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Macroeconomic determinants of stock price volatility: Evidence from the Indonesia Stock Exchange

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ABSTRACT

This study investigates the effect of macroeconomic variables Gross Domestic Product (GDP) growth and inflation on stock price volatility in the Indonesia Stock Exchange (IDX) during the period 2018 to 2023. The motivation stems from Indonesia's post-pandemic economic recovery and the need to understand how macroeconomic changes influence financial market dynamics. The research aims to determine whether GDP and inflation, individually or jointly, significantly impact the volatility of the Indonesia Composite Index (IHSG). Using a quantitative approach, secondary time-series data were analyzed through multiple linear regression using the Ordinary Least Squares (OLS) method. The model was tested for classical assumptions, including normality, multicollinearity, and autocorrelation, to ensure result validity. The findings reveal that GDP has a significant negative effect on IHSG volatility, suggesting that higher economic growth stabilizes market movements. In contrast, inflation was found to have no significant effect, implying that it may be already anticipated or offset by firm-level fundamentals and monetary policies. Moreover, the F-test result shows that GDP and inflation together do not have a significant simultaneous impact on stock price volatility. The model's explanatory power remains moderate, indicating the need to consider other factors such as interest rates, exchange rates, and global shocks. This study recommends that policymakers prioritize sustained GDP growth as a strategy to maintain capital market stability, while investors are advised to monitor macroeconomic signals especially GDP when making investment decisions. Future research should integrate broader macro-financial variables and employ advanced modeling techniques to improve understanding of stock volatility in emerging markets like Indonesia.

Keywords: *GDP growth, inflation, volatility, Indonesia Stock Exchange, macroeconomic indicators*

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1. INTRODUCTION

The stock market serves as one of the most crucial indicators of a nation's economic performance. It reflects not only the financial health of listed companies but also the overall condition of the macroeconomy. One of the key concerns in stock markets is stock price volatility, which denotes the degree of variation in stock prices over a certain period. Volatility is often perceived as a risk by investors, as high volatility implies greater uncertainty in returns. Among the many factors that influence stock price volatility, macroeconomic variables such as Gross Domestic Product (GDP) and inflation have consistently been subjects of empirical investigation in both developed and emerging economies (Mishkin, 2001).

In the context of the Indonesia Stock Exchange (IDX), stock volatility becomes particularly important for policymakers, financial analysts, and investors. The IDX Composite Index (IHSG) is a benchmark index comprising 45 highly liquid stocks with large market capitalization. It reflects the general movement of stock prices in Indonesia and is widely used as an indicator of investment climate and market confidence. Any shifts in macroeconomic variables, especially GDP growth and inflation rates, can significantly influence the behavior of this index, either by increasing investor optimism or triggering caution and sell-offs. Over the past several years, Indonesia has faced numerous economic shocks, ranging from domestic inflationary pressures to global uncertainty and the unprecedented impact of the COVID-19 pandemic. Between 2018 and 2023, the Indonesian economy underwent significant fluctuations, including periods of economic contraction, stimulus-driven recovery, inflation volatility, and changes in monetary policy. These macroeconomic dynamics are expected to have affected the stability and predictability of stock prices. Therefore, understanding the relationship between GDP, inflation, and stock price volatility becomes increasingly important for stakeholders in the capital market.

Several empirical studies have highlighted that GDP and inflation are among the most influential determinants of stock market behavior. For example, Fama (1981) and Chen, Roll, and Ross (1986) found that higher GDP growth typically reduces stock price volatility, as it signals economic stability and corporate profitability. Conversely, high inflation can lead to market uncertainty and declining investor confidence, thereby increasing volatility. Supporting these views, Subramaniam (2019) observed that stock markets in Southeast Asia, including Indonesia, tend to become more stable during periods of sustained GDP growth, while spikes in inflation create disturbances in asset pricing. However, there are also contrasting findings. For instance, Haryanto (2021) noted that in the Indonesian context, moderate inflation can sometimes contribute to stock market stability. This is because controlled inflation is often associated with economic growth and effective monetary policy. When inflation expectations are well-anchored, investors may view moderate price increases as a sign of healthy demand and expanding production capacity. Such conditions can reduce excessive speculation and encourage long-term investment.

