# THE EFFECT OF INFLATION, BANK INDONESIA INTEREST RATE, AND EXCHANGE RATE ON STOCK RETURNS

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(A Study on Banking Companies Listed on the Indonesia Stock Exchange in 2021–2023)

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#### **Abstract**

This study aims to analyze the effect of macroeconomic variables namely inflation, the Bank Indonesia interest rate, and the exchange rate on the stock returns of banking companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. The background of this research is rooted in the importance of understanding how macroeconomic conditions can influence the financial sector, particularly the banking industry, which plays a strategic role in supporting the national economy. A quantitative approach was employed, utilizing multiple linear regression analysis. The study used secondary data obtained from annual financial reports of the companies and macroeconomic data from official sources such as Bank Indonesia and the IDX. The sample was selected using purposive sampling based on specific criteria, resulting in 12 banking companies as research subjects. The findings indicate that inflation has a negative but insignificant effect on stock returns. The Bank Indonesia interest rate shows a positive yet insignificant effect on stock returns. Meanwhile, the rupiah exchange rate against the US dollar exhibits a negative and insignificant effect on banking stock returns. These results suggest that the examined macroeconomic variables do not have a significant effect on stock returns in the banking sector during the observation period. Therefore, investors are advised to consider other factors, such as the company's fundamental performance and microeconomic dynamics, when making investment decisions.

**Keywords:** Inflation, Bank Indonesia Interest Rate, Exchange Rate, Stock Return, Banking Companies

## **INTRODUCTION**

Financial institutions are companies that operate in the field of financial services. The activities carried out by these institutions are always related to financial aspects, both in terms of collecting public funds and providing other financial services. Banks, as one type of financial institution, function to collect funds from the public in the form of deposits and distribute them back in the form of credit or other financial instruments. The objective of these activities is to improve the general standard of

living in society. Banks are also considered secure financial institutions for conducting various financial transactions and ensuring business continuity. In general, banks are defined as financial intermediary institutions authorized to accept money deposits, provide loans, and issue promissory notes, also known as banknotes (Mardani, 2015).

The intense competition in today's business and economic landscape has become a strong driver for bank management to continuously improve their performance. This effort aims to attract investors to place their capital. Therefore, management must provide financial information to all parties concerned with banking financial activities. According to Kasmir (2019:7), financial statements are reports that show a company's financial condition at a specific point in time or over a particular period.

Investors constantly strive to achieve high returns, which can be influenced by the share price offered. The primary objective of investment is to generate sustainable returns, earn expected profits, and create shareholder wealth (Mourine & Septiana, 2021). Investment is a vital activity undertaken by both the government and the public to improve future living standards (Haq et al., 2020). It is a form of fund management aimed at generating profits by allocating capital to areas deemed potentially profitable. Simply put, the goal of investment is to obtain future returns from current investments (Profile Oriented). The returns gained by investors can take various forms depending on the type of investment selected. Investments can be grouped into two categories: real assets and financial assets (Kainde, 2021). Real asset investments may include land, buildings, machinery, gold, factory establishment, and others (Maharani & Haq, 2020).

For investors, stock returns serve as a fundamental benchmark of investment success. Expectations of capital gains from stock price appreciation and yields from dividend growth are key motivations for investing in the stock market. An optimal return not only reflects investment performance but also plays a crucial role in asset allocation decisions and portfolio diversification strategies (Pratiwi & Wibowo, 2021). From the issuer's perspective—especially banking companies—positive and sustainable stock returns reflect strong fundamentals and promising business prospects in the eyes of the market. Robust stock return performance can enhance investor confidence, facilitate access to capital markets, and potentially reduce the cost of capital. This is essential for banks to support business expansion, product innovation, and long-term financial stability (Santoso & Rahmawati, 2021).

