

FACTORS AFFECTING THE RUPIAH EXCHANGE RATE OVER THE UNITED STATES DOLLAR IN INDONESIA

Irwandi¹, Regina², Maizul Rahmizal³

^{1,2} Universitas Negeri Makassar, Makassar

³ Universitas Negeri Padang, Padang

E-mail: ¹⁾ irwandi@unm.ac.id, ²⁾ regina@unm.ac.id, ³⁾ maizul.rahmizal@fe.unp.ac.id

Abstract

This study examines the factors that affect the exchange rate of the rupiah against the US dollar in Indonesia between 2013-2022. The observed factors include interest rates, inflation, and money supply. Annual data was used from legitimate sources such as Bank Indonesia and the Central Bureau of Statistics. The results show that interest rates have a significant influence on the rupiah exchange rate, with an increase in interest rates causing a depreciation of the rupiah against the US dollar. Inflation has no significant effect on the exchange rate, although high inflation can affect purchasing power and confidence in the local currency. Money supply also has a significant effect, where an increase tends to cause rupiah depreciation. An increase in money supply causes inflation and decreases purchasing power, thus decreasing the exchange rate of the rupiah against the US dollar.

Keywords: *Exchange Rate, Interest Rate, Inflation, Money Supply.*

1. INTRODUCTION

When Indonesia's economy is growing rapidly, prices tend to rise. However, if price increases are not properly controlled, people will find it difficult to meet their needs, and this can lead to inflation (Suwardi, 2022). Unstable changes in inflation can make many people feel less prosperous. In addition, productive investment decreases, exports decrease, imports increase, which slows down economic improvement for the better.

Inflation is an important aspect of macroeconomics, as a country's inflation rate reflects its economic development. When an economic shift occurs in one country in a short period of time, it can have an impact on the economies of other countries, especially those with close economic links or economic partners. This shift in economic activity is usually seen in changes in currency exchange rates (Noor, 2011).

In economics, there are 4 factors that affect a country's exchange rate. These factors are interest rates, inflation rate, money supply, and balance of payments. The first three are common factors that have a major influence on exchange rates. Meanwhile, the balance of payments is a more complex factor because it involves many economic considerations than the previous three factors. (Firmansyah & Fatihudin, 2017).

The value of a country's currency also plays an important role in the economy (Habib & Sarwar, 2013). If a country's currency remains stable, it shows that its economy is relatively good. The government conducts various policies to maintain this stability for the welfare of people throughout the region. (Irawan, 2015).

Samuelson and Nordhaus (2004) say that the exchange rate is a price that indicates how much domestic currency is needed to obtain foreign currency. The price of foreign currency is set in the foreign exchange market, where different currencies are traded. Exchange rates not only affect export and import trade, but also have significance in foreign debt repayment.

The link between exchange rates and inflation is not uncommon. When the domestic currency appreciates, imports become cheaper. This has a positive impact on the real sector as people's desire to buy increases. Business activity is good because people's demand increases along with their desire to buy. However, the situation is different if there is a decline in the domestic currency against foreign currencies. If not taken seriously, this can be a serious problem for the economy.

Inflation has a significant impact on foreign exchange rates. Shifts in inflation can affect how much a country's currency is in demand, which in turn can affect international trade patterns. Moridu et al. (2021) explained that when a country's inflation increases, this has the effect of decreasing demand for that country's currency because the country's exports also decrease.

In addition, a factor related to currency exchange rates is interest rates. Whenever the Federal Reserve increases interest rates, it has a major effect on money markets and capital markets around the world. Investors tend to take money out and invest it in savings. This impact certainly creates instability in the money market and capital market, especially in developing countries like Indonesia.

Hidayati & Putra (2021) argue that interest rates are the fees paid for borrowing money. This interest rate is expressed as a percentage of the principal amount borrowed. Mishkin (2008) revealed that it is important to maintain interest rate stability, as this also contributes to the overall stability of financial markets. Interest rate stability ensures that financial markets can smoothly channel funds to individuals who have the opportunity to make productive investments, thereby stabilizing economic activity.