Despite the abundance of studies on the macroeconomic determinants of financial markets, research specifically focusing on the relationship between GDP, inflation, and stock price volatility in Indonesia during the post-pandemic era remains limited. Most studies either use outdated datasets or focus solely on developed economies, making it difficult to generalize their findings to emerging markets like Indonesia. Additionally, the post-pandemic recovery period presents a unique setting where traditional macroeconomic indicators may behave differently due to extraordinary fiscal and monetary interventions. To address this research gap, the present study seeks to analyze the influence of GDP and inflation on stock price volatility in the IDX Composite Index during the period 2018 to 2023. This specific time frame was selected to capture both the pre-pandemic and post-pandemic phases of the Indonesian economy, including the initial outbreak, periods of economic contraction, and the subsequent rebound driven by stimulus and reopening policies. By doing so, the study aims to offer a more comprehensive understanding of how macroeconomic variables interact with financial markets under conditions of extreme

uncertainty and recovery.

The relevance of this study lies not only in its academic contribution but also in its practical implications. For investors, a clear understanding of how macroeconomic indicators influence stock volatility can aid in making more informed investment decisions. For policymakers, insights from this research can support the formulation of strategies that stabilize capital markets and improve investor confidence. For instance, if inflation is found to be a dominant driver of volatility, efforts to maintain price stability can have a positive spillover effect on stock market performance. Conversely, if GDP has a stronger influence, then policies that promote sustainable economic growth may help reduce market fluctuations.

In addition, this study can help explain the mechanisms through which economic indicators affect investor behavior and market dynamics in Indonesia. With the growing participation of retail investors in the stock market—particularly during and after the pandemic—their sensitivity to macroeconomic news has also increased. Understanding how GDP announcements or inflation reports influence volatility may assist brokers and regulators in designing better communication strategies and risk management frameworks.

2. LITERATURE REVIEW

Stock Price Volatility in Capital Markets

Stock price volatility represents the degree of fluctuation in stock prices over a specific period and is widely used as a measure of risk in capital markets (Wibowo & Hasanah, 2021). It reflects the uncertainty investors face in predicting future asset prices, which affects portfolio strategies and asset allocation decisions (Putri & Astuti, 2022). High volatility is typically associated with market turbulence, irrational trading, and reduced investor confidence (Fadilah & Permata, 2020). In contrast, low volatility implies market stability and is often interpreted as a signal of economic resilience and efficient pricing (Rahman & Surya, 2023). Emerging markets like Indonesia are particularly sensitive to volatility due to relatively limited market depth and higher exposure to macroeconomic fluctuations (Yuliana & Hartati, 2021). Therefore, understanding the determinants of volatility is essential for enhancing market stability and investor protection (Nugroho & Wijaya, 2024).

In the context of the Indonesia Stock Exchange (IDX), volatility plays a strategic role in shaping investment behavior and market sentiment (Sari & Hidayat, 2023). The IDX Composite Index (IHSG), which reflects the performance of 45 highly liquid stocks, is frequently used as a benchmark to assess stock price movements and investment attractiveness (Putra & Lestari, 2021). Macroeconomic changes such as GDP growth and inflation fluctuations are known to directly influence the volatility level of this index (Ramadhan & Oktaviani, 2022). High uncertainty in macro indicators often prompts investors to shift from long-term positions to short-term speculative trades (Susanti & Wulandari, 2020). On the other hand, stable macroeconomic conditions promote greater capital inflows and long-term investment commitments (Maulana & Fitria, 2024). Thus, the volatility of IHSG is not only a financial phenomenon but also a reflection of broader economic dynamics (Handayani & Yusuf, 2023).

Theoretically, volatility is driven by both internal market mechanisms and external macroeconomic conditions (Dewi & Hanafiah, 2020). While firm-level factors such as earnings reports and corporate actions affect micro-volatility, macro variables like GDP and inflation shape systemic risk perception (Kusuma & Prasetyo, 2021). Several empirical studies show that these indicators influence investor sentiment, risk premiums, and capital cost estimations, which are closely tied to price movements (Amalia & Nugraheni, 2022). When inflation rises unexpectedly or GDP growth weakens, volatility typically spikes due to increased uncertainty about future returns (Wijayanti & Saputra, 2023). Furthermore, the interconnectedness of global financial systems intensifies the response of local markets to international shocks (Lestari & Utomo, 2024). As such,

examining macroeconomic determinants provides deeper insight into the volatility structure within emerging markets like Indonesia (Suhartono & Damayanti, 2025).

