

Domestic and Global Determinants of the Indonesian Rupiah Exchange Rate Against the US Dollar

Muflihatul Adawiyah^{1*}, Aminudin Ma'ruf²
Universitas Negeri Surabaya

Corresponding Author: Muflihatul Adawiyah muflihatuladawiyah11@gmail.com

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ABSTRACT

This study aims to analyze the impact of the money supply, Consumer Price Index (CPI) inflation, VIXCLS, Indonesia's Geopolitical Risk (GPR-C), external debt, the BI Interest Rates, and West Texas Intermediate (WTI) oil prices on the IDR/USD exchange rate. The study employs a quantitative approach using the Autoregressive Distributed Lag (ARDL) method, utilizing secondary monthly data for Indonesia covering the period from January 2015 to December 2024, obtained from official publications. The results indicate that the money supply and VIXCLS have a significant positive effect, whereas external debt and WTI oil prices have a significant negative effect on the IDR/USD exchange rate. Conversely, CPI inflation, GPR-C, and the BI Rate do not have a significant impact. The study concludes that the rupiah exchange rate is primarily influenced by domestic monetary factors and global conditions. Future research is advised to incorporate additional variables and extend the observation period.

INTRODUCTION

Exchange rate volatility indicates global economic uncertainty, which has a significant impact on developing countries, particularly in ASEAN. Since early 2020, the world has faced shocks such as the COVID-19 pandemic, the Russia-Ukraine war, rising interest rates, and the energy crisis, all of which have affected exchange rates in energy-importing countries, according to Ana et al. (2025). The Fed's tight monetary policy strengthened the US dollar, causing depreciation of ASEAN currencies and inflation (Khusni & Nurviliza, 2025). During the 2015-2024 period, the rupiah depreciated from around Rp 12,625 in 2015 to nearly Rp 16,157 in 2024. This was due to pressure from economic factors and external sentiment, such as global oil prices and market volatility. Inflation, interest rate policies, and Indonesia's money supply and foreign debt also contributed to this depreciation. Geopolitical risks added to the uncertainty and undermined market confidence.

Repaying foreign debt requires significant foreign exchange, which increases demand for foreign exchange and weakens the domestic currency. Both long-term and short-term debt can lead to economic problems, such as the depreciation of the rupiah. Imminent foreign exchange payment obligations also increase the demand for US dollars, depressing the rupiah, according to Junaedi, (2018). Countries with high short-term foreign debt are vulnerable to sudden withdrawals by foreign investors. This can weaken the exchange rate and increase the risk of a currency crisis. Short-term capital flows are highly volatile, leading to domestic currency depreciation when creditors withdraw funds (Sugeng et al., 2010; Devia SS & Fadli, 2023).

High inflation in a country can weaken its currency because money loses purchasing power. Inflation is a persistent increase in the general price of goods and services. Countries accustomed to international trade can experience inflation, which reduces demand for goods from that country. Domestic buyers will prefer foreign goods, and foreign buyers will also shift to cheaper foreign goods. This causes an increase in demand for foreign currency and a decrease in demand for the domestic currency, which can cause the currency's value to decline (Watty et al., 2023; Akter, 2021).

Geopolitical tensions can affect exchange rates through risk and capital flows. According to foreign exchange market theory, increased political risk makes investors fearful that governments will restrict capital flows, which can weaken the domestic exchange rate. Uncertainty also increases the risk premium, reducing asset demand and causing currency depreciation. The 1994 Mexican crisis demonstrated that political instability can trigger large capital outflows, reducing foreign exchange reserves, and weakening the exchange rate. Furthermore, political stability has a positive effect on exchange rates because it attracts foreign investors and increases demand for the currency (Krugman et al., 2017; Nabi et al., 2021).

The price of West Texas Intermediate (WTI) crude oil impacts the global economy, including Indonesia. As a major oil importer, WTI price fluctuations impact the trade balance and the IDR/USD exchange rate. Rising oil prices can weaken the rupiah due to higher import costs. In addition to the global oil

market, geopolitical conditions such as the Russia-Ukraine war also contribute to WTI price volatility. Oil prices serve as a strategic factor in global production, influencing exchange rates. Oil-exporting countries benefit when prices rise, while importing countries experience currency depreciation due to increased demand for foreign currency (Fattouh et al., 2022; Lin & Su, 2020).

According to IMF, (2026), when the VIXCLS is persistently high, the most risk-sensitive investors are the first and largest to withdraw their capital from developing countries on a sustained basis. These risks are more pronounced in developing countries than in developed countries due to greater portfolio flow volatility, shallower financial markets, and more limited policy capacity to absorb shocks. When the VIXCLS is persistently high in the long term, capital outflows from Indonesia occur continuously and sustainably, so that the supply of dollars in the country shrinks structurally, while the demand for dollars for imports and payment of foreign obligations remains high, which causes the rupiah to experience permanent and long-term depreciation. An increase in the VIX indicates market uncertainty and drives investment into the US dollar, depreciating emerging market currencies (Benavides, 2016).

