The Effect of Exchange Value and Inflation on Non-Oil and Gas Export Value Period 2015 – 2021

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ABSTRACT: This study aims to analyze the effect of Exchange Rates and Inflation on the Value of Non-Oil and Gas Exports. The independent variables used in this research are the Exchange and Inflation rates. The dependent variable used is the value of Indonesia's Non-Oil and Gas Exports. Data collection uses secondary data obtained from Badan Pusat Statistik and Bank Indonesia period 2015-2021, the data is analyzed using multiple linear regression analysis which is processed using the Eviews program version 12. The results of this study indicate that the variables Exchange Rate and Inflation affect Export Value Non-Oil and Gas. The Exchange Rate does not affect the Non-Oil and Gas Exports Value. The Inflation Rate affects the Value of Non-Oil and Gas Exports.

Keywords: Value of Non-Oil and Gas Exports, Exchange Rates, Inflation

INTRODUCTION

Export activity is the process of transporting goods or basic products from one country to another country by always paying attention to applicable laws and regulations. Export is an international commercial activity that is tried to trigger domestic demand, thus giving birth to other industries with more potential. The increase in export demand in each commodity has a direct impact on the industrial growth of a country. So, this will be able to give birth to a more conducive business ecosystem. Not only that, countries can adjust to compete in the international market and are better trained through fierce competition when carrying out international trade.

In export activities Indonesia itself has various commodities, for example, including rubber, textile products, palm oil, forest products, and cocoa. Exports are also a mean macroeconomic variable that ensures a country's economy. The more a country exports, the more open the country's economy becomes.

Non-Oil and Gas Interpretation is a whole of something that is a natural product or industrial product but is not listed in the scope of oil and gas or commonly spoken as Oil and Gas. According to the Central Bureau of Statistics in 2015 the value of Non-Oil and Gas Exports amounted to 131,791 USD, in 2016 amounted to 132,028 USD, in 2017 amounted to 153,083 USD, in 2018
amounted to 162,841 USD, in 2019 the value of Non-Oil and Gas Exports in Indonesia amounted to 155,895 USD, in 2020 amounted to 154,940 USD, while in 2021 it was 219,246 USD.

Non-Oil and Gas Export Value in 2015-2021

(Million US$)

![Graph showing Non-Oil and Gas Export Value in 2015-2021](image)

Figure 1
NON-OIL AND GAS EXPORT VALUE IN 2015-2021
Source: Central Bureau of Statistics, 2022

In export activities, there are factors that affect the Export Value including Inflation and Exchange Rate. In research conducted by Alvino Rezandy & Ach Yasin (2021), the Exchange Rate has a significant effect simultaneously on the Value of Non-Oil and Gas Exports in Indonesia, while for Inflation it does not affect the Value of Indonesian Non-Oil and Gas Exports. Inflation does not greatly affect the Export Value because it has an indirect impact on the Export Value, but that does not mean that Inflation will not affect the Export Value. Inflation has an influence in the long run because it will affect commodity prices in the country and production prices will follow the ups and downs caused by inflation itself. The Exchange Rate itself has a significant influence on the Export Value because basically the Exchange Rate itself is the condition in which commodities can compete in the global market. This is due to the Exchange Rate that depreciates and appreciates, the movement of the Exchange Rate is what greatly affects prices so that there is an influential relationship between the Exchange Rate and the Export Value.
The negative impact of inflation is that when inflation occurs, the price of raw materials will rise. Where the increase in raw material prices is caused by high production costs. High commodity prices will make these commodities less competitive in the global market. The inflation rate in Indonesia in 2015–2021 experienced fluctuating movements. In 2017 the inflation rate was 3.61%. In 2018 the inflation rate was 3.13%. In 2019 the inflation rate was 2.72%. In 2020, the inflation rate was 1.68%. In 2021, the inflation rate was 1.87%

In 2018 the inflation rate was 3.13%. In 2019 the inflation rate was 2.72%. In 2020, the inflation rate was 1.68%. In 2021, the inflation rate was 1.87%. Free-float currency exchange rates are rates that are allowed to differ from others and currencies are determined based on market forces over supply and demand. (Magdalena, 2017)

The appreciation of a country's currency means that the value of that country's currency has increased relative to other currencies, this makes imports cheaper, while exports are more expensive. On the one hand, when a country's currency depreciates, it becomes less valuable than others, which makes exports more affordable and more profitable. As in research (Setyorani, 2018)
in 2006-2015 the Exchange Rate depreciated or weakened. The weakening exchange rate was also followed by an increase in the money supply that increased during that period.

