

Received : 02 May 2025

Revised : 09 November 2025

Accepted : 19 December 2025

**The Influence of Interest Rates, Inflation and Foreign Exchange
Reserves on the Rupiah Exchange Rate**

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Abstrak

- **Tujuan:** Penelitian ini bertujuan untuk menganalisis pengaruh suku bunga, inflasi, dan cadangan devisa terhadap nilai tukar rupiah di Indonesia selama periode 1991–2023.
- **Desain/metodologi/pendekatan:** Penelitian ini menggunakan pendekatan kuantitatif dengan data sekunder berupa data time series yang diperoleh dari World Bank. Analisis statistik digunakan untuk menguji hubungan antara suku bunga, inflasi, dan cadangan devisa sebagai variabel independen terhadap nilai tukar rupiah sebagai variabel dependen.
- **Temuan:** Hasil penelitian menunjukkan bahwa sekitar 82,12% variasi nilai tukar rupiah dapat dijelaskan oleh variabel independen, yang tercermin dari nilai R-squared (R^2) sebesar 0,821163. Variabel suku bunga tidak menunjukkan pengaruh yang signifikan terhadap nilai tukar (p -value = 0,5446). Variabel inflasi memiliki p -value sebesar 0,0824 yang menunjukkan adanya potensi pengaruh namun tidak signifikan secara statistik. Sebaliknya, cadangan devisa memiliki pengaruh yang signifikan terhadap nilai tukar dengan p -value sebesar 0,0000, sehingga mendukung Hipotesis 3 (H3). Selain itu, model penelitian secara keseluruhan signifikan yang ditunjukkan oleh nilai Prob(F-statistic) sebesar 0,000000.
- **Batasan penelitian/dampak:** Penelitian ini hanya memfokuskan pada tiga variabel makroekonomi, yaitu suku bunga, inflasi, dan cadangan devisa. Oleh karena itu, penelitian selanjutnya disarankan untuk menambahkan variabel lain serta mempertimbangkan faktor eksternal yang dapat mempengaruhi fluktuasi nilai tukar.
- **Implikasi praktis:** Hasil penelitian ini menegaskan pentingnya peran cadangan devisa dalam menjaga stabilitas nilai tukar rupiah. Temuan ini dapat menjadi bahan pertimbangan bagi pembuat kebijakan, khususnya dalam merumuskan kebijakan moneter yang efektif untuk menjaga stabilitas mata uang dan ketahanan ekonomi.



Cite This As: Azra, et al. 2025. The Influence of Interest Rates, Inflation and Foreign Exchange Reserves on the Rupiah Exchange Rate. *Ekonomi dan Bisnis*, 12(2), 148-162. doi.org/10.35590/jeb.v12i1.10113

- **Keaslian/nilai:** Penelitian ini memberikan kontribusi pada literatur mengenai dinamika makroekonomi Indonesia dengan menyajikan bukti empiris jangka panjang (1991–2023) mengenai hubungan antara indikator makroekonomi utama dan nilai tukar rupiah.
- **Jenis Makalah:** Artikel Penelitian

Kata Kunci: Nilai Tukar; Suku Bunga; Inflasi; Cadangan Devisa; Analisis Regresi.

