

Stock Price Determinants in Indonesia's Energy Sector during the Russia–Ukraine Geopolitical Conflict

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HISTORY

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ABSTRACT

Purpose: This study examines the effects of Return on Assets (ROA), Debt-to-Equity Ratio (DER), Earnings Per Share (EPS), inflation, interest rates, and exchange rates on the stock prices of energy sector companies listed on the Indonesia Stock Exchange during the 2021–2024 Russia–Ukraine conflict period.

Method: This study employs a quantitative approach using secondary data obtained from companies' financial statements. The sample was selected through purposive sampling, resulting in 29 companies and 116 observations. Data were analyzed using a Fixed Effects model with Driscoll–Kraay standard error correction, processed with StataMP 17.

Result: The findings indicate that ROA, DER, and exchange rates have a significant positive effect on stock prices. Meanwhile, EPS, inflation, and interest rates do not show significant effects. The Adjusted R² value of 13.84% suggests that the independent variables explain part of the variation in energy sector stock prices.

Practical Implications for Economic Growth and Development: These findings provide practical insights for investors and corporate management in understanding internal and external factors that influence stock value. Such understanding may support more efficient investment decisions and strengthen stability in the energy sector, which plays an important role in national economic development.

Originality/Value: This study contributes empirical evidence on the Indonesian energy sector during the Russia–Ukraine conflict period.

Keywords: *Financial Performance, Inflation, Interest Rate, Exchange Rate, Stock Price, Russia-Ukraine Conflict*

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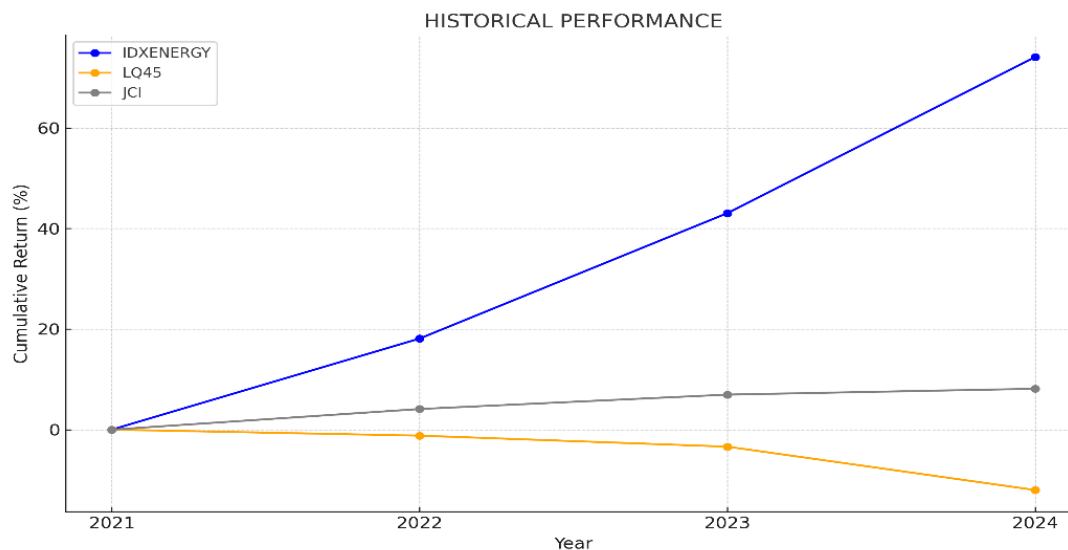


INTRODUCTION

The Russia–Ukraine conflict, which escalated in February 2022, fundamentally reshaped global economic dynamics and triggered a severe energy crisis (International Energy Agency, 2022). As a dominant supplier of natural gas, oil, and coal, Russia’s involvement led to critical supply disruptions, driving WTI and Brent benchmark prices up by 52.33% and 56.33%, respectively (Zhang et al., 2024). These structural shocks reverberated across international markets, significantly affecting trade balances and market volatility in emerging economies, including Indonesia (Utama & Astuty, 2023).

Despite these global disruptions, the Indonesian capital market demonstrated remarkable resilience, largely supported by the energy sector’s windfall gains from rising commodity prices. This was reflected in the Jakarta Composite Index (JCI), which reached a record high of 7,318 in September 2022, representing a 9.05% increase from the end of 2021 (Indonesia Stock Exchange, 2022). The surge in global energy demand caused by the Russia–Ukraine conflict directly benefited Indonesian energy issuers, as reflected in the sector’s outperformance compared with other industries. Therefore, this study focuses on the energy sector to analyze how geopolitically driven price spikes interact with firms’ internal financial conditions and macroeconomic stability. This focus is further justified by the sector’s continued growth prospects on the Indonesia Stock Exchange through 2024.

