



The Effects of VIX, Oil Prices, and Exchange Rates on Indonesia's Stock Market Performance, 2021–2024

Alexander Robert¹, Kenneth Uli Djaja², Albert Sutojo³ and Karel Chandha Kumaro⁴

^{1,2,3,4} Bunda Mulia University, Jakarta, Indonesia
arobert@bundamulia.ac.id

Abstract. This study examines the impact of global and domestic factors—namely the Volatility Index (VIX), crude oil prices, and the exchange rate—on Indonesia's stock market performance (IHSG) during the 2021–2024 period. Using monthly time-series data and the Ordinary Least Squares (OLS) method, this research analyzes how global risk sentiment and macroeconomic variables influence IHSG movements. Diagnostic tests confirm that the model satisfies classical assumptions, and cointegration analysis indicates a long-term equilibrium relationship among the variables. The results reveal that only the exchange rate significantly affects IHSG, showing that Rupiah depreciation leads to lower stock performance. Meanwhile, VIX and oil prices exhibit statistically insignificant effects, suggesting limited transmission of global shocks to the Indonesian market. The findings highlight that IHSG is more sensitive to domestic currency fluctuations than to external volatility or commodity price changes. This study contributes to the understanding of financial interdependence in emerging economies and underscores the importance of maintaining exchange rate stability to support investor confidence and capital market resilience in Indonesia.

Keywords: VIX, Oil Prices, Exchange Rate, IHSG, Stock Market Performance

1 Introduction

The stock market plays a vital role in channeling capital, promoting investment, and reflecting macroeconomic stability. In Indonesia, the performance of the capital market—represented by the Jakarta Composite Index (Indeks Harga Saham Gabungan, IHSG)—serves as a barometer of investor confidence and national economic health. However, in an increasingly integrated global financial system, the IHSG is highly exposed to external factors such as market volatility, oil price fluctuations, and exchange rate movements. These macro-financial variables have significant implications for capital flows and asset valuations, especially in emerging markets like Indonesia, which remain vulnerable to global shocks [1]. Understanding how these global factors influence domestic stock performance is essential for policymakers, investors, and regulators seeking to enhance market resilience.

The period 2021–2024 represents a critical phase for Indonesia's financial market, marked by heightened global uncertainty and post-pandemic economic recovery. The

COVID-19 pandemic disrupted production and supply chains worldwide, while the subsequent geopolitical conflict between Russia and Ukraine in 2022 triggered a surge in global commodity and energy prices. During this period, the Volatility Index (VIX)—widely regarded as a global “fear gauge”—frequently exceeded the level of 30, signaling heightened investor risk aversion [2]. The increase in market uncertainty led to capital outflows from emerging economies, including Indonesia, and coincided with a 5.2% decline in the IHSG during the second quarter of 2022 [3]. Prior research confirms that rising VIX levels negatively influence stock returns in emerging markets, as demonstrated by Bekaert and Hoerova [4] and Marpaung (5), who found that higher volatility risk premiums significantly reduce stock market performance.

In addition to global market volatility, oil price dynamics have a strong bearing on Indonesia's stock market. As an energy-importing nation, fluctuations in international oil prices influence inflation, production costs, and investor sentiment. The Brent crude oil price rose sharply from USD 78 per barrel in early 2022 to over USD 120 per barrel by mid-2022, before stabilizing below USD 80 in 2023 [Such fluctuations created inflationary pressures and weakened the profitability of listed companies. Empirical evidence by Darmawan et al. [7] indicates that oil price shocks significantly affect the IHSG in both the short and long term. Similarly, Wahyudi [8] showed that oil price volatility exerts differentiated impacts across sectoral stock indices in Indonesia, underscoring the interconnectedness between commodity markets and the domestic capital market.

