



## **The Influence of Gross Domestic Product, Rupiah Exchange Rate, and Inflation toward Non-oil Import Value in Indonesia**

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### **Abstract**

Indonesia is one of the countries with open economy. It allows Indonesia to conduct international trade. One of the Indonesia international trades is non-oil and gas imports. The total value of non-oil and gas imports in Indonesia is very high and increases from year to year. The high value of non-oil and gas imports has a positive and negative impact on the Indonesian economy. The higher non-oil and gas imports annually bring the impact of the weakening of domestic industry and agricultural sector due to the inability of price competition on foreign products. However, on the other hand, with the non-oil and gas imports, the government is able to provide goods to support the welfare of the community. This study aims to determine the effect of gross domestic product (GDP), rupiah exchange rate, and inflation on the value of non-oil imports in Indonesia in 1981–2015. The method of analysis in this study is ordinary least square. The result of data analysis shows that, simultaneously, the GDP, the exchange rate of rupiah, and inflation have a significant effect on the value of non-oil imports in Indonesia during 1981–2015. Partially, GDP, exchange rate, and inflation have a positive and significant influence on non-oil import value in Indonesia during 1981–2015.

**Keywords:** Non-oil; Gross Domestic Product; Exchange Rate; Inflation

### **1. Introduction**

Indonesia is one country with an open economy. It allows Indonesia to conduct international trade. International trade should always be developed to gain opportunities and gain profit. Various benefits can be seen from the existence of international trade, namely in the form of increased income, foreign exchange reserves, capital transfers, and increased employment opportunities. On the other hand, international trade can pose many challenges and constraints faced by developing countries such as Indonesia. These challenges and constraints include overempowerment of developing countries, declining local industries, low security of goods, and other constraints.

This international trade consists of two types of activities, namely export and import. Export is an activity selling goods or services produced by a country to another country, while imports are the opposite activities of exports, i.e., goods and services coming from outside a country that flows into the country.

According to Looi et al. (2007), the elasticity of import demand is higher in developing countries with large populations and large areas than in some developed countries, because in large countries, it requires a variety of production goods where there is a possibility that the country has not been able to produce efficiently enough to meet demand. Besides, to conduct production activities, a country cannot fulfill its own needs in terms of procurement of capital goods such as various modern machines or tools used to carry out the production of domestic needs.

In addition, to bring positive influence in an economy, the existence of import policy has the opportunity to suppress domestic similar products and services and can extort the income of the country concerned (Christianto, 2013). The more import, the more money, the country goes abroad. The amount of import is determined based on the ability of a country to produce products that can compete with foreign-made products. The lower the ability of a country in producing these goods, the higher the import of goods is done. In addition, the amount of import is very sensitive to the position of foreign exchange rates and the amount of foreign exchange reserves held in a country (Mingwei and Kalpana, 1994).

There are three classes of imports based on the use of goods, namely (1) consumer goods, raw materials, or auxiliary and (2) capital goods, while based on commodities, (1) oil and gas imports and (2) non-oil and gas imports. Oil and gas imports consist of crude oil, oil, and gas. Non-oil and gas imports include machinery, iron and steel, motor vehicles, plastics, chemicals, cotton, aircraft, and many other types.

The value of non-oil and gas imports in Indonesia during 1981–2010 was very high. In 1981, the value of Indonesian non-oil and gas imports amounted to 11,550.80 billion rupiah and in 2010 amounted to 49,767.10 billion rupiah. The high value of non-oil and gas imports has a positive and negative impact on the Indonesian economy. The negative impact is that the society becomes very consumptive and slows the growth of domestic industry due to the tight competition in the international market. While the positive impact is through import activities, the government is able to hold goods useful in improving people's welfare.

Many factors determine the development of the amount and value of imports in a country; one of them is gross domestic product (GDP). GDP is the final value of goods and services produced within a country over a period of time. The economic development of a country can be measured according to the GDP at current and constant prices, where the GDP at constant prices is all of the goods of GDP valued at a fixed price in the base year (Sukirno, 2000).

