

THE EFFECT OF INFLATION, INTEREST RATES, AND EXCHANGE RATES ON STOCK RETURNS WITH THE COMPOSITE STOCK PRICE INDEX (IHSG) AS AN INTERVENING VARIABLE IN INDONESIA 2016–2025

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Abstract

This study examines the effect of inflation, interest rates (BI7DRR), and exchange rates (USD/IDR) on stock returns of PT Telkom Indonesia (Persero) Tbk., with the Jakarta Composite Index (IHSG) as an intervening variable. Using a quantitative explanatory research design, monthly secondary data spanning January 2016 to December 2025 (120 observations) were analysed using Pearson correlation and two-stage path analysis (OLS regression). Results indicate that inflation and exchange rates significantly influence IHSG, while the BI Rate does not. However, neither macroeconomic variables nor IHSG significantly affect Telkom's stock returns either directly or indirectly. The model explains only 2.7% of the variation in stock returns, suggesting that company-specific and sectoral factors dominate return determination. These findings imply that IHSG does not serve as an effective mediating channel between macroeconomic conditions and individual stock returns for Telkom. Investors in the telecommunications sector should prioritise fundamental and sectoral analysis over macroeconomic indicators when making portfolio decisions.

Keywords: *Inflation, interest rates (BI7DRR), exchange rates (USD/IDR), PT Telkom Indonesia (Persero) Tbk., the Jakarta Composite Index (IHSG)*

1. INTRODUCTION

The capital market plays a crucial role as an indicator of a country's economic health and as a means of financial intermediation. In Indonesia, the Jakarta Composite Index (JCI) serves as the primary barometer reflecting all stock trading activity on the Indonesia Stock Exchange (IDX). However, the movement of this index and individual stock returns are highly susceptible to fluctuations in often volatile macroeconomic variables, particularly during the 2016–2025 observation period, which encompasses the pre-pandemic phase, the COVID-19 pandemic, and the digital economy's recovery. An interesting phenomenon occurred at PT Telekomunikasi Indonesia (Telkom). As a blue-chip company with a large market capitalization, Telkom should be highly resilient. However, data shows that despite the company's stable fundamental performance, its stock returns often experience extreme

volatility, in line with the JCI's movements during macroeconomic shocks. For example, when the Rupiah exchange rate sharply depreciates against the USD, the operating costs of import-based telecommunications companies (such as network infrastructure) increase, indirectly suppressing investor interest in the JCI and impacting TLKM's stock returns.

Previous research has shown mixed results (a research gap). Sutandi et al. (2021) stated that inflation, exchange rates, and interest rates simultaneously influence the Jakarta Composite Index (JCI). However, Paryudi et al. (2021) found that interest rates and inflation actually have a negative but insignificant effect on the JCI. This inconsistency requires the use of an intervening variable such as the JCI to explain how monetary policy and macroeconomic conditions impact the stock returns of specific companies like Telkom.

Inflation is a signal of declining purchasing power, which can increase a company's production costs. According to Purnamasari et al. (2025), inflation has a significant positive effect on the Jakarta Composite Index (JCI) under certain conditions. However, theoretically, uncontrolled inflation will depress stock prices by increasing investment risk. Interest rates (BI7DRR) also play a dual role; rising interest rates will increase the cost of capital and encourage investors to shift to fixed-income instruments, which in turn depresses the JCI (Iman et al., 2025).

On the other hand, the exchange rate (USD/IDR) is a crucial variable for telecommunications companies. Rupiah depreciation is often followed by a decline in the Jakarta Composite Index (JCI) due to capital outflow. Faqih & Priyono (2025) emphasized that exchange rate changes have a significant negative effect on the JCI. Therefore, the JCI's position as an intervening variable is highly relevant for examining whether macroeconomic influences directly impact Telkom's stock returns or whether they must first be influenced by overall market sentiment.

Given that the 2016–2025 period is an era of massive digital transformation in Indonesia, this research is crucial for mapping how monetary policy and exchange rate stability influence the digital infrastructure sector through capital market mechanisms. This will provide theoretical contributions to the financial management literature and practical insights for investors in mitigating portfolio risk in telecommunications sector stocks.

