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ORIGINAL ARTICLE

The Effect of Global Oil Prices and Monetary Variables on Inflation in Indonesia

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Abstract

This study aims to analyze the effects of global oil prices, interest rates, and exchange rates on inflation in Indonesia in both the long and short run. Inflation is one of the main indicators of macroeconomic stability, making it important to understand the factors that influence its movements. Such an understanding can assist policymakers in formulating appropriate policies to maintain price stability in Indonesia. This study uses secondary time-series data in the form of monthly observations covering the period from 2015 to 2024, comprising 120 observations. The Error Correction Model (ECM) is employed as the analytical method. The long-run estimation results indicate that global oil prices and interest rates have a positive and significant effect on inflation, while the exchange rate has a negative and significant effect on inflation in Indonesia. In the short run, only the interest rate has a positive and significant effect on inflation, whereas global oil prices and the exchange rate do not have a significant effect. The Error Correction Term (ECT) coefficient of -0.1015, with a probability value of 0.0049, indicates a statistically significant adjustment toward the long-run equilibrium. Overall, the findings suggest that global oil prices, interest rates, and exchange rates play important roles in influencing inflation in Indonesia. Therefore, appropriate monetary policies, including prudent adjustments to interest rates, are necessary to maintain price stability.

Introduction

Indonesia's economy has remained relatively stable in recent years despite global economic dynamics. However, uncertainties, including changes in the monetary policies of advanced economies and geopolitical tensions, continue to pose potential risks to the domestic economy [1]. Under certain conditions, expansionary monetary policy through interest rate reductions can stimulate aggregate demand and promote economic activity. However, if maintained excessively or implemented without appropriate policy adjustments, such policies may generate inflationary pressures by increasing the money supply and aggregate demand [2]. Therefore, controlling inflation is essential for maintaining national economic stability. Inflation is a key indicator of macroeconomic conditions because it reflects a sustained increase in the general price level of goods and services over time [3]. Low and stable inflation is generally associated with a healthy macroeconomic environment, whereas high and persistent inflation erodes household purchasing power, reduces the real value of savings, creates economic inefficiencies, and may contribute to greater political instability [4]. According to Bank Indonesia, recent global inflationary pressures have been driven by supply chain disruptions, fluctuations in energy and food prices, and aggressive monetary policy tightening in many countries [5].

As shown in Figure 1, Indonesia's inflation trend from 2015 to 2025 exhibited considerable fluctuations. Inflation was recorded at 3.35 percent in 2015 and remained relatively stable through 2019. In 2020, inflation declined to 1.68 percent due to the COVID-19 pandemic, which suppressed household consumption and overall economic activity [6]. Inflation then increased

sharply to 5.51 percent in 2022, driven by rising global commodity prices and domestic fuel price adjustments [7]. In 2024, inflation declined to 1.57 percent, reflecting easing price pressures compared with previous years. However, inflation increased again to 2.92 percent in 2025. These fluctuations suggest that inflation is influenced by various macroeconomic factors, including global oil prices, exchange rates, and monetary policy variables such as interest rates [8].

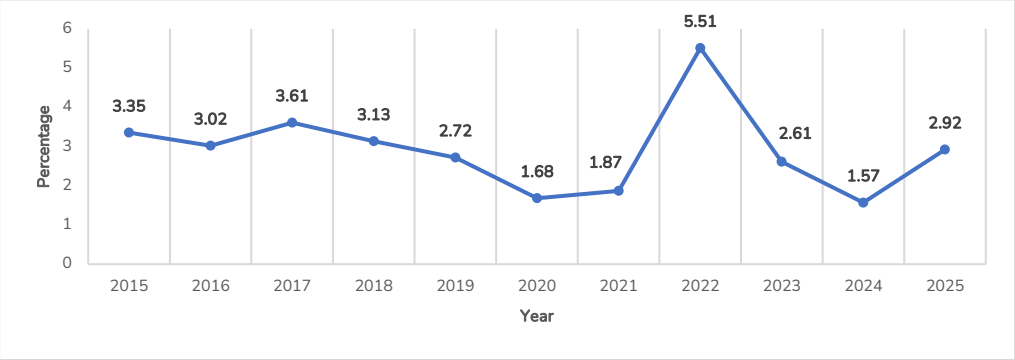

Figure 1. Indonesia's Inflation Rate, 2015-2025.
Source: Bank Indonesia [9]

