



THE INFLUENCE OF FOREIGN PORTFOLIO INVESTMENT AND PUBLIC OWNERSHIP ON STOCK PRICE VOLATILITY OF INDONESIAN ENERGY SECTOR COMPANIES (2021–2024)

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Abstract: *This study examines the effect of Foreign Portfolio Investment (FPI) and public ownership structure on the stock price volatility of energy sector companies listed on the Indonesia Stock Exchange during 2021–2024. Using a quantitative approach, this research analyzes secondary data from 40 companies, resulting in 160 observations. Data were collected from annual reports, Indonesia Stock Exchange publications, and stock price records and analyzed using panel data regression. The results show that Foreign Portfolio Investment and Foreign Institutional Ownership has a negative effect on stock price volatility. In contrast, Local Institutional Ownership and Foreign Individual Ownership has a positive effect on stock price volatility, while Local Individual Ownership has no effect on stock price volatility. These findings indicate that different investor groups contribute differently to stock price movements. This study concludes that investor heterogeneity plays an important role in explaining stock price volatility in Indonesia's energy sector.*

Keywords: *Foreign Portfolio Investment, Investor Heterogeneity, Public Ownership, Energy Sector, Stock Price Volatility*

Abstrak: Penelitian ini mengkaji pengaruh Investasi Portofolio Asing (FPI) dan struktur kepemilikan publik terhadap volatilitas harga saham perusahaan sektor energi yang terdaftar di Bursa Efek Indonesia selama periode 2021–2024. Dengan menggunakan pendekatan kuantitatif, penelitian ini menganalisis data sekunder dari 40 perusahaan, yang menghasilkan 160 observasi. Data dikumpulkan dari laporan tahunan, publikasi Bursa Efek Indonesia, serta catatan harga saham, dan dianalisis menggunakan metode regresi data panel. Hasil penelitian menunjukkan bahwa Investasi Portofolio Asing dan Kepemilikan Institusional Asing berpengaruh negatif terhadap volatilitas harga saham. Sebaliknya, Kepemilikan Institusional Lokal dan Kepemilikan Individu Asing berpengaruh positif terhadap volatilitas harga saham, sedangkan Kepemilikan Individu Lokal tidak berpengaruh terhadap volatilitas harga saham. Temuan ini mengindikasikan bahwa kelompok investor yang berbeda memberikan kontribusi yang berbeda pula terhadap pergerakan harga saham. Penelitian ini menyimpulkan bahwa heterogenitas investor memainkan peran penting dalam menjelaskan volatilitas harga saham di sektor energi Indonesia.

Kata Kunci: Investasi Portofolio Asing, Heterogenitas Investor, Kepemilikan Publik, Sektor Energi, Volatilitas Harga Saham

INTRODUCTION

The energy sector plays a strategic role in Indonesia's economic development by ensuring national energy security while supporting industrial productivity and long-term economic growth. Indonesia's abundant natural resources and increasing domestic energy demand have created significant investment opportunities within the energy industry (Boediman et al., 2021). To sustain operational activities and finance long-term investments, firms require an appropriate capital structure that balances internal and external financing sources. An effective financing strategy contributes to financial performance and supports long-term corporate sustainability (Wuryani, 2022); (Alghifari et al., 2022). According to the pecking order theory, firms prioritize internal financing before relying on debt and equity financing, emphasizing the importance of efficient capital market access for corporate growth (Myers, 2001). Consequently, stock market performance has become a critical indicator of investors' confidence in energy companies.

Stock price volatility has become one of the major concerns for investors because it reflects uncertainty regarding future firm value and market risk. Compared with many other sectors, the energy sector exhibits relatively higher stock price volatility due to its strong dependence on global commodity prices and policy uncertainty (Zhao, 2020). Stock price volatility represents an important measure of investment risk because it reflects the magnitude of stock price fluctuations faced by investors when making investment decisions (Sirullah & Hanafi, 2023). The sectoral volatility illustrated in the IDX Yearly Statistics indicates that energy stocks experience larger fluctuations than many other industrial sectors, suggesting that external shocks are rapidly transmitted into stock prices. Besides macroeconomic factors, ownership structure has increasingly been recognized as important determinants of stock price volatility because they influence market liquidity, information asymmetry, and investor behavior (Jankensgård & Vilhelmsson, 2018).