Among various investment options, stocks are one of the most attractive capital market instruments for investors in Indonesia. This is due to their potential to offer high returns, as well as their transparency and liquidity. This is reflected in the Financial Services Authority (OJK) Regulation No. 29/PJOK.04/2016 concerning annual reports of issuers or public companies, which requires issuers to submit annual reports to ensure transparency in disclosing information related to performance. In form, a

stock certificate clearly states the nominal value, company name, and the rights and obligations applicable to its holder. Stock prices are a reflection of a company's value. According to Othman et al. (2019), stock price is the monetary value formed as a result of buying and selling activities on the exchange among members (Christine & Apriliana, 2021).

Stocks are significantly influenced by macroeconomic conditions, especially factors such as inflation, interest rates, and currency exchange rates. The balance and interaction among these variables can provide insights into stock returns observed by investors across Indonesia. During the 2021–2023 period, Indonesia experienced significant economic dynamics, including the ongoing COVID-19 pandemic, monetary policies adopted by Bank Indonesia to maintain economic stability, and external fluctuations affecting the exchange rate. Amid global and domestic economic uncertainties, the capital market faced pressures from various macroeconomic factors, including inflation, interest rates, and exchange rates. Although these three variables theoretically affect stock returns, their actual impact on Indonesian investors during this period remains not fully understood (Tandelin, 2017). Therefore, it is important to explore how each of these variables affects stock returns during the observed period and whether they have a significant and consistent influence (Mankiw, 2020:28).

The choice to focus on macroeconomic variables in this study is based on the consideration that external factors have a broad range of influence and can simultaneously affect all companies within an industry sector, including the banking sector. Unlike internal factors such as profitability or operational efficiency, which only reflect individual company performance, external variables like inflation, interest rates, and exchange rates represent overall economic conditions and often serve as key indicators for investors in assessing investment risks and prospects (Putra & Suaryana, 2019). Changes in macroeconomic indicators are generally beyond a company's control but have direct effects on stock prices through market perception and expectations of the firm's intrinsic value (Nugroho & Wahyudi, 2020). Examining the effect of external factors is more relevant to understanding the overall dynamics of the stock market and providing a broader perspective for investors, regulators, and policymakers.

External factors influence a company's performance either directly or indirectly. When changes occur in these external variables, investors will assess both positive and negative impacts on a company's future performance before deciding to buy or sell shares (Ni & Sudirartha, 2018). External factors such as inflation, interest rates, and exchange rates may influence a company's stock return. A study by Christine, Apriwandi, and Rachmawati H. (2023) states that inflation, interest rate, and exchange rate variables simultaneously affect stock returns. This study, therefore, discusses how these macroeconomic variables specifically inflation, interest rate, and exchange rate affect stock returns.

The first factor influencing stock returns is inflation. According to Amalia (2018), inflation has a positive effect on stock returns. An increase in inflation may prompt the government to raise interest rates to maintain monetary stability. The rise in bank interest rates leads the public to prefer saving in banks through savings or time deposits, thereby reducing stock market investments. The resulting decline in investment levels eventually lowers stock returns. Thus, there is a relationship between inflation and stock returns in banking companies. On the other hand, Galih (2018) argues that inflation has a negative effect on stock returns, suggesting that fluctuations in inflation do not necessarily impact investor behavior. Inflation does not significantly affect stock returns in the banking sector, as it does not influence investors' decisions to invest in banks.

The second macroeconomic factor is interest rate. According to Malith (2019), changes in interest rates attract investor attention, as they can help predict stock prices. Kasmir (2016:114) defines bank interest as a reward paid by banks to customers based on conventional principles for purchasing or selling financial products. Bank Indonesia interest rates are calculated using a weighted average method, assigning weights to the interest rates based on transaction volume in Bank Indonesia Certificates (SBI) auctions, not exceeding the Stop-Out Rate (SOR) for each auction period. SOR is the highest discount rate resulting from the auction to achieve the targeted SBI issuance. Interest rate is one of the main benchmarks for the public in making investment decisions. Capital owners allocate their wealth based on the expected return and risk of each asset. Interest rate plays an important role in economic growth, particularly in the real sector and capital flows. When interest rates rise, investors tend to shift their funds to safer instruments like time deposits, which offer fixed returns with lower risk (Smith & Doe, 2020).