As a country that remains dependent on energy imports, Indonesia is vulnerable to changes in global oil prices, which increase domestic production and transportation costs and are subsequently transmitted to domestic prices [10,11]. Brent crude oil prices fluctuated considerably during the 2015–2025 period, rising from USD 42.30 per barrel in 2020 to nearly USD 100 per barrel in 2022, largely driven by the Russia–Ukraine war, which disrupted global energy supplies and heightened uncertainty in oil markets [12]. By 2026, global oil prices are projected to increase further to approximately USD 103 per barrel due to geopolitical tensions in the Middle East and disruptions to energy supply routes through the Strait of Hormuz. Data released by the Ministry of Energy and Mineral Resources of the Republic of Indonesia [13] indicate that the Indonesian Crude Price (ICP) increased to USD 102.26 per barrel in March 2026, reflecting continued pressure from rising global oil prices and the potential for higher domestic inflation. This dependence on global energy markets means that changes in international oil prices can be transmitted to the domestic economy, thereby increasing inflationary pressures.

In addition to global oil prices, interest rates and exchange rates are key variables examined in this study. Indonesia's policy interest rate fluctuated from 7.50 percent in 2015 to 3.50 percent in 2021 and is projected to increase to 4.75 percent by 2025, while the exchange rate of the Indonesian Rupiah against the U.S. dollar depreciated from IDR 13,436 per USD in 2016 to IDR 16,782 per USD in 2025. Changes in the exchange rate affect the prices of imported goods and may be transmitted to domestic inflation through the exchange rate pass-through mechanism [14].

Inflation is an economic phenomenon characterized by a sustained increase in the general price level over time. According to Irving Fisher's Quantity Theory of Money, the general price level is influenced by the amount of money circulating in the economy. Holding the velocity of money and the volume of transactions constant, an increase in the money supply leads to a proportional increase in the general price level [15].

According to Keynesian theory, inflation occurs when aggregate demand exceeds an economy's production capacity. Lower interest rates stimulate investment and consumption, thereby increasing the demand for goods and services. If production cannot keep pace with rising demand, the general price level will increase [16]. Meanwhile, structuralist theory argues that structural changes and sectoral imbalances can generate inflation by increasing production

costs. In particular, higher global oil prices raise production and distribution costs, which are subsequently passed on to consumer prices, thereby contributing to inflation [17]. To maintain economic stability, monetary authorities typically respond by raising interest rates to strengthen the exchange rate and curb inflationary pressures. According to the monetarist perspective, inflation is primarily caused by expansionary monetary policy that leads to excessive growth in the money supply. Consequently, inflation can be controlled through contractionary monetary policy by increasing policy interest rates, conducting open market operations to reduce liquidity, and raising reserve requirements to restrain bank lending and money supply growth [18]. Based on its underlying causes, inflation is generally classified into demand-pull inflation and cost-push inflation. Demand-pull inflation occurs when aggregate demand exceeds production capacity, resulting in higher prices [16]. In contrast, cost-push inflation arises from increases in production costs, such as higher prices of raw materials and energy or declines in production output caused by events such as crop failures.

Global oil prices are among the macroeconomic variables that have a broad impact on a country's economy. Crude oil plays a vital role in economic activity, not only as a primary energy commodity but also as a key input in various production processes. Nearly all economic activities, including transportation, manufacturing, and household consumption, depend on the availability of oil-based energy [19]. According to the cost-push inflation theory, rising production costs resulting from higher input prices encourage producers to increase the prices of goods and services [16]. Consequently, increases in global oil prices raise production and distribution costs, thereby contributing to inflation. Empirical evidence from Choi et al. [20] also shows that global oil price shocks have a positive and significant effect on domestic inflation.

Interest rates represent the cost of borrowing or the return on lending funds over a specific period. According to the Loanable Funds Theory, interest rates are determined by the interaction between the supply of savings and the demand for investment funds [21]. Interest rates can be classified into nominal interest rates, which are expressed in monetary terms, and real interest rates, which are adjusted for inflation and are calculated as the nominal interest rate minus the inflation rate. Lower interest rates encourage households and firms to borrow for consumption and investment purposes. Conversely, higher interest rates encourage individuals to save by increasing the returns on bank deposits, thereby reducing consumption and investment [18]. Mishkin [18] further argues that interest rates influence inflation through the monetary transmission mechanism. Changes in interest rates affect household consumption, business investment, and credit expansion, which subsequently influence aggregate demand and the general price level.