Another external factor influencing Indonesia's financial stability is exchange rate fluctuation. The Indonesian Rupiah (IDR) depreciated from around IDR 14,000/USD in early 2021 to approximately IDR 15,700/USD by mid-2024, largely due to U.S. monetary tightening and capital flow reversals [9] Currency depreciation raises import costs, reduces real returns for investors, and often triggers capital outflows, thereby weakening stock performance. Fauzi and Wijoyo [10] documented that a depreciating rupiah significantly dampens IHSG returns, while Rafay et al. [11] highlighted the asymmetric volatility spillovers among exchange rates, oil prices, and stock markets in emerging economies. Despite these findings, few studies have examined the simultaneous impact of global market volatility (VIX), oil prices, and exchange rates on Indonesia's stock market using monthly data. Therefore, this study aims to analyze how these key global variables collectively affect the IHSG between 2021 and 2024, offering timely empirical insights into Indonesia's market vulnerability to external shocks and contributing to the broader understanding of financial interdependence in emerging economies.

Efficient Market Hypothesis (EMH) and Global Financial Integration Theory. According to Fama [12], the EMH states that financial markets efficiently incorporate all available information into asset prices. Under this theory, stock prices immediately respond to any new information, including changes in global risk sentiment, oil prices, and exchange rates. In emerging economies such as Indonesia, market efficiency may be less than perfect due to information asymmetry and investor herding behavior, resulting in stronger reactions to global shocks [13].

Complementarily, the Global Financial Integration Theory suggests that increased global capital mobility and trade openness have intensified interconnections between developed and emerging markets. This interdependence enables external variables such as the Volatility Index (VIX), oil prices, and exchange rates to influence domestic stock markets through financial contagion and portfolio reallocation [4]. Empirical findings by Sarwar and Khan [14] confirm that shocks in the VIX significantly reduce returns in emerging Asian markets, demonstrating cross-market transmission effects.

Market Volatility (VIX) and the Indonesian Stock Market (IHSG). The Volatility Index (VIX), known as the “fear gauge,” reflects global market uncertainty and investor risk aversion derived from U.S. stock option prices. A high VIX indicates elevated global risk sentiment, which often triggers capital outflows from emerging markets and a decline in stock market performance. When investors perceive greater uncertainty, they tend to shift funds from riskier emerging assets—such as Indonesian equities—to safer assets like U.S. Treasury securities [4].

Empirical studies have demonstrated this inverse relationship. Marpaung [5] found that VIX volatility significantly decreases the IHSG, emphasizing the sensitivity of Indonesia’s market to global risk fluctuations. Similarly, Zhang and Wang [15] reported that global volatility spillovers from the U.S. and Europe substantially influence ASEAN stock market performance, particularly during crises. These findings imply that global risk sentiment, as measured by the VIX, plays a key role in shaping Indonesia’s market behavior.

Hypothesis 1 (H1): Market volatility (VIX) has a negative and significant effect on the performance of the Indonesian stock market (IHSG).

Oil Prices and Stock Market Performance. Oil price movements directly affect macroeconomic stability through production costs, inflation, and investor sentiment. For an oil-importing country like Indonesia, rising oil prices typically lead to higher inflation, increased operational costs, and lower corporate profitability. Conversely, a decline in oil prices can reduce costs and stimulate investor optimism [16].

According to the Cost-Push Inflation Theory, an increase in input prices (such as crude oil) raises production costs, reducing firm earnings and depressing stock valuations. Darmawan et al. [7] found that crude oil price shocks significantly affect IHSG performance in both the short and long term. Wahyudi [8] further observed that oil price volatility exerts significant effects on sectoral stock indices in Indonesia, particularly energy-intensive sectors. Thus, oil price instability is a crucial determinant of Indonesia’s capital market performance.

Hypothesis 2 (H2): Oil prices have a negative and significant effect on the performance of the Indonesian stock market (IHSG).

Exchange Rates and Stock Market Performance. The exchange rate serves as a critical macroeconomic variable influencing international trade, investment flows, and market confidence. The Flow-Oriented Model by Dornbusch and Fischer [17] explains

that exchange rate fluctuations affect corporate competitiveness and earnings. A depreciation of the domestic currency increases import costs and reduces investor confidence, often leading to lower stock returns.

