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# Analysis Of Factors Affecting The Fluctuation Of The Rupiah Exchange Rate Against The Us Dollar In Indonesia

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## ABSTRACT

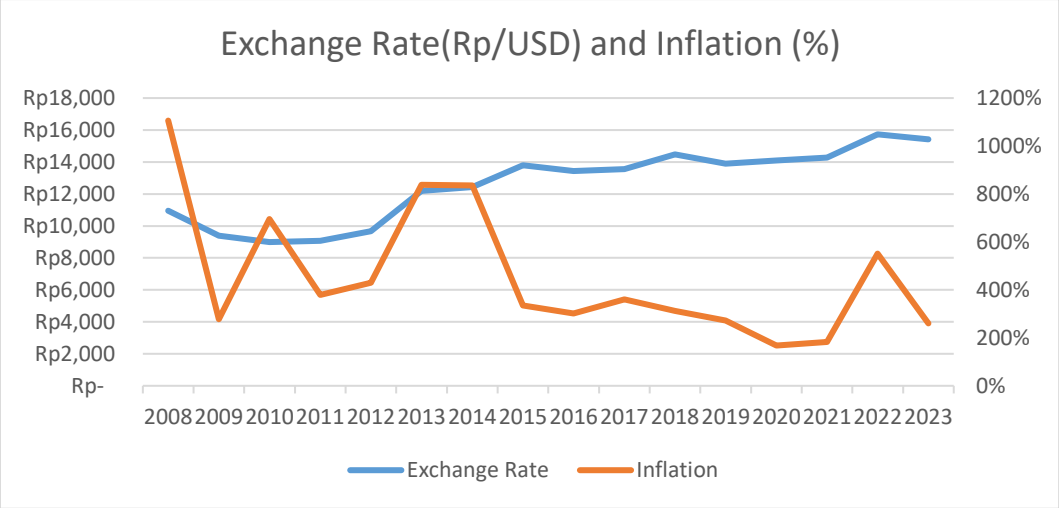
The phenomenon of globalization increases the intensity of interconnection among countries worldwide, so that the demand of each country is determined by the nature of its foreign trade. Undoubtedly, to conduct international business, the common currency, the US Dollar, must be used, as every country uses the dollar as a medium for transactions with one another. This increases the risk that changes in exchange rates themselves can lead to changes in currency values. The exchange rate of the Rupiah has a significant impact on the commercial efforts of individuals and organizations by comparing the value of one country's money with that of another. Indonesia's participation in the global economy exposes it to negative impacts from export and import activities and inflation, which influences the value of the Rupiah. This research aims to determine how exports, imports, and inflation affect the volatility of the Indonesian Rupiah exchange rate against the US Dollar. This study employs a quantitative model approach using data sourced from government agencies, namely BPS (Central Statistics Agency) and BI (Bank Indonesia). The research shows that the independent variables used (exports, imports, and inflation) have a simultaneous effect on the value of the Rupiah. The Rupiah exchange rate is greatly influenced by the export and import variables but is not affected by the inflation variable. The coefficient of determination ($R^2$) is 84.1%. This indicates that exports, imports, and inflation are factors that can cause changes in the value of the Rupiah against the US Dollar.

Keywords: Rupiah Exchange Rate, Exports, Imports, Inflation

## INTRODUCTION

An open economy refers to the current economic condition in which each country engages in trade with other countries and participates in international trade. Indonesia may suffer negative impacts from international trade if it cannot maintain the stability of the Rupiah exchange rate (Hasyim, 2018). he differing prices of two currencies due to this exchange are known as the exchange rate (Fajrin, 2022). he exchange rate of the Rupiah has a significant impact on the commercial efforts of individuals, organizations, and the nation. The value of foreign currency can rise or fall, depending on its exchange rate Experts and economists have proposed several explanations for the fluctuations in exchange rates, as the depreciation of the Rupiah against other currencies, particularly the US Dollar, can harm the economy as a whole (Syarina, 2020).

