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THE ANALYSIS OF CURRENT ACCOUNT BALANCE SYSTEM IN INDONESIA

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Abstract
This study investigates the current account balance system in Indonesia. We employed multiple regression analysis approach to explain the relationship between dependent variable and independent variables. This study entirely used time series secondary data from 1981 up to 2016. The condition of current account balance system is inseparable from the macroeconomic indicators. The results from this study are national income, real exchange rate, inflation, and financial development have negative affect and significant to current account balance system. Further, foreign direct investment has positive affect and significant to current account balance system. however financial development has negative affect but not significant to current account balance system. This research is recommended to the government to be able to increase the flow of foreign direct investment in Indonesia, because it is a major factor in improving the condition of current account balance system.

Introduction
The open economy model is important to maintaining external balance. How external balance is achieved? It's when an optimal level of current account balance system is attained. By optimal level of current account balance system is meant that a country's resources and domestic price level stability. External balance is attained when a country's current account balance system is neither so deeply in deficit [1]. The current account balance system is the broadest measure for international trade in goods and services affecting economic performance and has a significant role in development activities. Current account balance system, either deficit or surplus, is an important indicator of the health of an economy [2]–[5].

The globalization process causes each country to embrace the open economic system by cooperating in international trade activities, such as some goods and services are sold in domestic market and some of them are sold in foreign markets, because each country is integrated to meet the needs of its people [6]–[8]. The current account balance system is the broadest measure of international trade in goods and services in influencing economic performance and has a role in development activities in a country [9]–[11].

The interaction of international trade resulted in the condition of the current account system of a country experiencing an imbalance known as surplus and deficit [12].The current account balance system deficit is one of the main indicators of external imbalances in the global economy [7], [13]–[16] The concept of current account balance system deficit has long been the focus of research debates on economic policy making in a country [17]–[21]. The sustainability of the current account balance system deficit system in a country will be dangerous, because if a country experiences a large external shock and has limited ability to overcome it, this will result in economic crises such as currency crises, foreign debt and reduction of foreign exchange reserves [22]–[24]).

The sustainable of current account balance system deficit in the long term will be difficult to overcome because to overcome these conditions, capital imports are required in the form of foreign debt and if capital imports are not used in such a way as to gain sufficient profits, other problems will arise upon settlement. Thus, this can lead to turbulence in financial markets [25], [26]. The realization of an open economic system for the implementation of international trade activities among others occurred in Indonesia. Figure 1 summarizes the condition of current account balance system in Indonesia over the past ten years.

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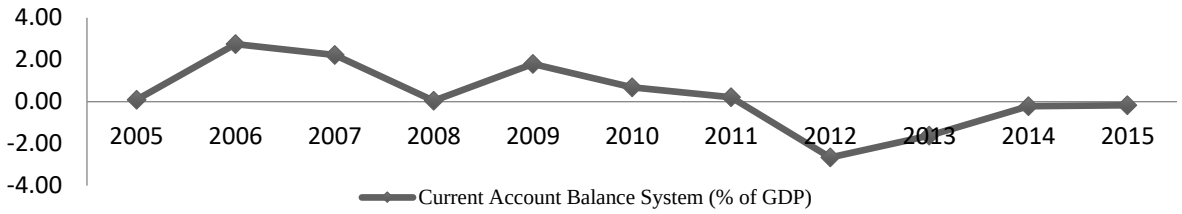

Based on graph 1, the condition of current account balance system in Indonesia surplus in 2005 to 2011, but in 2012 to 2015 experienced a state of sustained deficit. Fluctuations in condition of current account balance system in Indonesia cannot be separated from macroeconomic variables shocks. According to the theory of international financial economics that the condition of current account balance system of the country is determined by national income, inflation, and real exchange rate [27]. Based on previous research conducted by [23], [28]–[31] the condition of current account balance system is determined by national income, inflation, real exchange rate, financial development, and foreign direct investment.