Figure 1. Historical Performance of the Energy Sector Index Compared with the JCI and LQ45 Indices during 2021–2024



Source: Processed data from IDXENERGY Fact Sheet (2025)

The energy sector index experienced intense fluctuations, reflecting the sector’s high sensitivity to global supply disruptions and geopolitical risks. As shown in Figure 1, the energy index exhibited a sharp upward trend that diverged significantly from the JCI and LQ45 benchmarks during the Russia–Ukraine conflict, indicating a unique market reaction. Consequently, understanding these dynamics is a critical component of risk mitigation and long-term investment decision-making (World Economic Forum, 2025). Stock prices ultimately reflect an issuer’s financial performance and investors’ expectations (Junaedi et al., 2021). This distinct market pattern justifies the need to examine how internal financial metrics and external macroeconomic pressures interact in driving stock prices during this specific period.

Empirical findings regarding internal fundamental drivers remain highly contradictory. In terms of profitability, several studies report that Return on Assets (ROA) significantly increases stock prices (Zamzami & Hasanuh, 2021; Akbar & Djawoto, 2021; Tobing et al., 2024), whereas others find no statistically significant relationship (Junaedi et al., 2021; Pangaribuan et al., 2022). Leverage metrics show similar inconsistencies. The Debt-to-Equity Ratio (DER) is found to positively affect market value in some studies (Puteri & Wahyuni, 2023; Khasanah & Suwanti, 2022; Yusuf et al., 2022), while other studies report insignificant effects (Dewanti, 2022; Sanusi et al., 2024). Similarly, the conventional view that Earnings per Share (EPS) has a positive effect on stock prices (Abdillah & Zakaria, 2021; Yahya, 2022; Kusjono & Nurazzahm, 2023) is challenged by findings showing its insignificance (Rifani et al., 2022; Isman, 2024).

Macroeconomic determinants also display fragmented empirical evidence. Inflation is reported to significantly depress stock prices due to increased operational costs (Tumbelaka et al., 2023; Agustin et al., 2023; Ardiansyah et al., 2021), whereas contrasting studies document a positive relationship (Sulastri & Suselo, 2022; Paramita et al., 2024). Regarding interest rate policy, conventional studies identify significant downward pressure on share prices (Iradilah & Tanjung, 2022; Armelia & Martha, 2023; Wisudani & Priyadi, 2021), while alternative evidence indicates a positive effect (Indirasari, 2024; Setiani & Nurhasanah, 2023). Lastly, currency depreciation, measured through the IDR/USD exchange rate, is observed either as a detrimental risk factor that lowers stock prices (Dwijayanti, 2021; Fellicia & Widjaja, 2023; Hasan, 2024) or as a catalyst for value appreciation (Hairunnisa et al., 2021; Hijayanti & Manda, 2025).

This research distinguishes itself by focusing exclusively on the Indonesian energy sector, thereby filling a critical gap left by prior studies that predominantly examined manufacturing or general non-financial firms (Eldomiaty et al., 2020; Piero & Natsir, 2023). The primary novelty of this study lies in its analysis of the interaction between internal fundamentals, namely ROA, DER, and EPS, and macroeconomic shocks, specifically inflation, interest rates, and exchange rate volatility, during the dual impact of post-pandemic recovery and the Russia–Ukraine conflict. By integrating sector-specific characteristics with global energy market volatility, this study provides a comprehensive framework for understanding how external shocks and internal financial metrics redefine stock prices in a high-risk environment. These findings offer both theoretical depth and practical guidance for market participants navigating the complexities of the energy sector.

Hypotheses Development

Signaling Theory

Spence (1973) introduced signaling theory, which explains how firms reduce information asymmetry by communicating performance indicators to external investors. In capital markets, financial ratios such as ROA, DER, and EPS serve as important signals that help bridge this information gap. High ROA and EPS are generally interpreted as indicators of operational efficiency and profitability, while DER reflects a firm's capital structure and financial risk (Elwisam et al., 2024). Within this framework, high-quality firms use these financial metrics to distinguish themselves from their competitors. However, because such signals may sometimes be influenced by temporary accounting effects, investors must interpret these ratios carefully to assess a firm's sustainable value and long-term prospects. Thus, signaling theory provides a useful foundation for understanding how firm-specific financial information influences investment decisions.