Indonesian government and bank policies can influence exchange rate movements. Expansionary policies that increase the money supply can lead to inflation, which depreciates the rupiah. The money supply is an important indicator for managing inflation and maintaining a stable exchange rate. If inflation is too high, the central bank may need to reduce liquidity or raise the benchmark interest rate to stabilize the economy. The benchmark interest rate (BI Rate) also plays a crucial role in attracting foreign investment. An increase in the interest rate can strengthen the exchange rate, while a decrease can weaken it. Low inflation makes domestic products more attractive, reducing imports and increasing exports, thus strengthening the rupiah. This illustrates how the benchmark interest rate affects the exchange rate through monetary policy (Sangadji et al., 2024; Karimah & Laulita, 2023).

Despite the abundance of research on exchange rates, there are still gaps that need to be filled. First, previous research generally does not include the impact of the COVID-19 pandemic and recent global conflicts. Second, few studies combine macroeconomic, international economic, and risk variables in a single model. This study aims to analyze the factors influencing the Rupiah exchange rate against the US Dollar from January 2015 to December 2024.

LITERATURE REVIEW

Purchasing Power Parity Theory

Exchange rate changes occur as an adjustment mechanism to differences in inflation rates across countries. If the price level in one country changes relative to another, the exchange rate will move to maintain purchasing power parity. This ensures that consumers maintain a relatively equal ability to purchase goods and services, both domestically produced and imported (Cassel, 1967; Madura, 2012).

Quantity Theory of Money

The prices of products and services will double if the total money supply in an economy also doubles, provided all other factors remain constant. As a result, consumers need to spend twice as much money to obtain the same amount of goods and services, according to the prevailing prices in the economy, Inflation ultimately occurs when the supply and demand for both goods and money (Friedman & Schwartz, 1963).

Balance of Payments Bop Approach Theory

The IMF explains that external debt and government remittances can lead to foreign exchange outflows, affecting a country's ability to maintain its exchange rate. This pressure on the balance of payments can cause currency depreciation as the need for foreign currency increases when inflows fall short, weakening the rupiah against the USD (Rhombert & Heller, 1977).

Portfolio Balance Model Theory

The portfolio balance model theory explains how currency exchange rates are set by the supply and demand for three main financial assets: domestic currency, domestic bonds, and foreign bonds. Domestic and foreign bonds are not perfect substitutes due to risks with foreign bonds. Demand for domestic currency decreases when domestic or foreign interest rates rise, but increases with risk premium and real income. Demand for domestic bonds rises with higher domestic interest rates but falls with increased foreign interest rates. Demand for foreign bonds decreases with rising domestic interest rates but rises with increased foreign interest rates (Salvatore, 2021; Jeffrey, 1984).

Liquidity Preference Theory

Interest rates are determined by the interaction between the supply and demand of money. This view differs from classical theory, which positions interest rates as a balance between savings and investment. Keynes argued that people's decisions to save are more influenced by their income level. The higher a person's income, the greater their ability to set aside a portion of their income for savings, even if interest rates remain unchanged (Keynes, 1936).

Exchange Rates

The exchange rate in a free floating system is determined by differences in economic fundamentals between two countries, including differences in inflation rates, money supply growth, and interest rates. If the money supply or inflation at home increases faster than abroad, then the domestic exchange rate tends to depreciate. According to Hery, (2026) the currency exchange rate or what is often called the exchange rate is the price of one unit of foreign currency in domestic currency, or the price of domestic currency against foreign currency. For example, the exchange rate (NT) of the Rupiah against the US dollar is the price of one US dollar in rupiah, or the price of one rupiah against one US dollar.

Money Supply

The amount of money in circulation is one of the important parameters in managing state finances which is used by the central bank to overcome price increases and maintain currency value stability. shows that regulating the amount of money in circulation can have a positive impact on the exchange rate by encouraging economic activity and attracting investment from abroad (Sangadji et al., 2024). An increase in demand for money in circulation that is not matched by an increase in production will result in inflation (Funashima, 2020). The greater the money supply, the more money circulates in the community, leading to a downward trend in interest rates. This encourages capital outflows, increases demand for the US dollar, and causes the rupiah to depreciate (weaken). Consequently, the IDR/USD exchange rate increases (Landa et al., 2017).

H1: It is suspected that the total amount of money in circulation has a positive effect on the exchange rate.

Inflation

Several studies support the view that high inflation causes exchange rate depreciation, as explained by Harahap et al., (2024) and Kurniasih & Tampubolon, (2022) who stated that high domestic inflation in Indonesia weakens the Rupiah against the USD. When domestic inflation is higher, the purchasing power of the domestic currency weakens, triggering exchange rate depreciation to restore relative price competitiveness. (Lubis, 2018) Inflation significantly influences the rupiah exchange rate against the US dollar. These results indicate that changes in the inflation rate are one of the macroeconomic factors influencing the rupiah exchange rate.

H2: Inflation is suspected to have a positive effect on the exchange rate.