The exchange rate represents the value of a domestic currency relative to a foreign currency. According to the Purchasing Power Parity (PPP) theory, exchange rate movements are influenced by differences in price levels across countries. A depreciation of the domestic currency increases the prices of imported goods, raises production costs for firms that rely on imported inputs, and contributes to inflation through the exchange rate pass-through mechanism [14]. Exchange rate regimes generally include fixed, freely floating, and managed floating systems. Exchange rate movements may take the form of appreciation or depreciation, both of which affect economic competitiveness and domestic price stability. Previous empirical studies have reported mixed findings regarding the relationship between exchange rates, global oil prices, interest rates, and inflation. Muttalib [22] found that the exchange rate significantly influences inflation, whereas global oil prices do not have a significant effect. Yanti & Soebagyo [23] reported that interest rates significantly affect inflation, while the exchange rate does not. In contrast, Choi et al. [20] found that global oil prices have a significant effect on inflation. These inconsistent findings indicate a research gap in the existing literature.

Therefore, this study examines the effects of global oil prices, interest rates, and exchange rates on inflation in Indonesia using the Error Correction Model (ECM), which enables the analysis of

both long-run and short-run relationships among the variables. This study contributes to the existing literature by providing more comprehensive and up-to-date empirical evidence on the determinants of inflation in Indonesia using monthly data from 2015 to 2024. The findings are also expected to provide insights that support the formulation of effective monetary policies aimed at maintaining price stability.

Materials and Methods

Data and Variables

The primary focus of this study is to examine the dynamics of inflation, global oil prices, interest rates, and exchange rates in Indonesia during the period from 2015 to 2024. The study uses secondary time-series data consisting of 120 monthly observations. The geographical scope of the study is the Republic of Indonesia, and a quantitative research approach is employed. The selected period reflects Indonesia's recent economic conditions over the past decade and captures various economic dynamics and shocks, including fluctuations in global oil prices, changes in monetary policy, exchange rate movements, inflation volatility, and the economic disruptions caused by the COVID-19 pandemic.

The inflation data are obtained from Bank Indonesia [9] and measured in percentage terms. Global oil prices, represented by Brent crude oil prices, are sourced from the World Bank [24]. Interest rate data and exchange rate data are obtained from Bank Indonesia [9]. These variables are selected because they represent key macroeconomic factors that may influence inflation dynamics in Indonesia.

Model Specification and Method

This study employs the Error Correction Model (ECM), introduced by Engle and Granger, to examine both the short-run and long-run relationships among the variables. The ECM approach is appropriate for estimating long-run equilibrium relationships and short-run adjustments among cointegrated time-series variables. Data processing and econometric analysis were conducted using EViews 12 software.

The long-run equation model used in this study, based on Gujarati and Porter (2009), is specified as follows:

$$INF_t = \beta_0 + \beta_1 OP_t + \beta_2 IR_t + \beta_3 ER_t + \varepsilon_t \quad (1)$$

where INF represents inflation, OP represents global oil prices, IR represents interest rates, ER represents the exchange rate of the Rupiah against the U.S. dollar, β_0 represents the constant term, β_1, β_2, and β_3 represent the estimated coefficients, ε represents the error term, and t represents the time period.

Following the preliminary tests, including the cointegration test, the short-run dynamics were estimated using the Error Correction Model (ECM). The ECM specification applied in this study, based on Gujarati & Porter [25], is formulated as follows:

$$\Delta INF_t = \alpha_0 + \alpha_1 \Delta OP_t + \alpha_2 \Delta IR_t + \alpha_3 \Delta ER_t + \alpha_4 ECT_{t-1} + \varepsilon_t \quad (2)$$

where α_0 represents the constant term, α_1, α_2, α_3, and α_4 represent the estimated coefficients, ε represents the error term, t represents the time period, Δ represents the first difference operator indicating changes in variables, and ECT_{t-1} represents the lagged error correction term derived from the long-run cointegration equation.

