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THE EFFECT OF LENDING INTEREST RATE POLICY ON THE RUPIAH EXCHANGE RATE IN INDONESIA (2015-2024)

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Abstract

This study aims to analyze the influence of credit interest rate policy on the rupiah exchange rate in Indonesia in the period 2015–2024. The main focus of this study is to identify how Bank Persero's three types of credit interest rates, namely for investment, working capital, and consumption, affect the rupiah exchange rate in the short and long term. The research method used is a quantitative approach with multiple linear regression analysis and cointegration tests, as well as an error correction model (ECM). The regression results show that the interest rate on investment loans has a significant positive effect on the logarithm of the rupiah exchange rate, which indicates depreciation pressure. On the other hand, the interest rate on working capital and consumption loans has a significant negative effect on the exchange rate, indicating a tendency to appreciate the rupiah. The cointegration test proved the existence of a long-term relationship between variables, although the ECM results showed that in the short term, the effect of the three interest rates was not significant. This research provides important implications for monetary authorities in formulating appropriate interest rate policies based on credit types to maintain exchange rate stability.

INTRODUCTION

The stability of the rupiah exchange rate is one of the main indicators of Indonesia's economic health. In the last decade, fluctuations in the rupiah exchange rate against the US dollar have become a major concern, mainly influenced by the dynamics of domestic and global lending interest rate policies. The lending interest rate policy set by Bank Indonesia and the central banks of partner countries, especially the Federal Reserve, has proven to have a significant impact on the rupiah exchange rate through the mechanism of capital flows, investment, and market sentiment.

The phenomenon that occurred in the 2015–2024 period shows that every time there is an increase in the benchmark interest rate in the United States, the rupiah exchange rate tends to depreciate *(Adolph*, *2016).* For example, in the fourth quarter of 2018, the increase in the Fed Rate from 2.25% to 2.50% caused the rupiah to weaken from Rp14,500 to Rp15,200 per USD, followed by an increase in domestic inflation. The following graph illustrates the trend of the movement of lending rates and rupiah exchange rates during the period

Table 1.

Rupiah Exchange Rate 2015 - 2024

Year	Credit Interest Rate (%)	Rupiah Exchange Rate (Rp/USD)
2015	12,5	13.795
2018	11,0	14.481
2020	9,5	14.105
2022	10,5	15.700
2024	10,0	15.300

Source: Bank Indonesia, 2025

Bank Indonesia's lending interest rate policy and is a crucial factor in fluctuations in the rupiah exchange rate (2015–2024). Data shows that the increase in the Federal Reserve Rate in 2018 (2.25%→2.50%) caused the rupiah to depreciate from Rp14,500 to Rp15,200/USD, supported by an inversion trend between lending rates and exchange rates.

Inconsistency in the empirical relationship between the lending rate and the rupiah exchange rate, despite economic theories (such as *Interest Rate Parity* and *Monetary Approach*) theoretically support this correlation *(Yasa et al.,* 2024).

Theoretically, there are two main approaches to explaining the relationship between interest rates and exchange rates. Theory X which refers to *Interest Rate Parity* (IRP) states that high interest rates in a country will attract capital inflows from abroad, which ultimately leads to the strengthening of domestic currency exchange rates such as the rupiah. In contrast, Theory Y, which is a monetary approach, emphasizes that the influence of interest rates on exchange rates does not stand alone, but rather depends on inflation expectations and macroeconomic stability. In other words, high interest rates can be interpreted as positive if economic stability is maintained, but can have a negative impact if inflation expectations increase.

A review of previous research shows mixed results regarding the relationship between interest rates and the rupiah exchange rate. Wahid and Chaidir (2025) found that the Fed Rate or the benchmark interest rate of the United States has a significant influence on the depreciation of the rupiah in the long term. Meanwhile, Narotama (2023) shows that the Bank Indonesia Certificate (SBI) has a positive influence on the rupiah exchange rate, although it is not significant to the Composite Stock Price Index (JCI). Another finding from Unila (2022) shows that lending rates and rupiah exchange rates have a negative impact on national economic growth, indicating the existence of complex dynamics in the relationship between these variables

There is a lack of studies that integrate credit interest rate policy analysis with global factors (The Fed) and micro-macro data simultaneously. Integrative analysis for the period 2015–2024 with a robust econometric approach, combining microbanking, macroeconomic, and global dynamics data.