Arbitrage Pricing Theory

Ross (1976) introduced Arbitrage Pricing Theory (APT) as a multi-factor alternative to the Capital Asset Pricing Model (CAPM). APT posits that financial asset returns are influenced by multiple systematic risk factors rather than by a single market index. It also assumes that

price discrepancies are corrected swiftly through market arbitrage mechanisms. Since firm-specific risks can generally be reduced through diversification, APT is particularly relevant for examining how external macroeconomic and geopolitical factors affect sectoral stock price movements (Connor & Korajczyk, 1995). In this study, APT provides the theoretical basis for analyzing the effects of inflation, interest rates, and exchange rate volatility on energy sector stock prices.

Return on Asset and Stock Price

ROA reflects a company's efficiency in converting its total assets into net profit (Ifadhila, 2023). In this study, ROA is defined as the ratio of profit after tax to total assets. According to signaling theory, an increasing ROA conveys a positive signal regarding a firm's future profitability, thereby strengthening market confidence and encouraging stock price appreciation. This view is supported by Muhidin and Situngkir (2022) and Zamzami and Hasanuh (2021), who confirm a strong and positive relationship between ROA and stock prices. Therefore, this study proposes the following hypothesis:

H1: ROA has a positive effect on stock prices.

Debt-to-Equity Ratio and Stock Price

The Debt-to-Equity Ratio (DER) is a financial metric that compares a company's total debt to its equity, indicating the extent to which a company's capital structure relies on external financing (Rahmawati & Hadian, 2022). Under signaling theory, an increasing DER may convey a dual signal. Although high leverage generally increases insolvency risk, in the capital-intensive energy sector, it may also indicate strategic asset expansion and infrastructure development. When debt is used to finance exploration activities and capture opportunities from rising commodity prices during geopolitical shocks, investors may interpret leverage as an aggressive growth strategy rather than a sign of financial distress. This view is supported by Khasanah and Suwanti (2022) and Mursalim and Maytani (2025), who find that higher DER is significantly associated with rising stock prices. Therefore, this study proposes the following hypothesis:

H2: DER has a positive effect on stock prices.

Earnings Per Share and Stock Price

Earnings Per Share (EPS) measures the net profit attributable to each outstanding common share and serves as an indicator of corporate profitability rather than actual dividend distribution or direct cash returns to investors (Nuryani, 2021). Under signaling theory, an increasing EPS conveys a positive signal of strong financial performance and future earnings capacity. This signal may stimulate market demand for the company's shares and subsequently drive stock prices upward. This view is reinforced by Natalia and Nurdiana (2024) and Yahya (2022), who find that EPS has a significant and positive effect on stock prices. Based on this argument, this study proposes the following hypothesis:

H3: EPS has a positive effect on stock prices.

Inflation and Stock Price

Inflation is a macroeconomic phenomenon characterized by a general increase in prices and a decline in the purchasing power of currency, often signaling underlying economic instability (Faulianti et al., 2023). From the perspective of Arbitrage Pricing Theory (APT), inflation represents a systematic risk for energy firms because it increases operational costs and capital expenditures while raising the discount rate applied to future cash flows. Although inflation may be associated with higher energy prices, the resulting increase in production

costs and potential decline in industrial demand may reduce firms' net profitability. This perspective is supported by Ardiansyah et al. (2021) and Tumbelaka et al. (2023), who provide empirical evidence that inflation tends to have a negative and statistically significant effect on stock prices. Based on this argument, this study proposes the following hypothesis:

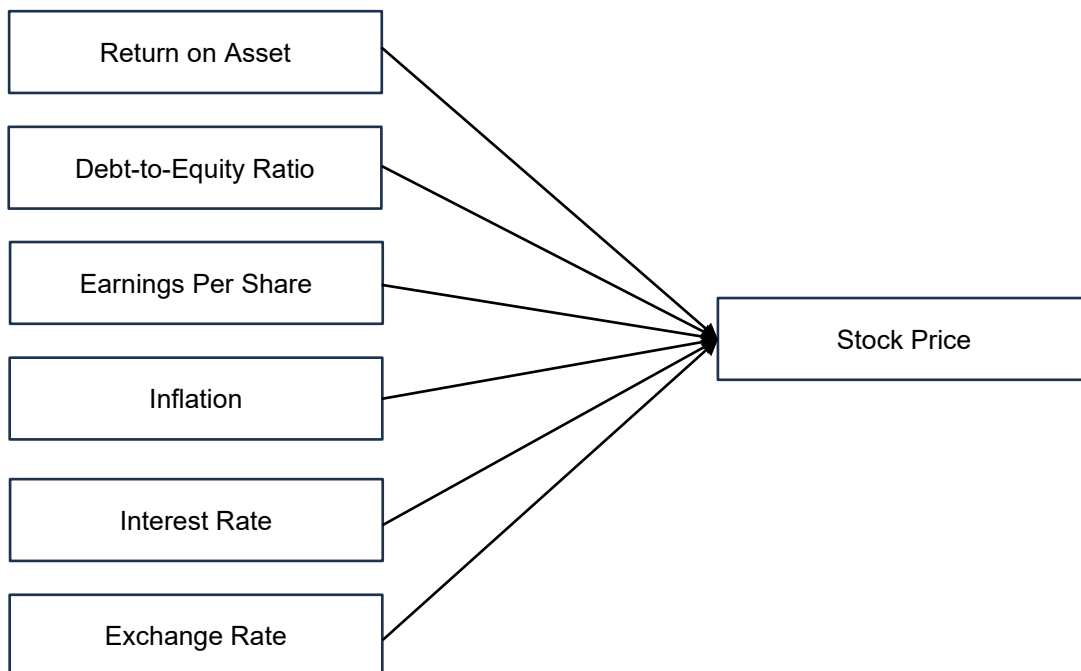
H4: Inflation has a negative effect on stock prices.

Interest Rate and Stock Price

Interest rates refer to the compensation paid for the use of borrowed funds over a certain period, representing the return received by lenders for providing economic benefits through financing (Imran, 2022). From the perspective of Arbitrage Pricing Theory (APT), rising interest rates may exert a negative effect on stock prices through three main channels. First, they increase the cost of capital for capital-intensive energy firms. Second, they raise the discount rate applied to future cash flows, thereby lowering current firm valuations. Third, they may trigger a substitution effect, as investors shift from volatile equities to safer fixed-income instruments, such as time deposits. This argument is consistent with previous empirical evidence from Wisudani and Priyadi (2021) and Iradilah and Tanjung (2022), whose findings suggest that interest rate variations significantly depress stock prices. Based on this explanation, this study proposes the following hypothesis:

H5: Interest rates have a negative effect on stock prices.

Figure 2. Conceptual Framework



Source: Developed by the authors (2025)

Exchange Rate and Stock Price

Exchange rate is one of macroeconomic variables that affects capital markets and currency values, as its volatility can influence investor behavior in making investment decisions (Porwati, 2024). From the perspective of Arbitrage Pricing Theory (APT), a weakening rupiah, or currency depreciation, may have a positive effect on the Indonesian energy sector,

particularly for firms that are export-oriented or generate USD-linked revenues through global commodity pricing. When revenues are denominated in or linked to USD, rupiah depreciation may enhance profitability once earnings are converted into domestic currency. However, this effect may vary depending on each firm's reliance on imported capital equipment or USD-denominated debt. This view is supported by Cipta and Laily (2021) and Rosdiana (2023), who find that exchange rates have a significant and positive effect on stock prices. Based on this argument, this study proposes the following hypothesis:

H6: Exchange rates have a positive effect on stock prices.

METHOD

This quantitative study utilizes panel data by combining cross-sectional and time-series dimensions. Econometric analysis was conducted using StataMP 17 based on the following Fixed Effects regression specification:

$$SP_{it} = \beta_0 + \beta_1ROA_{it} + \beta_2DER_{it} + \beta_3EPS_{it} + \beta_4INF_{it} + \beta_5IR_{it} + \beta_6ER_{it} + \mu_i + \varepsilon_{it}$$

Where:

SP_{it} : Stock price of firm i in year t

β_0 : Intercept

β_1 – β_6 : Regression coefficients for each independent variable

ROA_{it} : Return on Assets of firm i in year t

DER_{it} : Debt to Equity Ratio of firm i in year t

EPS_{it} : Earnings per Share of firm i in year t

INF_{it} : Inflation rate in year t

IR_{it} : Interest rate in year t

ER_{it} : Exchange rate in year t

μ_i : Firm-specific fixed effects

ε_{it} : Error term

The estimation procedure follows a systematic panel data approach, beginning with the Chow test and Hausman test to determine the most appropriate model, namely the Fixed Effects Model or Random Effects Model. Financial data were obtained from the Indonesia Stock Exchange (IDX), while macroeconomic indicators were sourced from Bank Indonesia. The primary analysis was performed using the xtsc command with Driscoll–Kraay standard errors to ensure consistent estimation. The sample in this study was selected using purposive sampling, based on the criteria presented in the following table.