The ECT coefficient captures the speed of adjustment from short-run disequilibrium toward the long-run equilibrium relationship. A statistically significant and negative ECT coefficient

indicates the existence of an adjustment mechanism, suggesting that deviations from the long-run equilibrium are corrected over time.

Preliminary Tests

Prior to estimating the Error Correction Model (ECM), preliminary tests were conducted to ensure the appropriateness of the time-series data and the validity of the model specification. In the ECM framework, variables are required to be non-stationary at the level but become stationary after first differencing and must exhibit a cointegration relationship. Stationarity was examined using the Augmented Dickey–Fuller (ADF) unit root test to determine whether the variables contain a unit root. This test is essential because the use of non-stationary data may result in spurious regression and unreliable estimation results. A variable meets the ECM requirement if it becomes stationary after first differencing or if all variables have the same order of integration [26].

Furthermore, a cointegration test was conducted to identify the existence of a long-run equilibrium relationship among the variables. The cointegration test was performed by examining the stationarity of the residuals obtained from the long-run equation using the ADF test. Stationary residuals at the level indicate the presence of a cointegration relationship among the variables. In addition, classical assumption tests, including normality, heteroscedasticity, multicollinearity, and autocorrelation tests, were conducted to ensure that the estimated regression model satisfies the assumptions of the Best Linear Unbiased Estimator (BLUE).

Results and Discussion

Descriptive Statistics

The descriptive statistics results in Table 1 show that the inflation variable has a mean value of 0.033740, equivalent to approximately 3.37%, with a standard deviation of 0.014812. This indicates that inflation fluctuations were relatively low and that inflation remained relatively stable during the study period. The maximum inflation value was 0.072600, while the minimum value was 0.013200.

The global oil price variable has a mean value of 66.17958 with a standard deviation of 19.05023, indicating considerable fluctuations in global oil prices during the observation period. The maximum value reached 120.0800, while the minimum value was 23.34000.

The interest rate variable has a mean value of 0.052104, equivalent to approximately 5.21%, with a standard deviation of 0.012135. This suggests that interest rate movements were relatively stable throughout the study period. The maximum interest rate value was 0.077500, while the minimum value was 0.035000.

Meanwhile, the exchange rate variable has a mean value of IDR 14,359.50 per U.S. dollar, with a standard deviation of 895.6745. This indicates that exchange rate movements experienced moderate fluctuations during the study period. The exchange rate reached a maximum value of IDR 16,421.00 per U.S. dollar and a minimum value of IDR 12,625.00 per U.S. dollar.

Table 1. Descriptive statistics.

Statistics	*Variable*			
	INF	OP	IR	ER
Mean	0.033740	66.17958	0.052104	14,359.50
Median	0.031900	64.97000	0.052500	14,304.50
Max.	0.072600	120.0800	0.077500	16,421.00
Min.	0.013200	23.34000	0.035000	12,625.00
Std. Dev.	0.014812	19.05023	0.012135	895.6745
Obs.	120	120	120	120

Stationarity Test

The stationarity test results presented in Table 2, based on the Augmented Dickey–Fuller (ADF) test, indicate that none of the variables are stationary at the level, as their p-values exceed the 5% significance level. However, after applying the first difference transformation, all variables become stationary, with p-values below 0.05. These results indicate that all variables are integrated of order one, denoted as I(1), which satisfies the stationarity requirement for applying the Error Correction Model (ECM).

Table 2. Stationarity test results.

Variable	Level (Prob.)	Conclusion	1st Diff. (Prob.)	Conclusion	Order of Integration
INF	0.1929	Non-stationary	0.0000	Stationary	I(1)
OP	0.2224	Non-stationary	0.0000	Stationary	I(1)
IR	0.1890	Non-stationary	0.0005	Stationary	I(1)
ER	0.1854	Non-stationary	0.0000	Stationary	I(1)

Cointegration Test

The results of the Error Correction Term (ECT) test using the ADF indicate a p-value of 0.0295, which is less than 0.05. This indicates that the residuals are stationary at the first-order level, suggesting a cointegration relationship or long-run equilibrium between the variables. Therefore, the Error Correction Model (ECM) can be used.

Table 3. Cointegration test results.

