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The Impact of Inflation, Exchange Rate, Interest Rate, and Economic Growth on The Indonesia Stock Exchange Composite Index

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ABSTRACT

This study aims to analyze the influence of macroeconomic variables specifically inflation, exchange rate, interest rate, and economic growth on the Composite Stock Price Index (IHSG) in Indonesia during the 2005–2023 period. Recent fluctuations in global and domestic economic conditions have raised concerns about how these key indicators affect stock market performance, prompting the need for empirical examination. The research objective is to identify which of these variables significantly affect the IHSG and to confirm whether common assumptions about their influence hold true over a longer time frame. A saturated sampling method was employed, yielding 19 annual time-series data points. The data were analyzed using multiple linear regression techniques with the assistance of EViews 12 software. The findings reveal that the exchange rate and economic growth both have a significant negative impact on IHSG, whereas the interest rate exerts a significant positive influence. In contrast, inflation does not significantly affect the index. These results suggest that investors, market analysts, and policymakers should closely monitor changes in exchange rates, interest rates, and economic growth, as these factors can meaningfully impact market dynamics. The conclusion drawn from this study confirms that not all macroeconomic variables influence IHSG as commonly assumed, and further research may be necessary to explore these relationships in different economic contexts or with higher-frequency data.

INTRODUCTION

One of the most popular forms of investment is stock investment, which offers two main benefits: dividends and capital gains (Titman, 2018). However, stock investments also carry risks, such as capital loss due to declining stock prices, as well as liquidity risk if a company goes bankrupt, which could cause shareholders to lose the entire value of their investment.

Stock trading in Indonesia is facilitated by the Indonesia Stock Exchange (IDX), which provides a platform for trading various securities such as stocks, bonds, and derivatives. Stock price movements on the IDX are summarized in the Jakarta Composite Index (JCI), which serves as a market sentiment indicator and a tool for evaluating investment decisions (idx.co.id).

The JCI is influenced by macroeconomic factors (Adenyana, 2020). For example, a decrease in the benchmark interest rate by Bank Indonesia can boost market optimism by encouraging business expansion and increasing corporate profits. High inflation may pressure purchasing power and profit margins, while a weakening rupiah can raise import costs. Positive economic growth generally has a favorable impact on the JCI as it indicates increased purchasing power and business prospects. However, previous studies have shown mixed results. Some studies found that macroeconomic variables have a negative impact on the JCI, while others found no significant effect or even a positive relationship. These inconsistencies are also evident in cross-country studies, such as those conducted in Malaysia and Arab countries.

These inconsistencies have prompted this research to re-examine the impact of macroeconomic variables on the JCI, particularly in the context of Indonesia during the 2005–2023 period. Given the dynamic and challenging economic backdrop during this period, the study is expected to provide comprehensive and relevant insights for investors, policymakers, and capital market researchers.

LITERATURE REVIEW

Signalling Theory. According to Spence (1973), in the labor market, higher-quality workers tend to send signals—such as educational qualifications—to differentiate themselves from lower-quality workers. The purpose of signaling is to reduce information asymmetry, which often leads to imbalances in economic decision-making. This concept was originally developed in the context of the labor market and has since evolved into an important framework in economics, psychology, and communication.

Contagion Effect Theory. Ahmad (2021) explains the phenomenon in which events or shocks occurring in one region, sector, or market can spread to others, even when no direct connection previously existed. In financial markets,

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the contagion effect describes how a crisis in one region can trigger volatility in other markets.

Arbitrage Pricing Theory (APT). According to Yadav and Hedge (2021), APT is an alternative to the Capital Asset Pricing Model (CAPM). Unlike CAPM, which considers only a single systematic factor (market risk) as a determinant of stock returns, APT assumes that an asset's return is influenced by multiple factors, including both macroeconomic and microeconomic variables. APT is advantageous due to its flexibility in accommodating numerous systematic risk factors. This approach is considered more realistic and adaptable to various market contexts, as it does not restrict the number or type of factors used in the model.