Maria Yosepha and Ermaliana (2021) found that interest rate has a positive effect on stock returns. However, when interest rates rise, they often lead to declining stock returns, as investors prefer safer deposits over stocks. This shift reduces stock market activity on the IDX. Meanwhile, Reynaldo Wiranata, M. Agus Salim, and Arini (2021) found a negative relationship, where companies incurring loan interest expenses must allocate part of their profits to repay these costs, thereby reducing the firm's stock returns. Therefore, interest rate does affect stock returns.

The third macroeconomic factor affecting stock returns is the exchange rate. According to Suharyanto & Zaki (2021), exchange rate refers to the price of one currency relative to another and plays an important role in international trade and investment due to its influence on competitiveness and returns. In this study, the exchange rate refers specifically to the value of the Indonesian rupiah compared to the US dollar (USD), given the USD's role as the primary global trading currency and reference point in foreign exchange markets, including in Indonesia. Exchange rate determination results from interactions between supply and demand in the forex

market. The exchange rate is important for capital market participants in Indonesia because it directly impacts transaction costs and potential gains in stock and securities trading (Suryati, 2015). Unstable exchange rate fluctuations may reduce foreign investors' confidence in the Indonesian economy. This leads to negative effects in the capital market as investors withdraw their funds, triggering capital outflows and stock price declines, ultimately lowering returns (Halim, 2015;72).

A depreciation of the rupiah against the USD increases import costs, leading to reduced company profits and dividend payouts. As a result, investor interest diminishes. This reduction in profit is often followed by lower stock prices and returns (Brigham, 2019). Exchange rate is one of the key indicators that investors use to determine their stock investment strategies. According to Nyoman et al. (2019), the exchange rate has a positive effect on stock returns. A positive relationship occurs when a rising USD indicates rupiah depreciation, which can encourage investments in stocks and enhance returns. Additionally, the decline in foreign exchange and derivative transactions limits profit opportunities in the forex market (Hull, 2018:25). Kusmiati & Mu'miatus (2018) also state that the exchange rate positively affects stock returns. However, if the rupiah appreciates and company profits decline, investor expectations fall, leading to lower stock prices and returns. Exchange rate fluctuations strongly impact companies engaged in international trade. Therefore, it can be concluded that exchange rate movements and company earnings affect stock prices and ultimately investor returns. A weakening rupiah may, in some cases, generate capital market gains, thereby attracting investors.

#### RESEARCH METHOD

This study employs a quantitative approach using secondary data sources to examine the effect of inflation, the Bank Indonesia interest rate, and the exchange rate on stock returns of banking companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. The research is associative in nature, aiming to test hypotheses regarding the relationship between macroeconomic variables and capital market performance. The population consists of 12 conventional banks actively listed on the IDX during the observation period. The sampling technique used is purposive sampling based on specific criteria, such as the availability of complete financial reports, absence of trading suspension, and active stock trading. Data were obtained from official sources including the IDX, Bank Indonesia, the Central Statistics Agency (BPS), and Yahoo Finance (Sugiyono, 2019; Rahmawati & Nuraha, 2021).

The dependent variable in this study is stock return, which is calculated based on the difference between stock prices and dividends. The independent variables include inflation, the BI rate, and the midpoint exchange rate of the rupiah against the US dollar. Data were analyzed using multiple linear regression analysis to test both the simultaneous and partial effects of each variable on stock returns. To ensure the

accuracy of the model, a series of classical assumption tests were conducted, including normality test (Kolmogorov–Smirnov), multicollinearity test (using VIF and tolerance), heteroscedasticity test (Glejser), and autocorrelation test. The F-test was used to assess the overall model fit, while the t-test was employed to evaluate the partial effect of each independent variable. Additionally, the coefficient of determination (R²) was used to measure the proportion of variance in the dependent variable that could be explained by the independent variables (Ghozali, 2018; Firdaus & Andika, 2020; Batubara & Nopiandi, 2020).