The increasing participation of Foreign Portfolio Investment (FPI) further strengthens the importance of ownership structure in explaining stock price volatility. Between 2021 and 2024, the proportion of foreign investor transactions on the Indonesia Stock Exchange increased substantially, indicating greater dependence on international capital flows. Since foreign portfolio investment is generally characterized by high capital mobility and responds rapidly to changes in global financial conditions, sudden capital inflows and outflows may amplify stock price volatility (Camanho et al., 2018). This effect is particularly evident in Indonesia's energy sector, where foreign portfolio investment has been found to increase stock price volatility (Ibrohim, 2024). Portfolio Theory suggests that foreign investors continuously rebalance their portfolios according to changing risk-return expectations, thereby increasing market volatility when external uncertainty rises.

Beyond foreign capital inflows, the composition of public ownership also deserves greater attention. Indonesian listed companies maintain various ownership structures consisting of domestic institutional investors, domestic individual investors, foreign institutional investors, and foreign individual investors. Each investor category possesses

different investment horizons and information-processing capabilities, resulting in heterogeneous trading behavior (Koesrindartoto et al., 2018). Market Microstructure Theory argues that these heterogeneous trading activities influence order flow, liquidity, and price discovery, which ultimately affect stock price volatility (Koesrindartoto et al., 2018); (Andersen et al., 2017); (Cont et al., 2013). Therefore, understanding investor heterogeneity becomes increasingly important for explaining stock price dynamics in Indonesia's energy sector.

Several empirical phenomena demonstrate the need for further investigation into stock price volatility in Indonesia's energy sector. First, the energy sector consistently records higher stock price volatility than many other sectors listed on the Indonesia Stock Exchange, indicating greater exposure to domestic and international economic shocks. Second, the proportion of foreign investor transactions increased significantly from approximately 25% in 2021 to more than 42% in 2024, reflecting the growing influence of international capital on domestic stock market movements. Third, ownership structures among Indonesian energy companies remain highly heterogeneous. Some firms are dominated by foreign institutional investors, while others are primarily owned by domestic individual investors, suggesting that different investor compositions may produce different trading behaviors and volatility patterns. These observations indicate that stock price volatility cannot be explained solely by macroeconomic variables but must also consider investor heterogeneity and ownership composition.

This research is urgently needed for several reasons. First, increasing dependence on foreign portfolio investment makes Indonesia's energy sector more vulnerable to sudden global financial shocks and capital reversals. Understanding how different investor groups influence stock price volatility is therefore essential for improving market stability. Second, regulators such as the Indonesia Stock Exchange and financial authorities require empirical evidence to evaluate whether current free-float and ownership regulations adequately support efficient price discovery. Third, investors require better information regarding how ownership composition affects investment risk when constructing their portfolios. Finally, because the energy sector remains a strategic pillar of Indonesia's economy and is expected to attract increasing domestic and international investment, identifying the determinants of stock price volatility is essential for promoting sustainable capital market development and enhancing investor confidence.

Although numerous studies have investigated the relationship between ownership structure and stock price volatility, several important research gaps remain. First, previous empirical findings remain inconsistent. Some studies report that foreign institutional ownership is associated with lower stock price volatility (Farhan & Kim, 2023), whereas others find a positive relationship (Sasikirono et al., 2020), and more recent evidence reports no significant effect after controlling for firm characteristics (Wijaya et al., 2025). Second, most previous studies examine ownership using aggregate measures such as total foreign ownership or total public ownership without distinguishing investor categories (Sasikirono et al., 2020); (Farhan & Kim, 2023); (Wijaya et al., 2025). Such aggregation potentially masks important behavioral differences among domestic institutional investors, domestic individual investors, foreign institutional investors, and foreign individual investors, each of whom possesses different holding periods, information advantages, and trading strategies (Koesrindartoto et al., 2018). Third, empirical evidence focusing specifically on Indonesia's

energy sector remains limited despite its strategic importance and relatively high exposure to global commodity price fluctuations and international capital movements. Consequently, little is known regarding how investor heterogeneity influences stock price volatility within this sector. These limitations indicate the need for a more comprehensive empirical investigation that simultaneously examines Foreign Portfolio Investment and disaggregated ownership structures to provide a deeper understanding of stock price volatility in Indonesian energy companies.