Table 1. Sampling Criteria

No.	Sample Selection Criteria	Number of Companies
1	Energy sector companies listed on the Indonesia Stock Exchange (IDX)	90
2	Energy sector companies with unavailable or unpublished audited annual reports during the 2021–2024 period	(27)
3	Energy sector companies that did not use USD in their financial statement presentation during the 2021–2024 period	(25)
4	Energy sector companies that did not report profits during the 2021–2024 period	(9)
5	Total energy sector companies selected as the sample	29
6	Total observations: 29 companies × 4 years (2021–2024)	116

Source: Processed data (2025)

To ensure econometric rigor, specific sampling criteria were applied. Firms with incomplete data were excluded to maintain a balanced panel structure. The sample was restricted to companies that report their financial statements in USD to minimize currency translation distortions and ensure alignment between financial metrics and global energy benchmarks. In addition, loss-making firms were excluded to prevent structural coefficient distortions arising from negative ROA and EPS values, which may weaken the linear assumptions underlying signaling theory. The operational definitions and measurement of the study variables are summarized in the table below.

Table 2. Operational Definitions and Measurement of Variables

No.	Variable	Definition	Proxy	Indicator
1	Stock Price	Stock price refers to the closing price of shares in the capital market within a given period (Piero & Natsir, 2023).	Year-end closing stock price converted into USD	$SP_USD = \text{Year-End Closing Price in IDR} / \text{Exchange Rate IDR/USD}$
2	Return on Assets	Return on Assets (ROA) is a financial ratio used to measure a company's ability to generate profit from its total assets (Ifadhila, 2023).	Profitability	$ROA = \text{Net Profit After Tax} / \text{Total Assets}$
3	Debt to Equity Ratio	Debt to Equity Ratio (DER) is a financial ratio that describes a company's capital structure and the extent to which its financing relies on debt (Rahmawati & Hadian, 2022).	Leverage	$DER = \text{Total Liabilities} / \text{Total Equity}$
4	Earnings per Share	Earnings per Share (EPS) reflects a company's ability to generate net income for each outstanding share (Nuryani, 2021).	Market ratio	$EPS = \text{Net Profit After Tax} / \text{Number of Outstanding Shares}$
5	Inflation	Inflation refers to a condition in which the general price level increases, followed by a decline in the purchasing power of money (Faulianti et al., 2023).	Consumer Price Index	$\text{Inflation} = [(CPI_n - CPI_{n-1}) / CPI_{n-1}] \times 100\%$
6	Interest Rates	Interest rates represent the cost incurred by borrowers for using borrowed funds within an agreed period (Imran, 2022).	BI 7-Day Reverse Repo Rate	Benchmark interest rate determined by Bank Indonesia
7	Exchange Rate	The exchange rate is the price of a country's currency relative to a foreign currency and affects international transactions (Dwijayanti, 2021).	BI middle exchange rate	$\text{Middle Rate} = (\text{Selling Rate} + \text{Buying Rate}) / 2$

Source: Compiled by the authors (2025)

To prevent currency-related distortions, market stock prices are converted into USD using year-end closing exchange rates rather than annual average rates or stock returns. This point-in-time measurement is deliberately chosen to capture the definitive market valuation at the exact reporting date, ensuring precise temporal alignment with year-end accounting metrics.

Meanwhile, EPS is inherently reported in USD, ROA and DER are dimensionless ratios, and the exchange rate retains its nominal form as IDR/USD. This uniform measurement framework ensures consistency and enhances comparability, reflecting the energy sector's strong integration with global commodity markets.

