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The Effect of External Debt, Current Account Balance, and Interest Rate on Indonesia's Exchange Rate 2014-2025

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Abstract:

The Rupiah has weakened steadily against the US dollar over the past decade. This article tests whether external debt, the current account balance, and Bank Indonesia's policy rate can account for that trend, using quarterly data from 2014 to 2025 and an Autoregressive Distributed Lag (ARDL) model. A Bounds Test confirms a long-run relationship among the variables. External debt depreciates the Rupiah in the long run but appreciates it in the short run, a reversal consistent with debt inflows temporarily boosting foreign-exchange supply before repayment obligations kick in. The current account carries the expected negative sign but has no significant effect, suggesting capital flows now matter more than trade flows for the Rupiah. The interest rate raises rather than lowers the exchange rate, a pattern better explained by Bank Indonesia raising rates in response to depreciation pressure than by classical interest-rate-parity capital inflows. The model corrects 16% of any short-run disequilibrium each quarter, passes all classical assumption tests, remains structurally stable, and forecasts the exchange rate with a MAPE of just 1.72%. External debt and interest rate policy, more than the trade balance, appear to be the variables policymakers should watch most closely.

Keywords:

exchange rate; external debt; current account balance; interest rate; ARDL

BACKGROUND

The Rupiah has lost significant ground against the US dollar over the past decade. It traded around Rp12,000 in 2014, held a relatively stable Rp13,000-Rp14,700 band through 2016-2019, then weakened further through the pandemic, the 2022 global rate-hike cycle, and renewed pressure in 2024-2025. This is not a random drift. It coincides with a steady rise in Indonesia's external debt, a current account that swings between deficit and surplus depending



on global demand, and a policy rate that Bank Indonesia has raised and cut repeatedly to defend the currency and contain inflation.

Each of these three variables should, in theory, push the exchange rate in a specific direction. External debt raises foreign-currency demand as repayments come due. A current account deficit does the same, since imports draw down foreign exchange faster than exports bring it in. A higher policy rate should attract capital and strengthen the currency. Yet Indonesian studies rarely agree on these effects. Kistiah et al. (2022) and Anggita Pramesti & Dewi Rahmi (2024) find that external debt weakens the Rupiah, while Nayottama (2023) finds the opposite. Permatasari (2025) finds a significant current-account effect; Wulansari & Rozani (2025) find none. Manurung et al. (2026) report that a higher interest rate coincides with a weaker Rupiah, contradicting the textbook prediction, while Rofi'i (2023) finds the standard positive relationship holds. Few of these studies test all three variables together, and fewer still cover a period long enough to include both the pandemic shock and the 2022-2024 tightening cycle.

This gap matters because the three variables rarely move in isolation. Government borrowing, export performance, and interest-rate decisions influence one another, particularly in an economy as exposed to global capital flows as Indonesia's. This article estimates their combined short-run and long-run effect on the Rupiah/US dollar exchange rate from 2014 to 2025, using an ARDL model capable of separating the two.

THEORETICAL FRAMEWORK

The exchange rate here is the price of the Rupiah in US dollar terms: Rupiah needed to buy one dollar, set by supply and demand in the foreign-exchange market (Krugman et al., 2018). A rising value means the Rupiah is depreciating; a falling value means it is appreciating.

External Debt

Debt Overhang Theory (Krugman, 1988; Sachs, 1988) predicts that a growing stock of external debt weakens a currency two ways. It raises the foreign exchange needed for principal and interest payments. It also erodes investor confidence in a country's fiscal position, which can trigger capital flight and a higher risk premium (Reinhart & Rogoff, 2010). Endang Kurniasih & Tampubolon (2022) find exactly this long-run pattern for Indonesia, alongside a reversed, negative short-run effect. Kistiah et al. (2022) and Anggita Pramesti & Dewi Rahmi



(2024) confirm the long-run direction; Nayottama (2023) does not. Based on the theory and the majority of prior evidence:

H1: External debt has a positive and significant effect on the Rupiah exchange rate in the short run.

H2: External debt has a positive and significant effect on the Rupiah exchange rate in the long run.

Current Account Balance

Balance of Payment Theory (Salvatore, 2013) ties the current account directly to the exchange rate through foreign-exchange supply and demand. A deficit means imports outpace exports, pulling in more foreign currency than the economy earns, which should weaken the Rupiah (Mishkin, 2011). A surplus works the other way. Permatasari (2025) and Nayottama (2023) find a significant negative effect in Indonesia; Yudiarti et al. (2018) find a significant positive one instead. The expected direction is:

H3: The current account balance has a negative and significant effect on the Rupiah exchange rate in the short run.