The importance of this research about the current account balance are; the first, the current account balance describes the effect of foreign economic transactions on national income; the second, current account balance showing the structure and composition of economic transactions and the international financial position of a country; the third, to assist the government in taking policy.

Literature Review

Based on relevant theories and research, the relationship between independent variable with current account balance system are; The first, according [23], [27]–[29] the impact of national income on the current account balance system is that if a country experiences an increase in national income with a relatively higher percentage than other countries, then its current account will deficit. If real income increases then consumption of goods will also increase as a portion of the increase in consumption will be realized in the purchase of imported products; The second, according [27], [29]–[31] the effect of real exchange rate on the current account balance system is that if the real exchange rate of a country starts appreciation to other countries, this will cause the current account balance system to deficit as the products exported by the state it will become more expensive for the importing country. Consequently, demand for these products will decrease. Strong domestic currencies will worsen the current account balance system if the traded products are price-elastic, such us sensitive to price changes; The third, according [27], [30], [31] the impact of inflation on the current account balance system is that if a country's inflation rises relative to the inflation of its trading partner countries, its current account balance system will deficit. Consumers and cooperation within the country will buy more goods from abroad because of the high domestic inflation, while exports to other countries will decline; The fourth, [30], [31] the impact of financial development on the current account balance system is that if an increase in financial development leads to lower purchasing power of people due to an increase in the money supply, this condition will result in high prices of goods. Consumers in the country will buy more goods from abroad, so that the country's imports become increasing which resulted in the current account's balance to deficit; The fifth, according [30], [31] the effect of foreign direct investment on the current account balance system is having a good impact on the current account balance system because an increase in foreign direct investment, the country's output will increase, which will lead to an increase in exports over imports.

Research Methodology

Type and Sources of Data

This study entirely used time series secondary data sources covering the year ranged from 1981 up to 2016. Table 1 summarized the description of data and data sources used in this study.

Table 1. Description of data and sources

Variable	Abbreviation	Description	Source
Current Account Balance System	CABS	Current account balance is total current account balance for Indonesia, percent of GDP	World Bank
National Income	NI	National income is a proxy of Gross Domestic Product by expenditure in constant prices 2010 for Indonesia, percent	World Bank
Real Exchange Rate	RER	Real exchange rate is the result of multiplying the nominal exchange rate with GDP deflator Indonesia, then the amount is divided by GDP deflator United State, local currency unit	World Bank
Inflation	INF	Inflation as measured by the consumer price index for Indonesia, percent	World Bank
Financial Development	FDEEP	Financial development is a proxy of money supply for Indonesia, percent of GDP	World Bank
Foreign Direct Investment	FDI	Foreign direct investment is the amount of net inflow of foreign investment for Indonesia, percent of GDP	World Bank

Model Specification

The analytical tool used in this research is econometric model with multiple regression analysis. The method of analysis used to explain the relationship between dependent variable and independent variables with data processing using EViews 8 application software. Some steps to use the multiple regression analysis test are. The firs is data estimation using multiple regression analysis model. The second is to test the classical assumption, which include; normality test that aims to see whether the residual value is normally distributed or not, a good regression model is to have a normally distributed residual value; multicollinearity test that aims to see whether or not there is a high correlation between the independent variables in a multiple regression analysis. If there is a high correlation between the independent variables, then the relationship between independent variables to the dependent variable to be disturbed; heteroscedasticity test that aims to see whether there is an inequality of variance from one residual to observation to another; autocorrelation test that aims to see whether there is a correlation between a period t with the previous period (t -1) and to see the influence between independent variables to the dependent variable, because there can be no correlation between the observation period t with the observation of the previous period (t -1). The third is to test statistical, that include; the coefficient of determination to measure how far the ability of a model in explaining the dependent variable; F-test to see the effect of independent variables on the dependent variable collectively; T-statistic test to see the effect of independent variables on the dependent variable individually.