Monetary policy recommendations based on responsiveness to global fluctuations and the enrichment of the policy transmission literature in developing countries.

PROBLEM FORMULATION

a). Does the multiple linear regression model used meet classical assumptions such as normality, homocedasticity, and the absence of autocorrelation?

b) Is there a long-term relationship (cointegration) between the lending rate of bank persero and the rupiah exchange rate?

RESEARCH OBJECTIVES

a. To analyze whether there is a long-term relationship (cointegration) between Bank Persero lending rates and rupiah exchange rates during the research period.

b. To test whether the multiple linear regression model used in the study has met the classical assumptions, namely normality, homokedasticity, and the absence of autocorrelation.

LITELATURE REVIEW

1. Exchange Rate Theory

a. Purchasing Power Parity
The theory of Purchasing Power Parity or Purchasing Power Parity is a basic concept in international economics that states that the exchange rate between two currencies will adjust so that the purchasing power in the two countries becomes equal *(Wen 2024).* In other words, the price of the same goods and services should have the same price if calculated in one same currency, after taking into account the exchange rate. *(Thi Quy et al. 2023)* PPP helps explain the long-term relationship between inflation and exchange rates. Ong 2024) If a country experiences higher inflation than other countries, then its currency will depreciate to maintain a balance of purchasing power. *(Bonga-Bonga 2023)(Vo and Vo 2023)*

b. Interest Rate Parity
Interest Rate Parity is a theory that links interest rate differences between countries with currency exchange rate movements. *(Hwang 2025)* This theory states that the difference in interest rates between two countries is equal to the expected change in the exchange rate between the currencies of that country *(Rime, Schrimpf, and Syrstad 2022).* In other words, if interest rates in a country are higher, then that country's currency is expected to depreciate so that investors cannot gain arbitrage benefits from interest rate differences *(Moskowitz et al. 2024).*
IRPs are divided into two types: Covered Interest Rate Parity which considers forward contracts and Uncovered Interest Rate Parity which does not consider forward contracts *(Ali, Ahmad, and Faizan 2024).* CIRP usually applies in high-efficiency markets due to hedging mechanisms.

2. The theoretical relationship to the exchange rate in Indonesia
   a) Purchasing Power Parity Theories

   The *Purchasing Power Parity* theory *is* an exchange rate theory that states that the exchange rate between two currencies will adjust so that the purchasing power of the two currencies is equal *(Wee & Lee, 2022) (Ong, 2024).* This means that the same goods should have the same price in two countries if they are expressed in the same currency (called *the Law of One Price) (Zubaidi, 2025).*

Rumus Purchasing Power Partiy Sederhana

$$S = \frac{P}{P}$$

S: the exchange rate between currency 1 and currency 2

P_1: price level in country 1

P_2: price level in 2 countries

Jenis-jenis Purchasing Power Partiy

1. Absolute Purchasing Power Partiy: comparing direct prices between countries.
2. Relative Purchasing Power Party: emphasizing on *changes in* price and inflation levels over time

between the two countries *(Haji-Othman & Yahaya, 2014).*

1. Interest Rate Parity Theory

Interest Rate Parity is a theory that explains the relationship between the difference in interest rates between two countries and the forward and spot exchange rates of the country's currencies (Hwang, 2025). The Partiy Interest Rate indicates that there is no arbitrage opportunity because the interest rate difference will be offset by the difference in forward and spot rates (Baillie et al., 2022).

Rumus Interest Rate Partiy (Covered Interest Rate Parity)

$$\frac{F}{S} = \frac{1 + id}{1 + if}$$

F: forward rate (domestic against foreign)

S: price spot

i_d: domestic interest rates

i_f: overseas interest rates

If the Partiy Interest Rate applies, then no arbitrage gain can be gained from the difference in interest rates between countries.

Types of IRP

1.Covered Interest Rate Partiy: involves forward contracts to avoid exchange rate risk.

Uncovered Interest Rate Partiy: does not use forward contracts, but is based on future exchange rate expectations.