2. RESEARCH METHOD

This study describes a quantitative explanatory research design to examine the relationship between variables. The independent variables of this study are inflation, interest rates (BI Rate / BI7DRR), and exchange rates (USD / IDR). The intervening variable of this study is the Jakarta Composite Index (JCI). The dependent variable of this study is the stock return of PT Telkom Indonesia (Persero) Tbk. The research sample was determined through a purposive sampling technique by taking monthly values for all variables over a 10-year period (January 2016-December 2025), resulting in 120 monthly observations as analysis data. The data used in this study is secondary data. The data sources in this study are obtained

from websites related to the research variables. Data on inflation, the Rupiah Exchange Rate (Rupiah), and the Interest Rate (BI Rate) were obtained from the website www.bi.go.id, the Central Statistics Agency (BPS), and the Indonesian Ministry of Trade's One Trade Data. JCI and stock return data are from Investing.com Indonesia.

3. RESULTS AND DISCUSSION

3.1 Correlation Analysis

Pearson correlation for continuous scale variables.

Table 1. Correlation Analysis

		Inflation	Bi Rate	Exchange rate	IHSG	Stock Returns
Inflation	Pearson Correlation	1	.186*	-.250**	-.014	-.017
	Sig. (2-tailed)		.042	.006	.879	.853
	N	120	120	120	120	120
Bi Rate	Pearson Correlation	.186*	1	.280**	.130	-.058
	Sig. (2-tailed)	.042		.002	.158	.530
	N	120	120	120	120	120
Exchange rate	Pearson Correlation	-.250**	.280**	1	.674**	-.097
	Sig. (2-tailed)	.006	.002		.000	.293
	N	120	120	120	120	120
IHSG	Pearson Correlation	-.014	.130	.674**	1	.019
	Sig. (2-tailed)	.879	.158	.000		.839
	N	120	120	120	120	120
Stock Returns	Pearson Correlation	-.017	-.058	-.097	.019	1
	Sig. (2-tailed)	.853	.530	.293	.839	
	N	120	120	120	120	120

*. Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Source: Processed data (2026)

The results of the correlation test indicate that most independent variables have no significant relationship with stock returns. Inflation, interest rates, and exchange rates each have a very weak and insignificant relationship with stock returns. Furthermore, the

intervening variable, the Jakarta Composite Index (JCI), also shows no significant relationship with stock returns. However, the exchange rate has a strong and significant positive relationship with the JCI, indicating a close link between exchange rate conditions and aggregate stock market movements. Overall, these findings indicate that, from a correlational perspective, the JCI's role as an intervening variable in mediating the influence of macroeconomic variables on stock returns has not been empirically supported.

3.2 Multiple Linear Regression (OLS)

3.2.1 Structural Equations

- a. Sub-Structure Equation 1 (The Effect of Independent Variables on Intervening Variables)

$$IHSG = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e_1$$

- b. Sub-Structure Equation 2 (The Effect of Independent and Intervening Variables on the Dependent Variable)

$$Stock\ Return = \beta_4 X_1 + \beta_5 X_2 + \beta_6 X_3 + \beta_7 Z + e_2$$

Symbol Description:

Inflation (X1): Inflation rate in Indonesia

Interest Rate (X2): BI Rate or benchmark interest rate

Exchange Rate (X3): Rupiah exchange rate against foreign currencies

IHSG (Z): Composite Stock Price Index as an intervening variable

Stock Return (Y): Stock return rate

$\beta_1, \beta_2, \beta_3$: Coefficient of influence of independent variables on the IHSG

$\beta_4, \beta_5, \beta_6$: Coefficient of influence of independent variables on stock returns

β_7 : Coefficient of the influence of the IHSG on stock returns

e_1 : Error term in the first equation

e_2 : Error term in the second equation

b. Path Coefficients of Model 1

Table 2. Model Summary Path Coefficients Model 1

Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.701a	.492	.479	622.30373

a. Predictors: (Constant), Exchange Rate, Inflation, Bi Rate

Source: Processed data (2026)