CBOE Volatility Index (VIX)

An increase in the VIX indicates market uncertainty and drives investment into the US dollar, depreciating emerging market currencies (Benavides, 2016). (Geng & Guo, 2022) when the VIX rises, uncertainty in global financial markets increases. This spillover affects the foreign exchange market, increasing exchange rate volatility in various countries. In other words, the VIX not only impacts the US stock market but can also impact the exchange rate stability of other countries through global risk transmission. Lu et al., (2017) found that the VIX has a two-way relationship with exchange rates. This relationship is stronger when there is economic uncertainty and financial market volatility, so changes in global risk levels also influence exchange rate dynamics.

H3: VIXCLS is suspected to have a positive effect on the exchange rate.

Indonesian Geopolitical Risk

According to Witjaksono, (2025) uncertainty in relations between countries, such as conflict, political tension and changes in foreign policy, can cause changes in currency exchange rates. Yilmazkuday, (2025) shows that geopolitical risk

shocks can cause currency depreciation in some countries, while in others they trigger appreciation.

H4: Indonesian geopolitics is suspected to have a positive effect on the exchange rate.

Foreign Debt

Foreign debt in the short term has a significant negative impact. This is because foreign debt that accompanies the wave of capital inflows has a direct consequence, namely strengthening the domestic currency exchange rate appreciation (Kurniasih & Tampubolon, 2022). Increasing foreign debt can increase foreign exchange inflows into the country, thereby strengthening foreign exchange reserves and enhancing the monetary authorities' ability to maintain exchange rate stability. Consequently, the rupiah tends to strengthen or appreciate against the US dollar (Adelia & Rahmiyati, 2026).

H5: Foreign debt is suspected to have a negative effect on the exchange rate.

Bi Rate Interest Rate

The increase in the BI Rate attracts foreign investors, increases portfolio investment, and increases demand for the rupiah, so its value tends to rise (Udiyana et al., 2023). When the BI rate rises, the exchange rate appreciates because foreign investors invest in Indonesia, the demand for money increases because investors increase (Karimah & Laulita, 2023).

H6: The BI rate is suspected to have a positive effect on the exchange rate

West Texas Intermediate (WTI)

Fluctuations in WTI oil prices affect the stability of exchange rates and trade flows between exporting and importing countries (Gusman et al., 2023). Fluctuations in oil prices can affect exchange rates through changes in price levels and purchasing power in the economy (Karimah & Laulita, 2023; Meylani & Prasetyo, 2023). Rising oil prices impact domestic inflation by increasing the cost of producing goods and services. Because oil is a crucial ingredient in the production process, rising oil prices also increase the selling price of products. Consequently, people's ability to purchase goods and services is reduced (Syahtria et al., 2013).

H7: The WTI is suspected to have a negative effect on the exchange rate.

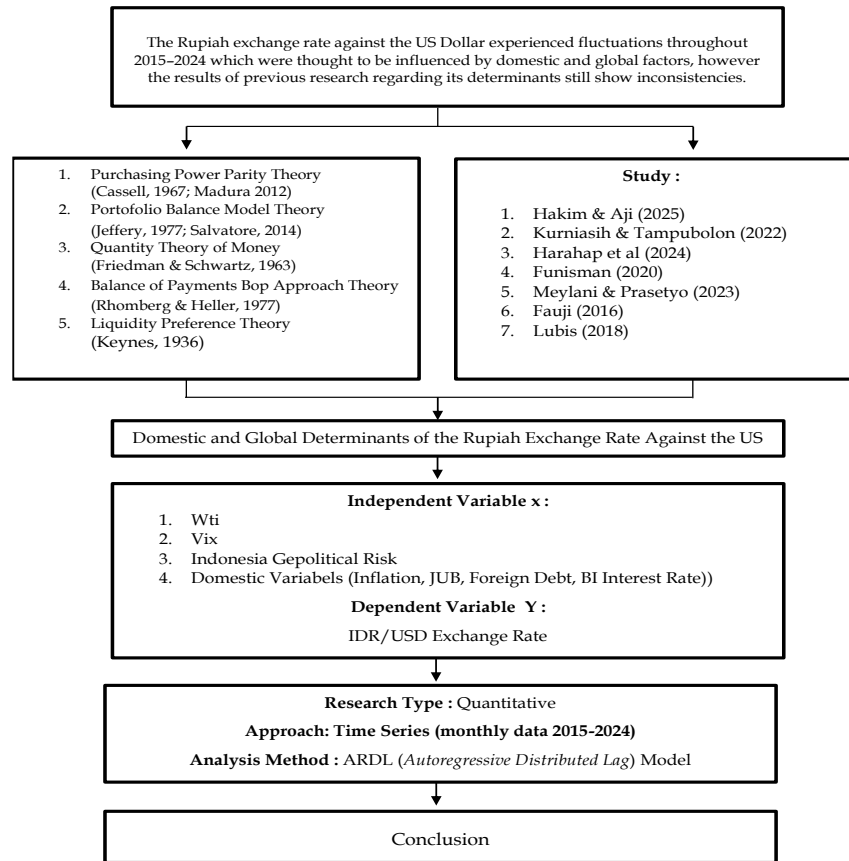


Figure 1. Conceptual Framework

METHODOLOGY

This study uses secondary data, specifically time series data, which includes monthly data from January 2015 to December 2024. The object of analysis is Indonesia, with the dependent variable being the IDR/USD exchange rate, and independent variables including the money supply (M2), inflation, CBOE volatility index (VIX), Indonesian geopolitical index, foreign debt, BI rate and West Texas Intermediate (WTI) oil price. The analysis was conducted using the ARDL method. Here's the ARDL formula:

$$\Delta \text{LNNT} = \beta_0 + \sum_{i=1}^p \beta_1 \Delta \text{LNNT}_{t-i} + \sum_{i=1}^q \beta_2 \Delta \text{LNJUB}_{t-i} + \sum_{i=1}^q \beta_3 \Delta \text{LNINF}_{t-i} + \sum_{i=1}^q \beta_4 \Delta \text{VIX}_{t-i} + \sum_{i=1}^q \beta_5 \Delta \text{GPR}_{t-i} + \sum_{i=1}^q \beta_6 \Delta \text{LNUTL}_{t-i} + \sum_{i=1}^q \beta_7 \Delta \text{SBI}_{t-i} + \sum_{i=1}^q \beta_8 \Delta \text{WTI}_{t-i} + \beta_9 \text{LNNT}_{t-1} + \beta_{10} \text{LNJUB}_{t-1} + \beta_{11} \text{LNINF}_{t-1} + \beta_{12} \text{VIX}_{t-1} + \beta_{13} \text{GPR}_{t-1} + \beta_{14} \text{LNUTL}_{t-1} + \beta_{15} \text{SBI}_{t-1} + \beta_{16} \text{WTI}_{t-1} + \gamma \text{ECT}_{t-1} + \mu_t$$

$\sum_{i=1}^p \beta_1$: summation of lags dependent variabels from 1 to p, Δ : change between short-them periods, LN: Natural logarithm, c: Constant of the model, $\sum_{i=1}^q \beta_2$: summation of lag independent variabels rangking from 1 to q, NT: Exchange rate, JUB: Total money supply m2, INF: Inflation, VIX: Volatility index, GPR: Indonesian geopolitical index, UTL: Foreign debt, SBI: BI interest rate, WTI: West texas intermediate, μ_t : error term, t - i: short-term, t-1: long term lag, $\beta_1 \beta_2 \beta_3 \beta_4 \beta_5 \beta_6 \beta_7 \beta_8$: short-term multiplier, $\beta_9 \beta_{10} \beta_{11} \beta_{12} \beta_{13} \beta_{14} \beta_{15} \beta_{16}$: long-term coefficient the ARDL-ECM model, γ : speed adjustment parameter, ECT: residual obtained from estimation of cointegration equation model.

RESEARCH RESULT

Stationary Test

The following criteria are used to make decisions about the results of the stationarity test: if the p-value is less than 5% ($\alpha = 0.05$), then the null hypothesis is rejected, and the data is stationary. If the p-value is greater than 5% ($\alpha = 0.05$), then the null hypothesis is not rejected, and the data is non-stationary.

Table 1. Stationary Test

Probability Value	Variables							
	NT	JUB	INF	VIX	GPR	UTL	SBI	WTI
Level	0,1818	0,8537	0,1929	0,0000	0,0000	0,2625	0,1879	0,3017
1 st difference	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0005	0,0000

Based on the results of the Augmented Dickey-Fuller (ADF) stationarity test, the results of the stationary test in the table above show that variables VIX and GPR are stationary at the level, then variables exchange rate, money supply, inflation, foreign debt, bi interest rate and wti are not stationary at the level because the probability results are more than 0.05, but stationary at the first difference level. The results for the variables in Table 1 meet the main prerequisites of the ARDL method and confirm the combination of stationary variables at the level and first difference.

Classical Assumption Test

According to Ghozali, (2018) the classical assumption test is the initial step before conducting multiple linear regression analysis. The purpose of this test is to ensure that the regression coefficient estimates are obtained in an unbiased, consistent, and accurate manner. This test analyzes whether the data is normally distributed and checks for multicollinearity, autocorrelation, and heteroscedasticity, allowing for further linear regression analysis.

a. Autocorrelation Test

Tabel 2. Autocorrelation Test

F-statistic	0.187173	Prob. F(2,107)	0.8296
Obs*R-squared	0.411390	Prob. Chi-Square(2)	0.8141

From the LM test, the result obtained was $0,8141 > 0,05$ chi square prob that there were no autocorrelation symptoms.

b. Heteroscedasticity Test

Tabel 3. Heteroscedasticity Test

F-statistic	0.590509	Prob. F(8,109)	0.7839
Obs*R-squared	4.901691	Prob. Chi-Square(8)	0.7680
Scaled explained SS	8.885843	Prob. Chi-Square(8)	0.3520