This study offers several significant contributions to the existing literature. This research integrates Portfolio Theory and Market Microstructure Theory to explain how foreign capital mobility and investor heterogeneity jointly influence stock price volatility within an emerging capital market. Unlike previous studies that employ aggregate ownership measures, this study disaggregates public ownership into four distinct investor categories: domestic institutional ownership, domestic individual ownership, foreign institutional ownership, and foreign individual ownership. This approach enables a more comprehensive examination of heterogeneous investor behavior. This study focuses exclusively on Indonesian energy sector companies listed on the Indonesia Stock Exchange during the 2021–2024 period, a timeframe characterized by heightened global energy market uncertainty, increasing foreign portfolio investment, and substantial changes in ownership composition. The findings are expected to provide valuable insights for investors, corporate managers, and policymakers regarding which categories of investors contribute most significantly to stock price volatility. The results may also support future policy development concerning free-float regulations, ownership transparency, and capital market stability. Overall, this research addresses unresolved inconsistencies in the literature by simultaneously examining Foreign Portfolio Investment and disaggregated public ownership composition as determinants of stock price volatility, thereby offering a more comprehensive explanation of investor heterogeneity in emerging capital markets.

METHODOLOGY

This study employs a quantitative research design to examine the causal relationships between Foreign Portfolio Investment (FPI), public ownership composition, and stock price volatility among energy sector companies listed on the Indonesia Stock Exchange (IDX). The study utilizes secondary data collected from publicly available sources, including the official IDX website, Yahoo Finance, and the annual reports of energy companies covering the 2021–2024 period. The research population consists of all energy sector companies listed on the IDX during the observation period. Using a purposive sampling technique, companies were selected based on three criteria: (1) continuously listed on the IDX from 2021 to 2024, (2) consistently issued shares throughout the study period, and (3) consistently disclosed public ownership information in their annual reports. Based on these criteria, 40 companies were selected, resulting in a balanced panel dataset of 160 firm-year observations. Data were collected through the documentation method by compiling financial market information, ownership data, and annual reports from the respective official sources.

The collected data were analyzed using panel data regression techniques with the aid of STATA software. The analytical procedure began with descriptive statistical analysis to

summarize the characteristics of the variables, followed by panel model selection using the Chow test, Hausman test, and Lagrange Multiplier (LM) test to determine the most appropriate estimation model among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Classical assumption tests, including normality and multicollinearity tests, were subsequently performed to ensure the validity of the regression model. Finally, panel data regression analysis was conducted to examine the effects of Foreign Portfolio Investment, local institutional ownership, foreign institutional ownership, local individual ownership, and foreign individual ownership on stock price volatility. The proposed hypotheses were evaluated using the Wald test for simultaneous effects, the z-test for partial effects, and the coefficient of determination (R^2) to assess the explanatory power of the model.

RESULTS AND DISCUSSION

1. Data Description

This research utilizes secondary data extracted from the annual reports and daily stock price records of energy sector companies listed on the Indonesia Stock Exchange for the period 2021–2024. The sample selection process was conducted using the purposive sampling method, adhering to predetermined criteria, which resulted in the inclusion of 40 enterprises suitable for the research objectives. Given the four-year observation period, the final dataset analyzed in this investigation comprises a total of 160 observations.

2. Descriptive Statistical Analysis

Descriptive statistical analysis is employed to provide a comprehensive overview of the data characteristics pertinent to this study, encompassing the minimum value, maximum value, mean, and standard deviation for each variable under investigation. The empirical results of the descriptive analysis are presented in the following table:

Table 1. Descriptive Statistics

	Mean	Std. dev.	Min	Max
VOL	0.514	0.192	0	1.075
FPI	0.342	0.062	0.25	0.420
LIN	0.095	0.098	0	0.452
FIN	0.082	0.076	0	0.433
LID	0.129	0.111	0	0.553
FID	0.005	0.015	0	0.960