Relationship Between Variables:

1. The Relationship Between Exchange Rates and Inflation

With the Value of Non-Oil and Gas Exports Simultaneously As is known that the Exchange Rate has a significant impact on Non-Oil and Gas Exports in Indonesia. This positive relationship shows that the activity of a positive relationship direction to the Exchange Rate in Indonesia increases means that the Non-Oil and Gas Export Value also increases. Meanwhile, inflation is known to have a negative and insignificant effect on Indonesia's Non-Oil and Gas Exports. Rising inflation can reduce the value of non-oil and gas exports. This data is in accordance with previous research conducted by Rini Silaban & Nurlina (2022) which stated the results of their research that the Exchange Rate has a positive and significant effect on the Value of Non-Oil and Gas Exports in Indonesia, and Inflation has a negative and insignificant effect on the Value of Non-Oil and Gas Exports in Indonesia. Research conducted previously by Alvina Rezandy & AchYasin (2021) stated that the Exchange Rate has a significant effect, while Inflation does not significantly affect the Value of Non-Oil and Gas Exports. This is in accordance with research conducted by Jajuk Suprijiati, et al (2020) that there is a positive and significant influence on the Exchange Rate and Inflation.

2. Exchange Rate Relationship with Non-Oil and Gas Export Value

Exports are highly dependent on the Exchange Rate, because the Exchange Rate is a means of determining the price of goods to be exported. The relationship between exchange value and non-oil and gas exports can be explained by the concept of supply theory, supply here is exports from countries that conduct foreign trade. The Exchange Rate affects the Non-Oil and Gas Export Value because changes in the Exchange Rate will affect the price of Export goods, where when a country's Exchange Rate appreciates (strengthens), the price of producing goods and services also increases which then has an impact on partner countries reducing the amount of spending and resulting in a decrease in the Value of Non-Oil and Gas Exports. Research conducted by Macpal (2017) also found that the Exchange Rate has a significant effect on Non-Oil and Gas Exports in Indonesia. Research conducted previously by Alvina Rezandy & AchYasin (2021) stated that the Exchange Rate has a significant effect on the Value of Non-Oil and Gas Exports in Indonesia. Research conducted by Rini Silaban & Nurlina (2022) shows that the Exchange Rate has a significant impact on the Value of Non-Oil and Gas Exports.

3. The relationship between inflation and the value of non-oil and gas exports

Inflation is the tendency of general and continuous price increases. If inflation increases, the price of goods in the country continues to increase. Rising inflation causes the cost of producing export goods to be higher. This will certainly cause exporters to be unable to produce optimally, causing exports to fall because to produce export commodity goods requires high costs. So, there is a negative relationship between Inflation and Non-Oil and Gas Export Value. (Wardhana, 2016). Previous research conducted by Alvina Rezandy & Ach Yasin (2021) stated that inflation has no effect on the value of non-oil and gas exports. Research conducted by Jajuk Suprijiati, et al (2020) states that inflation has a negative and non-significant effect on the development of Non-Oil and Gas Exports in Indonesia. Research
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can be obtained (obtained) using statistical procedures or other means of quantification (measurement) (Sujarweni, 2014). Quantitative approaches can be used to analyze the influence between one variable and another variable or to find out one variable can affect another variable. In this study, researchers used three variables consisting of Exchange Rate (X1), Inflation (X2), and Non-Oil and Gas Export Value (Y).

Based on the type of research, this study is included in the type of causality research that aims to examine the possibility of a cause-and-effect relationship between two or more variables. This study is expected to explain the influence between one (independent) variable and another variable. Where the independent variable acts as the cause variable and the dependent variable as the consequent variable. In this study Exchange Rate and Inflation act as independent variables and Non-Oil and Gas Export Value as dependent variables.

1. Non-Oil and Gas Export Value

Non-Oil and Gas Export is the activity of selling goods to other countries that are not in the form of oil and gas such as plantations, agriculture, animal husbandry, fisheries, and mining products not in the form of oil and gas (Silaban &; Nurlina, 2022). Non-oil and gas export activities are very useful for the Indonesian economy, because the increase in the value of these exports will have an impact on increasing national income and underlie economic improvement. This study examines the value of non-oil and gas exports nationally for 7 years, namely from 2015 – 2021, as follows:
The Value of Non-Oil and Gas Exports for the Year
2015-2021

(Billion US$)

Figure 3
Non-Oil and Gas Export Value in 2015-2021

Source: Central Bureau of Statistics, 2022

It was recorded from 2015 to 2021, the value of Non-Oil and Gas Exports in Indonesia experienced various fluctuations. In 2015, the value of non-oil and gas exports amounted to $131,791 million and at the end of 2021, the export value reached $219,362 million.