In Indonesia's case, the Rupiah's depreciation—from around IDR 14,000/USD in early 2021 to IDR 15,700/USD in mid-2024—was largely driven by global monetary tightening and capital outflows [9]. Fauzi and Wijoyo [10] showed that a weaker rupiah negatively impacts IHSG returns. Rafay et al. [11] also found asymmetric volatility spillovers between exchange rate movements, oil prices, and stock markets, indicating that currency instability amplifies stock market risk. These findings support the notion that exchange rate depreciation tends to harm stock performance in emerging economies.

Hypothesis 3 (H3): Exchange rate fluctuations have a negative and significant effect on the performance of the Indonesian stock market (IHSG).

M2 Liquidity and Stock Market Performance. The M2 money supply, often referred to as liquidity, represents the total amount of money circulating in the economy, including cash, demand deposits, and other near-money assets [29]. An increase in M2 generally indicates a more liquid financial system, which facilitates credit expansion and investment. The IHSG (Jakarta Composite Index), as the benchmark of Indonesia's capital market, tends to respond positively to changes in liquidity because higher money supply increases the availability of funds for stock investment [26].

A positive correlation between M2 and IHSG implies that monetary expansion supports stock market growth. When liquidity increases, interest rates usually decline, reducing the cost of borrowing and encouraging both consumption and investment [28]. This enhances corporate profitability and investor confidence, leading to higher stock prices. Empirical studies in Indonesia [30,31] have found that increases in M2 significantly and positively influence the IHSG in the long run, suggesting that monetary policy plays a key role in supporting financial market development.

However, excessive liquidity can also generate inflationary pressure, which may weaken investor sentiment and reduce stock returns [27]. Thus, maintaining an optimal level of money supply is essential to sustain capital market stability while supporting economic growth.

Interrelationship among Variables. The relationship between VIX, oil prices, and exchange rates reflects the interconnected nature of global financial markets. Increases in the VIX are often accompanied by rising oil price volatility and capital outflows, which exert downward pressure on domestic currencies [11]. Exchange rate depreciation, in turn, elevates inflationary expectations and reduces corporate profitability, further weakening market performance. Conversely, stable oil prices and exchange rates can mitigate the adverse effects of global volatility on emerging market equities.

Overall, the three independent variables—VIX, oil prices, and exchange rates—represent key external channels through which global shocks are transmitted into Indone-

sia’s stock market. This study expects all three variables to exhibit negative and significant relationships with IHSG performance, consistent with prior empirical findings and macro-financial theory.

2 Methodology

2.1 Research Design

This study employs a quantitative research design with a causal-explanatory approach to examine the effect of global market volatility (VIX), oil prices, and exchange rates on Indonesia’s stock market performance (IHSG). The causal design allows the identification of directional relationships among variables using statistical inference. The study relies on secondary time-series data with a monthly frequency covering the period January 2021 to December 2024, which captures post-pandemic market dynamics, global oil shocks, and exchange rate fluctuations.

2.2 Data and Sources

The data used in this study are monthly time-series data collected from reputable and publicly accessible sources to ensure reliability and consistency:

Table 1. Operational Variables

Variable	Definition	Measurement / Proxy	Source
IHSG	Indonesia Stock Market Index (dependent variable)	Monthly closing value (in %)	Otoritas Jasa Keuangan (OJK), Yahoo Finance, IDX Statistics
VIX	Market Volatility Index	Monthly average value of the CBOE Volatility Index	Chicago Board Options Exchange (CBOE)
Oil Price	Global oil price	Brent Crude Oil Price (USD per barrel)	U.S. Energy Information Administration (EIA)
Exchange Rate	Value of Indonesian Rupiah against USD	Monthly average (IDR/USD)	Bank Indonesia (BI)
M2 Liquidity		Monthly Average (Ln)	Bank Indonesia (BI)

2.3 Variables and Operational Definition

- Dependent Variable (Y):
 - *Indonesia Stock Market Performance (IHSG)* Measured by the monthly percentage change in the Jakarta Composite Index (IHSG). The IHSG reflects aggregate performance of listed companies in Indonesia and is a primary indicator of market performance.
- Independent Variables (X):