Source: (processed data), 2026

a. Price Stock Volatility

The stock price volatility variable (VOL) exhibits a mean value of 0.514, with a minimum value of 0.000 and a maximum of 1.075. These figures suggest that, on average, the stock price volatility level of the sampled companies is categorized as moderate. Furthermore, a standard deviation of 0.192 indicates that the variance in volatility among the companies is relatively moderate, implying that there are observable differences in the stock price fluctuation levels across the firms under investigation.

b. Foreign Portfolio Investment

The Foreign Portfolio Investment (FPI) variable exhibits a mean value of 0.342, with a minimum value of 0.250 and a maximum of 0.420. This implies that, on average, the

proportion of foreign investor ownership in the company portfolios is approximately 34.2%. Furthermore, the standard deviation of 0.062 indicates that the variation in foreign ownership is relatively low, suggesting that the distribution is fairly uniform across the sampled companies.

c. Local Institution Ownership

The Local Institutional Ownership (LIN) variable exhibits a mean value of 0.095, ranging from a minimum of 0.000 to a maximum of 0.452. These figures indicate that, on average, ownership by local institutions remains relatively low. Meanwhile, the standard deviation of 0.098 suggests substantial variation across the sampled companies, implying that the extent of local institutional ownership ranges from negligible to relatively significant among the firms under observation.

d. Foreign Institution Ownership

The Foreign Institutional Ownership (FIN) variable exhibits a mean value of 0.082, with values ranging from a minimum of 0.000 to a maximum of 0.433. This indicates that, on average, the presence of foreign institutional ownership within the corporate ownership structure is relatively limited. Furthermore, the standard deviation of 0.076 suggests that while there is some dispersion across companies, the variation in foreign institutional participation is not exceptionally high, reflecting a generally consistent pattern of limited involvement across the sample.

e. Local Individual Ownership

The Local Individual Ownership (LID) variable exhibits a mean value of 0.129, with a minimum of 0.000 and a maximum of 0.553. These results indicate that, on average, ownership by local individual investors remains limited; however, in certain instances, it accounts for a substantial proportion of the corporate equity. The standard deviation of 0.111 reflects significant variation in ownership levels across the sampled companies, suggesting a heterogeneous distribution of local individual investor participation.

f. Foreign Individual Ownership

The Foreign Individual Ownership (FID) variable exhibits a mean value of 0.005, ranging from a minimum of 0.000 to a maximum of 0.960. This indicates that, on average, ownership by foreign individuals within the sample is negligible. However, the significantly high maximum value points to the existence of certain companies where foreign individual ownership accounts for a substantial share of equity. The standard deviation of 0.015 suggests that while the variation remains generally limited, the presence of specific outliers creates a notable dispersion in the data distribution.

3. Model Selection

The model selection testing is conducted to identify the most appropriate panel data regression model among the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM), utilizing the Chow test, the Hausman test, and the Lagrange Multiplier (LM) test. The Chow test was first conducted to determine whether the Common Effect Model (CEM) or the Fixed Effect Model (FEM) was more appropriate. If the probability value is less than 0.05, the Fixed Effect Model (FEM) is selected; otherwise, the Common Effect Model (CEM) is preferred (Herusetya, 2025:19). When the Chow test indicates FEM, the Hausman test is subsequently performed to compare the Fixed Effect Model (FEM) and the Random Effect Model (REM). A probability value of less than 0.05 indicates that FEM is more appropriate, whereas a probability value greater than 0.05

suggests that REM should be selected (Herusetya, 2025:17). Finally, if the Hausman test favors REM, the Lagrange Multiplier (LM) test is conducted to compare the Random Effect Model (REM) with the Common Effect Model (CEM). A probability value of less than 0.05 indicates that REM is more appropriate than CEM, while a probability value greater than 0.05 indicates that CEM is the preferred model (Herusetya, 2025:21). The results of these diagnostic procedures are presented in the following table:

Table 2. Model Selection

Model	Prob	P-value	Model Selected
Uji Chow	0.000	< 0,05	FEM
Uji Hausman	0.6027	> 0,05	REM
Uji LM	0.000	< 0,05	REM

Source: (processed data), 2026

Based on the Chow test results, a probability value of 0.000 was obtained. Since this probability value is less than the significance level of 0.05, the Fixed Effect Model (FEM) is initially favored over the Common Effect Model (CEM). Subsequently, the Hausman test yielded a probability value of 0.6027. Given that this value exceeds 0.05, the Random Effect Model (REM) is deemed more appropriate than the Fixed Effect Model (FEM). Furthermore, the Lagrange Multiplier (LM) test produced a probability value of 0.000. This result, being less than 0.05, indicates that the Random Effect Model (REM) is more suitable than the Common Effect Model (CEM). Consequently, synthesized from these diagnostic procedures, it is concluded that the Random Effect Model (REM) is the most robust panel data regression model for this study.