Changes in interest rates also have an impact on investment in foreign securities, which impacts the demand and supply of foreign exchange. This has an impact on the exchange rate. The International Fisher Effect-IFE theory explains the perfect link between interest rates and exchange rates between countries. The movement of one country's currency against another is influenced by the comparison of the nominal interest rates of the two countries (Berlianta, 2005).

Economists after the Classical era generally supported Keynes' theory like this: the interest rate is affected by the quantity of money in circulation and liquidity preference.

Liquidity preference refers to the desire of the entire society to have money in the economy. Keynes mentioned the demand for money by the public has three motives, namely (1) transaction purposes, where people need money to pay for their consumption, (2) to be vigilant, such as facing unexpected events such as death or being fired, (3) speculation, which is investing money in stocks or other securities.

Another thing that researchers suspect is related to the rupiah exchange rate is the money supply. Langi (2014) explained that the amount of money in circulation M2 reflects the level of liquidity in the economy. M2 is the total of M1 and quasi money. Quasi money refers to money not in circulation directly. Quasi money includes time deposits, savings, and foreign exchange accounts held by private individuals in the country.

If the money supply increases, it can lead to an increase in prices in the United States in the long run and weaken the exchange rate in the future. Changes in the money supply can also make exchange rate movements more significant in the short term than in the long term, which is referred to as exchange rate overshooting. If the amount of money in circulation in the country is higher, the domestic currency tends to decline. If the amount of money in circulation is very large, people use it more often, which in turn can lead to an increase in the price of goods in the country (Landa & Hamidi, 2017).

From the concept description above, it is important to observe what factors affect the exchange rate of the rupiah against the US dollar in Indonesia. The results of this study are expected to provide a deeper insight that the aspects that affect the exchange rate will have a broad impact on economic growth.

2. RESEARCH METHOD

This study analyzes using quantitative methods. Research materials were obtained on the Central Bureau of Statistics and Bank Indonesia websites. The variables tested in this analysis are exchange rates, interest rates, inflation, and money supply in Indonesia starting from 2013-2022 and processed using Microsoft Excel and SPSS applications. Various relevant sources and references, such as books, journals, or other documents, to obtain information and data used as a reference in the research.

3. RESULTS AND DISCUSSION

3.1 Normality Test

Normality test is a test carried out with the aim of assessing the distribution of data in a group of data or variables, whether the distribution of the data is normally distributed or not. The Normality Test is useful for determining whether the data that has been collected is normally distributed or taken from a normal population.

The results of testing normality using the Kolmogorov-Smirnov Test where the Asymp. Significant value of 0.200 (see table. 1). These results indicate that the residual value is normally distributed because the sig value > 0.05.

Table. 1 Normality Test

One-Sample Kolmogorov-Smirnov Test	
Test Statistic	0.196
Asymp. Sig. (2-tailed)	0.200

Source: *Data processing results, 2023*

3.2 Autocorrelation Test

The Durbin-Watson value listed in table 2 of the SPSS output above is 1.494 and the critical value at $\alpha = 5\%$ where $k = 3$ (number of independent variables) and $n = 10$ (sample). The obtained value of $dL = 0.5253$ and $dU = 2.0163$, then $dL < d < dU$. This means that there is no positive autocorrelation or in other words there is no problem in the autocorrelation test.

Table 2. Autocorrelation Test

Model Summary				
R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
0.943	0.889	0.834	0.411334	1.494

Source: *Data processing results, 2023*

3.3 Multiple Linear Regression

In this section, statistical results are presented regarding the effect of interest rates, inflation and money supply simultaneously on exchange rates, with the results of research that has been processed by computer through the SPSS program with multiple linear regression analysis partially and simultaneously.

Table 3. Regression

Variable	Coefficient	t-Statistic	Sig
Interest Rate	0.391	2.440	0.050
Inflation	-0.196	-2.238	0.067
Money Supply	6.768E-7	5.640	0.001
Adjust R Square			0.834
F Count			16.037

Source: *Data processing results, 2023*

3.4 Goodness of Fit R^2

Based on table 2 above displays the Adjusted R-Square value of 0.834. This means that changes in the dependent variable are influenced by the independent variable by 83.4%, while the remaining 16.7% is influenced by other variables outside the model.