Figure 1
Exchange Rate (Rupiah/USD) and Inflation (%)

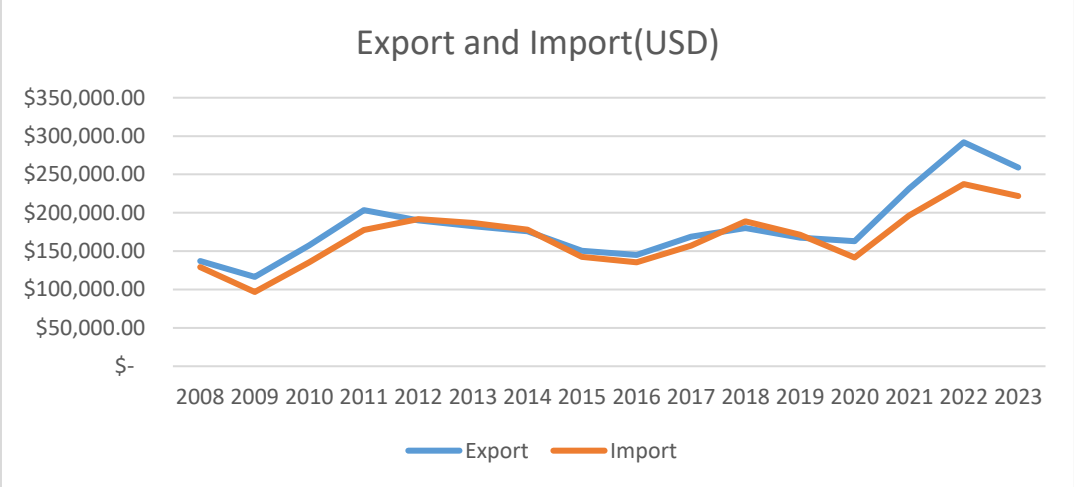



(Source : BPS and BI, 2023)

The graph above shows an upward trend in the exchange rate. From 2008 to 2023, there was an increase of 40.78%, with the highest increase occurring in 2022, reaching Rp 15,731/USD. This indicates that the rising trend in the exchange rate has led to a decline in the value of the Rupiah, which can be described as weakening. The stability of the Rupiah against the US dollar significantly impacts the economy of Indonesia. A weaker Rupiah can lead to higher import costs and inflation, affecting purchasing power and overall economic stability. Therefore, maintaining a stable exchange rate is crucial for the economic health of the country.

The US Dollar (USD) is viewed as stronger and is often used as a benchmark for Indonesia because it is more stable compared to various other currencies. Consequently, the value of the Indonesian currency has increased year by year against the US Dollar (Rejeki, 2015). Whenever the exchange rate, in this case, money, is assessed and compared with other currencies, the government will implement policies to depreciate the first currency. Conversely, when a country evaluates its currency, it does so openly (Janizfati, 2020). The main reason for the depreciation of the Rupiah against the US Dollar is the continuously increasing current account deficit and the ongoing devaluation of the Rupiah. The strengthening of the US Dollar against all other foreign currencies is a cause of the Rupiah's depreciation. However, the United States and China are now once again at odds over trade due to the signing of a new trade agreement by the US with Canada and Mexico that restricts imports from China (Diana & Dewi, 2017)

Figure 2
Exsports dan Imports (USD)




Source : BPS, 2023

Based on the figure above, it can be seen that export conditions have experienced fluctuations but tend to increase. From 2008 to 2023, exports increased by 88.87%, equivalent to Rp121,776,800/USD. The significant increase in export value began in 2008, then declined in 2009 due to the economic crisis that affected almost all countries worldwide, leading to a decrease in export value. Exports then experienced a resurgence in 2010-2011, but from 2012 to 2016, there was a decline because Indonesian products were still less competitive, as Indonesia's main export sources were still based on natural resources and low-tech products. In 2017-2018, exports rose again, but in 2019 there was another decline due to a decrease in both oil and gas and non-oil and gas exports. From 2020 to 2022, exports continued to increase, but again declined in 2023. An important factor determining exports is the quality of the produced products, which must meet global market needs and have strong competitiveness.