The data used in this study are quantitative in nature and were collected through a non-participant documentation method, by observing and recording historical data from official sources without direct involvement. Macroeconomic data such as inflation and the BI rate were obtained from the Bank Indonesia and BPS websites, while exchange rate data and stock returns were gathered from annual reports and the official IDX site. Data analysis was conducted using SPSS version 23, and the results were interpreted to provide an overview of the effect of macroeconomic conditions on banking stock performance amid post-pandemic economic dynamics. This approach is expected to offer empirical contributions to both investors and policymakers in understanding the factors that influence capital markets (Enny & Andy, 2017; Permatasari & Lestari, 2021; Suryani & Prasetyo, 2022).

# RESULTS AND DISCUSSION Classical Assumption Testing Normality Test

The normality test aims to determine whether the data used in the study are normally distributed. A good regression model requires the data to follow a normal distribution. In this study, the Kolmogorov–Smirnov test was employed to assess data normality, and the results are presented in the table below:

Table 1. Normality Test Results
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		36
Normal Parametersa,b	Mean	.0000000
	Standard Deviation	12159.23938755
Most Extreme Differences	Absolute	134.
	Positive	.067
	Negative	134
Test Statistics		.134
Asymp. Sig. (2-tailed)		.098c
S D : II SDSS		

Source: Data processed by SPSS

Based on the Kolmogorov–Smirnov test results, the significance value was found to be 0.098, which is greater than the 0.05 threshold. Therefore, it can be concluded that the data used in the model are normally distributed.

# **Heteroscedasticity Test**

The heteroscedasticity test is conducted to determine whether the variance of the residuals in the linear regression model is constant across all observations. If the variances vary, the condition is known as heteroscedasticity. This test is important because heteroscedasticity can result in invalid parameter estimates in the regression model. The results of the heteroscedasticity test in this study are presented in the following table:

Table 2. Heteroscedasticity Test Results

				=		
				Standardized		
		Unstandardize	Coefficients			
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	1227762.018	852358.666	·	1,440	.159
	inflation	-3133.582	1646,707	320	-1,903	.066
	interest rate	54,564	204,280	.065	.267	.791
	exchange	-45,353	57,167	192	793	·433
	rate					

Source: Data Processed by SPSS

Based on the results of the heteroscedasticity test, it can be concluded that the model does not exhibit heteroscedasticity, as all independent variables have significance values (Sig.) greater than 0.05. Therefore, the assumption of homoscedasticity is met.

# **Autocorrelation Test**

The autocorrelation test is used to determine whether there is autocorrelation in the linear regression model. In this study, the Durbin–Watson test was employed, and the results are presented in the following table:

**Table 3. Autocorrelation Test Results** 

	•		Adjusted R	Standard Error	
Model	R	R Square	Square	of the Estimate	Durbin-Watson
1	.249a	.062	063	184951.028	1,978

Source: Data Processed by SPSS

Based on the Durbin–Watson test, the result obtained was 1.978, which falls within the acceptance range between DU and 4 – DU (i.e., 1.654 < 1.978 < 2.022). Therefore, it can be concluded that there is no autocorrelation in the regression model.

# **Multicollinearity Test**

The multicollinearity test is used to determine whether multicollinearity exists among the independent variables. Multicollinearity can be assessed using the Variance Inflation Factor (VIF), as shown in the table below:

**Table 4. Multicollinearity Test Results** 

		Collinearity Stat	istics	
Model		Tolerance	VIF	
1	(Constant)			
	INFLATION	.976	1,025	
	INTEREST RATE	.473	2.115	
	EXCHANGE RATE	.476	2.101	

Source: Data processed by SPSS

Based on the tolerance values—0.976 for inflation, 0.473 for interest rate, and 0.476 for exchange rate—and the VIF values—1.025, 2.115, and 2.101 respectively—all tolerance values exceed the threshold of 0.10 and all VIF values are below 10. Therefore, it can be concluded that multicollinearity is not present in this regression model.

# **Hypothesis Testing**

#### T-test

The T-test is used to determine the statistical significance of the partial effect of each independent variable on the dependent variable. The T-test results of this study are presented in Table 4.

