Research Articles

Analisis Pengaruh Inflasi, Fed Rate, Dan Bi Rate Terhadap Indeks Harga Saham IDX 30 Di Bursa Efek Indonesia

Muhamad Raafi Al Hadi Mubarrok [1]* , Ririt Iriani [2]

[1] Universitas Pembangunan Nasional "Veteran", Indonesia; raafimuhammad859@gmail.com
[2] Universitas Pembangunan Nasional "Veteran", Indonesia: ririt.iriani.ep@upnjatim.ac.id
* Corresponding Author : Muhamad Raafi Al Hadi Mubarrok

Abstract: The IDX30 stock index can fluctuate or change, and these changes occur due to several macroeconomic factors, including the Fed interest rate, BI interest rate, and inflation rate. The objective of this study is to understand the impact of changes in BI interest rates, Fed interest rates, and inflation on the IDX30 stock index. The data used in this study covers the period from 2022 to 2024. This study employs a multiple regression analysis model based on OLS as its methodology. The results of the multiple regression analysis indicate that the IDX30 stock index is significantly influenced, both partially and simultaneously, by inflation, the Fed rate, and the BI rate. The findings suggest that the economy is stable and not in a recessionary state, thereby encouraging investment in stocks for speculative trading. This, in turn, supports trading levels that allow investors to purchase stocks even when inflation increases.

Keywords: Investasi, Indeks saham, IDX30, Inflasi, Fed rate, Bi rate

1. Introduction

The state of the economy reflects the various economic activities taking place within it. One of the sectors that influences the economy is the investment sector. It is stated that investment can contribute to economic growth. Investment is an action of allocating funds to certain assets over a specific period in order to obtain returns or an increase in the value of the investment in the future [1]. Markowitz also discussed the theory of portfolio efficiency. This theory emphasizes the importance of seeking an efficient portfolio that provides the highest return for a given level of risk or the lowest risk for a given level of return. The positive impact of investment on the economic production process leads to an increase in consumer spending, thereby accelerating economic growth.

Investments can take various forms of assets, such as stocks, bonds, real estate, currencies, commodities, and other financial instruments [2]. The most popular form of investment in the capital market is stock investment. A stock index is a collection of stocks selected based on standards and processes used in stock investment. The Indonesia Stock Exchange lists 44 types of stock indices, one of which is the IDX30 Index. This index measures the performance of 30 stocks with high market capitalization and high liquidity, supported by strong company fundamentals. Below is the IDX30 chart for the past two years.

There are 30 stocks in the IDX30 index, and its components are sourced from the LQ45 index. Several factors influence the development of the IDX30 stock index, including the benchmark interest rate and inflation rate [3]. In other words, as John Maynard Keynes stated in the concept of "Marginal Efficiency of Investment (MEI)," which explains the relationship

between the level of investment and the interest rate, also taking inflation into account when investing.

2. Research Methods

The IDX30 stock price index, which measures the average price performance of 30 stocks with strong company fundamentals, high liquidity, and large market capitalization, is the dependent variable (Y) in this analysis. The monthly data used for the IDX30 Stock Price Index is available on the Indonesia Stock Exchange website for the years 2022 to 2024 [4].

The independent variables (X) are variables that are examined to determine whether they are the cause of changes in the dependent variable. There are three independent variables to be studied, namely Inflation (X1), FED Rate (X2), and BI Rate (X3). This study uses IDX30 data obtained from the Indonesia Stock Exchange publication, BI rate data obtained from the Bank of Indonesia publication, FED rate data published on the Trading Economics website, and inflation rate data obtained from the Bank of Indonesia publication.

This study employs multiple regression analysis using the ordinary least squares (OLS) model. In this model, all data from previous sources and studies are collected, analyzed descriptively, and subjected to hypothesis testing [5]. Movements in the continuous period (time series) over twenty-seven months from January 2022 to March 2024 are also displayed. This is done to show the influence of independent variables (inflation rate, Fed rate, BI rate) on the dependent variable (Indonesian stock index IDX30).

3. Results and Discussion

Testing classical assumptions is necessary to ensure that there are no errors in the regression results. Below are the results of the classical acceptance test conducted in this study:

Table 1
One Sample Kolmogrov Smirnov test

		Unstandardized Residual
N		27
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,03577846
Most Extreme Differences	Absolute	,130
	Positive	,130
	Negative	-,078
TestStatistic		,130
Asymp. Sig. (2-tailed)[c]		,200[d]

a. Test distribution is Normal.
b. Calculated fromdata.

Only one sample To determine whether there is a sample from a specific distribution, apply the Kolmogorov-Smirnov model normality test. Researchers can confirm whether the sample represents a normally distributed population by following this process [6]. The analysis in Table 1 above indicates that the data is normally distributed because the sig (2-tailed) value of 0.281 is greater than 0.05.