The heteroscedasticity test in Table 3 shows that all probabilities (Prob. F, Prob. Chi-Square Obs*R-squared, and Scaled explained SS) are far above 0.05 (0.78, 0.77, 0.35), so there is no heteroscedasticity problem and the error variance can be considered constant.

c. Multicollinearity Test

Tabel 4. Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
D(NT (-1))	0.003424	1.242133	1.234452
D(JUB)	0.010457	1.391573	1.109580
D(INF)	1.23E-05	1.102627	1.090816
D(VIX)	1.87E-09	1.507662	1.507641
D(GPR)	0.000162	1.037589	1.037583
D(UTL)	0.016851	1.406364	1.317592
D(SBI)	4.79E-05	1.067689	1.063036
D(WTI)	4.66E-08	1.096426	1.095454
C	2.37E-06	1.428250	NA

In Table 4, all centered VIF values for D(NT(-1)) to D(WTI) are around 1–1.5 (<10), which means there is no multicollinearity problem between independent variables in the model; the linear relationship between variables is still within acceptable limits for regression analysis.

Cointegration Test

The bound testing method is a cointegration analysis technique that aims to verify the existence of a long-term equilibrium relationship between variables in a model. This study uses the bound testing approach to cointegration, where the upper and lower critical values are compared with the F-statistic:

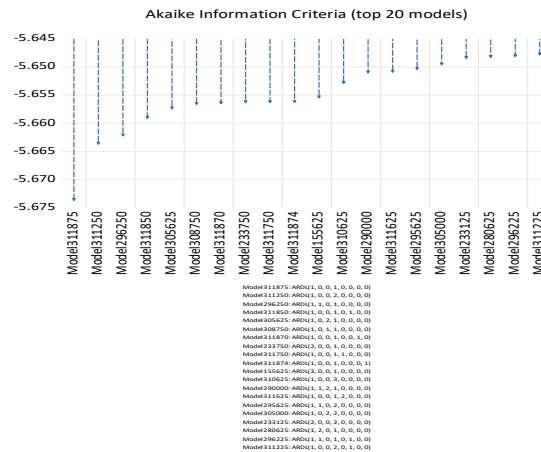
Tabel 5. Cointegration Test

Statistic Test	Value	Significant	1(0)	1(1)
F-Statistik	43.14528	10%	1.92	2.89
K	7	5%	2.17	3.21
		2.5%	2.43	3.51
		1%	2.73	3.9

Based on the results of the boundtest cointegration test in table 5, the F-statistic value of 43.14528 is greater than the lower limit of 1(0) at a significance of 10% (1.92) 5% (2.17) 2.5% (2.43) 1% (2.73), it can be concluded that there is a long-term relationship between the variables.

Optimal Lag

This test is carried out to determine the optimal lag length in the analysis using AIC as follows:

Figure 2. *Optimal Lag*

Based on graphic figure 2, the estimated AIC lag selection criteria chosen is the smallest of the 20 best models. The best ARDL criteria is (1,0,0,2,0,1,0,0) which means that the exchange rate variable has 1 lag, the money supply and inflation variables have 0 lags, the vix variable has 2 lags, the geopolitical Indonesia risk variable has 0 lags, the foreign debt variable has 1 lag and finally the bi interest rate & wti variables have 0 lags. Overall, this pattern leads to the selection of a simple ARDL model that is strong enough to explain the dynamics of the rupiah exchange rate against the global and domestic variables used in this study.

Autoregressive Distributed Lag (ARDL) Test

Table 6. ARDL Test

Short Long				Long Run			
Variable	Coefficient	Std. Error	Prob.	Variable	Coefficient	Std. Error	Prob.
D(JUB)	0.261787	0.102258	0.0118	D(JUB)	0.269727	0.106573	0.0128
D(INF)	-0.003071	0.003503	0.3825	D(INF)	-0.003164	0.003625	0.3846
D(VIX)	0.000197	4.33E-05	0.0000	D(VIX)	0.000203	5.06E-05	0.0001
D(GPR)	-0.012159	0.012748	0.3423	D(GPR)	-0.012528	0.013111	0.3414
D(UTL)	-1.273961	0.129811	0.0000	D(UTL)	-1.312601	0.149993	0.0000
D(SBI)	0.003027	0.006918	0.6626	D(SBI)	0.003119	0.007107	0.6617
D(WTI)	-0.000472	0.000216	0.0310	D(WTI)	-0.000486	0.000220	0.0293
C	0.003873	0.001541	0.0134	C	0.003990	0.001579	0.0130

The results of the research analysis show that the total amount of money in circulation has a significant positive effect on the rupiah exchange rate against the US dollar in the long and short term. This can be concluded from the ARDL model estimation which obtained a short-term coefficient of 0.261787 with a probability value of $0.0118 < 0.05$. So every 1% increase in this variable will cause the rupiah exchange rate to increase by 0.261787, meaning that an increase in the total amount of money in circulation causes the rupiah to depreciate against the dollar. The long-term coefficient is 0.269727 with a probability of $0.0128 < 0.05$.