Aspects	**Purchasing Power Parity**	**Interest Rate Parity**
Focus	Prices of goods (inflation)	Interest
Purpose	Explain long-term exchange rates	Explain the relationship between interest rates and exchange rates
Assumption	No transaction fees, competitive goods market	No arbitrage, perfect capital markets
Use	Long-term exchange rate estimates	Forward exchange rate forecast or market expectations

METHODOLOGY

In this study, the author uses a quantitative method, which is a research approach that emphasizes numerical data processing and statistical analysis to explain the phenomenon studied. The quantitative method aims to test a hypothesis that has been formulated previously using objectively measurable data (Sofwatillah et al. 2024). Through this approach, the relationships between variables can be analyzed systematically and measurably to produce valid and reliable conclusions. The dependent variable (variable Y) in this study is the monthly rupiah exchange rate against foreign currencies during the period from 2022 to 2024. Meanwhile, the independent variables used consist of three types of lending rates in rupiah according to the bank group, namely: X1 is the bank loan interest rate for investment, X2 is the bank loan interest rate for working capital, and X3 is the bank credit interest rate for consumption. From these three independent variables, the data was taken from the period from 2015 to 2024. The analysis of the relationship between the three independent variables and the dependent variables is expected to provide a clearer picture of the influence of credit interest rates on rupiah exchange rate movements.

It is known that:

Variable Y = Rupiah Exchange Rate (Rupiah Exchange Rate)

Variable X1 = Bank Persero Investasi (BPI)

Variable X2 = Bank Persero for Working Capital (BPMK)

Variable X3 = Bank Persero for Consumption (CPC)

In this study, data analysis was carried out with a quantitative approach, using multiple linear regression methods and cointegration methods. In this study, data analysis was carried out with a quantitative approach, using

multiple linear regression methods and cointegration methods. The purpose and purpose of using this method is to determine the influence of each independent variable partially or simultaneously on the dependent variable, as well as to test the long-term relationship between the analyzed variables. Multiple linear regression is used to identify how much variables such as investment loan interest rates, working capital, and consumption contribute to changes in the rupiah exchange rate. Meanwhile, the cointegration test is used to assess whether there is a long-term balance between these variables and the exchange rate, although in the short term the relationship can fluctuate.

Here are the stages of data analysis:

1. Model regresi linier berganda

The regression model used is as follows:

lnkurs = $\beta 0 + \beta 1.Bpi + \beta 2.Bpmk + \beta 3.Bpk + \varepsilon$

The description:

- lnexchange rate = natural logarithm of the rupiah exchange rate against foreign currency (dependent variable/Y)
- β_0 (intercept) = Regression constant; lnexchange rate value when all independent variables (Bpi, Bpmk, and Bpk) are zero
- β_1 = Regression coefficient for the Bpi variable (Bank Persero Investasi); shows how much the exchange rate changes if the Bpi rises by 1 unit, assuming the other variables remain
- β_2 = Regression coefficient for the Bpmk variable (Bank Persero Working Capital); shows the effect of changes in Bpmk on lnexchange rate
- β_3 = Regression coefficient for the variable Bpk (Bank Persero Konsumsi); shows the effect of changes in the Bpk on the exchange rate
- ε (error term) = Component error/stochastic error, i.e. the influence of other variables outside the model that affect the rate

2. Cointegration model

lnkurs = $\beta 0 + \beta 1.Bpi + \beta 2.Bpmkt + \beta 3.Bpkt + \varepsilon t$

The caption:

- εt: The residual of the relationship between the LNKURS and the three independent variables
- If this residual is stationary (the results of the dicky-fuller test are significant) then the model is cointegrated, meaning that there is a long-term relationship between these variables.

1. Normality test results

Skewness and kurtosis tests for test normality —— joint test ——

Variable	obs	pr(skewness)	pr(kurtosis)	Adj chi2(2)	prob>chi2
e	120	0,0002	0.0026	17.92	0.0001

swilk e

shapiro-wilk w test for normal data

variable	obs	w	v	z	prob>z
e	120	0.95033	4.779	3.505	0.00023

Stata17 Data Processing Results, 2025

Based on the results of the normality test displayed, there are two types of tests used, namely the Jarque-Bera test (Skewness and Kurtosis test) and the Shapiro-Wilk test. In the Jarque-Bera test, *the prob value of > chi2* is 0.0001, and in the Shapiro-Wilk test, the *prob value of > z* is 0.00023. Both probability values are smaller than the significance level of 5% (0.05), which means that the null (H_0) hypothesis that the normally distributed residual (e) is rejected. Thus, it can be concluded that the residuals in the model are not normally distributed, which means that the assumption of normality is not met. This can affect the validity of statistical tests, especially in small samples, but in large samples, these violations tend to be less problematic because they are based on *the Central Limit Theorem*.