Jakarta Composite Index (JCI/IHSG). The JCI is an indicator that reflects the performance of Indonesia's stock market. It calculates the average price change of stocks traded on the Indonesia Stock Exchange (IDX) and captures the overall trend in stock price movements. The index is used to measure market conditions—whether rising, falling, or stable. As a market indicator, the JCI is also commonly used by investors and analysts to assess the direction of the Indonesian capital market in both the short and long term (Maulinda, 2018).

Inflation is defined as a general increase in the prices of goods and services over a certain period, which leads to a decline in purchasing power (Mankiw, 2016). In the stock market context, inflation can affect corporate profitability and investor risk perception. Several studies have shown that inflation negatively affects stock indices. Research by Silalahi and Sihombing (2021), Koapaha (2022), and Mohnot et al. (2021) in Malaysia, as well as Adel & Faiçal (2021) in Arab countries, concluded that inflation significantly reduces stock indices. Conversely, different results were found in studies by Ratnasari et al. (2021) and Antonio et al. (2021), which found that inflation has a positive effect on the JCI. Meanwhile, Ahmad (2021) and Setiawan (2020) found that inflation does not significantly affect the JCI.

Exchange Rate reflects the value of one currency against another. According to Mishkin (2015), exchange rate fluctuations are influenced by interest rate differentials, inflation, and a country's economic and political stability. In relation to the stock market, currency depreciation tends to increase import costs and reduce company profits, while appreciation benefits certain sectors. Research by Silalahi and Sihombing (2021) and Ratnasari et al. (2021) suggested that exchange rates negatively affect the JCI. However, Ahmad (2021) and Setiawan (2020) did not find a significant influence. On the other hand, international studies such as those by Mohnot et al. (2021) in Malaysia, Antonio et al. (2021), and Ndlovu (2022) in Johannesburg showed a positive effect.

Interest Rate is the cost of borrowing money and is often used as a key monetary policy tool to regulate consumption, investment, and inflation (Mishkin, 2015). High interest rates tend to hinder economic activity by increasing borrowing costs, while low rates can spur growth. Research by Silalahi and Sihombing (2021) and Darmawan and Haq (2022) found that interest rates have a positive influence on the JCI, suggesting that rate adjustments can raise investor profit expectations. However, Setiawan (2020) and Koapaha (2022) found a significant negative effect. Ahmad (2021) and Ratnasari et al. (2021) found no significant relationship, indicating that market responses to interest rate changes may be contextual. Findings from Johannesburg by Ndlovu (2022) support the view that interest rates can have a positive effect depending on local market dynamics.

Economic Growth reflects the sustained increase in the production of goods and services, usually measured through real Gross Domestic Product (GDP) (Todaro & Smith, 2015). Strong economic growth provides a positive signal to the stock market as it indicates higher income, corporate profits, and investor confidence. Research by Silalahi and Sihombing (2021) and Setiawan (2020) showed that economic growth positively affects the JCI. However, Ahmad (2021), Koapaha (2022), and Adel & Faiçal (2021) found that economic growth does not have a significant effect on stock indices, both in Indonesia and Arab countries. These differing results indicate that stock markets may be influenced more dominantly by other variables in the short term.

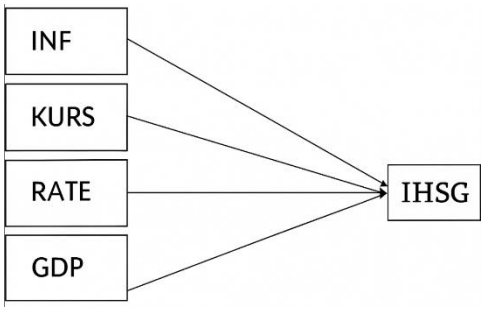

Fig. 1 Research Framework

Based on the discussion above, eight hypotheses can be formulated as follows:

Ha1: Inflation has a significant negative effect on the Jakarta Composite Index (JCI).
Ha2: The exchange rate has a significant negative effect on the JCI.
Ha3: Interest rates have a significant negative effect on the JCI.
Ha4: Economic growth has a significant positive effect on the JCI.