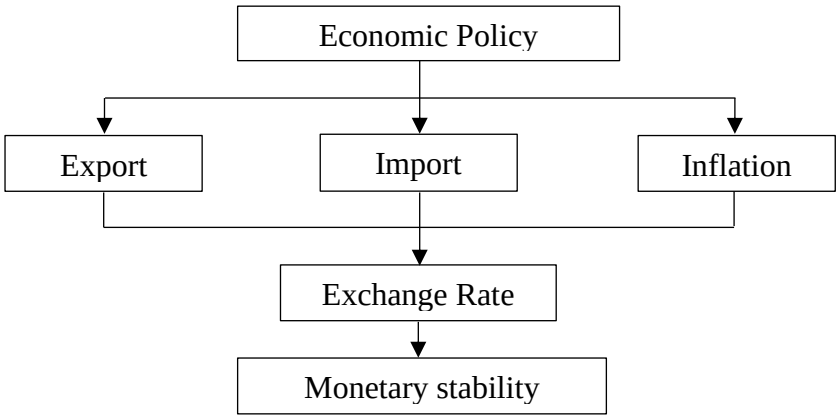
Changes in the supply and demand for other currencies, such as the Rupiah, are a direct result of Indonesia's export and import activities(Lubis, 2018), he inflation rate also affects the value of the Rupiah, where there is a close relationship between inflation and currency exchange rates. Thus, this can influence the intensity of international trade. Moreover, the exchange rate of a currency also responds to inflation (Abidianto, 2018). There is a strong connection between inflation and currency exchange rates. The value of a country's currency can be influenced by changes in inflation, which can, in turn, affect international trade patterns. Fluctuations in the inflation rate can impact trade-related activities globally. When prices rise and inflation increases, a country's exports also decline, leading to a decrease in the demand for that country's currency.

**Framework**

Important variables that influence the value of the Rupiah include exports and imports, as well as the inflation rate. Although rising inflation generally indicates economic expansion, high inflation can ultimately have adverse effects. Considering that a high inflation rate results in higher costs for products to be produced, this impacts both the value of imports and the value of exports. Other currencies, usually the US Dollar (USD), must be converted from the domestic currency (Rp) for transactions involving imported products. If prices rise and, as a result, the inflation rate increases, there is a tendency for the domestic currency (Rp) to lose value due to decreased competitiveness and increased demand for foreign currency (USD). The fluctuations in the

exchange rate of the Rupiah will spike if export operations exceed import activities, and conversely, if imports exceed exports, the exchange rate of the Rupiah will drop. If the exchange rate of the Rupiah strengthens, it will have a positive effect on a country's exports. The inflation rate of a country can have either a positive or negative impact on its exports and, indirectly, influence fluctuations in the exchange rate.

Figure 3
Framework




The provisional statements (hypotheses) in this research are as follows:

1) The value of the Rupiah and exports are suspected to significantly and positively influence each other.
2) The value of the Rupiah and imports are suspected to significantly and positively influence each other.
3) The exchange rate of the Rupiah and inflation are suspected to significantly and positively influence each other.

## METHOD

This research employs a quantitative approach to data analysis, focusing on the collection and analysis of numerical data (Arikunto, 2002) The type of data used in this study is time series data sourced from secondary parties, namely the Central Statistics Agency (BPS) and Bank Indonesia (BI). The data utilized includes export, import, and inflation figures to determine the extent to which these variables influence the exchange rate of the Rupiah. The analysis conducted is multiple linear regression, which can be used to examine the correlation among the investigated variables. Therefore, to ensure that the sample data can be used as a study object, classical assumption tests must be performed. Classical assumption testing is necessary to avoid biased parameter estimates and regression coefficients; its implementation should be combined with static tests, multiple regression analysis, and the coefficient of determination ($R^2$). This testing can be conducted using software such as SPSS.

### Sample

A representative of the population that possesses certain characteristics can be referred to as a sample. According to (Sugiyono, 2017), a sample is a portion that represents the whole and has properties that can be used to describe the population. This study uses samples from the exchange rate, exports, imports, and inflation for the years 2008-2023. The samples used in this research are data published by Bank Indonesia (BI, 2023), and the Central Statistics Agency (BPS, 2023).