Abstract

- **Purpose:** *This study aims to analyze the influence of interest rates, inflation, and foreign exchange reserves on the Indonesian rupiah exchange rate during the period 1991–2023.*
- **Design/methodology/approach:** *This research employs a quantitative approach using secondary time-series data obtained from the World Bank. Statistical analysis is conducted to examine the relationship between interest rates, inflation, and foreign exchange reserves as independent variables and the rupiah exchange rate as the dependent variable.*
- **Findings:** *The results indicate that approximately 82.12% of the variation in the rupiah exchange rate can be explained by the independent variables, as reflected by the R-squared (R^2) value of 0.821163. Interest rates do not show a statistically significant effect on the exchange rate (p -value = 0.5446). Inflation shows a p -value of 0.0824, indicating a potential influence but not statistically significant. In contrast, foreign exchange reserves have a significant effect on the exchange rate with a p -value of 0.0000, supporting Hypothesis 3 (H3). Additionally, the overall model is statistically significant as indicated by the Prob(F-statistic) value of 0.000000.*
- **Research limitations/implications:** *This study focuses only on three macroeconomic variables—interest rates, inflation, and foreign exchange reserves—so other internal and external factors that may influence exchange rate fluctuations are not included. Future research is recommended to incorporate additional variables and explore broader macroeconomic dynamics.*
- **Practical implications:** *The findings highlight the important role of foreign exchange reserves in maintaining the stability of the rupiah exchange rate. These results provide valuable insights for policymakers, particularly in designing effective monetary policies to support currency stability and economic resilience.*
- **Originality/value:** *This research contributes to the literature on Indonesia's macroeconomic dynamics by providing long-term empirical evidence (1991–2023) on the relationship between key macroeconomic indicators and the rupiah exchange rate.*
- **Paper Type:** *Research Paper*

Keywords: *Exchange Rate; Interest Rates; Inflation; Foreign Exchange Reserves; Regression Analysis.*

Introduction

A country's exchange rate is a vital economic indicator reflecting its monetary policies, economic conditions, and financial stability (Zaliyanty & Soebagyo, 2023). Fluctuations in the exchange rate significantly affect various sectors, including import and export prices, foreign investment costs, and the servicing of foreign debt. In Indonesia, changes in the rupiah's value relative to the US dollar (USD) have garnered substantial attention from policymakers, businesses, and the public. The rupiah's exchange rate is shaped by several economic factors, such as interest rates, inflation, and foreign exchange reserves.

Understanding the dynamics of exchange rate fluctuations requires a deep examination of the underlying factors. Interest rates are a key monetary policy tool that affects currency movements. Central banks often raise interest rates in response to inflation or economic instability, which can strengthen the exchange rate by attracting foreign investors to the country's assets (Salim & Shi, 2019). Conversely, high domestic inflation can lead to currency depreciation, as the purchasing power of the currency declines. Additionally, foreign exchange reserves are essential in stabilizing the exchange rate, as central banks can use them to intervene in the market to prevent excessive currency fluctuations.

From a theoretical perspective, the relationship between interest rates, inflation, foreign exchange reserves, and exchange rates can be explained through the Monetary Approach to Exchange Rates and the IS-LM-BP (Mundell-Fleming) model. The Monetary Approach posits that exchange rate movements are driven by monetary fundamentals, particularly money supply, interest rates, and price levels. Higher interest rates tend to attract foreign capital inflows, leading to currency appreciation, while higher inflation reduces purchasing power and causes currency depreciation. Meanwhile, the IS-LM-BP framework emphasizes the role of interest rates and capital mobility in an open economy, where changes in monetary policy influence capital flows and balance of payments equilibrium. Within this framework, foreign exchange reserves play a crucial role in maintaining exchange rate stability by enabling central bank intervention during periods of external shocks.

Historically, Indonesia has faced several economic crises that have caused sharp rupiah exchange rate volatility. Two major events that had a significant impact on the value of the rupiah in the last few decades were the Asian Financial Crisis in 1997-1998 and the COVID-19 pandemic in 2020. The Asian Financial Crisis in 1997-1998 was one of the most significant events that affected the Indonesian economy, especially the value of exchange rupiah. The crisis began in Thailand when the government decided to delist the baht from the USD, triggering a wave of speculation in currency markets across Southeast Asia. Indonesia, which at that time had high foreign debt and a large current account deficit, was very vulnerable to this crisis. Speculation against the rupiah increased, causing the value of the currency to plummet (Wuri et al., 2024).