H4: The current account balance has a negative and significant effect on the Rupiah exchange rate in the long run.

Interest Rate

Interest Rate Parity holds that a higher domestic rate draws in foreign capital, lifts demand for the domestic currency, and strengthens it (Mishkin, 2011; Salvatore, 2013). Rofi'i (2023) and Manurung et al. (2026) both report a significant relationship in Indonesia, but in opposite directions from each other. Following the classical IRP prediction:

H5: The interest rate has a negative and significant effect on the Rupiah exchange rate in the short run.

H6: The interest rate has a negative and significant effect on the Rupiah exchange rate in the long run.

Together, external debt, the current account balance, and the interest rate form the three explanatory variables tested against the Rupiah exchange rate over 2014-2025.



METHOD

This is a quantitative study built on quarterly secondary data from 2014Q1 to 2025Q4, 48 observations in total, drawn from official Bank Indonesia and BPS publications. The sample was chosen purposively to meet the data requirements of the ARDL method.

The dependent variable is the Rupiah/US dollar exchange rate (Y), the quarterly average from Bank Indonesia's JISDOR, where a higher value means depreciation. External debt (X1) is Indonesia's total government, central bank, and private external debt position in billions of US dollars, from the External Debt Statistics of Indonesia (SULNI). The current account balance (X2) is the quarterly balance in millions of US dollars from Bank Indonesia's balance-of-payments statistics, positive for a surplus and negative for a deficit. The interest rate (X3) is Bank Indonesia's policy rate in percent per year, combining the BI Rate through August 2016 and the BI 7-Day Reverse Repo Rate afterward, since both serve the same signaling function.

The ARDL model (Pesaran et al., 2001) fits this data well because it handles variables integrated at different orders, $I(0)$ and $I(1)$, performs reliably with a limited number of observations, and estimates short-run and long-run effects in one step, all of which suit Indonesia's quarterly macro data. Estimation was carried out in EViews 14. The procedure ran as follows: an Augmented Dickey-Fuller test for stationarity, Akaike Information Criterion for the optimum lag, a Bounds Test for cointegration, ARDL and Error Correction Model estimation for the long-run and short-run coefficients, Jarque-Bera, Breusch-Pagan-Godfrey, and Breusch-Godfrey LM tests for the classical assumptions, t- and F-tests for the hypotheses, CUSUM and CUSUM of Squares for stability, and RMSE, MAE, MAPE, and the Theil coefficient to evaluate forecast accuracy.

RESULT

Stationarity Test

None of the four variables are stationary at level. Table 1 shows all clear the Augmented Dickey-Fuller test once differenced, so each is integrated of order one, $I(1)$, the condition ARDL cointegration testing requires.



Table 1. Stationarity Test Results

Variable	Level (Prob.)	Description	First Difference (Prob.)	Description
Exchange Rate	0.7391	Not stationary	0.0000	Stationary
External Debt	0.3771	Not stationary	0.0000	Stationary
Current Account Balance	0.2873	Not stationary	0.0000	Stationary
Interest Rate	0.1199	Not stationary	0.0248	Stationary

Source: EViews 14 output (processed data, 2026)

Optimum Lag and Cointegration

The Akaike Information Criterion selects ARDL(1,2,0,3) as the best-fitting model among twenty candidates, with an AIC of about 12.91. One lag applies to the exchange rate, two to external debt, none to the current account balance, and three to the interest rate.

The Bounds Test returns an F-statistic of 8.020925, well above the upper I(1) bound of 4.022 at 5% and 5.412 at 1% ($n = 45$). External debt, the current account balance, and the interest rate are cointegrated with the exchange rate in the long run.

Long-Run and Short-Run Estimates

Table 2. Long-Run ARDL Estimates

Variable	Coefficient	Prob.	Conclusion
External Debt (X1)	0.005301	0.0369	Positive, significant
Current Account Balance (X2)	-0.023526	0.0872	Negative, not significant
Interest Rate (X3)	16,139.88	0.0035	Positive, significant

Source: EViews 14 output (processed data, 2026)

External debt and the interest rate both push the exchange rate up, toward depreciation, over the long run. The current account carries the expected negative sign but misses the 5% threshold.