Table 2

Multicolinierity tets

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	5,821	,052		111,107	,000		
	Inflasi (x1)	,048	,006	,341	8,263	,000	,987	1,013
	Fed rate (x2)	,023	,007	,253	3,202	,004	,270	3,709
	Bi rate (x3)	-,194	,014	-1,114	-14,137	,000	,271	3,685

a. Dependent Variable: Indeks IDX30 (y)

Multicollinearity testing attempts to determine whether the independent variables in a regression model are correlated. [7]. If the tolerance value is greater than 0.100 and the VIF value is less than 10.00, then there are no signs of multicollinearity, which serves as the basis for decision-making. The Variance Inflation Factor (VIF) and Tolerance values for each variable are presented based on the test findings in Table 2:

a. Variabel Inflasi (X_1) obtained: value Tolerance (0,987) > 0,10 & VIF (1,013) < 10,0

b. Variabel Fed rate (X_2) obtained: value Tolerance (0,270) > 0,10 & VIF (3,709) < 10,0

c. Variabel Bi rate (X_3) obtained: value Tolerance (0,271) > 0,10 & VIF (3,685) < 10,0

Therefore, it can be said that there are no symptoms of multicollinearity and further testing can be carried out..

Table 3

Heteroscedasticity Test

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-,018	,032		-,569	,575
	Inflasi (x1)	,004	,004	,199	,996	,330
	Fed rate (x2)	-,002	,004	-,174	-,456	,653
	Bi rate (x3)	,008	,008	,361	,945	,354

a. Dependent Variable: Abs_Res

When the residual variance varies across the range of independent variable values, heteroscedasticity occurs. To determine whether heteroscedasticity exists, it must first be determined whether the regression model shows no heteroscedasticity if the significance value is greater than $\alpha = 5\%$ or (0.05). The results of the heteroscedasticity test in Table 3 indicate the significance level (Sig.) for each variable X1, X2, and X3.

Table 4

Auto Correlation test

					Model Summary[b]
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,974[a]	,948	,941	,02801	1,723

a. Predictors: (Constant), Lag_X3, Lag_X1, Lag_X2

b. Dependent Variable: Lag_Y

To determine whether there is a correlation between the residuals of period t and period t-1 in the linear regression model, an autocorrelation test is used. Using the Durbin-Watson method, an autocorrelation test was conducted in this study [8]. Based on Figure 4, the Durbin-Watson value using the Cochrane-Orcutt method is 1.913. According to the criteria, this value falls between 2 and 4-2, indicating insufficient evidence to conclude the presence of

autocorrelation in this regression model. It can be stated that this model is free from auto-correlation.

The impact of independent variables and their influence on dependent variables can be observed by applying the Ordinary Least Squares (OLS) model [9]. The following are the results of applying Ordinary Least Squares (OLS) to estimate the variables of inflation, fed rate, and bi rate on the IDX30 Indonesia stock price index.

Table 5
Multiple linear regression model

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	5,821	,052		111,107	,000
Inflasi (x1)	,048	,006	,341	8,263	,000
Fed rate (x2)	,023	,007	,253	3,202	,004
Bi rate (x3)	-,194	,014	-1,114	-14,137	,000

a. Dependent Variable: Indeks IDX30 (y)

Based on the regression results presented in Table 5, the constant value of 5.821 indicates that if all independent variables remain unchanged, the dependent variable (IDX30) will increase by 5.821%.

Inflation : The coefficient for inflation is 0.048, meaning that a one-unit increase in inflation leads to a 0.048% increase in the IDX30 index, assuming all other variables are held constant. This demonstrates a positive relationship between inflation and the IDX30.

Fed Rate :The Fed Rate coefficient of 0.023 implies that if the Fed Rate increases by one unit, the IDX30 index will increase by 0.023%, provided other variables remain constant. This indicates a positive influence of the Fed Rate on IDX30.

BI Rate : The BI Rate has a coefficient of -0.194, indicating that a one-unit increase in the BI Rate causes a 0.194% decrease in the IDX30 index, assuming all other factors are unchanged. This reflects a negative impact of the BI Rate on IDX30.

Inflation : The T-value for inflation is 8.263, which is greater than the critical T-value of 2.068, and the significance level is 0.000, less than the 0.05 threshold. This confirms that inflation has a positive and statistically significant effect on the IDX30 index. Therefore, the null hypothesis (H01) is rejected, and the alternative hypothesis (Ha1) is accepted.