This study uses five determinants variables to current account balance system in Indonesia, it is based on result from relevant research about factors influencing current account balance system, that is:

$$CAB = f(NI, RER, INF, FDEEP, FDI) \quad (1)$$

Based on the function equation, multiple regression analysis model can be derived as follows:

$$CAB = \alpha_0 + \alpha_1 NI + \alpha_2 LogRER + \alpha_3 INF + \alpha_4 FDEEP + \alpha_5 FDI + \varepsilon_t \quad (2)$$

Where:

α_0 = constant

$\alpha_1 - \alpha_5$ = coefficient of independent variables

ε_t = error term

Data Analysis and Discussion

Estimation Result of Multiple Regression Analysis

The first analysis starts with estimated of data with multiple regression analysis which is summarized in Table 2.

Table 2. Estimation Result of Multiple Regression Analysis

Variable	Coefficient	T-statistic	Probability
C	-12.56294	-5.852295***	0.0000
NI	-0.434952	-2.289100***	0.0293
LogRER	-1.012346	-5.376776***	0.0000
INF	-0.188391	-2.598514***	0.0144
FDEEP	-0.050735	-1.541232	0.1337
FDI	1.444767	5.725041***	0.0000
F-statistic	17.73463		
R-square	0.747205		

The notifications *** denote 1%, level of significance, respectively.
Source: Authors' calculations using EViews 8.

Classical Assumption

The second analysis is to test the classical assumption. The normality test using the Jarque-Bera test (JB-test) which is summarized in Table 3. Based on table 3, the probability value of JB-test > α=5% (0.575154 > 0.05), so the data is normally distributed.

Table 3. Estimation Result of Normality Test

Jarque-Bera	1.106235
Probability	0.575154

Source: Authors' calculations using EViews 8.

The multicollinearity test using variance inflation factors which is summarized in Table 4. Based on table 4, the centered VIF value is less than 10 so there is no multicollinearity in the data.

Table 4. Estimation Result of Multicollinearity Test

Variable	Centered VIF
NI	5.483963
Log(REER)	1.783221
INF	5.262872
FDEEP	1.610585
FDI	1.315081

Source: Authors' calculations using EViews 8.

The heteroscedasticity test using Glejser test is comparing F-statistic with Obs*R-squared or focus on the Chi-Square probability value which is summarized in Table 5. Based on Table 5, the value of Chi-Square probability is greater than α=5% (0.1120 > 0.05), so the data used is not available heteroscedasticity (homoscedasticity).

Table 5. Estimation Result of Heteroscedasticity Test

F-statistic	1.978467
Obs*R-square	8.927130
Prob. Chi-square (5)	0.1120

Source: Authors' calculations using EViews 8.

The autocorrelation test using the Breusch-Godfrey LM Test which is summarized in Table 6. Based on Table 6, the prob. Chi-Square is greater than α=5% (0.1173 > 0.05), so there is no autokeralasi on the data.

Table 6. Estimation Result of Heteroscedasticity Test

F-statistic	1.892437
Prob. Chi-Square	0.1173

Source: Authors' calculations using EViews 8.

Statistical Testing

The third analysis is to test statistical. The coefficient of determination (R-square) based on Table 2, it can be seen that the R-square coefficient is 0.747205 which shows that 74.7205 condition of current account balance system in Indonesia is explained by national income, real exchange rate, inflation, financial development, and foreign direct investment, while the remaining 25.2795 is explained by other factors.

The coefficient of F-statistic based on Table 2 is 17.73463 and based on calculation it is found that F-statistic > F-table (142.824 > 2.53). Its means that the independent variables are national income, real exchange rate, inflation, financial development, foreign direct investment as a whole affect the dependent variable is current account balance system and can be statistically believed at a confidence level of 95%.