Sec. 2. Multicollinearity Test Results

vif

variable	VIF	1/VIF
bpmk	50.00	0.020000
bpi	32.69	0.030594
bpk	6.86	0.145747
Mean Vif	29.85	

Based on the output of the Variance Inflation Factor (VIF) test results, it is known that all independent variables have a fairly high VIF value. The bpmk variable has a VIF value of 50.00, bpi of 32.69, and bpk of 6.86, with an average VIF (mean VIF) of 29.85.

In regression analysis, VIF values exceeding 10 are generally considered to indicate a serious multicollinearity problem. Therefore, it can be concluded that this model contains high multicollinearity, especially in the bpmk and bpi variables. Multicollinearity can cause the regression coefficient to become unstable, increase the error standard, and make the interpretation of the influence of each variable inaccurate

3. Heteroscedasticity Test Results

Breusch-pagan/Cook-weisberg test for heteroskedasticity

Assumption: Normal error terms

Variable : Fitted values of lnkurs

H0; constant variance

Chi2(1) =1.39

Prob > chi2 =0.2391

Based on the results of the Breusch-Pagan/Cook-Weisberg test to detect heteroscedasticity, a chi-square value of 1.39 was obtained with a significance level (Prob > chi2) of 0.2391. Since this probability value is greater than 0.05, there is not enough evidence to reject the null (H_0) hypothesis that the error variant is constant or heteroscedasticity does not occur.

4. Autocorrelation Test Results

Dwatson status

Durbin-watson d-statistic (4, 120) = .5733381

Based on the results of the Durbin-Watson test output shown in the figure, a Durbin-Watson value of 0.5733381 was obtained. This value is well below the number 2, which indicates the presence of a very strong positive autocorrelation in the residual regression model. Positive autocorrelation means that there is a strong enough relationship between the residual value of one and the previous residual, so that the classical assumption of regression regarding the absence of autocorrelation is not fulfilled.

19.46% is explained by other factors outside the model. Partially, the bpi variable (Bank Persero Investasi) has a positive coefficient of 0.0628 and is significant at the level of 1% (P = 0.000). This shows that every 1 unit increase in the investment loan interest rate of bank persero will increase the exchange rate logarithm by 0.0628, which indicates a weakening of the rupiah exchange rate (depreciated rupiah), assuming other variables are constant. On the other hand, the bpmk variable (Bank Persero Modal Kerja) has a negative coefficient of –0.0391 and is also significant (P = 0.004), which means that an increase in the interest rate on working capital loans will cause a strengthening of the rupiah exchange rate. The same thing also happened to the variable bpk (Bank Persero Konsumsi) which has a negative coefficient of -0.0382 with

high significance (P = 0.000), which indicates that an increase in consumption interest rates will pressure the exchange rate to be stronger (strengthening the rupiah).

5. Regression test results

Reg lnkurs bpi bpmk bpk

Reg lnkurs bpi bpmk bpk

Source	SS	df	MS		
Model	.358522882	3	.119507627	Number of obs	= 120
Residual	.086603493	116	.000746582	F(3, 116)	= 160.07
total	.445126374	119	.003740558	prob > F	= 0.0000
				R-squared	= 0.8054
				Adj R-squared	= 0.8004
				Root MSE	= .02732

Lnkurs	Coefficient	std. err	t	p>| t |	[95% conf,	interval]
Bpi	.0628351	.0154908	4.06	0.000	.0321536	.0935167
Bpmk	-.0391022	.0131382	-2.98	0.004	-.0651242	-.0130803
Bpk	-.0381699	.0045368	-8.41	0.000	-.0471555	-.0291843
_cons	9.764083	.0551822	176.94	0.000	9.654788	9.873379

