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THE EFFECT OF EXPORTS, IMPORTS, INFLATION ON THE RUPIAH TO USD EXCHANGE RATE IN THE 2019-2023 PERIOD

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Abstract

This study aims to analyze the influence of exports, imports, and inflation on a country's currency exchange rate. In the context of the global economy, the exchange rate is an important indicator influenced by various factors, including the trade balance consisting of exports and imports. The method used in this study is multiple linear regression analysis with secondary data taken from trade and exchange rate statistics reports for a certain period. The results of the study indicate that there is a significant relationship between exports and exchange rates, where increased exports tend to strengthen the exchange rate. Conversely, high imports can cause exchange rate depreciation. These findings provide important insights for policy makers in formulating trade strategies that can support exchange rate stability.

Keywords: Import, Export, Inflation

INTRODUCTION

The phenomenon of globalization has caused interactions between countries in various parts of the world to become more intensive. The intensity of relations is mainly influenced by the interests between countries to complement each other's needs. The way to meet the needs of each country depends on their international trade activities. International trade certainly requires an agreed currency to be used in trade transactions, namely the US dollar (United States). The use of the US dollar causes the rupiah exchange rate against the dollar to fluctuate from time to time. This can cause the risk of changes in currency exchange rates that arise due to the uncertainty of the exchange rate itself (Muzaky, 2015).

The Indonesian economy operates based on the principle of an open economy (Sukirno, 2011), which encourages countries' participation in international trade, barter, and other agreements. According to another statement, Indonesia is engaged in international trade that prioritizes regional trade and diplomatic relations (Tambunan, 2001).

The exchange rate of the domestic currency against the exchange rate of foreign currencies must be maintained so as not to disrupt the investment climate or the real sector. In 2008 there was a crisis in the global economy. Countries that do not have a strong exchange rate will certainly experience the major impact of the global economic crisis. Therefore, the exchange rate needs to be maintained. Exports can affect the movement of the domestic currency exchange rate against foreign currencies. Increasing exports reflect the flow of foreign currency into the country, either through transactions of goods or services, thus causing the increase in the amount of foreign currency in the country. The

increase in the amount of foreign currency in a country causes the appreciation of the domestic currency against the foreign currency. Apart from exports, imports can also affect the movement of the domestic currency exchange rate against foreign currency. If imports increase, the flow of foreign currency out of the country will increase so that the amount of foreign currency available will decrease.

Other factors that can influence the movement of the domestic currency exchange rate against foreign currency is inflation. The increasing price of domestic goods results in Demand for domestic goods is decreasing. People choose imported goods which is cheaper as a replacement or substitute. The shift in people's choice to imported goods results in an increase in the need for foreign currency. The increase in the need for foreign currency causes the exchange rate of the domestic currency against foreign currencies to weaken or depreciate.

Table 1 Development of Economic Growth, Exports, and Exchange Rates 2019-2023

Year	Economic growth (%)	Exports (Million US\$)	Imports (Million US\$)	Exchange Rate (IDR/US\$)
2019	5.02	167,683.00	171,275.70	14,146.33
2020	-2.1	163,191.80	141,568.80	14,572.26
2021	3.7	231,609.50	196,190.00	14,311.96
2022	5.3	291,904.3	237,447.10	14,870.61
2023	5.1	258,797.2	221,886.2	15,255.05

From the data above, it states that the Export value in 2019 to 2023 experienced insignificant fluctuations, where in 2022 was the year with the highest Export amount, namely 291,979.10 US\$. In Import activities from 2014 until 2023 there will be fluctuations, where in 2022 it will be the year with the highest import value, namely 237,447.10 US\$, which provides the impact on economic growth is better than the previous year. And in 2023 the value of exports and imports decreased from the previous year. The exchange rate from 2014 to 2023 fluctuated and in 2023 it became the year with the highest exchange rate of 15,255.05 US\$. For the value of economic growth from 2014 to 2023, the highest value occurred in 2022, which was 5.3% and the lowest occurred in 2020, which was -2.1%, where in that year the Indonesian economy experienced a monetary crisis because this year there was an outbreak and had a significant impact on economic growth.