4. Classical Assumption Testing

Given that the chosen panel data regression model is the Random Effect Model (REM), the classical assumption testing presented herein is focused specifically on the normality and multicollinearity tests. This approach is adopted because, in the REM estimated via the Generalized Least Squares (GLS) method, issues pertaining to heteroskedasticity and autocorrelation are implicitly addressed within the estimation process (Herusetya, 2025:31). Consequently, separate diagnostic testing for these specific assumptions is not strictly required.

a. Normality Test

The normality test is conducted to determine whether the residuals in the regression model are normally distributed, which serves as a prerequisite for fulfilling the classical assumption requirements. The results of the normality test, utilizing the Kolmogorov-Smirnov method, are presented in the following table:

Table 3 Normality Test

Variable	Statistics K-S	P-value
Residual	0.752	> 0,05

Source: (processed data), 2026

Based on the normality test results employing the Kolmogorov-Smirnov method, a probability value (p-value) of 0.752 was obtained. This value exceeds the significance level

of 0.05 ($0.752 > 0.05$), thereby supporting the acceptance of the null hypothesis (H_0). Consequently, it can be concluded that the residual data in this study are normally distributed.

b. Multicollinearity Test

The multicollinearity test is performed to ascertain whether high correlations exist among the independent variables within the regression model. In this study, the multicollinearity assessment is conducted by analyzing the correlation matrix of the independent variables. If the correlation coefficient between these variables remains below 0.80, it can be concluded that the research model is free from multicollinearity issues. The results of the multicollinearity test are presented in the following table:

Table 4. Multicollinearity Test

	FPI	LIN	FIN	LID	FID
FPI	1.000				
LIN	0.011	1.000			
FIN	-0.055	0.105	1.000		
LID	-0.044	0.199	-0.114	1.000	
FID	-0.072	-0.104	0.006	-0.005	1.000

Source: (processed data), 2026

Based on the correlation matrix results, it is evident that all correlation coefficients among the independent variables are below 0.80. The highest correlation coefficient is observed between the LIN and LID variables, which stands at 0.199. Consequently, it can be concluded that the research model is free from multicollinearity issues, thereby confirming that the panel data regression analysis can proceed.

Regression

The empirical results of the panel data regression analysis, estimated through the Random Effect Model (REM) utilizing STATA 19 software, are presented in the following table:

Table 5. Regression (REM)

	Coeff	Std. err.	z	Prob
FPI	-0.532	0.244	-2.18	0.029
LIN	0.432	0.131	3.29	0.001
FIN	-0.423	0.171	-2.47	0.013
LID	-0.066	0.180	-0.37	0.713
FID	3.513	1.576	2.23	0.026
R ²		0.1777		
Prob>chi2		0.0000		

Source: (processed data), 2026

Based on the panel data regression estimation using the Random Effect Model (REM), the coefficient values indicate the direction and magnitude of the impact of each independent variable on stock price volatility. The Foreign Portfolio Investment (FPI) variable yields a coefficient of -0.532 with a p-value of 0.029, demonstrating a negative and statistically significant impact at the 5% level. The Local Institutional Ownership (LIN) variable exhibits a coefficient of 0.432 with a p-value of 0.001, indicating a positive and statistically significant relationship even at the 1% level. Similarly, the Foreign Institutional Ownership (FIN) variable demonstrates a coefficient of -0.423 with a p-value of 0.013, signifying a negative

and statistically significant effect at the 5% level. Conversely, the Local Individual Ownership (LID) variable shows a coefficient of -0.066 with a p-value of 0.713, indicating no statistically significant influence. Finally, the Foreign Individual Ownership (FID) variable produces a coefficient of 3.513 with a p-value of 0.026, revealing a positive and statistically significant influence at the 5% level.