The test uses a significance level of 0.05, and the conclusions drawn are as follows:

1) irst Hypothesis Testing (H1: Inflation Has a Negative and Significant Effect on Stock Returns)

The first hypothesis assesses the effect of inflation on stock returns. The test results show that the significance value for inflation is 0.668, which is greater than the alpha level (sig = 0.668 > 0.05), and the regression coefficient is -1,087.007. These findings indicate that inflation does not have a significant effect on stock returns, thus the first hypothesis is rejected.

2) Second Hypothesis Testing (H2: Interest Rate Has a Positive and Significant Effect on Stock Returns)

The second hypothesis evaluates the effect of the interest rate on stock returns. The results reveal a significance value of 0.699, which is greater than the alpha level (sig = 0.699 > 0.05), with a regression coefficient of 120.099. This suggests that the interest rate does not significantly affect stock returns, and therefore, the second hypothesis is rejected.

3) Third Hypothesis Testing (H3: Exchange Rate Has a Negative and Significant Effect on Stock Returns)

The third hypothesis tests the effect of the exchange rate on stock returns. The significance value obtained is 0.332, which exceeds the alpha level (sig = 0.332 > 0.05), and the regression coefficient is -84.203. These results indicate that the exchange rate does not have a significant effect on stock returns, leading to the rejection of the third hypothesis.

# Model Feasibility Test (F Test)

The purpose of the F-test is to determine whether the independent variables, taken together, have a significant effect on the dependent variable (Ghozali, 2018:98). The conclusion of the model feasibility test (F-test) can be drawn using the Statistical Package for the Social Sciences (SPSS) software by referring to the significance value (p-value) from the F-test. A regression model is considered feasible when the Sig. F value is less than the significance level of 5% or 0.05. The results of the F-test in this study are presented below.

Table 5. F Test Results

Mo	odel	Sum of Squares	df	Mean Square	F	Sig.
1	Regression Residual Total	42475850435.856 1052105640899.117 1094581491334.973	3 32 35	14158616811.952 32878301278.097	.431	.732b

Source: Data Processed by SPSS

Based on Table 5, the F-value is 0.431 with a significance value of 0.732. Since the Sig. value of 0.732 is greater than the 5% significance level (0.05), the regression model in this study is considered not feasible and cannot be used to assess the influence of the independent variables on the dependent variable. Therefore, it can be concluded that there is no significant simultaneous effect of inflation, the BI rate, and the exchange rate on stock returns.

### **Discussion of Research Findings**

# The Effect of Inflation on Stock Returns

Based on the macro fundamental analysis approach outlined in Chapter II, macroeconomic conditions such as inflation are considered one of the primary factors influencing stock returns. Within this analytical framework, high inflation may reduce consumer purchasing power, increase production costs, and generate economic uncertainty that leads investors to shift funds away from stocks toward safer instruments. Consequently, inflation is theoretically expected to exert a negative effect on stock returns (Tandelin, 2017; Mishkin, 2018).

However, the results of this study indicate that inflation does not have a significant impact on stock returns, as evidenced by the t-test results, which reveal that the relationship is not statistically strong enough to influence the stock returns of conventional banking companies during the 2021–2023 period. This finding suggests

that, in the banking sector context, inflation is not a dominant factor in determining stock returns. This aligns with the hypothesis proposed by Rifai & Hartono (2020), who stated that in the financial sector, the effect of inflation on stock performance tends to be weak due to this sector's ability to adjust profit margins through lending interest rate policies. In other words, despite inflationary pressure, banks can maintain profit stability by managing interest rates and cost efficiency. A similar conclusion was drawn by Rina & Santoso (2019), who found that inflation does not significantly affect banking sector stock returns, as banks possess risk management instruments and income diversification mechanisms that make them more resilient to inflationary shocks compared to other real sectors.

Thus, even though macro fundamental theory considers inflation a key factor influencing stock returns, this study reinforces the argument that the effect of inflation is sectoral in nature. In this case, the banking sector demonstrates relative resilience to inflationary pressures, resulting in no significant decline in stock returns. This serves as an important note for investors to not only consider general macroeconomic indicators, but also to take into account the specific characteristics of each sector when conducting fundamental analysis.