Test		t-Stat.	Prob.
ADF		-3.096039	0.0295
Critical values:	1% level	-3.486551	
	5% level	-2.886074	
	10% level	-2.579931	

Long-Term and Short-Term Estimates

The long-run estimation results in Table 4 indicate that global oil prices have a positive and significant effect on inflation, with a coefficient of 0.000264 and a probability value of 0.0000. Similarly, interest rates have a positive and significant effect on inflation, with a coefficient of 0.783683 and a probability value of 0.0000. In contrast, the exchange rate has a negative and significant effect on inflation, with a coefficient of -7.83E-06 and a probability value of 0.0000.

Table 4. Results of long-term estimate.

Variable	Coef.	Std. Er.	t-Stat.	Prob.
OP	0.000264***	6.13E-05	4.317331	0.0000
IR	0.783683***	0.081869	9.572410	0.0000
ER	-7.83E-06***	1.28E-06	-6.137734	0.0000
C	0.087902***	0.016834	5.221757	0.0000

Note: *** denotes statistical significance at the 1% level.

The short-run estimation results show that global oil prices do not have a significant effect on inflation, with a probability value of 0.2757. Likewise, the exchange rate does not have a significant effect on inflation, with a probability value of 0.6594. However, interest rates have a positive and significant effect on inflation, with a coefficient of 0.395845 and a probability value of 0.0384. The Error Correction Term (ECT) coefficient is -0.101520 with a probability value of 0.0049, indicating the existence of an adjustment mechanism from short-run disequilibrium toward the long-run equilibrium relationship. The negative and significant ECT coefficient suggests that approximately 10.15% of deviations from the long-run equilibrium are corrected in each period.

Table 5. Results of short-term estimate.

Variable	Coef.	Std. Er.	t-Stat.	Prob.
OP	-6.48E-05	5.92E-05	-1.095283	0.2757
IR	0.395845**	0.188998	2.094437	0.0384
ER	4.24E-07	9.60E-07	0.441844	0.6594
ECT_{-1}	-0.101520***	0.035374	-2.869878	0.0049
C	-0.000383	0.000348	-1.100598	0.2734

Note: *** and ** denote statistical significance at the 1% and 5% levels, respectively.

Classical Assumption Tests

Normality Test

The normality test results in Figure 2 indicate that the residuals are not normally distributed, as shown by the Jarque–Bera probability value of 0.0000. However, this issue does not necessarily invalidate the estimation results because the study uses a relatively large sample size of 120 observations. According to Ghasemi and Zahediasl [27], the assumption of normality becomes less critical in larger samples due to the application of the central limit theorem.

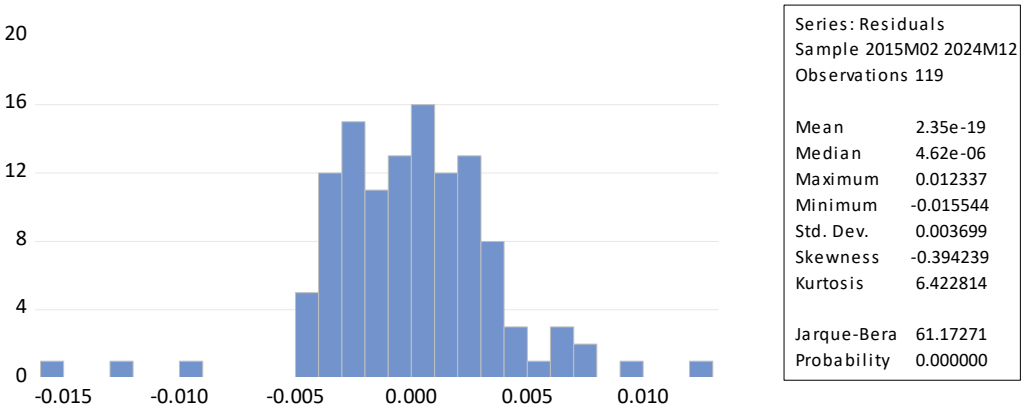

Figure 2. Normality test results.

Heteroscedasticity Test

The Breusch–Pagan–Godfrey test results in Table 6 show an Obs*R-squared value of 2.375099. The Obs*R-squared statistic in the Lagrange Multiplier (LM) test does not represent the conventional coefficient of determination (R^2), which ranges between 0 and 1. Instead, it represents the calculated Chi-square statistic obtained by multiplying the number of observations by the R^2 value from the auxiliary regression of squared residuals. Therefore, the Obs*R-squared value may exceed 1.