Stata17 Data Processing Results, 2025

Based on the results of multiple linear regression analysis conducted on the rupiah exchange rate variable (lnkurs) with independent variables in the form of lending rates from bank persero's for investment (bpi), working capital (bpmk), and consumption (bpk), a statistically significant model was obtained. This is evidenced by the Prob > F value of 0.0000, which shows that the three independent variables simultaneously have a significant effect on the rupiah exchange rate at a confidence level of 99%. The R-squared value of 0.8054 shows that 80.54% of the variation in rupiah exchange rate changes can be explained by the variables bpi, bpmk, and bpk, while the remaining 19.46% is explained by other factors outside the model. Partially, the bpi variable (Bank Persero Investasi) has a positive coefficient of 0.0628 and is significant at the level of 1% (P = 0.000). This shows that every 1 unit increase in the investment loan interest rate of bank persero will increase the exchange rate logarithm by 0.0628, which indicates a weakening of the rupiah exchange rate (depreciated rupiah), assuming other variables are constant. On the other hand, the bpmk variable (Bank Persero Modal Kerja) has a negative coefficient of –0.0391 and is also significant (P = 0.004), which means that an increase in the interest rate on working capital loans will cause a strengthening of the rupiah exchange rate. The same thing also happens with the bpk variable (Bank Persero Konsumsi) which has a negative coefficient of –0.0382 with high significance (P = 0.000), which indicates that an increase in consumption interest rates will pressure the exchange rate to be stronger (strengthening the rupiah)

6. Stationary test results of exchange rate, bpi, bpmk, bpk.

```
. dfuller d.kurs

Dickey-Fuller test for unit root            Number of obs  = 118
Variable: D.kurs                            Number of lags =   0

H0: Random walk without drift, d = 0

                                       Dickey-Fuller
                   Test         ──────── critical value ────────
                statistic          1%           5%          10%
─────────────────────────────────────────────────────────────────
 Z(t)             -9.137        -3.504       -2.889       -2.579
─────────────────────────────────────────────────────────────────
MacKinnon approximate p-value for Z(t) = 0.0000.
```

Stata17 Data Processing Results, 2025

The results of the Dickey-Fuller test on the variable D.kurs showed that the test statistical value of -9,137 was much smaller than the critical value at the significance levels of 1% (-3,504), 5% (-2,889), and 10% (-2,579). In addition, a p-value of 0.0000 indicates a very high significance. Thus, it can be concluded that the zero (H_0) hypothesis that states that the data has a root unit (not stationary) is rejected. This means that the variable D.kurs is stationary at the first difference level, so it can be used for further time series analysis such as VAR, VECM, or other regressions without the risk of *spurious regression*.

```
. dfuller d.bpi

Dickey-Fuller test for unit root            Number of obs  = 118
Variable: D.bpi                             Number of lags =   0

H0: Random walk without drift, d = 0

                                       Dickey-Fuller
                   Test         ──────── critical value ────────
                statistic          1%           5%          10%
─────────────────────────────────────────────────────────────────
 Z(t)             -7.304        -3.504       -2.889       -2.579
─────────────────────────────────────────────────────────────────
MacKinnon approximate p-value for Z(t) = 0.0000.
```

Stata17 Data Processing Results, 2025

The results of the Dickey-Fuller test on the D.bpi variable showed that the test statistical value of -7,304 was smaller than the critical value at the significance levels of 1% (-3,504), 5% (-2,889), and 10% (-2,579). In addition, a p-value of 0.0000 indicates that the results are very significant. Thus, the null (H_0) hypothesis that states that a variable has a root unit (not

stationary) can be rejected. This means that the D.bpi variable has been stationary at the first difference level, so it can be used in advanced analysis such as VAR or VECM without the risk of *spurious regression*.

```
. dfuller d.bpmk

Dickey-Fuller test for unit root            Number of obs  = 118
Variable: D.bpmk                            Number of lags =   0

H0: Random walk without drift, d = 0

                                    Dickey-Fuller
                   Test     ────── critical value ──────
              statistic         1%           5%          10%
────────────────────────────────────────────────────────────
 Z(t)            -7.925      -3.504       -2.889       -2.579
────────────────────────────────────────────────────────────
MacKinnon approximate p-value for Z(t) = 0.0000.
```