Table 3. ANOVA

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	43501842.927	3	14500614.309	37,444	.000b
Residual	44922384.677	116	387261.937		
Total	88424227.604	119			

a. Dependent Variable: IHSG

b. Predictors: (Constant), Exchange Rate, Inflation, BI Rate

Source: Processed data (2026)

Table 4. Coefficients

Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-2856.896	891,143		-3,206	.002
Inflation	15234.306	5480.410	.198	2,780	.006
Bi Rate	-10802.870	6502.062	-.119	-1,661	.099
Exchange rate	.633	.061	.757	10,399	.000

a. Dependent Variable: IHSG

Source: Processed data (2026)

Based on the regression model output part 1 of the Coefficients table, it is known that the significance value of the inflation variable (X1) is 0.006, the BI Rate (X2) is 0.099, and the exchange rate (X3) is 0.000. These results provide the conclusion that the inflation variable (X1) and the exchange rate (X3) have a significant effect on the JCI (Z) because the significance value is less than 0.05. The BI Rate (X2) does not have a significant effect on the JCI because the significance value is greater than 0.05.

The value of R Square in the Model Summary table is 0.492, this shows that the contribution of X1, X2, X3 to Z is 49.2% while the remaining 50.8% is the contribution of other variables.

c. Path Coefficients of Model 2

Table 5. Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.165a	.027	-.007	.0625623

a. Predictors: (Constant), IHSG, Inflation, BI Rate, Exchange Rate

Source: Processed data (2026)

Table 6. ANOVA

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.013	4	.003	.801	.527b
	Residual	.450	115	.004		
	Total	.463	119			

a. Dependent Variable: Stock Returns

b. Predictors: (Constant), IHSG, Inflation, BI Rate, Exchange Rate

Source: Processed data (2026)

Table 7. Coefficients

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.141	.093		1,510	.134
	Inflation	-.403	.569	-.072	-.708	.480
	Bi Rate	-.013	.661	-.002	-.020	.984
	Exchange rate	-1.402E-5	.000	-.232	-1,649	.102
	IHSG	1.261E-5	.000	.174	1,351	.179

a. Dependent Variable: Stock Returns

Source: Processed data (2026)

Based on the regression model output in section 2 of the Coefficients table, it is known that the significance value of the inflation variable (X1) is 0.480, the BI Rate (X2) is 0.984,

the exchange rate (X3) is 0.102, and the IHSZ (Z) is 0.179. These results provide the conclusion that X1, X2, X3, and Z do not have a significant effect on Y because their significance values are greater than 0.05.

The value of R Square in the Model Summary table is 0.027, this shows that the contribution of X1, X2, X3, Z to Y is 2.7% while the remaining 97.3% is the contribution of other variables.

3.3 Hypothesis Testing

- a. Analysis of the influence of inflation (X1) on the IHSZ (Z): the significance value is $0.006 < 0.05$. Thus, it can be concluded that there is a direct, significant influence of inflation (X1) on the IHSZ (Z).
- b. Analysis of the influence of the Bi Rate (X2) on the IHSZ (Z): the significance value is $0.099 > 0.05$. Thus, it can be concluded that there is no direct significant influence of the Bi Rate (X2) on the IHSZ (Z).
- c. Analysis of the influence of the exchange rate (X3) on the IHSZ (Z): the significance value is $0.000 < 0.05$. Thus, it can be concluded that there is a direct, significant influence of the exchange rate (X3) on the IHSZ (Z).
- d. Analysis of the influence of inflation (X1) on stock returns (Y): the significance value is $0.480 > 0.05$. Thus, it can be concluded that there is no direct significant influence of inflation (X1) on stock returns (Y).
- e. Analysis of the influence of Bi Rate (X2) on stock returns (Y): the significance value is $0.984 > 0.05$. Thus, it can be concluded that there is no direct significant influence of Bi Rate (X2) on stock returns (Y).
- f. Analysis of the influence of exchange rates (X3) on stock returns (Y): the significance value is $0.102 > 0.05$. Thus, it can be concluded that there is no direct significant influence of exchange rates (X3) on stock returns (Y).
- g. Analysis of the influence of the JCI (Z) on stock returns (Y): the significance value is $0.179 > 0.05$. Thus, it can be concluded that there is no direct significant influence of the JCI (Z) on stock returns (Y).
- h. Analysis of the influence of Inflation (X1) through the IHSZ (Z) on stock returns (Y): It is known that the direct influence given by X1 on Z is 0.006, while the indirect influence of X1 through Z on Y is the multiplication of the beta value of X1 on Z with the beta value of X1 on Y, namely: $0.198 \times (-0.072) = (-0.0142)$. Then the total influence given by X1 on Y is the direct influence plus the indirect influence, namely: $0.006 - 0.0142 = -0.0082$. The value of the direct influence is greater than the indirect influence. Thus, these results indicate that X1 does not have a significant influence on Y through Z.