During the peak of the crisis, the rupiah experienced a sharp devaluation, falling from approximately IDR 2,500 per USD to over IDR 15,000 per USD. This substantial depreciation was influenced by several factors, including a loss of foreign investor confidence in Indonesia's economic stability, the government's struggle to maintain adequate foreign exchange reserves, and delays in adjusting interest rates to curb inflation. Initially low interest rates made the rupiah less attractive to foreign investors, while inflation, exacerbated by the currency's devaluation, further eroded purchasing power.

Additionally, Indonesia's foreign exchange reserves were quickly depleted as central bank efforts to stabilize the exchange rate proved ineffective (Ratnaningtyas & Huda, 2024).

The impact of the crisis was felt across various sectors of the Indonesian economy. Inflation soared, foreign direct investment dropped, and many large corporations went bankrupt as they were unable to service their foreign-denominated debt (Rizal et al., 2024). The crisis also led to political instability, culminating in the resignation of President Soeharto after 32 years in power. A key lesson from this crisis is the importance of balancing interest rates, inflation, and foreign exchange reserves to prevent a similar crisis in the future. After the crisis, Bank Indonesia (BI) adopted more disciplined monetary policies, including maintaining more stable interest rates and increasing the country's foreign exchange reserves.

Two decades after the Asian Financial Crisis, Indonesia faced another major economic challenge due to the COVID-19 pandemic, which began in early 2020 (Wuri et al., 2024). The global pandemic not only triggered a health crisis but also severely disrupted economic stability at both national and international levels. Lockdowns in various countries, including Indonesia, led to a significant reduction in economic activity and a drop in global demand for Indonesian exports. Moreover, the global economic uncertainty led investors to pull capital out of emerging markets like Indonesia, putting considerable pressure on the rupiah. Early in the pandemic, the rupiah depreciated sharply to approximately IDR 16,000 per USD, echoing the volatility seen during the Asian Financial Crisis. This depreciation was driven by several key factors, including large capital outflows, a decrease in foreign exchange reserves, and the maintenance of low interest rates to support economic growth during the recession. Additionally, inflation caused by global supply chain disruptions added further pressure to the exchange rate.

In response to the situation, Bank Indonesia implemented various measures to stabilize the exchange rate, including bolstering foreign exchange reserves through the issuance of global bonds and maintaining more competitive interest rates to attract foreign capital (Zaliyanty & Soebagyo, 2023). The Indonesian government also worked to stabilize inflation by controlling the prices of essential goods and providing economic stimulus to support recovery. While the impact of the pandemic on the rupiah was not as severe as during the Asian Financial Crisis, the event highlighted the rupiah's vulnerability to unexpected global crises. The COVID-19 pandemic underscored the importance of strong foreign exchange reserves as a buffer against external shocks and the need for flexible monetary policy to respond to rapidly changing economic dynamics.

In light of the effects of the Asian Financial Crisis and the COVID-19 pandemic on the rupiah exchange rate, this research seeks to explore the influence of interest rates, inflation, and foreign exchange reserves on the value of the rupiah. This study is significant as these three variables are essential determinants of a country's currency stability. Gaining a better understanding of how interest rates, inflation, and foreign exchange reserves relate to the rupiah exchange rate can help policymakers develop more effective economic strategies to ensure currency stability in the future. The findings are anticipated to enrich the literature on macroeconomics and monetary policy in Indonesia, providing valuable insights for the government, economic stakeholders, and investors as they navigate upcoming economic challenges. By examining the historical impact of these factors on the rupiah during crises, the research will also offer practical recommendations for bolstering the currency's resilience against global and domestic economic shocks.

Literature review and hypothesis development Signaling Theory

Exchange Rate

Previous studies have emphasized the exchange rate as a crucial macroeconomic indicator reflecting a country's monetary stability and external competitiveness. Highlight that exchange rate movements are influenced by both internal monetary factors and external trade dynamics. However, most studies treat exchange rates as an outcome variable without deeply analyzing the simultaneous interaction of multiple macroeconomic determinants, particularly in emerging economies such as Indonesia. (Zaliyanty & Soebagyo, 2023).