Stata17 Data Processing Results, 2025

The results of the Dickey-Fuller test on the D.bpmk variable showed that the test statistical value was -7,925, which is much smaller than the critical values at the significance levels of 1% (-3,504), 5% (-2,889), and 10% (-2,579). A p-value of 0.0000 indicates that the results are statistically significant. Thus, the zero (H_0) hypothesis that the data contains root units (not stationary) can be rejected. This means that the D.bpmk variable is stationary at the first difference level, so it is suitable for advanced analysis in time series models such as VAR or VECM without the risk of misleading regression results.

```
MacKinnon approximate p-value for Z(t) = 0.0000.

. dfuller d.bpk

Dickey-Fuller test for unit root            Number of obs  = 118
Variable: D.bpk                             Number of lags =   0

H0: Random walk without drift, d = 0

                                    Dickey-Fuller
                   Test     ────── critical value ──────
              statistic         1%           5%          10%
────────────────────────────────────────────────────────────
 Z(t)           -11.277      -3.504       -2.889       -2.579
────────────────────────────────────────────────────────────
MacKinnon approximate p-value for Z(t) = 0.0000.
```

Stata17 Data Processing Results, 2025

The results of the Dickey-Fuller test on the D.bpk variable showed a test statistical value of -11,277, which is much smaller than the critical values at the significance levels of 1% (-3,504), 5% (-2,889), and 10% (-2,579). In addition, a p-value of 0.0000 shows a very statistically significant result. Therefore, the zero (H_0) hypothesis that states that the data contains root units (not stationary) can be rejected. Thus, the D.bpk variable is declared stationary at the first difference level, so that it can be used in the analysis of subsequent time series without the risk of *spurious regression*.

7. Cointegration test results (long-term)

Dickey-fuller test for unit root Number of obs = 119

Variable : resid Number of lags = 0

H0:

Random walk without drift, a = 0, d = 0

	test		Dickey-fuller Critical value	
	statistic	1%	5%	10%
z(t)	-4.973	-2.597	-1.950	-1.611

Stata17 Data Processing Results, 2025

Based on the results of the Dickey-Fuller test without a constant on the *resid* variable, the statistical value of the Z(t) test was obtained of -4.973. This value is smaller than the Dickey-Fuller critical value at significance levels of 1%, 5%, and 10% (i.e. -2,597, -1,950, and -1,611, respectively). Because the statistical value of the test is smaller (more negative) than all of these critical values, the null (H_0) hypothesis that the data has a unit root (non-stationary) is rejected. Thus, it can be concluded that the residual is stationary, which means that the model has a valid long-term relationship or that there is cointegration between the variables tested.

8. ECM (Error Correction Model) test results

7. **Hasil uji ECM (Error Correction Model). jangka pendek**

Reg dlnkurs dbpi dbpmk dbpk ect

Source	SS	df	MS		
Model	.000696671	4	.000174168	Number of obs	= 119
Residual	.043688211	114	.00038323	F (4, 114)	= 0.45
Total	.044384882	118	.000376143	prob > F	= 0.7690
				R-squared	= 0.0157
				Adj R-squared	=-0.0188
				Root MSE	=.01958

dlnkurs	Coefficient	Std. Err.	t	P>|t|	[95% conf.	interval]
dbpi	-.0219324	.0297335	-0.74	0.462	-.0808342	.0369693
dbpmk	-.0094332	.0274643	-0.34	0.732	-.0638397	.0449733
dbpk	.0167726	.0192481	0.87	0.385	-.0213576	.0549029
ect	.0083674	.0349253	0.24	0.811	-.0608193	.0775542
-cons	-.078232	.3343807	-0.23	0.815	-.7406376	.5841735

The results of the short-term regression using the Error Correction Model (ECM) model showed that the independent variables namely dbpi, dbpmk, dbpk, and ect simultaneously had

no significant effect on the change in the lnexchange rate (natural log exchange rate), which was indicated by the prob value > F of 0.7690, well above the significance level of 5%. In addition, the R-squared value is only 0.0157, which means that this model is only able to explain about 1.57% variation in exchange rate changes, while the rest is explained by other factors outside the model. The negative Adjusted R-squared value (-0.0188) further confirms the weak predictability of the model in the short term.

Partially, there is no significant variable because the entire p-value is greater than 0.05. The dbpi variable has a negative coefficient (-0.0219) with a p-value of 0.462, dbpmk is also negative (-0.0094) with a p-value of 0.732, and dbpk is positive (0.0168) with a p-value of 0.385, but all of them are not statistically significant. Likewise, the ECT (Error Correction Term) variable has a p-value of 0.811, which means that it is not significant in adjusting the long-term to short-term imbalance, even though the coefficient is positive (0.0084), which in theory should be negative and significant if the adjustment process is effective. Overall, this ECM model has not shown a meaningful short-term influence on exchange rates.