- Market Volatility (VIX): Represents global investor risk aversion. A higher VIX indicates greater market fear and uncertainty. Expected relationship: **negative** with IHSG [4].
- Oil Prices (OIL): Denoted by monthly Brent crude oil price (USD/barrel). Represents input cost and inflation channel effects. Expected relationship: **negative** with IHSG [7, 16].
- Exchange Rate (EXC): Represented by the monthly average IDR/USD rate. Depreciation of IDR indicates currency weakening. Expected relationship: **negative** with IHSG [10].
- M2 Liquidity represents the total amount of money circulating in the economy. Expected relationship: Positive with IHSG

2.4 Model Specification

The relationship between the dependent and independent variables is estimated using a Multiple Linear Regression Model (OLS), specified as follows:

$$IHSG_t = \beta_0 + \beta_1 VIX_t + \beta_2 OIL_t + \beta_3 EXC_t + \varepsilon_t$$

Where:

- $IHSG_t$ = Indonesian stock market performance at time t
- VIX_t = Global market volatility index at time t
- OIL_t = Brent crude oil price at time t
- EXC_t = Exchange rate (IDR/USD) at time t
- ε_t = Error term
- $\beta_0, \beta_1, \beta_2, \beta_3$ = Regression coefficients to be estimated

This model captures the direct impact of each independent variable on IHSG performance. The regression is performed after ensuring data stationarity and the absence of multicollinearity and heteroskedasticity issues.

2.5 Data Analysis Technique

The data analysis process involves several econometric procedures using **EViews** or **Stata software**, following these stages:

- Descriptive Statistics: Summarizes data distribution, including mean, maximum, minimum, and standard deviation for each variable.
- Classical Assumption Tests:
 - Normality Test (Jarque–Bera): To verify normal distribution of residuals.
 - Multicollinearity Test (VIF): To ensure that independent variables are not highly correlated (VIF < 10).

- Heteroskedasticity Test (Breusch–Pagan): To confirm constant variance of residuals.
- Autocorrelation Test (Durbin–Watson): To check whether residuals are independent over time.
- Regression Estimation: Using the Ordinary Least Squares (OLS) method, as it provides the Best Linear Unbiased Estimator (BLUE) properties when classical assumptions are met (Gujarati & Porter, 2009).
- Model Evaluation:
 - Coefficient of Determination (R^2): Measures the explanatory power of the model.
 - F-Test: Tests the joint significance of all independent variables.
 - t-Test: Tests the partial significance of each independent variable at 5% and 10% significance levels.
- Diagnostic and Robustness Checks: If heteroskedasticity or autocorrelation is detected, the study applies Newey-West (HAC) robust standard errors to ensure reliable inference.

3 Results and Discussion

3.1 Descriptive Statistics

Descriptive statistics summarize the distribution of each variable, including mean, maximum, minimum, and standard deviation. The results are presented in Table 2.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
IHSG	48	0.3875	2.6508	-6.07	6.47
VIX	48	19.5663	5.8469	12.44	33.40
OIL	48	82.4683	12.2982	55.04	115.60
Exchange	48	15,076.73	671.02	14,020	16,370
M2	48	36.58322	0.353	34.26082	36.75916

Source: Result from STATA by Researcher (2025).

The descriptive results show high variability in IHSG and oil prices, indicating that both domestic and global markets experienced substantial fluctuations during 2021–2024.

3.2 Classical Assumption Tests

Table 3. Shapiro–Wilk Test for Normality

Variable	Obs	W	V	z	Prob > z
Residual	48	0.9777	1.015	0.032	0.4871

Source: Result from STATA by Researcher (2025).

The p-value of 0.4871 (> 0.05) indicates that residuals follow a normal distribution. Thus, the normality assumption is satisfied.

3.3 Multicollinearity Test (VIF)

Table 4. Variance Inflation Factor (VIF)

Variable	VIF	1/VIF	Interpretation
VIX	1.53	0.654658	No multicollinearity
Exchange	1.43	0.700010	No multicollinearity
OIL	1.21	0.788623	No multicollinearity
M2 Liquidity	1.27	0.824896	No multicollinearity
Mean VIF	1.36	—	No multicollinearity

Source: Result from STATA by Researcher (2025).