2. Exchange Rate

An exchange rate is an agreement known as a currency exchange rate against current or future payments, between two currencies of each country or region (Magdalena, 2017). It can be concluded that the Exchange Rate is the value of a country's currency which is based on the value of foreign currencies that are used as a basis globally. In this case, the rupiah exchange rate is based on the value of the United States dollar (USD). The global rupiah exchange rate strongly underlies the price of every item that can be traded internationally. It is recorded that from 2015 – 2021 every month the rupiah exchange rate against the United States dollar always changes, as follows:
3. Inflation

Inflation is a condition in which the general price of goods or services during a certain period of 75 times always increases. Inflation can be a tool to determine the economic condition of a country where inflation makes the economy sluggish because the prices of goods and basic necessities continue to increase (Silaban & Nurlina, 2022). Since 2015 – 2021, inflation fluctuates every month and underlies the economic situation in Indonesia at that time. Here is the Indonesian Inflation data.

Figure 4

Exchange Rate Data in Indonesia 2015-2021

Source: Bank Indonesia, 2022

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<table>
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<td>12.5</td>
<td>12.7</td>
<td>13</td>
<td>12.9</td>
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<td>13.3</td>
<td>13.3</td>
<td>13.1</td>
<td>14.3</td>
<td>13.7</td>
<td>13.6</td>
<td>13.8</td>
</tr>
<tr>
<td>2016</td>
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<td>13.5</td>
<td>13.3</td>
<td>13.1</td>
<td>13.4</td>
<td>13.3</td>
<td>13.3</td>
<td>13.1</td>
<td>13.1</td>
<td>13.5</td>
<td>13.3</td>
<td>13.4</td>
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<tr>
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<td>13.3</td>
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<td>13.5</td>
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<td>2018</td>
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<td>14.1</td>
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Research Results

1. Descriptive Analysis Results

Table 1. Descriptive Analysis Results

<table>
<thead>
<tr>
<th>Date: 01/16/23 Time: 00:22</th>
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<td>NILAI_TUKAR</td>
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<tr>
<td>Mean</td>
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<tr>
<td>Median</td>
<td>12970.15</td>
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<tr>
<td>Maximum</td>
<td>21505.90</td>
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<tr>
<td>Minimum</td>
<td>8650.900</td>
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<tr>
<td>Std. Dev.</td>
<td>2645.199</td>
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<td>Skewness</td>
<td>1.395992</td>
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<tr>
<td>Kurtosis</td>
<td>5.101564</td>
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<tr>
<td>Jarque-Bera</td>
<td>42.35160</td>
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<tr>
<td>Probability</td>
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<td>1109642.0</td>
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<td>Sum Sq. Dev.</td>
<td>5.81E+08</td>
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<tr>
<td>Observations</td>
<td>84</td>
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</tbody>
</table>

Figure 5

Inflation Data in Indonesia 2015-2021
Source: Bank Indonesia, 2022
Based on the results of the descriptive analysis above, it can be explained the distribution of data in this study as follows:

a) The total data used is 84 sample data obtained from monthly data on Non-Oil and Gas Export Value, Exchange Rate, and Inflation from January 2015 – December 2021.

b) Non-Oil and Gas Export Value (Y) represents data that has an average value of 13,213.59 USD, a maximum value of 21,505.90 USD, a minimum value of 8,650.9 USD, and a standard deviation of 2,464 USD.

c) The Exchange Rate (X1) shows data that has an average value of IDR 13,907.65, a maximum value of IDR 15,867.43, a minimum value of IDR 12,579.10, and a standard deviation of IDR 619.18.

d) Inflation (X2) shows data that has an average value of 0.033, a maximum value of 0.07, a minimum value of 0.00, and a standard deviation of 0.015.

2. Classical Assumption Test Results

a) Normality Test Results

Table 2. Normality Test Results

Based on the data from the normality test above, it can be seen that the probability value is 0.19. The value is above the alpha value of 0.05, the result shows that the data has been normally distributed.

b) Heteroscedasticity Test Results

Table 3. Heteroscedasticity Test Results

Based on the results of the heteroscedasticity test above, it can be seen that the probability value on obs*R-squared is 0.043 which is below the alpha value of 0.05. The results show that there is a heteroscedasticity problem in this study.
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3. Regression Analysis Results

Table 6. Regression Analysis Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<td>3.477989</td>
<td>4.433709</td>
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<td>0.4352</td>
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<tr>
<td>LOG_NILAI_TUKAR</td>
<td>0.647337</td>
<td>0.462211</td>
<td>1.400521</td>
<td>0.1652</td>
</tr>
<tr>
<td>INFLASI</td>
<td>-5.423137</td>
<td>1.280754</td>
<td>-4.234331</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Based on the results of the regression analysis above, the regression results in this study can be known, as follows: Y = 3.477 + 0.647 Exchange Rate – 5.423 Inflation + e
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4. Hypothesis Test Results

a) Coefficient of Determination

Based on the results of the regression analysis above, it can be seen that the R-square value of 0.328 which cannot be used as the basis for the value of the coefficient of determination. From these results, it can be concluded that the variation in Non-Oil and Gas Export Value can be explained by Exchange Rate and Inflation factors of 32.8%. The remaining 67.2% can be explained by other factors not used in this study such as Gross Domestic Product and Foreign Investment.