Based on the ARDL estimation results, the inflation variable shows a short-term coefficient of -0.003071 with a t-statistic of -0.876828 and a probability of 0.3825, and a long-term t-statistic of -0.873034 and a probability of 0.3846. A

probability value of <0.05 indicates that inflation has no effect on the Rupiah to USD exchange rate in 2015-2024.

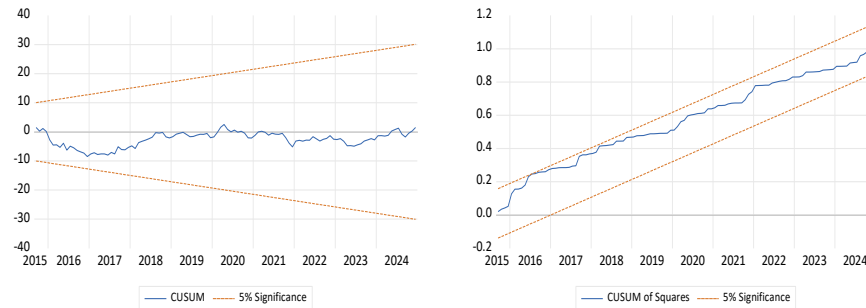
The research analysis shows that the VIXCLS variable, or market fear index, has a significant positive effect on the Rupiah exchange rate against the US dollar in both the long and short term. This can be concluded from the ARDL model estimation, which yields a short-term coefficient of 0.000197 with a probability value of $0.0000 < 0.05$. Therefore, every 1-point increase in the index of this variable will cause the Rupiah exchange rate to increase by 0.0197%, meaning that an increase in the total market fear index causes the Rupiah to depreciate against the US dollar. The long-term coefficient is 0.000203, with a probability of $0.0001 < 0.05$.

The short-term ARDL estimation results for the Indonesian geopolitical risk variable yielded a coefficient value of -0.012159 and a probability value of $0.3423 > 0.05$, indicating that the x_4 variable had no significant effect on the rupiah-dollar exchange rate. Similarly, the long-term ARDL estimation results for the Indonesian geopolitical index yielded a coefficient value of -0.012528 and a probability value of $0.3414 > 0.05$, indicating that the short-term effect was insignificant.

The foreign debt variable yielded a coefficient value of -1.2733961 with a probability value of $0.0000 < 0.05$. This indicates that foreign debt has a negative and significant effect on the rupiah exchange rate in the short term. This means that every 1% increase in foreign debt will decrease the rupiah exchange rate by 1.27%, resulting in an appreciation of the rupiah. Meanwhile, in the long term, the coefficient value is -1.312601 with a probability of $0.0000 < 0.05$, indicating that foreign debt also has a negative and significant effect on the rupiah exchange rate in the long term. Therefore, every 1% increase in foreign debt will depreciate the rupiah exchange rate by 1.31%, resulting in a long-term appreciation of the rupiah.

The analysis results indicate the BI rate, has no significant effect on the rupiah exchange rate against the US dollar in either the short or long term. This is confirmed by the estimated short-term coefficient of 0.003027 with a probability of $0.6626 > 0.05$ and a long-term coefficient of 0.003119 with a probability of $0.6617 > 0.05$.

The short-term estimation results show that the WTI variable has a coefficient value of -0.000472 with a probability of $0.0310 < 0.05$. This indicates that the WTI oil price has a negative and significant effect on the rupiah exchange rate in the short term. This means that every US\$1/barrel increase in oil prices will decrease the rupiah exchange rate by 0.000472%, causing the rupiah to appreciate. Meanwhile, in the long term, the WTI variable has a coefficient value of -0.000486 with a probability of $0.0293 < 0.05$. This indicates that WTI has a negative and significant effect on the rupiah exchange rate in the long term. This means that every US\$1/barrel increase in oil prices will decrease the rupiah exchange rate by 0.000486%, causing the rupiah to appreciate.

Cumulative Sum (CUSUM) TestFigure 3. *Cumulative Sum (CUSUM) Test*

Based on graphic figure 3, The results of the cusum and cusumsq indicate that the ARDL model is stable because the test statistic line is within the critical limit at the 5% significance level throughout the observation period. This indicates that there has been no significant structural change, so the model parameters tend to be consistent and the estimation results are reliable.