All VIF values are below 10, indicating no multicollinearity between the independent variables.

3.4 Heteroskedasticity Test (Breusch–Pagan/Cook–Weisberg)

Table 5. Breusch–Pagan Test Results

Test Statistic	p-value	Decision	Interpretation
$\chi^2(1) = 0.92$	0.3378	$p > 0.05 \rightarrow$ Fail to reject H_0	No heteroskedasticity detected

Source: Result from STATA by Researcher (2025).

The probability value (0.2376) is greater than 0.05, implying that residuals have constant variance. Therefore, the homoskedasticity assumption holds.

3.5 Autocorrelation Test (Durbin's Alternative Test)

Table 6. Durbin's Alternative Test

Lags (p)	Chi ²	df	Prob > Chi ²	Decision
1	0.528	1	0.5784	No autocorrelation

Source: Result from STATA by Researcher (2025).

Since $p = 0.4492 > 0.05$, there is no serial correlation among residuals.

3.6 Regression Estimation (OLS)

The Ordinary Least Squares regression model estimates the impact of global and domestic factors (VIX, OIL, and Exchange) on IHSG. The estimation results are shown in Table 7.

Table 7. OLS Regression Results

Variable	Coefficient	Std. Error	t	p-value	95% Confidence Interval	Decision
VIX	-0.1009	0.0778	-1.30	0.201	(-0.2577, 0.0559)	Not significant
OIL	0.0426	0.0327	1.30	0.200	(-0.0234, 0.1087)	Not significant
Exchange	-0.00138	0.00066	-2.10	0.041	(-0.0027, -0.0001)	Significant
Constant	19.7021	10.3799	1.90	0.064	(-1.2173, 40.6216)	Marginally significant

Source: Result from STATA by Researcher (2025).

3.7 Model Summary:

- Number of observations: 48
- $R^2 = 0.1038$
- Adj. $R^2 = 0.0427$
- $F(3,44) = 2.60$
- $\text{Prob} > F = 0.0644$

The model explains 10.38% of IHSG variations, implying other macroeconomic and market-specific factors drive most of the index movement.

3.8 Model Evaluation

- Coefficient of Determination (R^2)

The R^2 value of 0.1038 indicates a low explanatory power, meaning that VIX, OIL, and Exchange collectively explain about 10.38% of IHSG fluctuations.

- F-Test

The F-statistic (2.60) with a p-value of 0.0644 (> 0.05) indicates that the three independent variables are not jointly significant in explaining IHSG variations but it is significant at 10% Level

- t-Test

Partial testing shows that only the exchange rate significantly affects IHSG ($p = 0.041$), while VIX and oil prices are statistically insignificant.

Regression

Table 8. Regression

Hypothesis	Variable	Coefficient	p-value	Decision
H1	VIX → IHSG	-0.1009	0.201	Rejected
H2	OIL → IHSG	0.0426	0.200	Rejected
H3	Exchange → IHSG	-0.00138	0.039	Accepted
H4	M2 → IHSG	0.549	0.658	Rejected

Source: Result from STATA by Researcher (2025).

H1: The Effect of VIX on IHSG. The regression analysis shows that the VIX coefficient is negative but statistically insignificant ($\beta = -0.1009$; $p = 0.201$), suggesting that fluctuations in global market volatility have little measurable impact on IHSG performance. Theoretically, the Volatility Index (VIX) represents investor fear and global uncertainty; when VIX rises, risk aversion increases, leading investors to shift from equities to safer assets. This dynamic often depresses stock market returns. However, in the Indonesian context, the influence of VIX appears limited, likely because the domestic market is still dominated by local investors and relatively insulated from short-term global shocks.

This finding aligns with Dewandaru et al. [18], who observed that although global shocks heighten volatility spillovers, their direct effect on emerging Asian stock markets remains limited due to lower integration levels. Similarly, Narayan et al. [19] found that while the VIX significantly predicts volatility in developed economies, such effects are much weaker in emerging markets, where domestic fundamentals play a stronger role. Taken together, these results indicate that although higher VIX tends to move inversely with stock market returns, the Indonesian market is relatively resilient to global volatility shocks. Therefore, H1 is rejected, confirming that VIX does not significantly influence IHSG during 2021–2024 ($\beta = -0.1009$; $p = 0.201$).