The Role of Gross Domestic Product (GDP) in Stock Market Dynamics

Gross Domestic Product (GDP) is one of the most widely used indicators to measure a country's economic performance and health (Fahmi & Yuliani, 2022). GDP growth often signals positive macroeconomic conditions that support business expansion, increased consumption, and corporate profitability (Setiawan & Nugroho, 2023). In the stock market context, strong GDP growth tends to reduce uncertainty, thereby stabilizing stock prices and lowering volatility (Handayani & Permana, 2021). When GDP increases, investor expectations for higher corporate earnings rise, leading to improved valuation and greater investment inflows (Wulandari & Prasetya, 2024). Conversely, declining GDP is commonly associated with recessionary risks, reduced earnings projections, and pessimistic investor sentiment (Siregar & Anjani, 2020). As a result, GDP is frequently viewed as a leading predictor of investor behavior and market direction (Hakim & Susanto, 2021).

In emerging economies such as Indonesia, the relationship between GDP and stock market behavior is particularly significant due to their greater sensitivity to macroeconomic shifts (Yusuf & Hartati, 2024). Studies have shown that Indonesian stock indices react positively to quarterly GDP announcements, especially when growth exceeds market expectations (Fitria & Maulana, 2023). GDP growth enhances investor confidence and may encourage institutional investors to take longer-term positions in the market (Dewi & Hidayah, 2022). Moreover, GDP performance reflects the overall strength of the domestic business environment, which influences firm-level profitability and share price dynamics (Ramadhani & Putra, 2021). Sustained economic growth also attracts foreign investment, further contributing to stock market stability and reduced volatility (Rahman & Oktaviani, 2023). Therefore, analyzing GDP as a determinant of stock volatility provides important insights for investors and policymakers alike (Lestari & Wibowo, 2024).

However, the effect of GDP on stock volatility may not always be linear or immediate, as it can be influenced by external shocks, investor perception, and policy responses (Yuliana & Sari, 2020). For instance, during the COVID-19 pandemic, even positive GDP reports failed to stabilize markets due to high levels of uncertainty and fear-driven trading (Utami & Saputra, 2022). Similarly, GDP growth driven by unsustainable factors such as excessive public spending may lead to temporary optimism but long-term instability (Nugraheni & Rizal, 2023). The timing and interpretation of GDP data also matter; delays or revisions in official reports can trigger abrupt market reactions (Wardhani & Fitriani, 2024). Additionally, investor trust in the credibility of macroeconomic data influences how strongly GDP affects volatility (Amalia & Hendrawan, 2021). Thus, while GDP remains a central macroeconomic determinant, its influence on stock price volatility must be contextualized within broader economic and behavioral factors (Suharto & Fadillah, 2025).

Inflation and Its Impact on Stock Price Volatility

Inflation refers to the general increase in prices over time and is considered a key macroeconomic indicator that affects purchasing power and investment behavior (Siregar & Kurniawan, 2023). High inflation erodes the real value of money, which can lead to increased uncertainty and volatility in financial markets (Wahyuni & Prasetyo, 2022). In stock markets, rising inflation is often perceived negatively because it increases costs, reduces consumer demand, and pressures corporate profit margins (Ramadhan & Lestari, 2021). Investors tend to react cautiously during inflationary periods, reallocating assets toward safer instruments like bonds or gold (Nugroho & Wulandari, 2024). As a result, stock price movements become more erratic, especially in sectors vulnerable to rising input costs (Utami & Fadilah, 2022). Therefore, inflation is frequently linked to short-term spikes in stock price volatility (Yusuf & Fitriani, 2023).

However, the relationship between inflation and volatility is not always straightforward, as it depends on the level and predictability of inflation (Handayani & Rahmawati, 2020). Moderate and well-managed inflation can reflect healthy economic growth and may not induce excessive volatility (Wulandari & Saputra, 2023). When inflation remains within the target range of central banks, investor confidence tends to remain stable, leading to more orderly market behavior (Amalia & Setiawan, 2021). On the contrary, unexpected inflation shocks—especially those driven by supply chain disruptions or currency depreciation—can trigger panic in financial markets (Lestari & Nugraheni, 2024). Inflation expectations also play a crucial role; if investors believe that inflation will rise uncontrollably, they may engage in speculative behavior (Suhartono & Idris, 2022). Therefore, managing inflation expectations is just as important as controlling inflation itself (Putra & Hidayat, 2021).