Therefore, the purpose of this study is to learn more about how inflation, imports, and exports impact Indonesia's exchange rate. By looking at how these three variables relate to each other, we can gain a better understanding of how each of them affects the exchange rate. influence the stability of the country's currency. This research can help governments and businesses plan better economic policies and take more appropriate actions to deal with global economic changes.

METHOD

The method used in writing this research journal is a quantitative regression method, which... According to Sugiyono (2018:8), quantitative research methods can be interpreted as research methods based on the philosophy of positivism, used to research certain populations or samples, data collection using research instruments,

quantitative/statistical data analysis, which aims to test the established hypothesis. Research with a quantitative approach focuses on the analysis of numerical data obtained from questionnaires processed using statistical methods. By relying on inflation data from Bank Indonesia, exports-imports from the Trade Map and the Central Statistics Agency, and World Development Indicators as sources of exchange rate data in Indonesia. This method is carried out by determining and analyzing the character of the relationship, namely exports, imports, & inflation as independent variables (x) and those that can affect Indonesia's exchange rate as the dependent variable. (y), so that it can be found out how exports, imports, and inflation affect the exchange rate in Indonesia.

Using data from 2019 to 2023 sourced from secondary data, namely data that has been collected and processed by other parties. Primary data is obtained from official agencies such as Bank Indonesia (BI) for information on inflation, exchange rates, and other monetary indicators, and the Central Statistics Agency (BPS) for export, import, and macroeconomic indicator data. In addition, supporting information comes from scientific journals, articles, relevant literature, and trusted sources on the internet such as Trade Map and World Development Indicators. The data is analyzed using the method statistics to determine the relationship between exports, imports, and inflation as independent variables with the exchange rate as the dependent variable during the research period.

Regression Model

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \varepsilon$$

Information :

- Y = Exchange Rate
- A = Constant
- b₁ = Regression coefficient X₁
- b₂ = Regression coefficient X₂
- b₃ = Regression coefficient X₃
- X₁ = Export
- X₂ = Import
- X₃ = Inflation
- ε = Residual Value

RESEARCH RESULT

a. Normality Test

**Table 1. Kolmogorov-Smirnov Normality Test
One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		5
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	330.77342312
Most Extreme Differences	Absolute	.207
	Positive	.140
	Negative	-.207
Test Statistics		.207

Asymp. Sig. (2-tailed)c	.200d
Monte Carlo Sig. (2-tailed)e	Sig. .713
99% Confidence Interval	Lower Bound .701
	Upper Bound .725

- a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.
e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 299883525
Source: SPSS 23 processed data

Based on the data in Table 1, all data show a normal distribution. This is because the results of the Kolmogorov-Smirnov test show a significant value of 0.200 which is greater than 0.05. Therefore, there is no significant difference between the empirical distribution of data and the ideal normal distribution, so all variables are normally distributed.

b. Multicollinearity Test

Table 2. Multicollinearity Test Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.356	.184		-1.935	.193
	EXPORT & IMPORT	.031	.015	.647	2.141	.166
	INFLATION	-.031	.007	-1.277	-4.224	.052

- a. Dependent Variable: ABS_RES
Source: SPSS 23 processed data

Based on the data in table 2, the Tolerance value for each variable shows that inflation has a value of 4.224, exports and imports have a value of 2.141. In addition, the Variance Inflation Factor (VIF) value for inflation is recorded at 0.052, exports and imports are recorded at 0.166. Since the Tolerance value for all variables is greater than 0.1 and the VIF value is less than 10, it can be concluded that this multiple regression model is free from multicollinearity problems.

c. Heteroscedasticity Test

Table 3. Heteroscedasticity Test Coefficientsa

Model		Collinearity Statistics	
		Tolerance	VIF
1	EXPORT & IMPORT	.520	1,922
	INFLATION	.520	1,922