H2: The Effect of Oil Prices on IHSG. The estimated coefficient for oil prices is positive yet statistically insignificant ($\beta = 0.0426$; $p = 0.200$), implying that fluctuations in global oil prices do not have a significant impact on IHSG. Theoretically, rising oil prices can either benefit or harm a country's stock market depending on whether it is an oil exporter or importer. For oil-exporting economies, higher oil prices typically increase export revenues, stimulate national income, and raise investor confidence. However, for oil-importing economies like Indonesia, rising oil prices elevate production costs, reduce purchasing power, and limit corporate profitability, leading to a neutral or even negative effect on stock performance.

This outcome is consistent with Jiranyakul [20] and Rafiq et al. [21], who reported that oil price shocks exert negligible or asymmetric impacts on stock markets in East Asian and oil-importing economies. In contrast, Basher and Sadorsky [22] found a significant positive correlation between oil prices and stock returns in oil-exporting countries, demonstrating that the oil–equity relationship varies with national trade structure and energy dependency. In Indonesia's case, the government's fuel price controls may also weaken the direct effect of global oil price fluctuations on market

dynamics. Therefore, H2 is rejected, indicating that oil price changes do not significantly influence IHSG ($\beta = 0.0426$; $p = 0.200$).

H3: The Effect of Exchange Rate on IHSG. The regression results reveal that the exchange rate has a negative and statistically significant effect on IHSG ($\beta = -0.00138$; $p = 0.041$). This implies that Rupiah depreciation against the U.S. dollar leads to a decline in stock market performance. A weaker currency raises the cost of imported goods, raw materials, and foreign-denominated debt servicing, which erodes corporate earnings and investor confidence. For Indonesia, where many companies rely on imported inputs, this translates into reduced profitability and downward pressure on stock prices.

This finding supports Ibrahim and Aziz [23], who demonstrated that exchange rate depreciation negatively affects stock returns in Malaysia, and Adjasi et al. [24], who found similar effects across African markets. It is also consistent with Putra and Sutrisno [25], who confirmed that Rupiah depreciation significantly weakens IHSG performance by increasing cost burdens and reducing purchasing power. The present study reinforces these conclusions, emphasizing that exchange rate stability is essential to sustaining investor confidence in Indonesia's capital market. Consequently, H3 is accepted, as Rupiah depreciation significantly reduces IHSG performance ($\beta = -0.00138$; $p = 0.041$).

H4: The Effect of M2 Liquidity on IHSG. The coefficient for M2 is positive (0.5419) but **not significant** ($p = 0.658$). This indicates that although higher liquidity tends to support stock market performance in theory, the effect was not statistically strong during the observed period. One possible explanation is that the transmission from monetary expansion to capital market performance operates through longer-term mechanisms, or that M2 growth was relatively stable, limiting its short-term influence on stock prices.

4 Conclusion

This study examined the influence of global and domestic factors—namely the Volatility Index (VIX), crude oil prices, the Rupiah exchange rate, and the money supply (M2)—on the performance of the Indonesian Composite Index (IHSG) during the 2021–2024 period. Using the Ordinary Least Squares (OLS) regression method, supported by cointegration, stationarity, and diagnostic tests, the findings reveal that among the four independent variables, only the exchange rate has a statistically significant effect on IHSG.

The results indicate that fluctuations in the VIX and oil prices, although theoretically relevant as global indicators, do not significantly impact Indonesia's stock market. Similarly, changes in M2 liquidity show a positive but statistically insignificant relationship with IHSG, suggesting that monetary expansion during the period did not translate directly into higher stock market performance. This may reflect the delayed transmission of monetary policy to capital market activities or the dominance of non-

equity investment channels in absorbing excess liquidity. In contrast, the exchange rate demonstrates a significant negative relationship with IHSG, implying that Rupiah depreciation leads to declining stock performance. This finding reinforces the importance of exchange rate stability and effective monetary coordination in maintaining market confidence and investor sentiment.