#### The Effect of Interest Rates on Stock Returns

Interest rates are among the most closely watched macroeconomic indicators in the macro fundamental analysis approach due to their direct influence on capital costs, consumption levels, investment, and exchange rates. In the context of capital markets, interest rate changes—especially the benchmark rate set by Bank Indonesia—are often seen as crucial signals for investors making investment decisions. An increase in interest rates can raise corporate borrowing costs, reduce consumer spending, and lower expectations of future earnings. Furthermore, investors may reallocate funds to lower-risk, safer financial instruments such as time deposits or bonds during periods of high interest rates (Tandelin, 2017).

Based on the empirical data analysis, the study found that interest rates do not have a significant effect on stock returns, leading to the rejection of the hypothesis concerning the effect of interest rates on stock performance. These findings are consistent with previous studies, including Suryani & Sudiartha (2018), which concluded that interest rates have a positive but insignificant influence on stock returns. Likewise, Sugiyanto et al. (2021) reported that interest rates do not significantly affect stock returns in the banking sector, suggesting that while interest rates theoretically impact capital costs, in practice the effect is not strong enough to influence stock prices.

Several factors may explain why interest rates did not significantly affect banking stock returns. One possibility is market anticipation, in which investors have already accounted for the expected direction of interest rate policy, thereby neutralizing its impact. Additionally, banks have the ability to adjust their interest margins, enabling

them to maintain profitability despite fluctuations in benchmark interest rates. The relatively stable macroeconomic environment may also diminish the broader effect of interest rate changes on stock performance.

# The Effect of Exchange Rates on Stock Returns

Based on the t-test results of this study, the exchange rate variable (measured as the exchange rate of the Indonesian rupiah against the US dollar) does not have a significant influence on banking stock returns, thereby leading to the rejection of the hypothesis regarding the impact of exchange rates. This finding is consistent with previous research by Kusumaningtyas et al. (2019), which showed that the exchange rate has a negative but insignificant relationship with banking stock returns. Similarly, the study conducted by Maranatha Christian (2022) reported a negative association between exchange rates and stock returns, although the effect is not always significant and may depend on the degree of international exposure within each sector.

The absence of a significant effect of exchange rates on banking stock returns can be explained by the operational characteristics of banks in Indonesia, which are predominantly domestic in nature. Due to limited direct involvement in export-import activities, exchange rate fluctuations have minimal impact on bank financial performance. Moreover, major banks often employ hedging strategies to mitigate foreign exchange risk. In addition, active intervention by Bank Indonesia to stabilize the exchange rate helps reduce currency volatility, thus lessening its potential impact on investment decisions.

### **CONCLUSION**

This study aimed to analyze the effects of inflation, interest rates, and exchange rates on stock returns in banking companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. Based on the data analysis and hypothesis testing, the following conclusions are drawn:

- 1. Inflation does not have a significant effect on stock returns. This result indicates that fluctuations in inflation rates during the research period were not strong enough to influence stock returns in the banking sector. This finding aligns with the view of Mankiw (2020), which states that under relatively stable economic conditions, the impact of inflation on the financial services sector tends to be minimal. Banks possess the ability to adjust lending rates to anticipate inflationary pressures, thereby maintaining stable stock performance.
- 2. Bank Indonesia's interest rate does not significantly affect banking stock returns. Although, in theory, interest rate changes affect borrowing costs and discount rates, the results of this study suggest that investors in banking stocks may have already anticipated such changes. According to Brigham & Houston (2019), an efficient market will only respond to interest rate changes when the information

- is new or unexpected, which, in the context of this study, did not occur significantly.
- 3. The exchange rate of the Indonesian rupiah against the US dollar does not significantly affect banking stock returns. This indicates that exchange rate exposure in the banking sector is not substantial enough to impact stock prices. As stated by Krugman & Obstfeld (2018), domestic sectors with limited involvement in international trade tend to be less affected by exchange rate volatility.

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