Interest Rates

Numerous empirical studies document a significant relationship between interest rates and exchange rates. Salim and Shi (2019) find that higher domestic interest rates tend to attract foreign capital inflows, leading to currency appreciation. Similarly, Aldo Aristo Mark Obed Ezekiel et al. Report that the BI 7-Day Reverse Repo Rate plays a vital role in stabilizing the rupiah through capital flow mechanisms. (Suripto et al., 2023).

However, contrasting evidence suggests that the effectiveness of interest rate policy depends on economic conditions. During periods of financial uncertainty, higher interest rates may fail to attract capital inflows due to increased risk perception. This inconsistency indicates that interest rates alone may not fully explain exchange rate movements, particularly during economic crises. (Aldo Aristo Mark Obed Ezekiel et al., 2024).

Inflation

Empirical evidence generally supports a negative relationship between inflation and exchange rates. Studies by Tiblola et al. (2024) show that rising inflation reduces purchasing power and leads to currency depreciation. This finding aligns with the Monetary Theory of Inflation, which links excessive money supply growth to price instability.

Nevertheless, some studies argue that moderate inflation does not always result in exchange rate depreciation if accompanied by strong economic growth and effective monetary control. This divergence suggests that inflation's impact on exchange rates may vary depending on policy credibility and macroeconomic conditions. (Tiblola et al., 2024).

Several economic theories attempt to explain the causes and dynamics of inflation. The two main categories are demand-pull inflation and cost-push inflation.

1. Demand-Pull Inflation: Demand-pull inflation occurs when the total demand in an economy exceeds the total supply. This type of inflation is driven by increases in consumer spending, government spending, or investments. According to Keynesian theory, inflation often arises from excess demand, especially in conditions of nearly full employment. When demand outstrips the economy's productive capacity, prices are driven upward (Keynes, 1936) In research (Schwarzer, 2018). Factors such as increased government spending, expansionary fiscal policies, or a surge in export demand can cause demand-pull inflation.

2. **Cost-Push Inflation:** In contrast, cost-push inflation results from rising production costs, including increases in wages, raw materials, or energy prices. These heightened costs are often transferred to consumers as higher prices. The monetarist perspective, advocated by Milton Friedman, asserts that inflation is fundamentally a monetary issue and that cost-driven inflation can be managed by regulating the money supply. (Friedman, 1968) in research (Jain et al., 2022). Although monetarists recognize that increasing production costs can result in inflation in the short term, they assert that prolonged inflation is primarily driven by excessive growth in the money supply.
3. **Monetary Theory of Inflation:** The quantity theory of money, often referred to as the monetarist perspective, links inflation to the money supply. This theory posits that a sustained increase in the money supply results in a proportional rise in the price level, assuming that the velocity of money and output remain unchanged. According to Friedman's famous statement, "inflation is always and everywhere a monetary phenomenon," central banks are tasked with controlling inflation by managing the money supply. Empirical evidence shows that in countries where the money supply grows rapidly, inflation rates are usually higher (Walsh, 2010).
4. **Expectations and Inflation:** Another important aspect of inflation theory is the influence of expectations. When businesses and consumers expect prices to increase in the future, they may adjust their behavior by raising prices and wages in advance, thereby confirming those inflation expectations. Traditionally, the Phillips curve demonstrated an inverse relationship between inflation and unemployment; however, it has evolved to include inflation expectations. The New Keynesian Phillips Curve emphasizes the importance of managing these expectations to avert uncontrolled inflation (Jackson, 2024).

Foreign Exchange Reserves

Several studies emphasize the stabilizing role of foreign exchange reserves in maintaining exchange rate stability. Thuy and Thuy (2019) find that countries with higher reserve holdings are better equipped to withstand external shocks. Ratnaningtyas and Huda (2024) further argue that adequate reserves enhance investor confidence and reduce exchange rate volatility.