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METHOD

This study employs a quantitative method using secondary data obtained from Bank Indonesia and other relevant sources covering the period from 2005 to 2023. The sampling technique used is the census method (total sampling), applied to the closing values of the Jakarta Composite Index (JCI) during the specified period. These values were then averaged annually, resulting in a total of 19 yearly data points as the research sample. The operational definition and measurement of variables are presented in the Table 1:

Table 1. The Operation of Variables

No	Variable	Source	Formula	Scale
1	IHSG	Silalahi & Sihombing (2021)	$IHSG = NP_t / ND$	Ratio
2	Inflasi	Ahmad (2021)	$INF = (IHKt – IHKt\text{-}1) / (IHKt\text{-}1)$	Ratio
3	Nilai Tukar	Ahmad (2021)	$KURSt = (KT_t – KT_{t-1}) / KTt_{-1}$	Ratio
4	Suku Bunga	Silalahi & Sihombing (2021)	$Rate = BIRate_t / n$	Ratio
5	Pertumbuhan Ekonomi	Silalahi & Sihombing (2021)	$R = (GDP_t\text{-}GDP_{t-1}) / GDP_{t-1}$	Ratio

RESULT

Before conducting further analysis and discussion, a descriptive statistical analysis is first performed to describe the characteristics of the data used in this study. The descriptive statistics were generated using **EViews 12 software**, and the results are presented in the Table 2:

Table 2. Descriptive Statistics Result

	IHSG	INFLASI	NILAI TUKAR	SUKU BUNGA	PERTUMB...
Mean	4331.683	0.055247	11850.09	0.066479	0.049647
Median	4908.180	0.049000	11878.30	0.064800	0.051700
Maximum	6959.450	0.133300	15255.05	0.127500	0.063500
Minimum	1089.600	0.015600	8779.490	0.035200	-0.020700
Std. Dev.	1895.153	0.030331	2393.896	0.022226	0.018217
Skewness	-0.318878	1.124202	0.033595	1.051498	-3.216107
Kurtosis	1.796829	3.679609	1.299723	4.155392	13.11310
Jarque-Bera	1.468030	4.367775	2.292237	4.558036	113.7215
Probability	0.479978	0.112603	0.317868	0.102385	0.000000
Sum	82301.98	1.049700	225151.6	1.263100	0.943300
Sum Sq. Dev.	64648897	0.016560	1.03E+08	0.008892	0.005974
Observations	19	19	19	19	19

The average value of the Jakarta Composite Index (JCI) from 2005 to 2023 was 4331.683, with a maximum value of 6959.450 and a minimum of 1089.600, indicating a high degree of fluctuation in the Indonesian stock market. The standard deviation of 1895.15 further confirms substantial variation in the JCI data. The negative skewness value (-0.318877) suggests a slightly left-skewed distribution, meaning more data points lie above the mean. A kurtosis value of 1.796829 (below 3) indicates a flatter distribution compared to the normal distribution. The Jarque-Bera value of 1.468030 with a probability of 0.479978 indicates that the JCI data does not significantly deviate from normality.

Inflation averaged 5.52% per year with a standard deviation of 3.03%, reflecting relatively stable conditions with minor fluctuations. The maximum inflation rate was 13.33%, and the minimum was 1.56%. The skewness of 1.124202 indicates a right-skewed distribution, suggesting a few years of above-average inflation. A kurtosis value of 3.679609 indicates a more peaked distribution than normal, hinting at potential outliers. The Jarque-Bera statistic of 4.367775 with a probability of 0.112603 suggests that the inflation data is approximately normally distributed, with slight deviations.

The exchange rate had an average value of 11,850.09, with a maximum of 15,255.05 and a minimum of 8,779.49, reflecting a clear trend of depreciation against the US dollar. The standard deviation of 2393.964 indicates significant volatility. The slightly positive skewness (0.033595) suggests an almost symmetric distribution. A kurtosis of 1.299723 (below 3) points to a flatter distribution. The Jarque-Bera value of 2.292237 with a probability of 0.317868 implies the exchange rate data can be considered normally distributed.

The average interest rate during the study period was 6.6479%, with a standard deviation of 2.22%, indicating moderate variation. The minimum value was 3.50%, and the maximum was 12.75%, reflecting monetary easing especially during periods of crisis or economic slowdown. A skewness of 1.051498 suggests a right-skewed distribution, with several years showing relatively high rates. The kurtosis value of 4.155392 indicates a more peaked

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distribution. The Jarque-Bera value of 4.558036 with a probability of 0.102385 suggests that the interest rate data generally falls within the acceptable range for normal distribution.