The detection of heteroscedasticity is based on the Prob. Chi-Square value of 0.6671. Since the probability value is greater than the 5% significance level (0.6671 > 0.05), the null hypothesis of no heteroscedasticity cannot be rejected. This indicates that the residual variance is constant (homoscedastic), and the regression model does not suffer from heteroscedasticity.

Table 6. Breusch–Pagan–Godfrey heteroskedasticity test results.

Breusch–Pagan–Godfrey Test	Value	Prob.
F-stat.	0.580411	0.6774
Obs*R-squared (Chi-Square)	2.375099	0.6671
Scaled explained SS (Chi-Square)	5.910065	0.2060

Multicollinearity Test

The multicollinearity test results in Table 7 indicate that all Variance Inflation Factor (VIF) values are below 10, and the correlation coefficients among the independent variables are below 0.80.

These results suggest that the model does not experience serious multicollinearity problems [25].

Table 7. Multicollinearity test results.

Variable	Coef. Variance	Uncentered VIF	Centered VIF
D(OP)	3,50E-09	1,034574	1,033196
D(IR)	0,035720	1,119137	1,112647
D(ER)	9,22E-13	1,045362	1,038521
ECT(-1)	0,001251	1,128676	1,128567
C	1,21E-07	1,017255	NA

Autocorrelation Test

The autocorrelation test was conducted using the Breusch–Godfrey LM Test. The results in Table 8 show a Chi-square probability value of 0.0646, which is greater than the 5% significance level. Therefore, the null hypothesis of no autocorrelation cannot be rejected, indicating that the model does not suffer from autocorrelation problems.

Table 8. Breusch–Godfrey serial correlation LM test results.

Breusch–Godfrey Serial Correlation LM Test	Value	Prob.
F-stat.	1.757870	0.0712
Obs*R-squared (Chi-Square)	18.80919	0.0646

Discussion

The Impact of Global Oil Prices on Inflation

Based on the estimation results, increases in global crude oil prices in the long run tend to raise inflation by increasing production and distribution costs. Conversely, declines in global oil prices may reduce inflationary pressures. Therefore, the estimation results indicate that global oil prices have a positive and significant effect on inflation in the long run. This finding suggests that higher global oil prices are transmitted to domestic prices through the cost-push inflation mechanism. However, in the short run, changes in global oil prices do not have a significant effect on inflation. This may occur because the transmission of global oil price fluctuations to domestic prices requires an adjustment period and may be moderated by government intervention, such as energy price stabilization policies. Nevertheless, the negative and significant Error Correction Term (ECT) confirms the existence of an adjustment mechanism toward the long-run equilibrium relationship.

The findings of this study are consistent with Al-Mustafa [28], who found that global oil prices significantly affect inflation in the long run, with a positive coefficient. This evidence confirms that increases in global energy commodity prices can generate domestic inflationary pressures through higher production and distribution costs. Meanwhile, the insignificant short-run effect of oil prices on inflation is supported by Wu et al. [29], who explain that government price control mechanisms and policy interventions can weaken the immediate transmission of global oil price shocks to domestic prices. As a result, the inflationary effects of oil price fluctuations may only become apparent after a certain adjustment period.

The Impact of Interest Rates on Inflation

Based on the estimation results, interest rates have a positive and significant effect on inflation in both the long and short run. This finding implies that increases in interest rates are associated with higher inflation in Indonesia. This result appears inconsistent with the conventional loanable funds theory, which suggests that higher interest rates reduce borrowing, investment, and aggregate demand, thereby lowering inflationary pressures. However, the positive relationship can be explained through the Fisher Effect, proposed by Irving Fisher, which

suggests that economies experiencing higher inflation rates tend to have higher nominal interest rates, whereas economies with lower inflation rates generally exhibit lower interest rates [30].

The findings are consistent with Aprileven [31], who argues that increases in lending rates may raise production costs. Producers facing higher capital costs due to increased interest rates may respond by increasing the prices of goods and services to maintain profitability, thereby contributing to cost-push inflation. Furthermore, high interest rates may reduce investment activities, potentially limiting production capacity and reducing the supply of goods in the market, which may contribute to higher prices.