### Data Analysis Techniques

Multiple Linear Regression Analysis is the analytical technique used in this study, which involves various tests to determine the influence of variables, namely the t-test (partial), F-test

(simultaneous), and $R^2$ (Coefficient of Determination) test. This analysis examines the significance values and the adjusted $R^2$ in the results table.
Multiple Linear Regression Analysis Equation:

$$Y_t = \beta_0 + \beta_1 X_{t1} + \beta_2 X_{t2} + \beta_3 X_{t3} + \mu_t$$

Ket:

| | |
|---|---|
| Y | : Exchange Rate (Rupiah/USD) |
| $\beta_0$ | : *Intercept*/constant |
| $\beta_1, \beta_2 \beta_3$ | : Regression coefficient of independent variables |
| $X_1$ | : Exports (Million USD) |
| $X_2$ | : Imports (Million USD) |
| $X_3$ | : Inflation (%) |
| $\mu$ | : *Distrurbance error* |
| $t$ | : *Time Series* (2008-2023) |

Classical Assumption Testing is also employed in this study, which consists of: (1) Normality Test: using the Kolmogorov-Smirnov test and examining the significance value; if > 0.05, it can be concluded that the data is normally distributed; (2) Multicollinearity Test: by checking the tolerance value or VIF (Variance Inflation Factor). If the tolerance value is > 0.10 and the VIF is < 10, it can be concluded that multicollinearity does not occur; (3) Heteroscedasticity Test, using the Glejser test. By examining the significance value, it can be concluded that heteroscedasticity does not occur if the significance value is > 0.05; (4) the DW (Durbin-Watson) statistic and the d value are compared to determine whether autocorrelation occurs in the variables used. Autocorrelation occurs when DW < dL or DW > 4 - dL; there is no autocorrelation when dU < DW < 4 - dU, and no conclusion can be drawn when dL < DW < dU or 4 - dU < DW < 4 - dL. This testing is conducted to avoid biased estimation of parameters and regression coefficients. This study utilizes SPSS software version 26.

**Variable Operations**

The independent and dependent variables of this study are:

1. The symbol ($x$) represents the independent variable, which is also known as a variable that influences and causes changes in the dependent variable. Exports (X1), imports (X2), and inflation (X3) are the independent variables in this study.
2. The symbol (y) represents the dependent variable, which is also known as the variable that is influenced and becomes the result or effect caused by a change in the independent veriable. The Rupiah exchange rate is a dependent variable in this study.

## RESULT

The SPSS software version 26 is used in this study to obtain the following statistical test results:

Table 1
Result Multiple Linear regression test

| **Information** | **H** | **B** | $t_{hitung}$ | **Sig. (t)** |
|---|---|---|---|---|
| (Constant) | | 6,587 | | |
| Export | + | 0,401 | 4,037 | 0,041 |
| Import | + | 0,432 | 4,816 | 0,030 |
| Inflation | - | -0,029 | -0,052 | 0,201 |
| $t_{table}$ | | | | 2,178 |
| $F_{count}$ | | | | 12,317 |
| $F_{table}$ | | | | 3,49 |
| Sig. (F) | | | | 0,007 |
| Adjusted R Square | | | | 0,841 |
| n | | | | 16 |

Source: (SPSS V.26 Output, 2024)

**Multiple Linear regression test**

$$Y = B0 + B1X1 + B2X2 + B3X3$$

$$Exchange\ Rate = 6{,}587 + 0{,}401\ eksport + 0{,}432\ import + (-0{,}029)\ inflation$$

1) The constant value of 6.587 indicates that the exchange rate is Rp 6,587/USD when the variables of exports, imports, and inflation are all assumed to be constant.
2) The regression coefficient for the export variable is 0.401. The positive sign (+) indicates a direct correlation between the exchange rate and exports. This suggests that if all other independent variables remain constant and exports increase by one unit, the exchange rate will increase by Rp 0.401/USD.
3) The regression coefficient for the import variable is 0.432. The positive sign (+) indicates a direct correlation between the exchange rate and imports. This means that if all other independent variables remain constant and imports increase by one unit, the exchange rate will increase by Rp 0.432/USD.
4) The regression coefficient for the inflation variable is -0.029. The negative sign (–) indicates an inverse correlation between the exchange rate and inflation. This suggests that if all other independent variables remain constant and the inflation rate increases by one unit, the exchange rate will decrease by Rp 0.029/USD.