- a. Dependent Variable: EXCHANGE RATE
Source: SPSS 23 processed data

Based on the data in table 3, the Tolerance value for the export & import and inflation variables are both 0.520, while the Variance Inflation Factor (VIF) value for both variables is 1.922. Since the Tolerance value is greater than 0.1 and the VIF value is less than 10, it can be concluded that this regression model does not experience multicollinearity problems. This indicates that the relationship between the independent variables in the model is not

too strong, so there is no indication of multicollinearity that can affect the results of the analysis.

d. Autocorrelation Test

Table 4. Autocorrelation Test Runs Test

	Unstandardized Residual
Test Value ^a	-.00085
Cases < Test Value	2
Cases >= Test Value	3
Total Cases	5
Number of Runs	4
Z	.109
Asymp. Sig. (2-tailed)	.913

a. Median

Based on the data in table 4, the Asymp. Sig. (2-tailed) value is 0.913, which is greater than the significance level of 0.05. This shows that there is no systematic pattern in the residuals, so it can be concluded that the residuals in this regression model are randomly distributed. Thus, no autocorrelation problems were found in the model used.

Determination Test (R^2)

The coefficient of determination (R^2) value is in the range of 0 to 1. The closer the value is to 1, the better the model's ability to explain the variation of the dependent variable based on the independent variable. Conversely, an R^2 value close to 0 indicates that the independent variable has almost no influence on the dependent variable.

In this model, the R^2 value reaches 0.948, indicating that 94.8% of the variation in the Rupiah exchange rate against the USD can be explained by the independent variables, namely exports, imports, and inflation. Meanwhile, the remaining 5.2% is the influence of other factors not included in the model.

Correlation Test Results

From the results of the correlation analysis, it is known that exports have a moderate positive relationship with the Rupiah exchange rate against the USD. This means that when exports increase, the Rupiah exchange rate tends to strengthen, although this relationship is not too strong. Imports also show a moderate positive relationship with the exchange rate, but its influence is slightly smaller than exports.

Meanwhile, inflation has a very weak relationship with the exchange rate. This shows that inflation does not have a major impact on changes in the exchange rate during the study period. In addition, there is a very strong relationship between exports and imports, indicating that these two variables move in almost the same pattern. A fairly strong relationship is also seen between imports and inflation, indicating that increasing imports are often in line with rising inflation.

Overall, these results reveal that international trade activities, especially exports and imports, have a greater relationship to the exchange rate than inflation. This shows the importance of the role of exports and imports in maintaining the stability of the Rupiah exchange rate against the USD during the study period.

t-test

Based on the results of the t-test, it is obtained that the export variable has a probability value of 0.238, which is greater than the significance level of $\alpha = 0.05$ \ $\alpha = 0.05$. This shows that exports partially do not have a significant effect on the Rupiah exchange rate. The export regression coefficient of -0.0638 indicates that an increase in exports of 1 million USD will reduce the Rupiah exchange rate by 0.0638 IDR. Furthermore, the import variable has a probability value of 0.216, which is also greater than $\alpha = 0.05$ \ $\alpha = 0.05$, so imports do not have a significant effect on the Rupiah exchange rate. The import regression coefficient of 0.1343 indicates that an increase in imports of 1 million USD will increase the Rupiah exchange rate by 0.1343 IDR. For the inflation variable, the probability value of 0.202 which is greater than $\alpha = 0.05$ \ $\alpha = 0.05$ indicates that inflation does not have a significant effect on the Rupiah exchange rate. The inflation regression coefficient of -575.20 indicates that a 1% increase in inflation will cause a decrease in the Rupiah exchange rate of 575.20 IDR. Based on these results, it can be concluded that partially, exports, imports, and inflation do not have a significant effect on the Rupiah exchange rate against the USD in the period studied.