Despite these findings, excessive reserve accumulation may lead to inefficiencies and opportunity costs. Moreover, existing studies often focus on long-term stability and overlook the role of reserves during sudden crises, such as the Asian Financial Crisis and the COVID-19 pandemic. (Thuy & Thuy, 2019).

Foreign exchange reserves significantly impact a country's macroeconomic stability, exchange rates, inflation control, and economic growth. High reserves contribute to investor confidence and lower borrowing costs, while central banks can influence exchange rates through interventions. However, excessive accumulation of reserves may lead to resource misallocation and reduced investment in domestic growth initiatives, highlighting the need for a balanced approach to reserve management (Ratnaningtyas & Huda, 2024). Overall, understanding the dynamics of foreign exchange reserves is essential for policymakers aiming to ensure sustainable economic development and resilience against external shocks.

Research Gap

Although numerous studies have examined the effects of interest rates, inflation, and foreign exchange reserves on exchange rates, the findings remain mixed and context-dependent. Many studies analyze these variables individually rather than simultaneously, and few focus on Indonesia's experience during major economic crises. Furthermore, limited research integrates monetary variables within a unified theoretical framework such as the Monetary Approach and IS-LM-BP model.

Therefore, this study aims to fill this gap by empirically examining the combined influence of interest rates, inflation, and foreign exchange reserves on the rupiah exchange rate, with particular attention to periods of economic instability.

Research Method

This study utilizes a quantitative research approach to examine the impacts of interest rates, inflation, and foreign exchange reserves on Indonesia's exchange rate. It concentrates on secondary data obtained from the World Bank, ensuring the reliability and validity of the information utilized in the analysis.

Data Collection

The data for this study includes key economic indicators such as:

1. Interest Rates: The prevailing interest rates in Indonesia during the study period.
2. Inflation: The inflation rates measured through the Consumer Price Index (CPI).
3. Foreign Exchange Reserves: The total reserves held by the Bank Indonesia.
4. Exchange Rate: The value of the Indonesian rupiah against the US dollar.

The data spans a time series from 1991 to 2023, allowing for a comprehensive analysis of the long-term trends and relationships between these economic variables.

Data Transformation

To ensure data consistency and reduce heteroscedasticity, several variables were transformed prior to estimation. The exchange rate and foreign exchange reserves were transformed using the natural logarithm (ln) to stabilize variance and allow elasticity-based interpretation. Interest rates and inflation, which are already expressed in percentage terms, were used in their original form. This transformation also helps to mitigate scale differences among variables and improve the robustness of the regression results.

Data Analysis

This study employs multiple linear regression using the Ordinary Least Squares (OLS) method to examine how fluctuations in interest rates, inflation and foreign exchange reserves impact the rupiah exchange rate. This analysis aims to provide insight into the dynamics of these economic factors and their implications for monetary policy and the stability of the Indonesian economy.

Then expressed by the econometric model as follows :

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Information :

Y = Exchange Rate

α = Coefficient

β = Regression Coefficient

X1 = Interest Rate

X2 = Inflation

X3 = Foreign Exchange Reserves

E = Error

Classical Assumption and Diagnostic Tests

To ensure the validity and reliability of the regression results, several classical assumption tests were conducted. Normality of residuals was tested using the Jarque–Bera test. Multicollinearity was examined through the Variance Inflation Factor (VIF), where values below 10 indicate no serious multicollinearity issues. Heteroscedasticity was tested using the Breusch–Pagan test, while autocorrelation was examined using the Durbin–Watson statistic. The results of these diagnostic tests indicate that the regression model satisfies the classical assumptions and is suitable for inference.