Table 3. Short-Run ECM Estimates

Variable	Coefficient	Prob.	Conclusion
ECT (COINTEQ)	-0.162297	0.0000	Negative, significant
D(External Debt)	-0.010409	0.0262	Negative, significant
D(External Debt(-1))	-0.023026	0.0000	Negative, significant
D(Interest Rate)	51,361.54	0.0001	Positive, significant
D(Interest Rate(-1))	–	0.2156	Not significant
D(Interest Rate(-2))	-23,811.41	0.0437	Negative, significant

Source: EViews 14 output (processed data, 2026)

The ECT of -0.162297 means about 16% of any deviation from long-run equilibrium closes within a single quarter. External debt flips sign in the short run, pushing the Rupiah to appreciate rather than depreciate, while the interest rate's short-run effect swings from positive



at the current quarter to negative two quarters later. The model explains 62.82% of the variation in the exchange rate ($R^2 = 0.628235$) and is significant overall (Prob. F-statistic = 0.0000).

Diagnostics, Stability, and Forecast Accuracy

The residuals pass every classical assumption test: normal by Jarque-Bera (0.631447, $p = 0.729261$), homoscedastic by Breusch-Pagan-Godfrey (Obs* R^2 $p = 0.1424$), and free of autocorrelation by the Breusch-Godfrey LM test (Obs* R^2 $p = 0.1851$). Both CUSUM and CUSUM of Squares stay within the 5% bounds throughout, so the model shows no structural break.

Forecast accuracy is strong: RMSE of 285.8392, MAE of 247.8148, and a MAPE of just 1.72%. A Theil coefficient of 0.009833, close to zero, and a Theil U2 of 0.844975, below one, both confirm the model beats a naive forecast.

DISCUSSION

External Debt: A Reversal Between Horizons

External debt weakens the Rupiah over the long run but strengthens it in the short run, and both effects have a clear economic story behind them. New borrowing brings dollars into the country before repayment falls due, so in the quarter it arrives, it briefly adds to foreign-exchange supply and the Rupiah gains. Once repayment obligations mount, that logic reverses: debt service pulls foreign currency out faster than new borrowing brings it in, and the currency drifts down. That is exactly the pattern behind Indonesia's rising debt stock, from roughly USD 273 billion in 2014 to over USD 420 billion by 2021, a build-up debt overhang theory would expect to show up as depreciation once the bill comes due. Endang Kurniasih & Tampubolon (2022) find the identical reversal in Indonesian data. Kistiah et al. (2022) and Anggita Pramesti & Dewi Rahmi (2024) confirm the long-run direction, though Nayottama (2023), using a different model specification, does not.

Current Account: Overtaken by Capital Flows

The current account balance points the right way, toward depreciation when the deficit widens, but the effect never reaches significance. Indonesia's current account swung from a persistent deficit through 2019, to a rare surplus during the pandemic as imports collapsed, back to deficit again as trade activity normalized. Despite these swings, the exchange rate



response is too weak to detect statistically. A likely explanation: portfolio and other financial-account flows now move faster and in larger volume than trade flows, and react to interest-rate differentials and risk sentiment rather than the trade balance, a pattern Kumhof et al. (2020) document for capital flows more broadly. Wulansari & Rozani (2025) reach the same null result using OLS; Permatasari (2025) and Nayottama (2023) find significant effects, which suggests the relationship is sensitive to sample period and model choice rather than settled.

Interest Rate: Policy Reaction, Not Parity

Raising the policy rate coincides with a weaker Rupiah in this data, the opposite of what interest rate parity predicts. Bank Indonesia's rate hikes in 2018, and again through 2022-2024, both followed periods of capital outflow and global tightening rather than preceding them. Read that way, the positive coefficient reflects Bank Indonesia responding to depreciation pressure, in line with a Taylor Rule-style reaction function (Taylor, 1992), rather than rate hikes causing the depreciation. A large, defensive rate increase can also unsettle investors instead of attracting them, signaling elevated risk rather than an attractive return (Cristi et al., 2024), which would blunt the capital-inflow channel IRP assumes. Manurung et al. (2026) report the same positive long-run relationship for Indonesia; Rofi'i (2023) finds the textbook negative one, a split that likely comes down to how each study's sample period aligns with BI's policy cycle.

CONCLUSION

External debt and the interest rate both move the Rupiah exchange rate; the current account, over this period, does not. External debt weakens the currency in the long run and strengthens it briefly in the short run, a reversal tied to when debt inflows arrive versus when repayment falls due. The interest rate raises rather than lowers the exchange rate, consistent with Bank Indonesia adjusting rates in response to currency pressure rather than the reverse. The current account carries the theoretically expected sign but no statistical bite, suggesting capital flows now outweigh trade flows in driving the Rupiah.

For policy, this points toward external debt management and the timing of monetary tightening as the more consequential levers for exchange-rate stability, ahead of trade-balance measures. Businesses and investors exposed to Rupiah risk would do well to track debt and rate developments closely. Future work could extend this model with inflation, reserves, or



trade variables, or apply NARDL or VECM to test whether these relationships hold beyond a linear specification.

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