b) Test Results F

Based on the results of the regression analysis above, it can be seen that the F-statistics probability value of 0.000 can be used as the basis for the F test value. From these results it can be concluded that the value of F-Statistics < alpha or 0.000 < 0.05 which can be interpreted that the variables Exchange Value and Inflation simultaneously or together can affect the Value of Non-Oil and Gas Exports.

c) T Test Results

Based on the results of the regression analysis above, it can be seen that the probability value of each independent variable value in this study can be used as the basis for the T test value. From these results it can be concluded that the probability value of the variable X1 or Exchange Rate of 0.165 which can be interpreted that the partial Exchange Rate variable can not affect the Non-Oil and Gas Export Value, while the Inflation variable can simultaneously affect the Non-Oil and Gas Export Value because it has A probability value of 0.000 which is less than 0.05.

Discussion

Based on the results of the tests that have been carried out in this study, it can be concluded the results of the influence of Exchange Rate and Inflation on Non-Oil and Gas Export Value, namely:

1. Effect of Exchange Rate on Non-Oil and Gas Export Value
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Based on the results of regression that has been carried out the Exchange Rate variable has a coefficient value of 0.647 with a positive sign, the results explain that if the Exchange Rate increases by 1%, the Non-Oil and Gas Export Value will increase by 64.7%. Then 84 of the results of the Exchange Rate hypothesis test have a value of 0.165 which is above the value of 0.05. This result means that the Exchange Rate has no partial effect on the Non-Oil and Gas Export Value. The results of this study are in line with the results of research (Suharyono, 2017) which shows that the Exchange Rate variable does not have a significant effect on the export of Indonesian textiles and textile products.

2. Effect of Inflation on Non-Oil and Gas Export Value

Based on the results of regression that has been carried out the Inflation variable has a coefficient value of -5.423 with a negative sign, the results explain that if Inflation increases by 1%, the Value of Non-Oil and Gas Exports will decrease by 54.23%. Then from the results of the hypothesis test Inflation has a value of 0.000 which is below the value of 0.05. The result means partial Inflation has a negative effect on the Value of Non-Oil and Gas Exports. The results of this study are in line with research conducted by (Suprijati, Damayanti, &; Kurniasari, 2020) that partially the variable Inflation has a negative effect on the development of Non-Oil and Gas Exports in Indonesia.

3. Effect of Exchange Rate and Inflation on Non-Oil and Gas Export Value

Based on the results of the F test that has been done, it is known that the F test value of 0.000 is below the value of 0.05. This result means that simultaneously the variables of Exchange Rate and Inflation affect the Value of Non-Oil and Gas Exports. This is also supported by the results of the coefficient of determination hypothesis test which has an R-squared value of 0.328 or 32.8%. Which means that the variables Exchange Rate and Inflation together affect the variable Nilai Non-Oil and Gas Exports by 32.8%, while the remaining 67.2% can be explained by other factors not studied in this study such as Gross Domestic Product and Foreign Investment. The results of this study are in line with the results of research (Permatasari, 2018) which states that Exchange Rates, Inflation, and Investment simultaneously affect the Value of Non-Oil and Gas Exports in Indonesia.

CONCLUSION

Based on the results of research and discussion on the Analysis of the Effects of Exchange Rates, Inflation and Non-Oil and Gas Export Values in 2015-2021, the following conclusions can be drawn:
1. Based on the results of simultaneous hypothesis testing, Exchange Rate and Inflation variables affect the Non-Oil and Gas Export Value. Based on the results of the coefficient of determination analysis, it can be concluded that the variation in Non-Oil and Gas Export Value can be explained by Exchange Rate and Inflation factors of 32.8%. While the remaining 67.2% can be explained by other factors that were not used in this study such as Gross Domestic Product and Foreign Investment.
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2. Based on the results of partial hypothesis testing, the Exchange Rate variable has no effect on the Non-Oil and Gas Export Value. This shows that if the Exchange Rate rises, the development of Non-Oil and Gas Exports in Indonesia will not change. Based on the results of regression analysis that has been carried out the Exchange Rate variable has a coefficient value of 0.647 with a positive sign, the results explain that if the Exchange Rate increases by 1%, the Non-Oil and Gas Export Value will increase by 64.7%.

3. Based on the results of partial hypothesis testing, the Inflation variable has a negative effect, which means that the Inflation variable affects the Non-Oil and Gas Export Value. This shows that if the inflation rate increases, the development of Indonesia's exports will decrease. Based on the results of regression analysis that has been carried out the Inflation variable has a coefficient value of -5.423 with a negative sign, the results explain that if Inflation increases by 1%, the Non-Oil and Gas Export Value will decrease by 54.23%.

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