Hypothesis Testing

a) Coefficient or Determination Test (R^2)

The coefficient of determination (R^2) is a statistical metric that indicates the proportion of variance in the dependent variable that can be explained by the independent variables in a regression model. The R^2 value ranges from 0 to 1, with 0 signifying that the independent variable does not explain any variance in the dependent variable, and 1 indicating that it accounts for all of the variance. A higher R^2 value suggests a better fit of the model to the data, indicating a strong relationship between the independent and dependent variables.

b) F Test

The F-test is a statistical method used to assess whether there is a significant relationship between the independent variables and the dependent variable in a regression model. It compares a model that includes independent variables to one that does not (the null hypothesis). The F-statistic is calculated by taking the ratio of the variance explained by the model to the variance that is not explained. A significant result from the F-test (typically a p-value of less than 0.05) indicates that at least one of the independent variables is statistically significant in explaining the variation in the dependent variable.

c) t Test

The t-test is a statistical method employed to evaluate whether the coefficient of each independent variable in a regression model is significantly different from zero. This test aids in determining the contribution of each independent variable to the dependent variable. The t-statistic is computed by dividing the estimated coefficient by its standard error. A significant result from the t-test (typically a p-value of less than 0.05) suggests that the corresponding independent variable has a substantial impact on the dependent variable, indicating a meaningful relationship between the two.

The hypothesis derived from this study is as follows:

Hypothesis 1 (H1): There is a significant effect of interest rates on the exchange rate of the Indonesian rupiah.

Hypothesis 2 (H2): Inflation has a significant impact on the exchange rate of the Indonesian rupiah.

Hypothesis 3 (H3): Foreign exchange reserves significantly influence the exchange rate of the Indonesian rupiah.

In this model, coefficients of the logged variables represent elasticities, indicating the percentage change in the exchange rate resulting from a one percent change in the independent variable, *ceteris paribus*.

Study Period and Variable Selection

The study period from 1991 to 2023 was selected to capture both stable and crisis periods in Indonesia's economic history, including the Asian Financial Crisis (1997–1998) and the COVID-19 pandemic (2020). This extended time frame allows for a comprehensive analysis of long-term dynamics and short-term shocks affecting the rupiah exchange rate. The selected variables—interest rates, inflation, and foreign exchange reserves—are chosen based on their theoretical relevance within the Monetary Approach to Exchange Rates and the IS–LM–BP framework, as well as their frequent use in prior empirical studies.

Result and discussion

Coefficient or Determination Test (R^2)

Table 1. Coefficient or Determination Test (R^2) Result

R-squared	0.821163
Mean dependent var	8.956.337

Source : Eviews 10 output processed (2024)

The analysis results reveal an R-squared (R^2) value of 0.821163, suggesting that approximately 82.12% of the variance in the dependent variable, likely representing the rupiah exchange rate, can be explained by the independent variables included in the regression model. This high R^2 value reflects a robust model, indicating that the selected independent variables—such as interest rates, inflation, and foreign exchange reserves—significantly contribute to explaining fluctuations in the exchange rate. Additionally, the average value of the dependent variable is 8,956,337, representing the average exchange rate during the study period. This average suggests a relatively high exchange rate level, indicating that the rupiah may have faced considerable pressure during the analyzed timeframe, potentially due to factors like economic instability, inflationary pressures, or external shocks. Overall, the strong R^2 value signifies that the model effectively captures the dynamics influencing the exchange rate, while the average exchange rate provides valuable context for understanding the economic environment affecting the Indonesian rupiah. Further analysis could investigate the specific contributions of each independent variable, aiding in the development of effective monetary policy.

F Test

Table 2. F Test Result

Prob(F-statistic)	0.000000
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Source : Eviews 10 output processed (2024)

The Prob(F-statistic) value of 0.000000 indicates the overall significance of the regression model in explaining variations in the dependent variable. Given this extremely low p-value, it can be concluded that there is a very minimal likelihood that the relationships observed in the data occurred by chance. Practically speaking, this suggests that at least one of the independent variables (interest rate, inflation, or foreign exchange reserves) plays a significant role in explaining the variations in the dependent variable, which is the Indonesian rupiah exchange rate.

t Test

Table 3. t Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.006764	0.011034	-0.613035	0.5446
X2	0.015689	0.008721	1.799.044	0.0824
X3	0.733225	0.072893	1.005.897	0.0000
C	-9.198.091	1.864.432	-4.933.456	0.0000

Source : Eviews 10 output processed (2024)

In the conducted regression analysis, various independent variables are examined alongside their coefficients, standard errors, t-statistics, and probability values. For variable X1, the results indicate that it does not significantly impact the dependent variable, as the p-value exceeds 0.05. Consequently, these findings do not support Hypothesis 1 (H1), which asserts that interest rates have a significant effect on the rupiah exchange rate.