The positive relationship between interest rates and inflation is also supported by Sir [32], who explains that monetary authorities often increase benchmark interest rates as a preventive measure when inflationary pressures are expected to rise. In this case, interest rate adjustments are responses to anticipated future inflation rather than the initial cause of inflation. Therefore, empirical observations may show a positive relationship between interest rates and inflation because both variables respond to the same underlying inflationary pressures. These findings highlight the important role of interest rates as a monetary policy instrument in influencing inflation dynamics in Indonesia, although the direction of the relationship depends on the broader economic conditions and the timing of policy responses.

The Impact of Exchange Rates on Inflation

The long-run estimation results indicate that the exchange rate has a significant effect on inflation, with a negative coefficient. This finding implies that an increase in the exchange rate, representing a depreciation of the Rupiah, is associated with a decrease in inflation. This result appears inconsistent with the Purchasing Power Parity (PPP) theory, which suggests that currency depreciation increases the prices of imported goods and subsequently generates inflationary pressures. However, this finding is consistent with Wahid & Chaidir [33], who also identified a negative long-run relationship between the exchange rate and inflation. They argue that this relationship may occur because domestic factors, particularly aggregate demand conditions, play a dominant role in determining inflation dynamics.

The findings suggest that long-run inflation dynamics in Indonesia are not solely driven by cost-push inflation through exchange rate depreciation but are also influenced by domestic demand conditions. When currency depreciation occurs alongside economic stagnation or declining household consumption, the negative impact of weakened domestic demand may outweigh the inflationary effect of higher import prices. For example, during the COVID-19 pandemic in 2020, the Rupiah depreciated significantly to approximately IDR 16,300 per U.S. dollar, while inflation declined due to reduced household consumption and weakened economic activity. This indicates that demand-side factors can play a more dominant role than exchange rate pass-through in certain economic conditions.

In the short run, changes in the exchange rate do not have a significant effect on inflation. This indicates that exchange rate fluctuations are not immediately transmitted to domestic prices due to adjustment lags in import prices, production costs, and pricing decisions by firms. However, the significant and negative Error Correction Term (ECT) coefficient confirms the existence of an adjustment process toward long-run equilibrium. The findings are supported by Mufarrikhah [34], who found that the exchange rate has a negative effect on inflation in the long run but does not significantly influence short-run inflation fluctuations. These results suggest that the exchange rate affects inflation dynamics gradually, as changes in currency values require time to influence domestic prices, particularly through imported goods and production inputs.

Conclusions

The findings of this study indicate that, in the long run, global oil prices and interest rates have a positive and significant effect on inflation, whereas the exchange rate has a negative and significant effect. In the short run, only interest rates significantly influence inflation, while global oil prices and the exchange rate do not exhibit significant effects. Furthermore, the negative and significant Error Correction Term (ECT) coefficient confirms the existence of an adjustment mechanism toward long-run equilibrium.

Based on these findings, the Government of Indonesia should strengthen economic stability through appropriate energy policies to reduce the impact of global oil price fluctuations on domestic inflation. In addition, Bank Indonesia should continue implementing prudent monetary policies by adjusting interest rates carefully and maintaining exchange rate stability, given their significant roles in influencing inflation dynamics. These policy measures are expected to support price stability and promote sustainable economic growth in Indonesia.

This study has several limitations. First, it examines only three explanatory variables, namely global oil prices, interest rates, and exchange rates, while other macroeconomic factors may also influence inflation dynamics. Future studies are encouraged to incorporate additional variables to provide a more comprehensive understanding of inflation determinants. Second, this study uses monthly data covering the period from 2015 to 2024, which may limit the ability to capture longer-term structural changes in the Indonesian economy. Future research may extend the observation period to obtain broader empirical evidence. Third, this study applies only the Error Correction Model (ECM) approach. Future research may consider alternative econometric methods, such as the Autoregressive Distributed Lag (ARDL) model or Vector Autoregression/Vector Error Correction Model (VAR/VECM), to validate the findings and provide deeper insights into inflation dynamics in Indonesia.

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Data Availability Statement: The data used in this study are publicly available and can be downloaded from the official websites of Bank Indonesia and the World Bank.

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Conflicts of Interest: All the authors declare that there are no conflicts of interest.

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