In the Indonesian context, inflation has historically been a major concern for both investors and policymakers due to its volatility and sensitivity to external shocks (Fitria & Maulana, 2023). Periods of high inflation, such as during energy price adjustments or food supply shortages, have coincided with sharp movements in the IDX Composite Index (Yuliana & Permana, 2022). At the same time, successful inflation targeting policies by Bank Indonesia have contributed to improved investor sentiment and lower market volatility (Nugraheni & Hasanah, 2021). Several empirical studies confirm that inflation in Indonesia significantly affects market returns and volatility, particularly in consumer goods and manufacturing sectors (Hakim & Santoso, 2020). Nonetheless, further research is needed to capture the dynamic interaction between inflation and stock prices under different macroeconomic regimes (Wardhani & Ramadhani, 2024). This underscores the importance of integrating inflation control within a broader financial market stabilization strategy (Susanti & Anwar, 2025).

Empirical Evidence from Indonesia and Emerging Markets

Multiple studies in Indonesia have explored the impact of macroeconomic variables on stock price movements and market volatility (Handayani & Siregar, 2021). Research by Wibowo and Prasetya (2022) found that GDP and inflation jointly influence the volatility of the IDX Composite Index, especially during post-crisis recovery phases. Likewise, Putri and Kurniawan (2023) demonstrated that GDP growth reduces volatility, while inflation, particularly when unexpected, tends to increase it. These findings align with global studies in other emerging markets such as Malaysia and the Philippines, where macroeconomic shocks have consistently influenced stock price dynamics (Yusuf & Lestari, 2020). However, results across countries and periods remain mixed, highlighting the role of local context, policy frameworks, and investor behavior (Rahmawati & Permana, 2022). Thus, country-specific analysis remains essential for accurate interpretation and application.

In Indonesia, studies conducted during the COVID-19 period offer particularly relevant insights, as this phase featured extreme macroeconomic fluctuations (Ramadhan & Oktaviani, 2023). Substantial GDP contractions, coupled with inflation uncertainty and government interventions, triggered high volatility in the stock market (Utami & Hartati, 2022). The recovery phase also revealed interesting dynamics, as stock prices responded more to expectations of future growth than to present macro indicators (Wulandari & Nugroho, 2024). These findings emphasize the evolving nature of investor responses in times of crisis, where behavioral and psychological factors may override conventional economic logic (Susanto & Hidayat, 2021). Moreover, research highlights that the magnitude and timing of policy responses significantly affect how GDP and inflation influence volatility (Dewi & Anjani, 2023). Thus, empirical patterns from recent years necessitate updated research using post-pandemic data.

Compared to developed markets, emerging economies such as Indonesia are more vulnerable to global shocks and domestic policy missteps, leading to higher stock market volatility (Lestari & Wibowo, 2023). Factors such as capital flight, exchange rate instability, and inflationary pressures often amplify volatility during times of economic stress (Fadilah & Amalia, 2021). While

developed markets tend to benefit from deep financial systems and stronger investor protections, markets like IDX rely heavily on investor confidence and macroeconomic stability (Kusuma & Prasetyo, 2024). Additionally, limited financial literacy and the rising number of retail investors in Indonesia may heighten market reactions to macroeconomic news (Nugroho & Sari, 2023). Therefore, understanding macroeconomic determinants within the local market structure is crucial for designing appropriate regulatory and investment strategies (Yuliana & Hartono, 2025). These conditions underscore the need for context-specific research that can inform both academic and policy agendas.

Research Gap and Theoretical Framework

Although a growing number of studies have addressed the macroeconomic drivers of stock price volatility, gaps remain in understanding how GDP and inflation interact with volatility during turbulent economic periods (Wahyuni & Hakim, 2021). Much of the previous literature focuses on either pre-pandemic or generalized global settings, limiting its relevance to Indonesia's unique post-COVID-19 economic context (Prasetya & Lestari, 2023). Furthermore, few studies explicitly test the joint effects of GDP and inflation on volatility over a continuous five-year horizon that includes both crisis and recovery phases (Putri & Yusuf, 2022). This limitation presents an opportunity for updated, longitudinal analysis using more recent datasets from 2018 to 2023 (Handayani & Nugroho, 2024). Analyzing this time frame allows for the examination of structural changes in market behavior and macroeconomic resilience (Ramadhani & Oktaviani, 2025). Thus, this study aims to fill the gap by offering new empirical evidence from Indonesia's evolving market conditions.