Economic growth averaged 4.96% per year, with a minimum of -2.02% during the COVID-19 pandemic in 2020, and a maximum of 6.35%. Although the standard deviation was relatively low (1.28%), the skewness of -3.216107 indicates a highly left-skewed distribution, reflecting a sharp contraction in a single extreme year. The kurtosis of 13.11310 is very high, pointing to a sharply peaked distribution with extreme outliers. The Jarque-Bera statistic of 113.7215 with a probability of 0.000000 confirms that economic growth data significantly deviates from normality.

Of the five variables analyzed, only the JCI, inflation, exchange rate, and interest rate data approximate a normal distribution based on the Jarque-Bera test. In contrast, economic growth shows significant deviation from normality due to an extreme outlier during the pandemic. These variations and asymmetries in the descriptive statistics provide an important preliminary picture of Indonesia's macroeconomic conditions during 2005–2023 and serve as a foundation for further regression modeling and quantitative analysis.

Before hypothesis testing, classical assumption tests were performed. These included tests for normality, heteroskedasticity, multicollinearity, and autocorrelation.

Normality Test. The normality test was conducted using the Jarque-Bera method. If the significance level of the residuals is greater than 0.05, the regression model is considered to meet the assumption of normality. The test results showed a probability value of 0.955 (for the 2014–2016 model), indicating that the model fulfills the normality assumption and is suitable for further analysis.

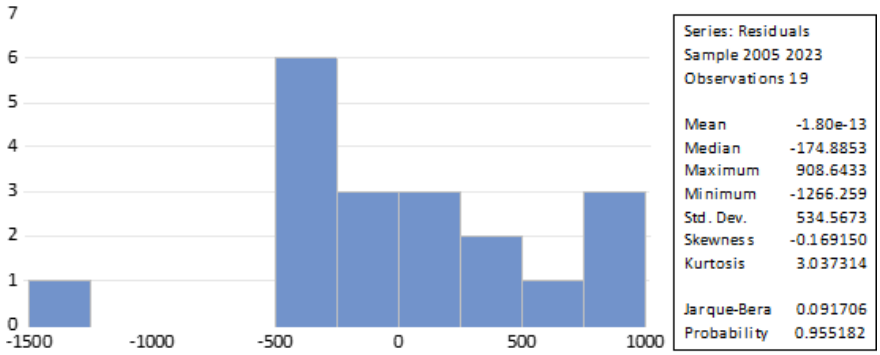

Fig. 2 Normality Test Result

Heteroskedasticity Test. The heteroskedasticity test used the Breusch–Pagan–Godfrey method. The results showed a probability value of 0.7486, which is above 0.05. This indicates that the regression model is free from heteroskedasticity problems.

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.787579	Prob. F(4,14)	0.5521
Obs*R-squared	3.490083	Prob. Chi-Square(4)	
Scaled explained SS	1.930246	Prob. Chi-Square(4)	0.7486

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/14/25 Time: 13:41
Sample: 2005 2023
Included observations: 19

Fig. 3 Heteroskedasticity Test Result

Multicollinearity Test. Multicollinearity was tested by examining the centered Variance Inflation Factor (VIF). A VIF value below 10 for each independent variable indicates the absence of multicollinearity. All variables in the model had VIF values below 10, confirming that multicollinearity is not present in the regression model.

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Variance Inflation Factors
Date: 06/14/25 Time: 13:38
Sample: 2005 2023
Included observations: 19

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	2436122.	125.9805	NA
INFLASI	1.02E+08	20.64263	4.585169
NILAI_TUKAR	0.007310	55.14005	2.052482
SUKU_BUNGA	1.85E+08	46.87415	4.488369
PERTUMBUHAN_EK...	83510889	12.00266	1.357802

Fig. 4 Multicollinearity Test Result

Autocorrelation Test. The Breusch-Godfrey Serial Correlation LM Test was used to detect autocorrelation. The probability value of 0.0517 is slightly above 0.05, suggesting that the model does not suffer from autocorrelation and can be used for further analysis.