Fed Rate : The Fed Rate shows a T-value of 3.202, exceeding the critical value of 2.068, with a significance level of 0.004 (<0.05). This indicates that the Fed Rate also has a significant partial effect on the IDX30 index, leading to the rejection of the null hypothesis (H02) and acceptance of the alternative hypothesis (Ha2).

BI Rate : The BI Rate has a T-value of 14.137, well above 2.068, and a significance of 0.000, confirming that it significantly influences the IDX30 index. Hence, the null hypothesis (H03) is rejected, and the alternative hypothesis (Ha3) is accepted.

Table 6

F Test

	ANOVA[a]				
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	,826	3	,275	190,199	,000[b]
Residual	,033	23	,001		
Total	,859	26			

a. Dependent Variable: Indeks IDX30 (y)
b. Predictors: (Constant), Bi rate (x3), Inflasi (x1), Fed rate (x2)

Table 6 shows that the calculated F value is greater than the table F value because the calculated F value is 190.199 and the table F value is 3.03. This indicates that each independent variable has an impact on the dependent variable..

Table 7

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,980[a]	,961	,956	,03804

a. Predictors: (Constant), Bi rate (x3), Inflasi (x1), Fed rate (x2)

Adjusted R-squared aims to determine the percentage of the dependent variable's impact explained by the independent variables [10]. Based on the results of Table 7, the percentage of variance in the IDX30 (Y) variable that can be explained by the Inflation (X1), Fed Rate (X2), and Bi Rate (X3) variables is 96.1%, while 3.9% is explained by other variables outside the regression model in this study. Based on the results of the data test, the coefficient of determination is obtained by looking at the R Square column.

The Effect of Inflation on IDX30 Stock Prices in Indonesia

Based on statistical test results using multiple linear regression analysis, the inflation coefficient value obtained was 0.048, indicating that the inflation rate has a positive effect on IDX30 stock prices in Indonesia. The regression coefficient of the inflation rate variable shows that every 1% increase in the inflation rate will increase IDX30 stock prices in Indonesia by 0.048. When inflation rises, it increases companies' production costs, such as raw materials and labor. If companies can pass on these increased costs to consumers through higher product prices, their profit margins will increase, which can lead to higher stock prices. Companies with significant pricing power can pass on inflation costs to consumers.

The Impact of the FED Rate on IDX30 Stock Prices in Indonesia

Based on the results of statistical tests using multiple linear regression analysis, the FED rate coefficient was found to be 0.023, indicating that the FED rate has a positive impact on IDX30 stock prices in Indonesia. The regression coefficient of the FED rate variable shows that every 1% increase in the FED rate will increase IDX30 stock prices in Indonesia by 0.023. The reason the FED rate affects the IDX30 stock price index is because an increase in the FED rate can strengthen the US dollar exchange rate. If the exchange rate of the rupiah against the US dollar remains stable or strengthens, Indonesian export-oriented companies can benefit from the strengthening of the dollar. Their income in rupiah can increase, which can improve the company's financial performance and increase their stock prices. The Fed's interest rate decision can also affect overall investor sentiment.

The effect of the BI rate on IDX30 stock prices in Indonesia

Based on statistical tests using multiple linear regression analysis, the BI rate coefficient was found to be 0.194, indicating that the BI rate has a negative impact on IDX30 stock prices in Indonesia. The regression coefficient for the BI rate variable shows that every 1% increase in the BI rate reduces IDX30 stock prices in Indonesia by 0.194. Fluctuations in the BI rate can have a significant impact on the movement of stocks included in the IDX30 index in the Indonesian stock market, such as the impact on borrowing costs: An increase in the BI rate can lead to an increase in borrowing costs for companies, which can reduce company profits and reduce the attractiveness of investing in IDX30 stocks and other activities, and the financial sector: higher interest rates can reduce credit demand due to higher borrowing costs for consumers and businesses. This reduces the volume of new loans and bank revenue growth. For other sectors, companies may face higher borrowing costs, which can reduce profitability, investment, and business expansion, leading to a decline in stock prices.

5. Conclusion and Suggestion

From the analysis conducted on the impact of inflation, the FED rate, and the BI rate on the IDX30 stock price index for the period January 2022 to March 2024, the following conclusions can be drawn::

a. Inflation has a positive effect on the Idx30 stock price index in Indonesia, which means that as inflation increases, it can increase the Idx30 stock price index in Indonesia.
b. The FED Rate has a positive effect on the Idx30 stock price index in Indonesia, which means that as the Fed rate increases, it can increase the Idx30 stock price index in Indonesia.
c. The BI Rate has a negative impact on the IDX30 stock price index in Indonesia, meaning that as the BI Rate increases, it can decrease the IDX30 stock price index in Indonesia. 4. Inflation, the FED Rate, and the BI Rate collectively have a positive and significant impact on the IDX30 stock price index in Indonesia..

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