Abba and Hassan (2005) stated that GDP is an important indicator of total imports in a country. High economic growth reflects people who are ready to consume in accordance with the ability of their income. This is in connection with the theory of consumption by John Maynard Keynes, and the current amount of consumption (current disposable income) is directly related to the income.

International trade, both export and import, cannot be separated from the payment process. These payments with outsiders use foreign currency, it called foreign currency (Indrayani et al., 2013). The amount of domestic money required to obtain a unit of foreign currency is called the foreign exchange rate (Sukirno, 2000). A country is said to have relatively good economic conditions or stable if the growth of its currency value is also stable (Salvator, 1997). This exchange rate instability can affect capital flows or investment and international trade. As a country that imports many industrial raw materials, Indonesia is experiencing the impact of this volatility of the exchange rate, as evidenced by the rising production costs so that the prices of Indonesian goods also increase.

According to Pascal and Sebastian (2011), flexible exchange rates will have a higher impact on foreign trade shocks on an economy. International trade commonly use US Dollar, which is the international currency. The position of the rupiah against the dollar greatly determines the amount of import growth. In the condition of weak currency position, it will have an impact on the people's desire in consuming imported goods. This is because the consumption of imported goods when the rupiah currency is stable, the amount of money paid on imported goods is different from when the rupiah weakens against foreign currency. The amount of imports, especially non-oil and gas imports, depends heavily on the conditions of appreciation or depreciation of exchange rates (Mario et al., 2005).

In addition to factors of GDP and rupiah exchange rate, inflation also has a strong influence on imports, especially non-oil and gas imports. Inflation is an economic condition whereby it is characterized by the perceived and marked high price of goods by the majority, causing the public to lose the balance between purchasing power and income over a period of time. However, it is not called inflation if the price increase is only from one or two goods only unless the increase is widespread and influences the increase of most of the price of other goods (Sukirno, 2000).

According to Alex and Karen (2008), countries that apply open trade, inflation occurring within the economy will affect import and export conditions. High inflation is usually attributed to overhead

conditions, meaning that economic conditions are in demand for products that exceed their product capacity, and prices tend to increase (Saputra et al., 2013). When inflation occurs and the price of domestically produced goods increases, people will start to consume goods manufactured from abroad that are relatively cheaper.

Based on the background of the above problems, the authors are interested to test whether the GDP, the rupiah exchange rate, and inflation affect the value of non-oil imports in Indonesia in 1981–2015. This study aims to determine the effect of GDP (gross domestic product), rupiah exchange rate, and inflation on the total value of non-oil and non-oil and gas imports in Indonesia during 1981–2010.

## 2. Research Methods

This research type is quantitative research, which in this research uses the quantitative method with scientific approach to managerial and economic decision. this approach comes from the data who processed and manipulated info valuable information for decision making.

The type of data used in this study is secondary data sourced from the Central Bureau of Statistics (BPS) and Bank Indonesia. Secondary data is a data were obtained through other parties.. The type of data used in this study is the time series data (time series) with the period of 1981–2015.

Variables of this research are anything in the form of what is determined by the researcher to be studied so as to obtain information about it, then drawn conclusion (Sugiyono, 2007), This study has dependent and independent variables, dependent variable (Y) in this study is the value of non-oil imports, while the independent variables are GDP, rupiah exchange rate, and inflation. The independent variables are the influencing variables (Arikunto, 2006. p. 119).

Data analysis method used in this research is the smallest quadratic square method or ordinary least square (OLS). The core method of OLS is to estimate a regression line by minimizing the sum of the squares of errors of each observation on the line (Kuncoro, 2007. p. 79).

Data analysis done in this research will use the regression equation using the least squares regression method or OLS with formulation as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e_i \quad (1)$$

To obtain the result of research which refers to the research hypothesis that has been elaborated, it is done several tests to obtain the influence between independent variables to the dependent variable simultaneously (Test F) and partially (t-test), but before doing the test done some classical assumption test for see if the data used for the analysis in this study has eligible or not.