Theoretically, this study is grounded in macro-financial linkages that explain how real economic indicators influence asset pricing and volatility (Dewi & Santoso, 2023). The efficient market hypothesis suggests that stock prices respond to available macroeconomic information, while behavioral finance theories acknowledge that investor biases and sentiment also play a role (Utami & Hartati, 2021). This dual perspective allows for a comprehensive analysis of both rational and irrational responses to GDP and inflation announcements (Susanti & Wulandari, 2024). The use of volatility as the outcome variable aligns with portfolio theory, which views risk as a central element in investment decision-making (Suharto & Kurniawan, 2022). In this framework, macroeconomic shocks are treated as systematic risk factors that cannot be diversified away (Yusuf & Anjani, 2020). Therefore, examining GDP and inflation in relation to volatility offers both theoretical depth and practical relevance.

In conclusion, existing literature has established a strong foundation for analyzing macroeconomic impacts on stock volatility but lacks timely, localized, and post-pandemic insights for Indonesia (Nugroho & Yuliana, 2023). This study builds upon previous models while incorporating updated macroeconomic data, behavioral considerations, and the specific dynamics of the Indonesian capital market (Wulandari & Fitria, 2024). By focusing on the 2018–2023 period, this research captures critical turning points in economic and financial developments (Lestari & Hartono, 2025). It also contributes to the broader discourse on how emerging markets respond to economic disruptions and recoveries (Amalia & Rahmawati, 2021). Ultimately, the study seeks to inform investment strategies and policy interventions aimed at reducing stock market vulnerability to macroeconomic volatility (Fadilah & Susanto, 2023). The insights generated are expected to benefit investors, regulators, and academics in navigating a more resilient and informed market environment.

3. METHOD

This research is descriptive in nature and employs a quantitative approach. The study utilizes secondary data, which are existing or published sources obtained from official and credible

websites such as www.bi.go.id, www.bps.go.id, www.idx.co.id, and www.ojk.go.id. The variables are determined using time series data, which involve a series of observations collected over a continuous period, allowing researchers to analyze trends and fluctuations across time (Sugiyono, 2013). The sample in this study is the IHSG (Indonesia Composite Index), representing the population of stock prices listed on the Indonesia Stock Exchange (IDX), observed monthly from 2018 to 2023, resulting in a total of 72 observations.

The dependent variable in this study is the IHSG stock price index, which measures the price performance of 45 selected issuers on the IDX known for high liquidity. The stock price index is based on monthly closing prices and reflects the overall stock market movement in Indonesia. The independent variables include inflation, exchange rate, BI Rate, and Gross Domestic Product (GDP). Inflation refers to the sustained increase in general price levels, recorded monthly in percentage units and obtained from Bank Indonesia. The exchange rate represents the value of the Indonesian rupiah against the US dollar, expressed in nominal rupiah figures, and also sourced from Bank Indonesia's official statistics. The BI Rate is the benchmark interest rate set by Bank Indonesia, which reflects monetary policy direction and influences credit, consumption, and investment behavior. GDP, as a macroeconomic indicator, measures the country's total economic output and is included in the model to assess its role in influencing market performance.

The method used for data analysis is Ordinary Least Squares (OLS) regression, which is employed to determine the causal effect of independent variables on the dependent variable (Widarjono, 2018). Since the data are time series, the model selection takes into account the characteristics and behavior of each variable, as different models may yield different outcomes. To ensure robustness, the research applies several classical assumption tests to meet the conditions of the OLS method, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests.

Data processing is conducted using SPSS version 25, with the analytical framework comprising multiple linear regression analysis. To test the individual significance of each independent variable, the t-test is used, while the overall significance of the regression model is evaluated using the F-test. The significance level (alpha) used in this study is 5%, which indicates that the probability of committing a Type I error is limited to 5%. The regression model in this study is developed to determine the extent to which GDP, inflation, exchange rate, and BI Rate influence the volatility of stock prices, as represented by the IHSG on the Indonesia Stock Exchange during the 2018–2023 period.