- i. Analysis of the influence of Bi Rate (X2) through IHSG (Z) on stock returns (Y): It is known that the direct influence given by X2 on Z is 0.099, while the indirect influence of X2 through Z on Y is the multiplication of the beta value of X2 on Z with the beta value of X2 on Y, namely: $(-0.119) \times (-0.002) = 0.000238$. Then the total influence given by X2 on Y is the direct influence plus the indirect influence, namely: $0.099 + 0.000238 = 0.099238$. The value of the direct influence is greater than the indirect influence. Thus, these results indicate that X2 does not have a significant influence on Y through Z.
- j. Analysis of the influence of the exchange rate (X3) through the IHSG (Z) on stock returns (Y): It is known that the direct influence given by X3 on Z is 0.000, while the indirect influence of X3 through Z on Y is the multiplication of the beta value of X3 on Z with the beta value of X3 on Y, namely: $0.757 \times (-0.232) = (-0.175624)$. Then the total influence given by X3 on Y is the direct influence plus the indirect influence, namely: $0.000 - 0.175624 = (-0.175624)$. The value of the direct influence is greater than the indirect influence. Thus, these results indicate that X3 does not have a significant influence on Y through Z.

The results of the study indicate that macroeconomic variables such as inflation, interest rates, and exchange rates do not significantly influence stock returns, either directly or through the Jakarta Composite Index (JCI) as an intervening variable. This finding indicates that corporate stock returns, particularly PT Telkom Indonesia, are more influenced by internal company factors and sectoral conditions than macroeconomic factors. This study shows that macroeconomic variables only influence the aggregate market level (JCI), but do not directly or indirectly affect individual stock returns, thus indicating a difference in mechanisms between the aggregate market and corporate stocks.

4. CONCLUSION

Based on the results of path analysis using two-stage OLS regression on 120 monthly observations, this study concludes that inflation has a positive and significant effect on the Jakarta Composite Index (JCI), and the exchange rate also has a positive and significant effect on the JCI. Meanwhile, the BI Rate does not show a significant effect on the JCI. However, when examined in relation to Telkom's stock returns, none of the macroeconomic variables, namely inflation, interest rates, and exchange rates, nor the JCI as an intervening variable, has a significant direct or indirect effect. These findings indicate that macroeconomic movements that influence the aggregate stock market do not necessarily translate into significant changes in the stock returns of a specific company.

Furthermore, the JCI is unable to mediate the influence of macroeconomic variables on Telkom's stock returns. The indirect effects of inflation, interest rates, and exchange rates through the JCI are smaller than their direct effects, indicating that the mediation hypothesis

is not empirically supported. This result suggests differences in transmission mechanisms between the aggregate market level and individual company stock performance. Therefore, investors in the telecommunications sector should not rely solely on macroeconomic indicators when making investment decisions, but should also consider a more comprehensive analysis of company fundamentals.

For future research, it is recommended to include additional control variables, such as earnings per share (EPS) growth, dividend yield, and market sentiment index, in order to improve the predictive power of the model. In addition, expanding the research scope to include other telecommunications companies or strategic sectors may strengthen the generalizability of the findings and provide a broader understanding of the relationship between macroeconomic conditions, market performance, and individual stock returns.

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