F Test

The F test is used to test whether the export, import, and inflation variables together have an effect on the Rupiah exchange rate against the USD. In this test, a significance level (α \ α) of 5% or 95% confidence is used. The degrees of freedom are calculated as $(k - 1)$ for df_1 and $(n - k - 1)$ for df_2 , where $k = 4$ and $n = 5$, so that $df_1 = 3$ and $df_2 = 1$. Because the amount of data is limited, the interpretation of Ftable is done through a common approach.

The testing criteria are:

- H_0 is accepted if $F_{count} < \alpha$
- H_0 is rejected if $F_{count} > \alpha$

The hypotheses tested are:

- H_0 : Taken together, exports, imports, and inflation do not have a significant effect on the exchange rate.
- H_a : Taken together, exports, imports and inflation have a significant effect on the exchange rate.

The results of the analysis show the F_{count} value of 6.045 with a probability value of 0.289, which is greater than the significance level of $\alpha = 0.05$ \ $\alpha = 0.05$. Thus, H_0 is accepted, which means that simultaneously exports, imports, and inflation do not have a significant effect on the Rupiah exchange rate against the USD. In essence, the export, import, and inflation variables together are not significant enough to influence changes in the exchange rate. This shows that exchange rate fluctuations during the study period are more influenced by other factors outside the model used.

DISCUSSION

The Impact of Exports on the Rupiah Exchange Rate

The results of the analysis show that the export variable does not have a significant effect on the Rupiah exchange rate, with a probability value of 0.166 which is greater than the significance level of $\alpha = 0.05$. However, the export regression coefficient indicates a

positive effect on the exchange rate. Every increase in exports of 1 million USD is estimated to be able to strengthen the Rupiah exchange rate by 0.031 units. This finding is in line with economic theory that increased exports can encourage the influx of foreign currency into the country, thereby strengthening the domestic currency exchange rate. However, these results also indicate that other factors, such as global trade conditions, market volatility, or international trade policies, may be more dominant in determining exchange rate fluctuations during the study period.

The Impact of Imports on the Rupiah Exchange Rate

The t-test results show that the import variable also has no significant effect on the Rupiah exchange rate, with a probability value of 0.166. The import regression coefficient shows a negative relationship, meaning that an increase in imports of 1 million USD tends to weaken the Rupiah exchange rate by 0.031 units. This is consistent with the understanding that increased imports increase the need for foreign exchange to pay for goods and services from abroad, which has the potential to reduce foreign exchange reserves and weaken the position of the domestic currency. The insignificance of this result may be due to the influence of other factors, such as the stability of economic policy or fluctuations in the international market, which have not been accommodated in this study.

The Effect of Inflation on the Rupiah Exchange Rate

The inflation variable has a negative regression coefficient of -0.031, indicating that every 1% increase in inflation can cause the Rupiah exchange rate to depreciate by 0.031 units. However, the inflation probability value of 0.052, which is greater than $\alpha = 0.05$, indicates that this effect is not significant. High inflation tends to increase the price of domestic goods, so that people switch to cheaper imported goods. This increases the demand for foreign exchange, which ultimately weakens the Rupiah exchange rate. However, these results indicate that inflation is not the main factor influencing the exchange rate during the study period. Most likely, monetary stability, foreign exchange reserves, or fiscal policy have a more dominant influence.

The Simultaneous Effect of Exports, Imports, and Inflation on the Rupiah Exchange Rate

The results of the F test show that simultaneously, export, import, and inflation variables do not have a significant effect on the Rupiah exchange rate, with a probability value of 0.289. This indicates that the three variables are not strong enough to explain the variation in the Rupiah exchange rate against the USD during the study period. This insignificance may be influenced by external factors, such as global monetary policy, changes in international interest rates, or geopolitical dynamics that are not analyzed in this study. For example, changes in The Federal Reserve's policy or fluctuations in world oil prices can have a significant impact on the Rupiah exchange rate.