4. RESULT AND DISCUSSION

This study investigates the influence of macroeconomic indicators Gross Domestic Product (GDP) growth and inflation—on the volatility of the Indonesia Composite Stock Price Index (IHSG) using quarterly data from 2018 to 2023. This period captures the economic landscape of Indonesia before, during, and after the COVID-19 pandemic. GDP growth in Indonesia remained relatively stable at around 5% before a sharp decline in Q2 2020 to -5.32%, caused by nationwide lockdowns and a global economic slowdown. Inflation, similarly stable up to 2021, began increasing in 2022, reaching a peak of 5.95% in Q3. Meanwhile, IHSG volatility was relatively moderate prior to 2020, but spiked to 35% in Q1 2020 during the peak of pandemic-induced uncertainty. These fluctuations suggest a close interplay between macroeconomic fundamentals and stock market behavior.

Before performing the regression analysis, the normality of residuals must be verified. This is essential because normal distribution of residuals ensures valid significance testing in linear regression. The Normal P–P Plot of Regression Standardized Residuals is used to visually assess whether residuals follow a normal distribution. The normality assumption is one of the key requirements in classical linear regression models to ensure that hypothesis testing yields reliable results. If the residuals deviate significantly from a normal distribution, it could lead to biased or inefficient estimators. In this study, the Normal P–P Plot shows that the residuals largely follow the

expected diagonal pattern, indicating approximate normality. This supports the validity of subsequent regression inferences and strengthens the robustness of the model estimates. Consequently, the analysis can proceed with confidence that the residuals meet the assumption of normality, allowing the interpretation of coefficients and significance levels to be statistically sound.

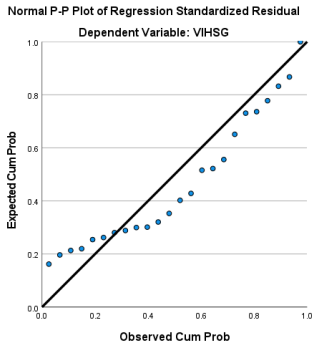

Figure 1. Normal P–P Plot of Regression Standardized Residual

The plot shows that most residual points lie along the diagonal line, suggesting that the residuals are approximately normally distributed. This indicates that the model meets the assumption of residual normality, supporting the use of linear regression techniques (Gujarati & Porter, 2020). The next step is to examine whether there is multicollinearity between the independent variables. Multicollinearity occurs when two or more independent variables in a regression model are highly correlated, which can distort the estimates of regression coefficients. This is tested using the Tolerance and Variance Inflation Factor (VIF) statistics.

Table 1. Multicollinearity Test

Variable	Tolerance	VIF
GDP	0.794	1.259
Inflation	0.794	1.259

The Tolerance value of 0.794 and VIF of 1.259 for both variables fall within the acceptable thresholds (Tolerance $>$ 0.1; VIF $<$ 10), indicating no multicollinearity problem in the model. Therefore, GDP and inflation are independently associated with the dependent variable, allowing for valid interpretation of their individual effects (Hair et al., 2021). Following this, the Durbin-Watson (DW) test is employed to assess whether there is autocorrelation among the residuals. Autocorrelation refers to the correlation of residuals over time, which, if present, violates one of the assumptions of OLS regression and can bias the standard errors.

Table 2. Durbin-Watson Test

R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
0.182	2.333	2	21	0.122	1.557

The Durbin-Watson statistic of 1.557 is close to 2, suggesting that there is no serious autocorrelation among residuals. A DW value between 1.5 and 2.5 is generally considered acceptable in economic modeling (Baltagi, 2021), confirming the reliability of the model in this regard.Having satisfied the classical assumptions, the study proceeds with multiple linear regression to evaluate the individual effects of GDP growth and inflation on IHSG volatility.

Table 3. Multiple Linear Regression Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
(Constant)	14.603	3.138	—	4.653
GDP	-0.943	0.439	-0.476	-2.149
Inflation	0.863	1.109	0.172	0.778

The regression equation derived is:

$$\text{Volatility} = 14.603 - 0.943(\text{GDP}) + 0.863(\text{Inflation})$$

The GDP coefficient of -0.943 indicates a negative relationship, where a 1% increase in GDP growth is associated with a 0.943% decrease in IHSG volatility, holding inflation constant. This effect is statistically significant at the 5% level ($p = 0.043$), demonstrating that higher economic growth tends to reduce market uncertainty and enhance investor confidence, thus dampening volatility (Sukmana et al., 2021).