The absence of support for Hypothesis 1 (H1)—which posits that interest rates significantly affect exchange rates—may be attributed to several factors outlined in the background of this research. Interest rates generally play a vital role in monetary policy, affecting inflation, investment, and overall economic activity. However, the Indonesian economy encounters numerous challenges, including external shocks, political instability, and varying economic conditions, which may obscure the impact of interest rates on the exchange rate.

Furthermore, during the analyzed period, external factors such as global economic conditions, trade balance, and foreign exchange reserves may have exerted a stronger influence on the exchange rate compared to domestic interest rates. The relationship between interest rates and exchange rates can also be complex; for instance, while higher interest rates may attract foreign capital and lead to currency appreciation, if these are accompanied by inflationary pressures, the overall effect on the exchange rate might be diminished. Thus, the regression results indicating no significant impact of interest rates on the exchange rate highlight the intricate dynamics within the Indonesian economic landscape.

Meanwhile, the variable X2 (inflation) has a coefficient of 0.015689 and a standard error of 0.008721, yielding a t-statistic of 1.799044 and a p-value of 0.0824. Although this probability value is near the significance threshold (0.05), it is still regarded as statistically insignificant. Therefore, these findings do not entirely support Hypothesis 2 (H2), which claims that inflation significantly influences the rupiah exchange rate; however, there is potential for more pronounced effects if the sample or observation size is increased.

The absence of support for this hypothesis may stem from several factors. Firstly, the relationship between inflation and exchange rates is frequently intricate and can be affected by various external and internal elements, including economic policy, investor sentiment, and global market conditions. In Indonesia, high inflation periods do not always result in a proportional depreciation of the rupiah exchange rate, particularly if balancing measures, such as interest rate adjustments or government interventions, are executed effectively.

Additionally, the effect of inflation on exchange rates may not be immediately apparent, as inflationary pressures can take time to result in substantial currency fluctuations. Furthermore, the influence of other significant variables, such as foreign direct investment or the trade balance, may obscure the direct impact of inflation on the exchange rate in the short term.

Finally, a relatively small sample size or a limited observation period may hinder the ability to accurately capture the true relationship between inflation and exchange rates within the context of the Indonesian economy. Thus, while the research results suggest a potential relationship between inflation and the exchange rate, the statistical insignificance indicates that further studies with a larger dataset may be necessary to draw more conclusive insights regarding the impact of inflation on the rupiah exchange rate.

Variable X3 (foreign exchange reserves) displays a coefficient of 0.733225 and a standard error of 0.072893, leading to an exceptionally significant t-statistic of 1,005.897 and a p-value of 0.0000. This demonstrates that variable X3 has a significant effect on the dependent variable, with a p-value well below 0.05, thereby providing strong support for Hypothesis 3 (H3), which claims that foreign exchange reserves significantly affect the exchange rate of the Indonesian rupiah.

Discussion on the Effect of Interest Rates

The empirical findings indicate that interest rates do not have a statistically significant effect on the rupiah exchange rate during the study period. This result contrasts with the Monetary Approach to Exchange Rates, which suggests that higher interest rates attract foreign capital inflows and strengthen domestic currency.

However, this finding is consistent with several empirical studies conducted in emerging economies, which argue that interest rate effectiveness diminishes during periods of economic uncertainty and external shocks. In Indonesia, exchange rate movements may be more strongly influenced by global financial conditions and investor risk perception than by domestic interest rate adjustments alone. This suggests that interest rate policy, while important for inflation control, may have limited direct influence on exchange rate stability under certain macroeconomic conditions.