**Partial test (t-test)**

To determine the significance of the model, the t-test is used to assess the influence of independent variables (exports, imports, and inflation) on the dependent variable (exchange rate). Based on the results from the t-test table, the following conclusions can be drawn:

1) The exchange rate of the Rupiah is significantly influenced by the export variable, as the test result for this variable is 0.041 < 0.05. Therefore, it can be concluded that the export variable has a significant effect on the exchange rate of the Rupiah.
2) The import variable also has an impact on the exchange rate of the Rupiah, based on the test result of 0.030 < 0.05. Thus, it can be concluded that the import variable has a significant effect on the exchange rate of the Rupiah.
3) In contrast, the exchange rate of the Rupiah is not influenced by the inflation variable. This is evident from the significance value of the inflation variable, which is 0.201 > 0.05. Therefore, it can be concluded that the inflation variable does not have an effect on the exchange rate of the Rupiah.

**Simultaneous Test (test F)**

The dependent variable (exchange rate) is tested using the F-test to determine the influence of the independent variables (exports, imports, and inflation). Based on the findings from the simultaneous assessment, the F-test value is 0.007 < 0.05, and F count value is greater than the F table value (12.317 > 3.49). Thus, it can be concluded that the independent variables (exports, imports, and inflation) have a joint effect on the exchange rate of the Rupiah.

**Determination Test (R2)**

The percentage of the dependent variable (exchange rate) that is influenced by the independent variables (inflation, imports, and exports) calculated using SPSS is 0.841, indicating that the independent variables (exports, imports, and inflation) can explain 84.1% of the dependent variable (exchange rate). Meanwhile, 15.9% of the characteristics are not explained in this study.. The results of the Classical Assumption Test can be seen as follows :

Table 2
Result Classical Assumption Test

| Information | Tolerance | VIF | Sig |
|---|---|---|---|
| Export | 0,129 | 7,763 | 0,796 |
| Import | 0,131 | 7,636 | 0,684 |

| | | | |
|---|---|---|---|
| Inflation | 0,943 | 1,06 | 0,783 |
| **Asymp. Sig. 2-tailed** | | 0,088 | |
| **Durbin-Watson** | | 2,006 | |

Source: (SPSS V.26 Output, 2024)

**Normality Test**

To determine whether the independent variables are distributed regularly and similarly, a normality test can be conducted. The Kolmogorov-Smirnov test is utilized to see if the data is normally or regularly distributed. The advantage of this test is that it is straightforward and does not create perceptual gaps among observers.

Table 3
Results of the Normality Test

| Model | Uji Normalitas (Asymp. Sig. 2-tailed |
|---|---|
| 1 | 0,088 |

Source: (SPSS V.26 Output, 2024)

This is evidenced by the results of the normality test of the study, which showed a significant value of 0.088 > 0.05, indicating that the data is normally distributed.

**Multicollinearity Test**

To determine whether the regression model identifies a relationship between independent variables, a multicollinearity test is conducted. If there is a strong relationship, the regression model may have multicollinearity issues. The VIF values and tolerance levels used in this analysis are determined as follows:

Table. 4
Results of the Multikolinearty Test

| Keterangan | Tolerance | VIF |
|---|---|---|
| Ekspor | 0,129 | 7,763 |
| Impor | 0,131 | 7,636 |
| Inflasi | 0,943 | 1,060 |

Source: (SPSS V.26 Output, 2024)

1) The tolerance value for the export variable is 0.129 > 0.10 and the VIF value is 7.763 < 10, so it can be said that the variable has multicollinearity issues.
2) Considering that the tolerance value for the import variable is 0.131 > 0.10 and the VIF value is 7.636 < 10, it can be said that the variable does not have multicollinearity issues.
3) Given that the tolerance value for the inflation variable is 0.943 > 0.10 and the VIF value is 1.06 < 10, it can be concluded that the variable does not have multicollinearity issues.