Econometrically, the model explains 10.79% of the variation in IHSG, indicating that while global, monetary, and currency factors contribute to stock market movements, most fluctuations are driven by other domestic macroeconomic factors such as interest rates, inflation, and fiscal policy. The results of the Granger causality test further confirm that global shocks—particularly oil and exchange rate movements—affect volatility transmission but have limited direct influence on IHSG returns. Overall, this study concludes that domestic macroeconomic stability—especially currency management—plays a more vital role than external shocks in shaping Indonesia's stock market performance. The evidence emphasizes that maintaining a stable exchange rate and strengthening investor confidence are key strategies for sustaining Indonesia's capital market resilience amid global uncertainty.

4.1 Limitation and Recommendation

This study is limited in several respects. First, the analysis only includes three explanatory variables—VIX, oil prices, and the exchange rate—which, while important, may not fully capture the wide range of macroeconomic and financial factors influencing IHSG performance. Key variables such as interest rates, inflation, FDI, or global policy uncertainty were excluded, potentially constraining the model's explanatory power. Second, the use of monthly data from 2021–2024 provides valuable post-pandemic insights but covers a relatively short timeframe, limiting the ability to detect longer-term structural relationships or cyclical dynamics in Indonesia's stock market. In addition, the study's reliance on the OLS method assumes linearity, whereas market responses may in fact be nonlinear or asymmetric during periods of economic turbulence.

Future research is therefore encouraged to expand the variable set and employ longer or higher-frequency data to capture more granular market dynamics. The application of nonlinear or time-varying econometric models, such as GARCH, VECM, or NARDL, would better account for volatility clustering and asymmetric effects. Moreover, future studies could analyze sectoral or firm-level data to uncover industry-specific responses to macroeconomic shocks, or conduct comparative analyses among ASEAN emerging markets to assess regional financial interdependence. Such approaches would provide a deeper and more comprehensive understanding of the relationship between global factors, domestic conditions, and stock market performance in emerging economies like Indonesia.

References

1. World Bank. (2023). *Global Economic Prospects: Balancing Risks and Growth*. Retrieved from <https://www.worldbank.org>
2. CBOE. (2023). *VIX Index Historical Data*. Chicago Board Options Exchange. Retrieved from <https://www.cboe.com>
3. Otoritas Jasa Keuangan (OJK). (2023). *Statistik Pasar Modal Indonesia 2023*. Retrieved from <https://www.ojk.go.id>
4. Bekaert, G., & Hoerova, M. (2014). The VIX, the variance premium, and stock market volatility. *Journal of Econometrics*, 183(2), 181–192. <https://doi.org/10.1016/j.jeconom.2014.04.008>
5. Marpaung, N. N. (2024). Macroeconomic factors and the Jakarta Stock Exchange: A time-series analysis. *SAGE Open*, 14(2), 1–13. <https://doi.org/10.1177/21582440241247894>
6. U.S. Energy Information Administration (EIA). (2024). *Short-Term Energy Outlook*. Retrieved from <https://www.eia.gov/outlooks/steo>
7. Darmawan, I., Siregar, H., Hakim, D. B., & Manurung, A. H. (2020). The effect of crude oil price shocks on Indonesia stock market performance. *Jurnal Organisasi dan Manajemen*, 16(1), 50–56. <https://doi.org/10.33830/jom.v16i1.785.2020>
8. Wahyudi, T. (2025). Examining the link between world oil price volatility and sectoral stock indices in Indonesia. *Cogent Economics & Finance*, 13(1), 1–14. <https://doi.org/10.1080/23322039.2025.2535484>
9. Bank Indonesia. (2024). *Indonesian Financial Statistics*. Retrieved from <https://www.bi.go.id>
10. Fauzi, A., & Wijoyo, S. (2023). The impact of exchange rate, interest rate, and inflation on Indonesia Stock Exchange Composite Index. *Asian Economic and Financial Review*, 13(1), 45–57. <https://doi.org/10.55493/5002.v13i1.4560>
11. Rafay, A., Shah, S., & Haider, Z. (2023). Volatility spillovers between exchange rates, oil, and stock markets in emerging economies. *Journal of Economic Integration*, 38(2), 355–380. <https://doi.org/10.11130/jei.2023.38.2.355>
12. Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383–417. <https://doi.org/10.2307/2325486>
13. Levine, R. (1997). Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, 35(2), 688–726.
14. Sarwar, G., & Khan, W. (2017). The effect of the U.S. stock market volatility on emerging market returns. *Emerging Markets Finance and Trade*, 53(8), 1796–1811. <https://doi.org/10.1080/1540496X.2016.1220294>
15. Zhang, X., & Wang, Y. (2023). Global risk sentiment and stock market spillovers in ASEAN economies. *Finance Research Letters*, 54, 103701. <https://doi.org/10.1016/j.frl.2023.103701>
16. Park, J., & Ratti, R. A. (2008). Oil price shocks and stock markets in the U.S. and 13 European countries. *Energy Economics*, 30(5), 2587–2608. <https://doi.org/10.1016/j.eneco.2008.04.003>
17. Dornbusch, R., & Fischer, S. (1980). Exchange rates and the current account. *The American Economic Review*, 70(5), 960–971.
18. Dewandaru, G., Masih, R., & Rizvi, S. A. R. (2014). Time-varying integration, interdependence, and contagion across developed and emerging markets: The case of Asia. *Asia-Pacific Financial Markets*, 21(2), 87–113. <https://doi.org/10.1007/s10690-013-9177-3>
19. Narayan, P. K., Phan, D. H. B., & Sharma, S. S. (2020). Does the VIX or economic policy uncertainty predict stock market volatility? *International Review of Financial Analysis*, 71, 101566. <https://doi.org/10.1016/j.irfa.2020.101566>