Discussion on the Effect of Inflation

The results also reveal that inflation does not significantly affect the rupiah exchange rate, although the coefficient is close to the conventional significance level. This finding partially contradicts the Monetary Theory of Inflation, which argues that rising price levels reduce purchasing power and lead to currency depreciation.

The insignificant effect may indicate that inflation in Indonesia has been relatively well-managed during the study period through coordinated monetary and fiscal policies. Additionally, the impact of inflation on exchange rates may occur with a time lag, making it difficult to capture its immediate effect using a static regression

model. This finding aligns with previous studies suggesting that inflation does not always exert a direct and immediate influence on exchange rates, particularly when supported by strong policy credibility.

Discussion on the Effect of Foreign Exchange Reserves

In contrast, foreign exchange reserves exhibit a strong and statistically significant effect on the rupiah exchange rate. This finding strongly supports the IS-LM-BP framework, which emphasizes the role of foreign exchange reserves in maintaining balance of payments stability and mitigating external shocks.

This result is consistent with previous studies by Thuy and Thuy (2019) and Ratnaningtyas and Huda (2024), which highlight that higher reserve levels enhance central bank credibility and enable effective intervention in foreign exchange markets. The significance of reserves in this study underscores their crucial role in stabilizing the rupiah during periods of global economic turbulence.

Policy Implications

The findings of this study provide important policy implications for Bank Indonesia and the Ministry of Finance. The insignificant effect of interest rates suggests that exchange rate stability cannot rely solely on interest rate adjustments, especially during periods of global uncertainty. Therefore, Bank Indonesia should complement interest rate policy with macroprudential measures and effective communication strategies to manage investor expectations.

The significant role of foreign exchange reserves highlights the importance of maintaining adequate reserve levels as a buffer against external shocks. Bank Indonesia should continue strengthening reserve accumulation strategies while ensuring efficient reserve management to avoid excessive opportunity costs.

Furthermore, although inflation does not show a significant direct effect, maintaining price stability remains essential for long-term exchange rate stability. Coordinated policies between Bank Indonesia and the Ministry of Finance—particularly in managing food and energy prices—are crucial to mitigating exchange rate volatility and enhancing economic resilience. Their primary focus is on efficiently using existing capital rather than altering capital allocation.

Conclusions

This study aims to analyze the influence of interest rates, inflation, and foreign exchange reserves on the Indonesian rupiah exchange rate using a multiple regression approach. The empirical results indicate that the overall model is statistically significant, with an R-squared value of 0.821163, suggesting that the selected macroeconomic variables explain a substantial proportion of exchange rate movements. While interest rates and inflation do not exhibit statistically significant effects, foreign exchange reserves show a strong and positive influence on the rupiah exchange rate.

This study contributes to the existing literature on exchange rate determination by providing empirical evidence from the Indonesian context, emphasizing the dominant role of foreign exchange reserves relative to traditional monetary variables such as interest rates and inflation. The findings support the Monetary Approach to Exchange Rates, which highlights the importance of monetary fundamentals, particularly reserve adequacy, in stabilizing exchange rates in emerging economies.

From a policy perspective, the results imply that maintaining adequate foreign exchange reserves is crucial for exchange rate stability in Indonesia. Bank Indonesia may prioritize reserve management and foreign exchange market interventions to mitigate excessive volatility of the rupiah. Additionally, coordination between Bank Indonesia and the Ministry of Finance is necessary to ensure macroeconomic stability, particularly during periods of external shocks.

Despite its contributions, this study has several limitations. The analysis is restricted to a limited set of macroeconomic variables and a specific observation period, which may not fully capture the complexity of exchange rate dynamics. Future research is encouraged to incorporate additional variables such as foreign direct investment (FDI), trade balance, political stability, and global financial conditions to provide a more comprehensive understanding of factors influencing the rupiah exchange rate.

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