DISCUSSION RESULTS

This study shows that overall, the model used to measure the influence of lending rates on the rupiah exchange rate is significant. The three types of credit interest rates, namely for investment, working capital, and consumption, have a real influence on the exchange rate. The interest rate on loans for investment was found to have an effect on weakening the rupiah exchange rate. On the other hand, lending rates for working capital and consumption actually supported the strengthening of the rupiah exchange rate. This indicates that the types of credit use by banks have different roles in influencing the stability of national currencies. In the study of Ditria, all (2008) where the results of the study showed that these macroeconomic variables (including interest rates and exchange rates) had a significant effect on the amount of credit, both in total and in each type of credit.

The data used in this study is not distributed normally. This is shown by the results of statistical tests that reject the hypothesis that residual data is normally distributed. However, in regression analysis, violations of normality are not always a big problem as long as the sample size is large enough and there are no serious deviations in other assumptions.

From the test results, it was found that there was no heteroscedasticity problem in the model. This means that the variance of the error of the regression model can be considered constant, which means that the model has fulfilled one of the classical assumptions of regression well. This strengthens the validity of the linear regression results performed.

This research model contains the problem of multicollinearity, especially in the variables of investment interest rates and working capital. The test values show that there is a high correlation between independent variables. This can cause the estimation results to be unstable and make it difficult to interpret the influence of each variable individually. Positive autocorrelation was found in the residual regression model. This means that there is a strong correlation between the model's prediction errors over time. This condition violates the classical assumption of regression and can affect the accuracy of the model's predictions, as well as lead to errors in estimating parameter significance.

The analysis shows that there is a long-term relationship between the rupiah exchange rate and the three types of credit interest rates. This means that, although in the short term the relationship between variables can fluctuate, in the long term the movement of the rupiah exchange rate tends to follow changes in the lending rate in an integrated manner. In contrast to long-term results, the influence of lending rate variables on the rupiah exchange rate in the short term is not significant. Changes in lending rates for investment, working capital, consumption, and error correction components have no significant effect on exchange rate fluctuations in a short period of time. This shows that the mechanism of adjusting the exchange rate to changes in interest rates takes time and does not happen instantly. In the study, Rompas (2021) explained that this study uses multiple linear regression to analyze the influence of interest rates and exchange rates on the demand for banking credit (including investment credit, working capital, and consumption).

CONCLUSION

The logarithm of the rupiah exchange rate, which means that an increase in the interest rate on investment loans tends to cause a weakening of the exchange rate. On the other hand, lending rates for working capital and consumption actually contribute negatively to the exchange rate logarithm, which indicates that the increase in interest rates can encourage the strengthening of the rupiah exchange rate. The multiple linear regression model used proved to be statistically significant, with an R-squared value of 80.54%, which suggests that most of the exchange rate variations can be explained by these independent variables. However, this study also found that there is a violation of classical assumptions in the form of positive autocorrelation and high multicollinearity, especially between the variables of investment interest rates and working capital. On the other hand, the model has met the assumption of homogeneity and the violation of residual normality is considered less intrusive due to the large sample size. Furthermore, the results of the cointegration test showed that there was a stable long-term relationship between the variables studied, while in the short term no significant influence was found. This shows that the impact of interest rate changes on exchange rates is not instantaneous, but rather takes time to process.

CONCLUSION

A.Model Repair

To address the problems of multicollinearity and autocorrelation, researchers are advised to consider the use of alternative models such as ridge regression, principal component regression, or autoregressive distributed lag (ARDL) models that are more suitable for time series data with long-term and short-term relationships.

B) Policy Making:

Governments and monetary authorities may consider differentiating interest rate policies based on credit type. Investment loan interest rates should be managed carefully so as not to weaken the exchange rate, while increasing efficiency and disbursement of consumption credit and working capital can be used as a tool to stabilize the rupiah exchange rate.

C) Expansion of Research Variables:

Further research can include other variables that also affect exchange rates, such as foreign exchange reserves, trade balances, or foreign capital flows, to improve the model's ability to explain exchange rate variations.

D) Improving Data Quality:

Researchers are also advised to use data with higher frequencies (e.g. weekly or daily data) to more accurately identify short-term dynamics and avoid estimation bias.

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