RESULT AND DISCUSSION

Descriptive Statistics

Based on the descriptive statistical results, the stock price (SP) and earnings per share (EPS) variables are presented in United States dollars (USD) to ensure measurement consistency. The average stock price is 0.2241, with a standard deviation of 0.4328. Since the standard deviation exceeds the mean, this indicates high data dispersion and a positively skewed distribution, suggesting that several companies have valuations substantially higher than most firms in the sample. Similarly, the average EPS is recorded at 0.0570. Meanwhile, the macroeconomic variables show an average inflation rate of 2.89% and an average interest rate of 5.25%, while the rupiah exchange rate against the USD averages IDR15,394.50.

Table 3. Descriptive Statistical Test Result

Variable	Obs.	Minimum	Maximum	Mean	Std. Dev.
SP	116	0.0042	24.808	0.2241	0.4328
ROA	116	0.0009	0.6026	0.1415	0.1505
DER	116	0.0461	55.339	0.9033	0.8710
EPS	116	0.0000	10.621	0.0570	0.1461
INF	116	0.0157	0.0551	0.0289	0.0157
IR	116	0.0350	0.0600	0.0525	0.0104
ER	116	14,269.0100	16,162.0000	15,394.5025	7.047.348

Source: Processed data (2025)

Model Specification Test

To determine the most appropriate panel data regression model among the Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM), formal model specification tests were conducted sequentially. First, the Chow test was performed to evaluate the appropriate baseline specification between CEM and FEM. Second, the Hausman test was employed to determine whether FEM or REM was more suitable. The combined statistical results of these model selection tests are summarized in the table below.

Table 4. Model Specification Test Result

Test	p-value	Decision	Selected Model
Chow Test	0.0000	H ₀ Rejected	Fixed Effects Model
Hausman Test	0.0338	H ₀ Rejected	Fixed Effects Model

Source: Processed data (2025)

As presented in Table 4, the Chow test yields a p-value of 0.0000 ($p < 0.05$), leading to the rejection of the null hypothesis and indicating that the Fixed Effects Model (FEM) is more appropriate than the Common Effects Model (CEM). Subsequently, the Hausman test produces a p-value of 0.0338 ($p < 0.05$), which also rejects the null hypothesis. This result confirms that individual entity-specific effects are correlated with the independent variables, making FEM more consistent than the Random Effects Model (REM). Since both diagnostic tests consistently support the FEM specification, the Breusch–Pagan Lagrange Multiplier (LM) test, which is primarily used to compare REM with CEM, is considered unnecessary and

is therefore omitted. Consequently, the empirical analysis proceeds using the Fixed Effects Model with Driscoll–Kraay standard errors.

Heteroscedasticity Test

A Modified Wald test was conducted to examine groupwise heteroscedasticity in the Fixed Effects Model. Any detected variance violations were subsequently corrected during the estimation stage using Driscoll–Kraay robust standard errors. The results of the heteroscedasticity test are presented in Table 5.

Table 5. Heteroscedasticity Test Result

Test	p-value	Decision
Modified Wald Test	0.0000	H ₀ Rejected

Source: Processed data (2025)

As shown in Table 5, the Modified Wald test produces a p-value of 0.0000, which is below the 0.05 significance level. Therefore, the null hypothesis is rejected, indicating the presence of heteroscedasticity in the regression model.

Autocorrelation Test

A Wooldridge test was conducted to evaluate first-order serial correlation in the panel residuals and to assess whether the error terms are temporally independent. The results of the autocorrelation test are presented in the following table.

Table 6. Autocorrelation Test Result

Test	p-value	Conclusion
Wooldridge	0.1215	H ₀ Accepted

Source: Processed data (2025)

Since the Wooldridge test produces a p-value of 0.1215, which exceeds the 0.05 significance level, the null hypothesis fails to be rejected. This indicates that there is no evidence of first-order autocorrelation in the model.

Cross-sectional Dependence Test

The cross-sectional dependence test was conducted to identify the presence of correlation or dependence among cross-sectional units in the panel data regression model. The results of the cross-sectional dependence test are presented in the table below.

Table 7. Cross-sectional Dependence Test Result

Test	p-value	Conclusion
Cross-sectional Dependence	0.0000	H ₀ Rejected

Source: Processed data (2025)

The cross-sectional dependence test produced a p-value of 0.0000, which is below the 0.05 significance level. This result indicates significant interdependence among the cross-sectional units in the panel data, confirming the presence of cross-sectional dependence.