## 3. Results and Discussions

The value of Indonesia's non-oil and gas imports from 1981 to 2015 is fluctuated and tended to increase. In 1981, the value of Indonesian non-oil and gas imports amounted to 11,550.80 billion rupiah and in 2015 amounted to 49,767.10 billion rupiah. The value of non-oil and gas imports in Indonesia during 1981–2015 was the highest in 2009 of 98,644.40 and the lowest in 1986 amounted to 8,983.50. This proves that Indonesia still relies heavily on non-oil and gas imports. The high import of non-oil and gas will cause the decline of domestic products that will be bad for the Indonesian economy.

The presence or absence of multicollinearity of a model can be known by means of correlation between two independent variables compared with the correlation between the dependent and independent variables. Multicollinearity problem happens if the correlation between two independent variable is higher than the highest coefficient correlation of dependence variables.

To test whether in a model there is a correlation between the confounding error in period t with error in period t-1 (previously) an autocorrelation test is conducted. If the probability value of Obs \*R<sup>2</sup> is >5%, it means that the model created does not occur autocorrelation.

White Heteroskedastis test was used to test heteroscedasticity in this study. The presence or absence of heterokedastisitas in regression can be seen from probability value Obs \*R<sup>2</sup>. If the probability value of Obs \*R<sup>2</sup> is >5%, it means that the model created does not occur heteroscedasticity.

White test above, it can be seen that the value of  $\text{Obs} \cdot R^2 = 13.01787$  and  $\text{prob. Chi-square} = 0.0046 < 0.05$  then expressed this model affected from the problem of heteroskedasitas.

This analysis is used to determine the effect of GDP (PDB), rupiah exchange rate, and inflation on non-oil and gas imports in Indonesia during 1981–2015. The result of the analysis of regression when it is added to the equation of multiple regression fields is then obtained the equation:

$$\hat{Y} = 4.074 + 1.04X_1 - 1.01X_2 + 0.17X_3 \quad (2)$$

F-statistic test is used to determine the influence of independent variables together to the dependent variable. The result of the F test states that the independent variables used together influence the dependent variable. It can be determined by comparing the probability (F-Statistic) value of  $0.000002 < 5\%$ . Hence, it can be said that there is a positive and significant influence between GDP (X1), exchange rate of rupiah (X2), inflation (X3), together toward non-oil import value (Y).

### 3.1. t-test

Partial test is intended to determine whether each independent variable has an influence on the dependent variable. In this research, partial test is used to know how far GDP (X1), exchange rate of rupiah (X2), inflation (X3), and together toward non-oil import value (Y). The results of the hypothesis can be seen partially.

t-test results show that the probability value of the GDP variable is  $0.0002 < 0.05$  which means that the GDP has a significant effect on the value of Indonesian non-oil imports. The probability value of the exchange rate variable is  $0.8051 > 0.05$  which means that the exchange rate and inflation also affect the value of Indonesian non-oil imports. The probability value of the inflation variable is  $0.000 > 0.05$  which means that the exchange rate affects the value of Indonesian non-oil imports.

## 4. Conclusions

Based on the results of the previous analysis, it can be concluded as follows:

1. Simultaneously, the variables of GDP (X1), exchange rate (X2), and inflation (X3) influence simultaneously to the value of non-oil and gas imports (Y) in Indonesia in 1981–2015.
2. The partial variable of GDP has a positive and significant influence on Indonesia's non-oil imports in 1981–2015.
3. Partially, exchange rate variable has a negative and significant on non-oil and gas volume of Indonesia in 1981–2015.
4. Partially, inflation has a positive and significant to non-oil and gas volume of Indonesia in 1981–2015.
5. Based on the results of the analysis and conclusions, it can be submitted some suggestions as follows. From the results of this study, it was found that GDP has a positive and significant impact on non-oil imports in Indonesia. It is expected that in the future the government will be more open and facilitate domestic and international investors, to open industrial production land, so that some industrial products are able to be produced domestically and to suppress high imports from other countries. Moreover, the government put more pressure on the policy of several types of imported goods, to protect domestic production, especially, the newly developed producers with the same products that are produced abroad.

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