the influx of foreign direct investment.

Ajayi (2014) investigated the factors that affect the balance of payments in Nigeria with a partial adjustment analysis. The analytical method used was the Augmented Dickey Fuller (ADF) test, Engel Granger Cointegration, post-estimation and OLS. The results show that the decline in trade openness, lack of money supply, greater private investment, a higher exchange rate, monetary policy easing, fiscal deficits are higher in improving the balance of payments in Nigeria.

## RESEARCH METHODS

This study uses secondary data years 1987-2014, namely foreign exchange reserves, exports, foreign investment, the exchange rate and the real gross national income. Again, the Replication model of Thirlwall and Hussain (1994) is a study that is in the sense of explanation (explanatory research). The analysis is focused on explanation of the relationship between the independent variables on economic growth from 1987 to 2014. The hypothesis to be tested in this study is: exports will have positive influence on

national income; capital inflow has positive effect on national income and relative price has positive affects towards national income. The equation is as follows:

$$Y_t = \alpha + \gamma + \beta X_t (c-p)_t + \delta (p - p_f)_t + \mu_t$$

Where:  $Y_t$  is real incomes;  $X_t$  is real exports;  $(c-p)_t$  is the capital;  $(p - p_f)_t$  is the relative price,  $\mu_t$  is the error term, and  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  are constants.

## RESULTS AND DISCUSSION

After the data were analyzed, here, the researchers present the result of the data analysis by employing the Thirlwall and Hussain empirical model of regression in the following table 1.

Regarding the above table, the R-square value is 0.9838. This means, the data empirically show that the Indonesia national real income can be explained by the variable exports, foreign investment and trade exchange amounted to 98.38 percent and the remaining 1.72 percent is explained by variables outside the model.

The export variable contributes positive significance on  $\alpha$  5% to economic growth with coefficient of 0.4592. This means that the increase in exports of 1 percent would increase the real national income as many as 0.45 percent. Two other independent variables namely foreign direct investment (FDI) and the purchasing power parity show that the exchange rate trading in a priori way is consistent with the hypothesis (according to the theory), but no significant effect either on  $\alpha$  5% or  $\alpha$  10% of the real national income of Indonesia.

**Table 1.** The Result of Thirlwall and Hussain Empirical Model of Regression  
Dependent Variable: LOG(GDPR)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.436346	0.206339	6.961083	0.0000
LOG(EKSP)	0.459285	0.042712	10.75315	0.0000
LOG(FDI)	0.050827	0.034653	1.466744	0.1554
LOG(PPP)	0.036853	0.032282	1.141604	0.2649
R-squared	0.983804			
F-statistic	485.9551			

The second empirical models adopt the model of Duasa study (2007) on Malaysia's trade balance. The difference of this study with the research by Duasa is located on the dependent variable and the basic approach. In Duasa's study, the exchange rate acted as the dependent variable, and was done by using elasticity approach by using exchange rate as the main variable. It also added PDB variable and money supply (JUB) to test the relevance of absorption and monetarist approach to the balance of trade. Meanwhile, the empirical model as the dependent variable in this study is the foreign exchange reserves (CD), as the representations of Indonesia balance of payments and analyzed by using monetarist approach, so it involves offer and demand of

money as the basic model. In addition, this research also wants to test the relevance of elasticity and absorption approaches to the balance of payments by adding exchange rate variable and Gross Domestic Product (PDB) variable as the independent variables.

After seeing the early explanation of the three approaches regarding the above balance of payments, the empirical models will then analyze the determinants of the balance of payments with the independent variable which is the exchange rate with real PDB, interest rates, and inflation as the factors that affect the balance of payments (CD). Here are the results of regression with 28 observations series of data between the years 1986-2013.

**Table 2.** The Regression Result of the Duasa Model

Dependent Variable: LOG(CD)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.175564	1.049243	-4.932663	0.0001
LOG(GDPR)	1.743270	0.181756	9.591272	0.0000
INF	-0.002967	0.004295	-0.690769	0.4966
LOG(KURS)	0.321402	0.080110	4.012026	0.0005
SB	-0.004737	0.010071	-0.470348	0.6425
R-squared	0.974510			
Prob(F-statistic)	0.000000			

The results of this study indicate the R-square values 0.974510. It empirically shows that Indonesia's balance of payments can be explained by the real national income (GDPR), inflation (INF), exchange rate, and interest rates (SB) as many as 97.45 percent and the rest of 2.55 percent is explained by variables outside the model.

The results of this study stated that the exchange rate in Indonesia has positive and significant impact on the current account, due to the devaluation of the exchange rate may encourage exports. The exchange rate improves the balance of payments by using the current account. This is due to the devaluation of the exchange rate in Indonesia by which, in details, meaning that the price of abroad goods will rise and imports will drop and cause the reduced use of foreign exchange.

In contrast, the prices of domestic goods will fall and it will increase exports that will add to foreign exchange or add to the balance of payments. This is indicated by the negative sign in the variable inflation. However, inflation which is shown by the empirical model is not significant both on the degree  $\alpha$  of 5% and 10%. Theoretically, it is stated that if inflation rises it will reduce the balance of payments. However, inflation can also be a positive effect because of the rising of inflation in Indonesia is relatively low and could further as a lubricant in the economy and could further increase the national income. Accordingly, when the national income increases, the balance of payments will go up. Unfortunately, the increase in national income due to inflation is not too big so it does not significantly improve the balance of payments.

This empirical study shows that the Indonesia real PDB significantly affects towards  $\alpha$  5% with a coefficient 1.743270, meaning that an increase in real PDB of 1

percent would be able to raise foreign exchange reserves on the balance of payments amounted to 1.74 percent. Interest rates do not significantly affect Indonesia's balance of payments, but has a negative sign. As a result, if interest rates rise, it will worsen the balance of payments. This is in contrast with the theory which states that an increase in interest rates would encourage foreign capital come into Indonesia in that it will improve the balance of payments. This could occur because of the high level of interest would attract "hot money" into Indonesia and will make the exchange rate appreciation. Furthermore, it will make exports more expensive than imports which later will worsen the balance of payments, and vice versa. Another possibility which may cause the insignificant of interest rates and the negative is that the "hot money" that goes in or out does not affect much to exchange rate fluctuations.

## CONCLUSION

The analysis of the balance of payments with Thirlwall and Hussain Empirical Model shows that export variable contributes significant positive effect on economic growth. Meanwhile, two other independent variables, namely foreign direct investment (FDI) and the purchasing power parity reveal their suitability of the hypothesis, but do not affect the real national income Indonesia.

The analysis of the balance of international payments using the Duasa model shows the same result as Sugema's study (2005) and Sahminan, et al (2009) which state that the exchange rate in Indonesia has positive and significant impact on the current account, due to the devaluation of the exchange rate may encourage exports. The exchange rate



improves the balance of payments within the current account. This is due to the data which show that by having devaluation of the exchange rate, meaning that the price of foreign goods in Indonesia would rise and imports will drop and cause reduced use of foreign exchange. In contrast, the prices of domestic goods will fall and it will increase exports that will add to foreign exchange or add to the balance of payments.

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