3.5 F-Test

In the F-test, we need to know if $F_{count} > F_{table}$ means that the independent variables jointly affect the dependent variable. In the f test as in table 4, it can be seen that the F count is 16.037 and the F table is 4.737414 (can be seen in the statistical distribution table F numerator $k-1 = 2$ and denominator $n-k = 7$). Because $F_{count} 16.037 > F_{table} 4.737414$ it can be concluded that all independent variables (Interest Rates, Inflation and Money Supply) simultaneously affect the dependent variable (Exchange Rate).

Table 4. Anova

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	8.140	3	2.713	16.037	0.003
Residual	1.015	6	0.169		
Total	9.156	9			

Source: *Data processing results, 2023*

3.6 T-Test

In the t test, we need to know that if $t_{count} > t_{table}$ means that the independent variable has a positive effect on the dependent variable. And vice versa if $t_{count} < t_{table}$ means that the independent variable has no effect on the dependent variable.

Table 3 shows the following results:

1. The table shows that the t count on the Interest Rate is 2.440 and the t table is 2.364624 (can be seen in the t distribution statistics table with $\alpha=0.05$ and $n-k=7$). Because $t_{count} 2.440 > t_{table} 2.364624$, it can be concluded that the Interest Rate variable affects the Exchange Rate (Kurs).
2. In the table it can be seen that the t count on Inflation is -2.238 and the t table is 2.364624 (can be seen in the t distribution statistics table with $\alpha=0.05$ and $n-k=7$). Because $t_{count} -2.238 < t_{table} 2.364624$, it can be concluded that the Inflation variable has no effect on the Exchange Rate (Kurs).
3. In the table it can be seen that the t count on the Money Supply is 5.640 and the t table is 2.364624 (can be seen in the t distribution statistical table with $\alpha=0.05$ and $n-k=7$). Because $t_{count} 5.640 > t_{table} 2.364624$, it is concluded that the variable Amount of Money in Circulation affects the Exchange Rate (Kurs).

3.7 Discussion

Interest Rate and Exchange Rate

From the results above, it is known that the value of the interest rate variable is $2.440 > 2.364642$. The results prove that interest rates have an effect on exchange rates in Indonesia in 2013-2022. This is in accordance with research (Murtadho, 2016.) Changes in a country's interest rates can affect the exchange rate of the country's currency, which in turn

can lead to a decrease in profits due to an increase in the price of goods on the market and reduce the company's production level.

Inflation and Exchange Rate

From the results above, the value of the inflation variable is $-2.238 < 2.364624$. The results prove that inflation has no effect on exchange rates in Indonesia in 2013-2022. This is in accordance with research (Faizin, 2020). exchange rates and inflation in short-term interactions do not affect each other but in the long run will affect each other.

Money Supply and Exchange Rate

From the results above, it is known that the value of the money supply variable is $5.640 > 2.364624$. The results prove that money supply has an influence on the exchange rate in Indonesia in 2013-2022. This is in accordance with research by Farlin et al (2020), the amount of money in circulation has a large effect on the exchange rate because the currency has a lower value compared to the American dollar.

4. CONCLUSION

The purpose of this study is to analyze the factors affecting the IDR exchange rate over the USD in Indonesia. From the results of the analysis and tests carried out, it can be concluded that the factors that have an impact on the increase or decrease in the IDR exchange rate on the USD for the period 2013-2022 are due to several factors, namely interest rates and money supply, for inflation itself has no effect because testing only uses data with a short-term time series, but if the long term then theoretically inflation can affect the Rupiah exchange rate against the United States Dollar in Indonesia.