Panel Data Regression Test

The Fixed Effects Model was selected based on the results of the Chow and Hausman tests. To improve the reliability of the estimates in the presence of groupwise heteroscedasticity and cross-sectional dependence, the model was estimated using Driscoll–Kraay standard errors. This approach was employed to produce more robust standard errors by accounting for potential spatial correlation and synchronized external shocks that may affect firms within the energy sector (Driscoll & Kraay, 1998; Hoechle, 2007). The regression results are summarized in the following table.

Table 8. Driscoll-Kraay Model Fixed Effect Regression Test Results

Variable	Coefficients	Std. Err.	t-statistic	p-value
ROA	0.7823986	0.2372292	3.30	0.046
DER	0.0548777	0.0094011	5.84	0.010
EPS	-0.8105294	0.8065393	-1.00	0.389
INF	-0.4149654	1.019266	-0.41	0.711
IR	-0.0438463	0.6357762	-0.07	0.949
ER	0.0000855	0.0000104	8.22	0.004
Constant	-1.192456	0.1221375	-9.76	0.002

Source: Processed data (2025)

The panel regression analysis, using the Fixed Effects specification with Driscoll–Kraay standard errors, produces the following formal estimation equation:

$$SP = -1.192456 + 0.7823986ROA + 0.0548777DER - 0.8105294EPS - 0.4149654INF - 0.0438463IR + 0.0000855ER$$

As presented in Table 8, the Fixed Effects Model estimated with Driscoll–Kraay standard errors shows that ROA, DER, and the exchange rate significantly influence stock prices, while EPS, inflation, and interest rates do not have significant effects. Overall, the model demonstrates statistical significance, as indicated by $F(6, 3) = 661.34$ with a p-value of 0.0001, while the within R^2 value of 18.34% indicates that the independent variables explain part of the variation in stock prices within firms over time. The relatively high F-statistic compared with the within R^2 should be interpreted carefully because the Driscoll–Kraay estimation procedure in a short panel structure, where $T = 4$, produces limited degrees of freedom. Following Hoechle (2007), the non-parametric covariance matrix used in Driscoll–Kraay standard errors relies on the time dimension, which results in a restricted denominator degree of freedom of $T - 1$, or 3 in this study. Therefore, the joint significance test may appear relatively large without necessarily implying a high explanatory power of the model. Methodologically, the use of Driscoll–Kraay standard errors remains appropriate because the model detects groupwise heteroscedasticity and cross-sectional dependence among energy sector firms. This correction improves the reliability of the standard errors and significance tests under potential synchronized external shocks during the Russia–Ukraine conflict period. Thus, the results provide robust evidence that ROA, DER, and exchange rate movements are important determinants of energy sector stock prices.

Discussion

The empirical analysis demonstrates that ROA has a significant positive effect on energy sector stock prices, with a coefficient of 0.7823986 and a significance probability of 0.046. In terms of economic magnitude, a 1 percentage point increase in corporate profitability, equivalent to a 0.01 increase in ROA, is associated with a 0.007823986 USD increase in stock price. This effect was particularly important during the research period, when geopolitical shocks from the Russia–Ukraine conflict triggered substantial volatility and increases in global commodity prices. Under signaling theory, a rising ROA serves as a

positive signal that a firm is capable of efficiently converting its capital-intensive assets into profits amid volatile commodity cycles. This efficiency reduces information asymmetry, strengthens investor confidence, and ultimately supports stock price appreciation. These findings are consistent with Hidayat and Ramadhani (2025), Lestari et al. (2024), and Taufik (2025), who found that ROA has a significant and positive effect on stock prices.

Regarding leverage, the model reveals that DER has a significant positive relationship with stock prices, with a coefficient of 0.0548777 and a significance probability of 0.010. In terms of economic magnitude, a 1 percentage point increase in corporate leverage, equivalent to a 0.01 increase in DER, is associated with a 0.000548777 USD increase in stock price. This finding presents a dual interpretation. Although higher leverage generally increases financial risk, the positive market response suggests that, during the research period, investors perceived debt-financed, capital-intensive operations as a strategic mechanism for expansion rather than merely as a source of default risk. From a signaling perspective, a greater reliance on debt may indicate management's confidence in using borrowed capital to support business growth and capture opportunities from rising energy prices. These results support the conclusions of Saragih and Sari (2024), Eliana et al. (2025), and Maulana (2023), who also confirmed the positive and significant effect of DER on stock prices.