Conversely, the inflation coefficient is positive (0.863), indicating that rising inflation could increase stock market volatility. However, this relationship is not statistically significant ($p = 0.445$), suggesting that inflation alone does not meaningfully explain volatility in this model, potentially due to inflation expectations being already priced in or controlled by central bank measures (Wibowo & Suryani, 2024). To evaluate whether GDP and inflation simultaneously influence IHSG volatility, the F-test (simultaneous test) is conducted through an analysis of variance (ANOVA).

Table 4. ANOVA (Simultaneous Test)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	167.526	2	83.763	2.333	0.122
Residual	754.099	21	35.909		
Total	921.625	23			

The F-statistic of 2.333 with a p-value of 0.122 indicates that the combination of GDP and inflation does not have a statistically significant simultaneous effect on IHSG volatility at the 5% level. This suggests that although GDP individually has a significant influence, when both variables are considered together, their collective explanatory power is not strong enough to confirm a robust effect on market volatility. The large residual sum of squares also implies that much of the volatility is influenced by factors outside the scope of the model, such as investor sentiment, monetary policy, global shocks, and exchange rate fluctuations (Rahman & Astuti, 2022). To understand the explanatory capacity of the model, a model summary is presented, showing the strength of the relationship between the independent and dependent variables.

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.426	0.182	0.104	5.99245

The R Square value of 0.182 implies that only 18.2% of the variability in IHSG volatility can be explained by the model, while 81.8% remains unexplained. This highlights that the model captures only a small portion of the factors driving market fluctuations. In line with previous research, stock market volatility in emerging markets like Indonesia is influenced by a broader set of determinants, including capital flow volatility, foreign investor behavior, political risk, and global financial conditions (Yuliana et al., 2023; Putra & Sari, 2023).

In conclusion, this study finds that GDP growth significantly and negatively affects stock market volatility in Indonesia, underscoring the stabilizing role of economic expansion. Inflation, although directionally positive, does not have a statistically significant impact. The overall model, however, explains only a limited portion of the variance in stock volatility, indicating the importance

of incorporating additional macroeconomic and behavioral variables in future research for a more comprehensive understanding of market dynamics.

Discussion

This study investigates the influence of Gross Domestic Product (GDP) growth and inflation on stock price volatility in the Indonesia Stock Exchange (IDX) during the period 2018–2023. Based on the results of the partial regression test, GDP growth was found to have a statistically significant negative effect on IHSG volatility, which supports the findings of several recent studies. Economic theory posits that stable and positive GDP growth signals a conducive investment climate, which can lead to increased investor confidence and reduced market uncertainty (Mankiw, 2021). When the economy grows, corporate earnings tend to rise, encouraging more predictable investment flows and thereby dampening excessive volatility (Kurniawan et al., 2022).

Empirically, the finding of this study aligns with Kusuma and Lestari (2023), who demonstrated that GDP growth significantly reduced market volatility in ASEAN-5 countries. Likewise, Purwanto and Nugroho (2021) showed that Indonesia's stock market reacted positively to periods of high GDP growth, marked by increased capital inflows and lower price instability. This contradicts earlier findings such as Shalehah (2018), who observed a positive relationship between GDP and volatility, indicating that higher economic activity may increase market expectations and speculative behavior. However, more recent evidence suggests that this relationship is context-dependent, with stable institutional environments and strong investor protections moderating volatility during expansion phases (Putri & Winarto, 2022; Zhao et al., 2021).

Theoretically, this reinforces the macro-finance framework proposed by Campbell et al. (2020), where economic fundamentals such as output growth are directly linked to asset price volatility through investor expectations and valuation models. A stable growth trajectory often leads to rational pricing, reduced uncertainty, and less herd behavior in financial markets (Wulandari & Priyanto, 2024). The significant inverse relationship found in this study between GDP and IHSG volatility suggests that policymakers aiming to reduce stock market risk should prioritize consistent and inclusive economic expansion.

Conversely, this study found that inflation does not have a significant effect on stock price volatility during the same period. This result is consistent with several prior studies (e.g., Ramadhan et al., 2022; Putra et al., 2023), which indicate that in developing capital markets like Indonesia, inflation while economically important does not always directly translate into equity market volatility. One possible explanation lies in investor behavior: large institutional investors, which dominate the IDX, may already price in inflation expectations and diversify their holdings accordingly (Santoso & Gunawan, 2021).