REFERENCES

- Berlianta, Heli Chrisma. 2005. *Mengenal Valuta Asing*. Yogyakarta: Gadjah Mada University Press.
- Faizin, M. (2020). Analisis hubungan kurs terhadap inflasi. *Akuntabel*, 17(2), 314-319.
- Farlian, T., Handayani, M., Fitriani, N., Fachruddin, R., Zulkifli, N., & Phillipe, J. (2020). The Effect of Inflation and Interest Rate on Dollars Exchange (January-December 2018). In *Proceedings Aceh Global Conference-Business, Economics, and Sustainable Development Trends* (Vol. 2, pp. 98-104).
- Firmansyah, M. A., & Fatihudin, D. (2017). *Globalisasi Pemasaran (Marketing Globalization)*. Deepublish.
- Habib, M. D., & Sarwar, S. (2013). Impact of foreign direct investment on employment level in Pakistan: A time series analysis. *JL Pol'y & Globalization*, 10, 46.
- Hidayati,, Aisyah S., & Putra, Bintang Mandala S. (2021). Pengaruh Pengetahuan Investasi, Manfaat Investasi, Motivasi Investasi, Modal Minimal Investasi Dan Return Investasi Terhadap Minat Investasi Di Pasar Modal (Studi pada Mahasiswa Fakultas Ekonomi dan Bisnis Universitas Mataram) (Vol. 9, Issue 1).
- Irawan, A. (2015). Regional income disparities in Indonesia: Measurements, convergence process, and decentralisation. In *Bulletin of Indonesian Economic Studies* (Vol. 51, Issue 1, pp. 148–149). Taylor and Francis Ltd.
<https://doi.org/10.1080/00074918.2015.1023415>
- Irwandi, I. Samsir, A., Syafri, M., & Mawadani, M. D. (2023). Is There an Effect of Economic Growth and Poverty Level in North Sulawesi? Data Analysis for 2003-2021. *Indonesian Journal of Contemporary Multidisciplinary Research*, 2(3), 381-394.
- Landa, T. N., Putro, T. S., & Hamidi, W. (2017). *Pengaruh Jumlah Uang Beredar dan Suku Bunga BI Terhadap Kurs Rupiah di Indonesia Periode 2005-2014* (Doctoral dissertation, Riau University).
- Langi, T. M. (2014). Analisis pengaruh suku bunga bi, jumlah uang beredar, dan tingkat kurs terhadap tingkat inflasi di Indonesia. *Jurnal berkala ilmiah efisiensi*, 14(2).
- Mishkin, Frederic S. 2008. *Ekonomi, Uang, Perbankan dan Pasar Keuangan*. Edisi 8. Buku 2. Jakarta: Salemba Empat.
- Moridu, I., Eka Putri, D., Hartaty Posumah, N., Suciati, R., Nugraheni Eko Sudarmanto, S., Rosyid, A., Fadila, A., Muniarty, P., Kadek Bagiana, A. I., Azizi, M., Noekent, V., Koerniawati, D., Krisnanto Nandang Ihwanudin, B., Sri Lestari, A., & Prambudi Utomo, K. (2021). *Manajemen Keuangan Internasional Tim Penulis*.
www.penerbitwidina.com

FACTORS AFFECTING THE RUPIAH EXCHANGE RATE OVER THE UNITED STATES DOLLAR IN INDONESIA

Irwandi et al, 2023

- Murtadho, M. (2016). Pengaruh suku bunga terhadap nilai tukar serta pengaruhnya terhadap indeks harga saham (studi kasus Indonesia, China dan Australia). *e-Journal Manajemen Kinerja*, 2(2).
- Noor, Zulki Zulkifli. (2011). Jurnal: Pengaruh Inflasi, Suku Bunga, dan Jumlah Uang Beredar terhadap Nilai Tukar. *Jurnal Trikonomika*, 10(2), 139-147.
- Samuelson, Paul A. & Nordhaus, William D. 2004. *Ilmu Makroekonomi*. Edisi Bahasa Indonesia. Jakarta: PT Media Global Edukasi.
- Suwardi, W. Z. (2022). Efek Inflasi, Pengeluaran Pemerintah, Kredit Perbankan, dan Upah Minimum terhadap Penyerapan Tenaga Kerja di Indonesia (2000-2020)= The Inflation Effects, Government Expenses, Banking Loans, And Minimum Payment Towards Employment Absorption In Indonesia (2000-2020) (Doctoral dissertation, Universitas Hasanuddin).