T-statistic coefficient based on Table 2 can be analyzed;

Influence of national income on current account balance system is known that the national income has negative relationship with current account balance system. Its means that if national income continuous increase will lead to deficit current account balance system. The coefficient of national income is -0.434952 which means that every increase of national income 1 percent with the assumption that the other independent variable is fixed then the current account balance system will deficit by 0.434952 percent. The result of t-test shows that national income has an effect significant on current account balance system where t-statistic > t-table (2.289100 > 2.04227), this means that national income individually affect current account balance system which are consistent with research [28],[29].

Influence of real exchange rate on current account balance system is known that real exchange rate has negative relationship with current account balance system. Its means if real exchange rate continuous appreciation will lead to deficit current account balance system. The coefficient of real exchange rate is -1.012346 which means that every appreciation of real exchange rate 1 percent with the assumption that the other independent variable is fixed then the current account balance system will deficit by 1.012346 percent. The result of t-test shows that real exchange rate has an effect significant on current account balance system where t-statistic > t-table (5.376776 < 2.04227), This means that real exchange rate individually affect current account balance system which are consistent with research [29]–[31].

Influence of inflation on current account balance system is known that inflation has negative relationship with current account balance system. Its means if inflation continuous increase will lead to deficit current account balance system. The coefficient of inflation is -0.188391 which means that every increase of inflation 1 percent with the assumption that the other independent variable is fixed then the current account balance system will deficit by 0.188391 percent. The result of t-test shows that inflation has an effect significant on current account balance system where t-statistic > t-table (2.598514 > 2.04227), This means that inflation individually affect current account balance system at 95 percent confidence level which are consistent with research [30], [31].

Influence of financial development on current account balance system is known that financial development has negative relationship with current account balance system. Its means if financial development continuous increase will lead to deficit current account balance system. The coefficient of financial development is -0.050735 which means that every increase of financial development 1 percent with the assumption that the other independent variable is fixed then the current account balance system will deficit by 0.050735 percent. The result of t-test shows that financial development has an effect not significant on current account balance system where t-statistic < t-table (1.541232 > 2.04227), This means that financial development individually not affect current account balance system which are consistent with research [30], [31].

Influence of foreign direct investment on current account balance system is known that foreign direct investment has positive relationship with Current Account Balance system. Its means if foreign direct investment continuous increase will lead to surplus current account balance system. The coefficient of foreign direct investment is 1.444767 which means that every increase of foreign direct investment 1 percent with the assumption that the other independent variable is fixed then the current account balance system will surplus by 1.444767 percent. The result of t-test shows that foreign direct investment has an effect significant on current account balance system where t-statistic > t-table (5.725041 > 2.04227), This means that foreign direct investment individually affect current account balance system which are consistent with research [30], [31].

Summary

From the analysis that has been discussed in this study, it can be drawn some conclusions are; the first, multiple linear regression model in this study have distribution of normal data and did not have multicolinearity, heteroscedasticity, and autocorrelation after tested in classical assumption test procedure; the second, The value of R-Square is 0.747205 which means that each independent variable i.e national income, real exchange rate, inflation, financial development, and foreign direct investment can explain fluctuation of dependent variable ie current account balance system of 74.7205 percent, while the remaining 25.2795 percent is influenced by other variables outside the model; the third, the value of F-statistic using the degree of confidence 95 percent explained that the independent variables i.e national income, real exchange rate, inflation, financial development, and foreign direct investment as a whole significantly affect of dependent variable that is current account balance system; the fourth, national income, real exchange rate, inflation , and foreign direct investment (5.725041 > 2.04227) having an effect current account balance system where the t-statistic is greater than t-table. However, financial development is not statistically significant against the current account balance system where t-statistic is smaller than t-table.

Policy Implication

The policy implications of this study are focused on estimating data that has the largest regression coefficient of foreign direct investment. Authors suggested that the Indonesian government could attract foreign investors to invest in the domestic by means of infrastructure improvements and easy licensing process because with an increase in the flow of foreign direct investment, the domestic output will increase so that the condition of the current account system becomes better. Furthermore, the Indonesian government should be able to stabilize national income, real exchange rate, inflation, and financial development because these variables have a negative influence on the condition of current account system.

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