**Heterokedasticity Test**

The heteroscedasticity test is used to determine whether there are errors in variance in the regression model between the two sides of the observations. Below are the results of the heteroscedasticity test conducted in this study:

Table. 5
Results of the Heterokedastisity Test

| Keterangan | Sig |
|---|---|
| Ekspor | 0,796 |
| Impor | 0,684 |
| Inflasi | 0,783 |

Source: (SPSS V.26 Output, 2024)

1) The test result value is 0.796 > 0.05, indicating that there is no heteroscedasticity issue with the export variable in the regression model.
2) he significance value for the import variable is 0.684 > 0.05, which means there is no heteroscedasticity issue in the regression model.
3) The significance value for the inflation variable is 0.783 > 0.05, indicating that there is no heteroscedasticity issue in the regression model.

1. Autokorelasi Test

The autocorrelation test is used to evaluate the existence of relationships between variables that fluctuate over time. Conducting an autocorrelation test on a linear regression model is necessary when the data is time series data. The following conclusions are drawn from the findings of the autocorrelation test conducted in this study:

Table 6
Result of the Autorrelation test

| Model | Durbin-Watson |
|---|---|
| 1 | 2,006 |

Source: (SPSS V.26 Output, 2024)

Whare :
n : 16
K : 3
DW : 2,006
dL : 0,857
dU : 1,727
4-dU : 2,273
Result : dU < DW < 4-dU

Based on the results of the autocorrelation test, it can be stated that there is no autocorrelation in the variables.

$$dU < DW < 4 - dU = 1{,}727 < 2{,}006 < 2{,}273$$

The reason is that the DW value is lower than the value of 4−dU and higher than the value of dU.

**Discussion**

**The Influence of Exports on the Exchange Rate of the Rupiah**

Based on the partial testing, it was found that the exchange rate of the Rupiah is significantly influenced by the export variable, with a significance value of 0.041 < 0.05. This leads to the conclusion that the export variable has a significant effect on the exchange rate of the Rupiah. This indicates a direct influence between the exchange rate and exports. In line with the research conducted by (Frido Evindey Manihuruk, Dwi Silfani, Yohana Feby & Marbun, 2023) it shows that the exchange rate of the Rupiah is positively and significantly affected by the export variable. Export activities can bring in more foreign currency to Indonesia and increase the country's foreign exchange receipts, which in turn will encourage economic expansion and enhance the value of the Rupiah. Therefore, it can be said that exports can strengthen the exchange rate of the Rupiah by

increasing demand, subsequently improving the trade balance, and supporting economic growth and the stability of the Rupiah's value.

**The Influence of Imports on the Exchange Rate of the Rupiah**

The results of the partial testing on the exchange rate of the Rupiah indicate that it is influenced by the import variable, which shows a significance value of 0.030 < 0.05. Based on this, it can be stated that the import variable has a significant effect on the exchange rate of the Rupiah. Similarly, the research by (Nurul Hazizah, Zainuri, 2017) explains specifically that imports have a positive and substantial effect, implying that any shocks to imports will cause the exchange rate to respond positively. When the value of imports is higher than the value of exports, it can lead to a lower exchange rate, and vice versa. There is a theory that states that an increase in imports requires more payments to foreign exporters, which increases the country's foreign currency holdings and results in the weakening of the Rupiah. Overall, an increase in imports can pressure the exchange rate of the Rupiah; however, it has a complex influence that requires effective policies and strategies to maintain exchange rate stability.

**The Influence of Inflation on the Exchange Rate of the Rupiah**

The exchange rate of the Rupiah is not influenced by inflation, based on the results of the partial testing on that variable. The regression coefficient for inflation shows an inverse relationship between the exchange rate and inflation. The significance value for the inflation variable is 0.201 > 0.05, indicating that the inflation variable does not have a significant effect on the exchange rate of the Rupiah. Research by (Ribka BR Cereal, 2017) explains that the inflation spike in 2008 reached 11.06%, and the inflation coefficient produced a negative and insignificant figure. Purchasing Power Parity (PPP) indicates that the value of our currency will eventually decline due to high inflation rates. Consequently, production costs in Indonesia are higher because the inflation rate is greater than that in the United States. Inflation will increase alongside a decrease in output caused by rising production costs due to workers' demands for higher wages or increased raw material costs for industries, resulting in decreased exports and increased imports. As a result, Indonesia will experience a trade imbalance, leading to the depreciation of its currency. Therefore, it can be concluded that high inflation rates devalue the Rupiah.