DISCUSSION***The Influence of the Amount of Money in Circulation on the IDR/USD Exchange Rate***

The results of the research show that there is a significant positive long-term and short-term effect of the money supply variable on the exchange rate. In theory, the results are consistent with the postulates of the Quantity Theory of Money. When JUB growth exceeds real economic production capacity, excess liquidity will reduce the competitiveness of the Rupiah in the foreign exchange market. This mechanism is strengthened by research by Hakim & Aji, (2025) and Funashima, (2020) which also found a unidirectional relationship between monetary expansion and weakening of the exchange rate. In other words, monetary policy which tends to be expansionary in the market, creates an excess supply of Rupiah in the market thereby reducing its relative value against foreign currencies. The findings (Sangadji et al., 2024) show that a controlled amount of money in circulation can have a positive effect on the exchange rate by increasing economic activity and attracting foreign investment. The greater the money supply, the more money circulates in the community, leading to a downward trend in interest rates. This encourages capital outflows, increases demand for the US dollar, and causes the rupiah to depreciate (weaken). Consequently, the IDR/USD exchange rate increases (Landa et al., 2017).

The Influence of Inflation on the IDR/USD Exchange Rate

The results of the research on the inflation variable are negative and have no significant effect on the exchange rate, which means that H2 is rejected, but this finding is in line with research Amitha Mutiara & Puspitasari, (2024) which shows that the increase in domestic inflation did not significantly weaken the rupiah, because Bank Indonesia succeeded in controlling it through tight monetary policy (Munasir et al., 2023). Inflation has no impact on the exchange rate due to strong external pressures, with all Asian currencies weakening against the US dollar. The dollar is strengthening not only in Asia but globally as

well. Purchasing power parity (PPP) theory suggests that high inflation will weaken the exchange rate. Indonesia's inflation rate is higher than that in the United States, which increases production costs (Diana & Dewi, 2019). This also contradicts the predictions of the Purchasing Power Parity Theory in his book, *International Financial Management*. According to Madura, (2012) differences in inflation rates between countries should be offset by proportional changes in exchange rates, so that countries experiencing higher inflation will experience currency depreciation. In other words, if Indonesia's inflation rate is higher than that of the United States, the Rupiah exchange rate against the USD should weaken (depreciate) proportionally according to the difference in inflation between the two countries.

The Influence of Volatility (Vix) on the IDR/USD Exchange Rate

The research analysis found that the VIXCLS, or market fear index, has a significant positive effect on the rupiah exchange rate against the US dollar in both the long and short term, which means that hypothesis H3 is accepted. This finding aligns with the Portfolio Balance Model proposed by Jeffrey, (1984). This theory explains that a country's exchange rate is determined by equilibrium conditions in the asset market. International investors view domestic and foreign assets as having different risk characteristics. Therefore, when allocating their portfolios, investors consider both the return and risk levels of each asset in different countries. This research also aligns with (Geng & Guo, 2022), who demonstrated a spillover effect from the VIX on exchange rates. VIX index shocks can spill over to the foreign exchange market through global investor sentiment and risk expectations. Therefore, VIX movements not only reflect uncertainty in the US stock market but also exert real pressure on exchange rate stability in developing countries. Benavides, (2016) found that increases in the VIX reflect increasing uncertainty in global financial markets and investor risk aversion, driving capital to safe-haven assets such as the US dollar. This situation leads to depreciation pressure on the currencies of developing countries. This research is also in line with Lu et al., (2017), which found that the VIX has a two-way relationship with exchange rates. This relationship is stronger when there is economic uncertainty and financial market volatility, so changes in global risk levels also affect exchange rate dynamics.

The Influence of the Indonesian Geopolitical Index on the IDR/USD Exchange Rate

The results of this study indicate that Indonesia's geopolitical risk has a negative and insignificant effect on the rupiah exchange rate against the US dollar in the long and short term, meaning that the H4 hypothesis is rejected. This result is inconsistent with the portfolio balance theory by Salvatore, (2014) that changes in risk and uncertainty can influence investor preferences for domestic and foreign assets, thereby impacting the exchange rate. Changes in Indonesia's geopolitical risk do not appear to be strong enough to trigger significant adjustments in investor portfolios towards the rupiah. This study aligns with Susianti & Putri, (2025) who found that geopolitical risk only has a limited and

temporary impact on Indonesia's macroeconomic variables, including the exchange rate. This study explains that the Indonesian economy tends to be resilient to geopolitical shocks, so its impact on the rupiah exchange rate is not too strong.

The Influence of Foreign Debt on the IDR/USD Exchange Rate

The results of the long-term and short-term foreign debt tests have a significant negative effect on the exchange rate, which means that the H5 hypothesis is accepted. The results of this study are in accordance with the Balance of Payments (BOP) Approach theory, the exchange rate is determined by a country's balance of payments condition. If the BOP is not balanced, it will affect the demand and supply of foreign currency which will determine the exchange rate. When foreign debt increases, the obligation to pay principal and interest installments in foreign currency also increases. To fulfill these payment obligations, the government and the private sector must buy foreign currency in the foreign exchange market, so that the demand for foreign currency increases significantly (Rhomberg & Heller, 1977). The results of this study align with Kurniasih & Tampubolon, (2022) findings that indicate a significant negative short-term impact. Foreign debt accompanying a surge in capital inflows has a direct consequence, namely strengthening the domestic currency exchange rate (appreciation). The behavior of the rupiah exchange rate in relation to capital flows can be viewed through the lens of the dollar's supply-demand balance. In addition to foreign exchange receipts from domestic goods and services transactions, capital inflows are one factor driving an increase in foreign exchange supply. If foreign exchange supply exceeds demand, the US dollar will depreciate against the rupiah. In other words, *ceteris paribus*, the rupiah will appreciate against the US dollar, and vice versa. Increasing foreign debt can increase foreign exchange inflows into the country, thereby strengthening foreign exchange reserves and enhancing the monetary authorities' ability to maintain exchange rate stability. Consequently, the rupiah tends to strengthen or appreciate against the US dollar (Adelia & Rahmiyati, 2026).