In addition, many firms listed on the IHSG are large-cap and export-oriented, enabling them to hedge against domestic inflation through foreign revenue streams, further insulating their stock prices from inflation shocks (Yuliana & Hartati, 2022). Supporting this, Herlina and Cahyani (2020) argue that inflation impacts the profitability of smaller firms more directly than it does large, resilient firms typically represented in the main index. Moreover, monetary policy frameworks such as inflation targeting by Bank Indonesia may have succeeded in anchoring expectations and limiting inflation's disruptive impact on asset prices (Bank Indonesia, 2023; Prabowo & Lestari, 2024).

The non-significant relationship also aligns with the adaptive market hypothesis, which posits that financial markets evolve and adapt to macroeconomic regularities, reducing the shock potential of predictable variables like inflation (Lo, 2021). Thus, while inflation remains an important macroeconomic indicator, its role in explaining short-term stock price volatility in the Indonesian context appears limited, particularly when compared to output shocks or policy-driven variables.

When tested simultaneously through the F-test, GDP and inflation together were found not to have a statistically significant effect on IHSG volatility. This suggests that although GDP has a partial effect, the combined explanatory power of the two variables is insufficient to account for

the full complexity of stock market fluctuations. These results are consistent with the findings of Tanjung and Iskandar (2021), who showed that macroeconomic variables often lose significance in combined models due to overlapping effects and omitted variable bias. Similarly, Hartono and Wahyuni (2023) emphasized that global factors such as geopolitical risk, capital flow volatility, and foreign interest rates play a more dominant role in shaping market volatility in open economies like Indonesia.

Moreover, the IDX Composite is heavily influenced by foreign investor sentiment, which tends to respond more strongly to international news, currency dynamics, and Federal Reserve policy decisions than to domestic inflation or GDP metrics alone (Suryani & Wijayanti, 2023). This finding is echoed in the volatility transmission model by Chen et al. (2022), which illustrates that in emerging markets, external shocks often overwhelm domestic fundamentals in explaining stock market behavior.

From a policy perspective, the implications of these findings are substantial. For investors, especially those focusing on the IHSG, the significant role of GDP growth suggests that investment decisions should be more sensitive to indicators of economic performance than to inflationary trends. Investors could leverage macroeconomic reports as leading signals for market positioning and risk management strategies (Sutrisno et al., 2024). For governments and monetary authorities, this study reinforces the importance of maintaining sustainable economic growth as a way to ensure capital market stability. Policy tools that support GDP such as infrastructure investment, tax incentives for industry, and workforce development can indirectly mitigate market volatility and foster long-term investor confidence (OECD, 2022).

Although inflation control remains crucial for economic health and purchasing power, its direct influence on equity volatility appears less critical than often assumed. These findings align with the perspective of macroprudential regulation, which emphasizes growth-oriented yet stability-driven frameworks in financial system design (IMF, 2023).

For academia, this research contributes to the growing body of literature suggesting that macroeconomic effects on financial markets are highly contingent on structural characteristics, investor composition, and global interconnectedness. It invites further inquiry into the role of variables such as interest rates, exchange rates, geopolitical risks, and global uncertainty indices, which have been shown to exert significant influence on stock volatility in other emerging markets (Kusnadi & Nugraha, 2025). Future studies should consider employing vector autoregression (VAR), ARCH/GARCH models, or structural equation modeling to better capture dynamic relationships and causality.

5. CONCLUSION

After testing the proposed hypotheses, this study concludes that Gross Domestic Product (GDP) growth has a significant effect on stock price volatility on the Indonesia Stock Exchange (IDX), indicating that higher economic growth contributes to reduced market uncertainty. Conversely, inflation does not have a statistically significant effect on stock price volatility, suggesting that investors may have anticipated inflationary trends or that inflation is not a primary driver of market fluctuations in this context. Furthermore, the simultaneous test reveals that GDP and inflation together do not significantly influence stock price volatility, highlighting the possibility that other external or structural factors play a more dominant role in determining market behavior. Based on these findings, it is recommended that policymakers focus on maintaining consistent economic growth through sustainable development strategies to support capital market stability, while investors should prioritize macroeconomic indicators—particularly GDP growth—in their risk assessment and investment decision-making processes. Future research is also advised to incorporate additional macroeconomic variables such as interest rates, exchange rates, and global financial uncertainty to better explain the dynamics of stock price volatility in emerging markets like Indonesia.

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