## CONCLUSION

Based on the discussion that has been conducted, the following conclusions can be drawn:

1) The analysis indicates that the variables of exports, imports, and inflation collectively have a significant effect on the exchange rate, with a significance value of 0.007 < 0.05. This explains that the three independent variables influence changes in the Rupiah exchange rate.
2) The export and import variables show a significant effect on the Rupiah exchange rate, with a significance value for exports of 0.041 < 0.05 and for imports of 0.030 > 0.05. This indicates that both export and import variables affect changes in the Rupiah exchange rate. An increase in export volume can strengthen the Rupiah exchange rate, whereas an increase in imports can pressure the Rupiah exchange rate.
3) The inflation variable does not have an effect on the Rupiah exchange rate, with a significance value of 0.201 > 0.05. This indicates that inflation does not influence the Rupiah exchange rate. Although the inflation rate tends to be volatile, the significant spike in inflation in 2008, which reached 11.06%, shows that the exchange rate is not significantly affected by inflation and is, in fact, negatively impacted.
4) The coefficient of determination is 84.1%, indicating that the variables of exports, imports, and inflation collectively explain a large part of the variation in the exchange rate. However, there remains 15.9% of the exchange rate variation that is influenced by other factors not examined in this study.

**REFERENCE**

Abidianto, G. (2018). Identify the factors that affect the rupiah exchange rate against the US dollar in 2011-2016.

BI. (2023). Exchange Rate and Inflation Target. Bank Indonesia.

BPS. (2023). The Value of Oil and Gas Exports and Imports—Non-Oil and Gas. Central Statistics Agency.

Diana, I. K. A., & Dewi, N. P. M. (2017). Analysis of Factors Affecting the Exchange Rate of the Rupiah against the United States Dollar in Indonesia. E-Journal EP Unud.

Fajrin, M. M. (2022). The Influence of Exports and Imports on the Rupiah Exchange Rate in Indonesia. In Angewandte Chemie International Edition, 6(11), 951–952.

Frido Evindey Manihuruk, Dwi Silfani, Yohana Feby, J., & Marbun. (2023). Analysis of the Influence of Exports, Imports, and Money Supply in Indonesia on the Rupiah/USD Exchange Rate. Journal of Economic Research, 3.

Hasyim, H. (2018). Analysis of Factors Influencing Exchange Rate Changes in Indonesia in 2006-2018. Al-Iqtishad, 2. https://doi.org/10.24014/jiq.v15i1.6834

Janizfati. (2020). The Influence of Exports and Imports on Indonesia's Foreign Exchange Reserves in the Perspective of Islamic Economics for the Period 2010-2018.

Lubis, D. S. (2018). Analysis of factors that affect the rupiah exchange rate against the United States dollar. Al-Masharif: Journal of Economics and Islam, 6. https://doi.org/10.24952/masharif.v6i1.1124

Mufidah, A. K., Anjani, A. S., Handayani, T., & Astutik, E. P. (2023). Systematic Literature Review: Analysis of Factors Changing the Rupiah Exchange Rate Against Foreign Exchange. Student Research Journal, 1.

Nurul Hazizah, Zainuri, S. V. (2017). The Effect of JUB, Interest Rates, Inflation, Exports and Imports on the Rupiah Exchange Rate against the United States Dollar. e-Journal of Business Economics and Accounting, 4. https://doi.org/10.19184/ejeba.v4i1.4600

Rejeki, R. S. (2015). The Effect of Inflation and Import Value on the Rupiah Exchange Rate Per US Dollar in Indonesia.

Rebekah BR Silitonga, Z. I. and M. (2017). The Influence of Exports, Imports and Inflation on the Rupiah Exchange Rate in Indonesia. Development Economics, 15.

Sugiyono. (2017). Quantitative, Qualitative, and R&D Research Methods.

Syarina, D. P. (2020). Analysis of the Influence of the Rupiah Exchange Rate, Inflation and the Dow Jones Index on the Jakarta Composite Stock Price Index (JCI) on the Indonesia Stock Exchange (IDX). 16.