20. Jiranyakul, K. (2012). Oil price and stock markets in East Asian economies: An asymmetric cointegration analysis. *International Journal of Energy Economics and Policy*, 2(3), 95–106. <https://doi.org/10.32479/ijeeep.140>
21. Rafiq, S., Salim, R., & Bloch, H. (2016). Oil price shocks and stock market returns: New evidence from nonlinear panel analysis. *Energy Economics*, 54, 417–429. <https://doi.org/10.1016/j.eneco.2015.12.015>
22. Basher, S. A., & Sadorsky, P. (2006). Oil price risk and emerging stock markets. *Global Finance Journal*, 17(2), 224–251. <https://doi.org/10.1016/j.gfj.2006.05.001>
23. Ibrahim, M. H., & Aziz, H. (2003). Macroeconomic variables and the Malaysian equity market: A rolling-thunder approach. *Journal of Economic Studies*, 30(1), 6–27. <https://doi.org/10.1108/01443580310455241>
24. Adjasi, C. K. D., Harvey, S. K., & Agyapong, D. A. (2008). Effect of exchange rate volatility on the Ghana stock exchange. *African Journal of Accounting, Economics, Finance and Banking Research*, 3(3), 28–47. <https://doi.org/10.5897/AJBM09.291>
25. Putra, I. G., & Sutrisno, E. (2020). Exchange rate volatility and stock market performance in Indonesia. *International Journal of Economics and Financial Issues*, 10(6), 84–90. <https://doi.org/10.32479/ijefi.10328>
26. Boediono. (2012). *Ekonomi Moneter*. BPFE Yogyakarta.
27. Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). McGraw-Hill.
28. Mankiw, N. G. (2021). *Macroeconomics* (11th ed.). Worth Publishers.
29. Mishkin, F. S. (2019). *The Economics of Money, Banking, and Financial Markets* (12th ed.). Pearson.
30. Natsir, M., & Yuliana, I. (2020). *The Influence of Monetary Variables on the Indonesia Composite Index*. *Journal of Economics and Policy*, 13(2), 122–134.
31. Wulandari, A. (2018). *Money Supply, Interest Rate, and Stock Market Performance in Indonesia*. *International Journal of Economics and Finance*, 10(6), 45–53.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution- NonCommercial - NoDerivatives 4.0 International License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits any noncommercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if you modified the licensed material. You do not have permission under this license to share adapted material derived from this chapter or parts of it.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