CONCLUSION

This study analyzes the effect of exports, imports, and inflation on the rupiah exchange rate against the US dollar during the period 2019 to 2023. The results of the regression analysis show that exports have a positive effect on the exchange rate, where increased exports can strengthen the rupiah exchange rate. Conversely, increased imports can weaken the exchange rate because they cause a decrease in the amount of foreign currency in the country. Inflation also has a negative effect on the exchange rate, where high inflation drives increased demand for imported goods, which in turn increases the need for foreign currency and causes depreciation of the exchange rate. In addition, the classical assumption test which includes the normality, multicollinearity, heteroscedasticity, and autocorrelation tests

shows that the regression model used in this study meets the requirements, with normally distributed data, there are no problems of multicollinearity, heteroscedasticity, or autocorrelation. These findings provide useful insights for policy makers and business actors in formulating economic policies that can maintain the stability of the rupiah exchange rate in the global market.

REFERENCES

- A. Agustina and R. -, "Pengaruh Ekspor, Impor, Nilai Tukar Rupiah, dan Tingkat Inflasi Terhadap Cadangan Devisa Indonesia," *J. Wira Ekon. Mikroskil*, vol. 4, no. 2, pp. 61–70, 2014, doi: 10.55601/jwem.v4i2.214.
- A. Slamet and A. N. Hidayah, "Analisis pengaruh ekspor, impor, nilai tukar rupiah dan inflasi terhadap pertumbuhan ekonomi Indonesia tahun 2000- 2019," *J. Econ. Res. Policy Stud.*, vol. 1, no. 3, pp. 183–192, 2022, doi: 10.53088/jerps.v1i3.10.
- E. Keuangan *et al.*, "Pengaruh Ekspor , Impor , dan Nilai Tukar terhadap Pertumbuhan Ekonomi di Indonesia Periode 2014-2023 Fakultas Ekonomi dan Bisnis Islam , Universitas Islam Negeri Raden Intan Lampung," vol. 1, no. 3, 2024.
- K. Sabtiadi and D. Kartikasari, "Analisis Pengaruh Ekspor Impor Terhadap Nilai Tukar Usd Dan Sgd," *J. AKUNTANSI, Ekon. dan Manaj. BISNIS*, vol. 6, no. 2, pp. 135–141, 2018, doi: 10.30871/jaemb.v6i2.629.
- R. B. R. Silitonga and Z. Ishak, "Pengaruh Ekspor, Impor dan Inflasi Terhadap Nilai Tukar Rupiah di Indonesia," *Ekon. Pembang.*, vol. 15, no. 1, pp. 53–59, 2017.
- W. Thorbecke, "The Effect of Exchange Rate Changes on Trade in East Asia," *SSRN Electron. J.*, no. 263, 2012, doi: 10.2139/ssrn.1743982.
- F. E. Manihuruk, D. Silfani, Y. Feby, and J. Marbun, "Analisis Pengaruh Ekspor, Impor, Dan Jub Di Indonesia Terhadap Kurs Rupiah/Usd," *J. Ris. Ilmu Ekon.*, vol. 3, no. 2, pp. 118–129, 2024, doi: 10.23969/jrie.v3i2.70.
- R. Sukmawati and M. I. Tarmizi, "Analisis Pengaruh Ekspor Dan Impor Terhadap Nilai Tukar," *Univ. Nusa Putra Sukabumi*, vol. 27, no. 2, pp. 58–66, 2022, [Online]. Available: <http://117.74.115.107/index.php/jemasi/article/view/537>
- N. Dewi, "Pengaruh Ekspor, Impor, Inflasi, dan Pertumbuhan Ekonomi terhadap Nilai Tukar di Indonesia," *J. Ekon. Drh.*, pp. 2013–2015, 2020.
- M. Rahmasari and T. Hali, "Pengaruh Ekspor, Impor, dan Inflasi Terhadap Nilai Tukar di Indonesia," *J. Ilm. Ekon. dan Manaj.*, vol. 1, no. 4, pp. 202–212, 2023, [Online]. Available: <https://doi.org/10.61722/jiem.v1i4.343>