The Influence of the BI Rate on the IDR/USD Exchange Rate

The results of the study show that the BI interest rate has no effect on the rupiah exchange rate in either the long or short term, which means that the H6 hypothesis is rejected. This research is inconsistent with Liquidity Preference theory, which explains that an individual's decision to hold money or invest in interest-bearing assets is determined by transaction, precautionary, and speculative motives, with the latter being highly sensitive to interest rates. This theory provides the theoretical basis for suggesting that an increase in domestic interest rates should increase the attractiveness of rupiah assets and encourage an appreciation of the rupiah exchange rate. However, in this study, this effect is not always significant because other factors such as risk, expectations, and global capital flows influence investor portfolio decisions. Furthermore, Bank Indonesia also explains that the transmission of policy interest rate increases to exchange rate stability is not always direct, as financial market responses are influenced by

risk perceptions and investor expectations regarding global and domestic economic conditions. This study aligns with research by Manurung et al., (2026) the BI rate does not have a significant effect on the rupiah exchange rate in the short term because monetary policy transmission takes time to influence investor portfolio decisions and foreign capital flows, so that in the short period the exchange rate movement is more influenced by external factors such as capital inflow, capital outflow, and global market conditions. This study is in line with Halawa, (2023) that the BI rate variable is not significant on the rupiah exchange rate to the US dollar. This is because the determination of the BI rate is not entirely left to the market mechanism because the monetary authority has a reference interest rate so that the applicable interest rate is the interest rate according to the monetary authority to intervene as needed. According to the findings of Hazizah et al., (2017) also the BI rate is not significant so that even if the central bank raises or lowers interest rates it will not necessarily affect the exchange rate.

The Influence of Crude Oil (Wti) Prices on the IDR/USD Exchange Rate

The short- and long-term estimation results show that WTI has a significant negative effect on the rupiah exchange rate, meaning hypothesis H7 is accepted. According to Purchasing Power Parity theory, a currency's exchange rate will adjust to changes in price levels and inflation across countries. This theory explains that if a country experiences higher price increases or higher inflation than other countries, its currency tends to depreciate. Conversely, if the price level is relatively lower, the country's currency tends to appreciate. Thus, changes in international commodity prices, including world oil prices (WTI), can affect exchange rates through changes in import costs, inflation, and foreign exchange demand (Cassel, 1967). This research aligns with the research of Singhal et al., (2019) on the case of Mexico, which is also a net oil importer. The study found that the increase in WTI oil prices had a negative and significant effect on the peso in the long run through the mechanism of widening the current account deficit. In the study of Narayan, (2019) it was also found that WTI had a significant negative effect in the long run because this finding indicated that the increase in oil prices increased foreign exchange earnings from the oil and gas sector and improved Indonesia's external position, thereby strengthening the rupiah exchange rate, which means finding that the increase in oil prices had an effect on the appreciation of the rupiah during the floating exchange rate system period. (Hakim & Aji, 2025) in the short term is volatile and triggers rapid market reactions, such as changes in investor sentiment, sudden capital flows, and disruptions to the trade balance.

CONCLUSION AND RECOMMENDATION

This study aims to analyze the influence of the money supply, Consumer Price Index (CPI) inflation, VIXCLS, Geopolitical Risk Indonesia (GPR-C), foreign debt, BI Rate, and West Texas Intermediate (WTI) oil prices on the rupiah exchange rate against the US dollar. Based on the analysis, it was found that each variable has a different influence on the rupiah exchange rate, both in the short and long term. The results showed that there were variables that had a significant

positive effect, namely the money supply and VIXCLS, then variables that had a significant negative effect were foreign debt and West Texas Intermediate, while the other variables did not show a significant effect. These findings indicate that the movement of the rupiah exchange rate is influenced by a combination of domestic fundamental factors and external factors, so that exchange rate stability requires policy management that takes both aspects into account.

ADVANCED RESEARCH

This study has several limitations that should be considered when interpreting the results. First, the observation period is limited, making it unable to fully describe the dynamics of the exchange rate in 2025-2026. Second, the study only used seven independent variables, meaning other factors could potentially influence the rupiah exchange rate, such as foreign exchange reserves, the trade balance, foreign capital flows, the Federal Funds Rate (FFR), the US Dollar Index (DXY), and gold prices. Third, the study used a quantitative approach using the ARDL analysis method, so the results can be further developed using other econometric approaches or models.

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