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	2.717943	Prob. F(2,12)	0.1063
Obs*R-squared	5.923521	Prob. Chi-Square(2)	0.0517

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 06/14/25 Time: 13:45
Sample: 2005 2023
Included observations: 19
Presample missing value lagged residuals set to zero.

Fig. 5 Autocorrelation Test

Multiple Linear Regression Analysis. The results of the multiple regression analysis are summarized in figure and the regression equation in Equation (1)

Dependent Variable: IHSG
Method: Least Squares
Date: 06/14/25 Time: 13:55
Sample: 2005 2023
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-727.8497	1560.808	-0.466329	0.6482
INFLASI	630.1045	10086.13	0.062472	0.9511
NILAI_TUKAR	0.548464	0.085501	6.414684	0.0000
SUKU_BUNGA	-40410.05	13618.33	-2.967329	0.0102
PERTUMBUHAN_EKONOMI	24408.04	9138.429	2.670922	0.0183

R-squared	0.920436	Mean dependent var	4331.683
Adjusted R-squared	0.897704	S.D. dependent var	1895.153
S.E. of regression	606.1423	Akaike info criterion	15.87304
Sum squared resid	5143720.	Schwarz criterion	16.12158
Log likelihood	-145.7939	Hannan-Quinn criter.	15.91510
F-statistic	40.48979	Durbin-Watson stat	1.042571
Prob(F-statistic)	0.000000		

Fig. 6 Multiple Regression Analysis Result

$$IHSG = -727.850 + 630.104\ INF + 0.548\ KURS - 40410.051\ RATE + 24408.035\ GDP + \varepsilon \quad (1)$$

The regression analysis reveals that the model includes an intercept of –727.850, which serves primarily as a statistical adjustment and carries no substantive economic meaning. The JCI is mainly influenced by four macroeconomic variables. Inflation, with a positive coefficient of approximately 630, shows an unexpected direction and is statistically insignificant, suggesting that it does not play a major role in explaining stock market movements during the observed period. In contrast, the exchange rate (IDR/USD) has a small but statistically significant positive

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coefficient (≈ +0.55), indicating that a depreciation of the rupiah is associated with a slight increase in the JCI—possibly reflecting investor optimism tied to export competitiveness or external sector performance. Interest rates exhibit a strong and statistically significant negative effect on the JCI (coefficient ≈ –40,410), suggesting that rising rates discourage investment in equities by making risk-free assets more attractive. Meanwhile, economic growth shows a positive and significant impact (coefficient ≈ +24,408), confirming that stronger GDP performance boosts investor confidence and drives stock market gains. The model demonstrates high explanatory power, with an adjusted R-squared of 0.8977, indicating that nearly 90% of the variation in JCI can be accounted for by the selected variables. The F-statistic of 40.49 with a p-value of 0.0000 further confirms the joint significance of these variables. In summary, the JCI during 2005–2023 was most responsive to changes in the exchange rate, interest rates, and economic growth, while inflation had no significant influence.

DISCUSSION

The hypothesis testing indicates that during the period 2005–2023, inflation was not the primary driver of the Indonesia Stock Exchange Composite Index (IHSG) movements. This is attributed to relatively well-controlled price expectations, causing investors to focus more on company fundamentals. Conversely, interest rates had a negative impact on the IHSG, as rising rates increased capital costs and shifted funds toward fixed-income instruments, which in turn lowered the stock index. Meanwhile, economic growth positively influenced the IHSG, reflecting that consistent economic expansion fosters market optimism and drives stock prices higher. These findings address the research problem by confirming that the IHSG's sensitivity during this period was more affected by exchange rate dynamics, interest rate policies, and economic growth rates rather than inflation fluctuations. Therefore, investment strategies and macroeconomic policies should prioritize exchange rate stability, effective interest rate management, and support for economic growth to sustain stock market performance.

CONCLUSION

This study has several limitations. First, the analysis is based on annual observations over 19 years, which limits the level of detail and does not capture short-term fluctuations. Second, the model does not include important macroeconomic variables such as commodity price indices, trade balance, and external factors like global crises that could potentially impact the stock market. Third, the purely quantitative approach used cannot fully capture the psychological dynamics of investors and rapidly changing market sentiment, meaning the results may not completely reflect the complexity of capital market behavior.

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