The analysis shows that EPS does not have a significant effect on the stock prices of energy sector companies. Within the signaling theory framework, although EPS conveys earnings-related information to the market, this signal was not significantly reflected in stock prices during the observation period. This suggests that EPS was not the primary basis for investment decisions in this sector. In the context of capital-intensive energy companies, EPS may be less informative than ROA because investors tend to prioritize overall asset productivity and operational efficiency over per-share earnings. Amid global volatility, the market may view the ability to generate returns from large-scale assets as a more reliable indicator of long-term sustainability than current EPS, which can be affected by corporate actions and changes in the number of outstanding shares. These findings are consistent with Rifani et al. (2022), Lutfi (2023), and Pariska and Berliani (2025), who found that EPS does not significantly affect stock prices.

The analysis also shows that inflation does not significantly affect stock prices in the energy sector. Based on Arbitrage Pricing Theory (APT), macroeconomic factors influence asset prices when they represent systematic risk or unexpected information shocks. Data from the Central Bureau of Statistics (BPS) show that annual inflation fluctuated from 1.87% in 2021 to 5.51% in 2022 due to fuel price adjustments, before declining to 2.61% in 2023 and 1.57% in 2024. Since these movements were largely anticipated and managed through monetary policy, they may have represented expected inflation rather than an unexpected systematic shock. Consequently, investors may have already incorporated inflation expectations into market valuations, resulting in a statistically insignificant response. These results are in line with Rahmadonna and Astuti (2023), Fellicia and Widjaja (2023), and Maulani and Riani (2021), who also found that inflation does not play a statistically significant role in determining stock prices.

The analysis reveals that interest rates do not significantly influence stock prices in the energy sector. Based on APT, interest rate adjustments are expected to trigger significant market responses only when they represent major information shocks. During the 2021–2024 period, the BI Rate increased from 3.50% in 2021 to 5.00% in 2022 and then stabilized at 6.00% in 2023–2024. Although interest rates increased, these adjustments were gradual and largely anticipated as part of global monetary tightening. In the energy sector, this monetary signal was overshadowed by the extraordinary increase in global commodity prices and sectoral profitability cycles. Investors appeared to prioritize the potential margins generated from high coal and oil prices over incremental changes in the cost of capital, thereby making the interest rate channel statistically insignificant. These findings are consistent with Maulani and Riani (2021), Anisya and Hidayat (2021), and Rahman (2023), who found that interest rates have no significant effect on stock prices.

The analysis further shows that the exchange rate has a significant positive effect on stock prices, with a coefficient of 0.0000855 and a significance probability of 0.004. In economic terms, a 1-unit increase in the IDR/USD exchange rate, indicating rupiah depreciation against the USD, is associated with a 0.0000855 USD increase in stock price. This macroeconomic condition proved favorable during the research period, when global volatility affected international trade and commodity markets. Under APT, exchange rate movements represent a systematic factor linking global trade conditions to firm value. Since many energy companies generate revenues from USD-denominated exports or USD-linked commodity prices while incurring part of their costs in domestic currency, rupiah depreciation can widen profit margins after revenue conversion. This structural advantage may strengthen investor valuation and support higher stock prices. These results are supported by Rahmayanti and Farida (2022), Hasan (2024), and Murniwati and Wijono (2021), who concluded that exchange rates have a significant positive effect on stock prices.

CONCLUSION

This study concludes that stock prices in the energy sector are significantly influenced by ROA, DER, and exchange rates, whereas EPS, inflation, and interest rates do not show statistically significant effects. These findings support Signaling Theory and Arbitrage Pricing Theory, suggesting that in the capital-intensive energy industry, market participants prioritize asset productivity and capital structure over per-share earnings. Practically, investors are advised to use ROA as a primary screening metric for operational efficiency and DER as a valuation proxy for growth potential. Furthermore, exchange rate movements should be incorporated into risk assessments, particularly as a catalyst for forecasting USD-linked revenues. For management, improving the transparency of these key indicators is essential to reduce information asymmetry and sustain positive market signals.

Despite these insights, this study has several methodological and scope-related limitations. Its focus on a single sector, limited time-series coverage, and specific exclusion criteria may restrict the generalizability of the findings. Methodologically, the use of absolute stock price levels without additional robustness tests or control variables, such as dividend policy and trading volume, may expose the model to omitted variable bias. Future research should expand the sectoral scope and observation period while adopting dynamic methodologies, such as the Generalized Method of Moments (GMM) or Panel Vector Autoregression (Panel VAR), to better address industry-specific endogeneity and improve the predictive accuracy of stock price volatility models.

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