Hypothesis Testing

1. Simultaneous Test (Wald Test)

In the panel data regression model employing the Random Effect Model (REM) approach, simultaneous significance testing is conducted using the Wald test to ascertain whether all independent variables collectively exert a significant influence on the dependent variable. This diagnostic procedure is predicated upon the Wald chi-square statistic and its corresponding probability value.

Table 6. Wald Test

Wald chi2	Prob > chi2	p-value
32.33	0.0000	< 0.05

Source: (processed data), 2026

Based on the Wald test results, a chi-square statistic of 32.33 was obtained, with an associated probability value of 0.0000. Since this probability value is less than the 0.05 threshold, it can be concluded that the independent variables, when analyzed simultaneously, exert a statistically significant influence on the dependent variable.

2. Partial Test (z-test)

The z-test is employed to assess the impact of each independent variable individually on the dependent variable. Hypothesis testing within this model is conducted by comparing the calculated z-statistic with the critical z-table value at a 5% significance level.

Table 7. z-test

	Coeff	z	Prob
FPI	-0.532	-2.18	0.029
LIN	0.432	3.29	0.001
FIN	-0.423	-2.47	0.013
LID	-0.066	-0.37	0.713
FID	3.513	2.23	0.026

Source: (processed data), 2026

The partial test results indicate that the Foreign Portfolio Investment (FPI) variable has a coefficient of -0.532 with a probability value of 0.029, which is lower than the significance level of 0.05. This indicates that Foreign Portfolio Investment has a negative effect on stock price volatility. The negative coefficient suggests that an increase in foreign portfolio investment is associated with a decrease in stock price volatility.

The partial test results reveal that the Local Institutional Ownership (LIN) variable has a coefficient of 0.432 and a probability value of 0.001, which is below the 0.05 significance level. This result indicates that local institutional ownership has a positive effect on stock price volatility. The positive coefficient implies that a higher proportion of local institutional ownership is associated with higher stock price volatility.

The partial test results reveal that the Foreign Institutional Ownership (FIN) variable has a coefficient of -0.423 with a probability value of 0.013, which is less than 0.05. This finding indicates that foreign institutional ownership has a negative effect on stock price volatility. The negative coefficient implies that an increase in foreign institutional ownership tends to reduce stock price volatility.

The partial test results reveal that the Local Individual Ownership (LID) variable has a coefficient of -0.066 and a probability value of 0.713, which exceeds the significance level of 0.05. This indicates that local individual ownership does not have an effect on stock price volatility. Although the coefficient is negative, the effect is not statistically significant, suggesting that changes in the proportion of local individual ownership are not associated with significant changes in stock price volatility.

The partial test results reveal that the Foreign Individual (FID) variable has a coefficient of 3.513 with a probability value of 0.026, which is below the significance level of 0.05. This result indicates that foreign individual ownership has a positive effect on stock price volatility. The positive coefficient suggests that an increase in foreign individual ownership is associated with higher stock price volatility.

3. Coefficient of Determination (R^2)

The coefficient of determination is utilized to evaluate the extent to which the independent variables are capable of explaining the variability observed in the dependent variable.

Table 8. Coefficient of Determination (R^2)

Model	Overall R^2
Random Effect Model	0.1777

Source: (processed data), 2026

Based on the regression results of the Random Effect Model, an overall R^2 value of 0.1777 was obtained. This indicates that the Foreign Portfolio Investment (FPI) variable and the four public ownership variables collectively explain 17.77% of the variation in stock price volatility, while the remaining 82.23% is attributable to other factors outside the scope of this research model. Consequently, this suggests that while the model provides a degree of explanatory power, there remain significant factors beyond the scope of this study that can influence stock price volatility.

Discussion

The Effect of Foreign Portfolio Investment on Stock Price Volatility

Based on the empirical results, the Foreign Portfolio Investment (FPI) variable yields a coefficient of -0.532 with a p-value of 0.029. At a significance level of $\alpha = 5\%$, the p-value is below the 0.05 threshold, indicating that FPI exerts a statistically negative influence on stock price volatility. This negative relationship suggests that an increase in Foreign Portfolio Investment is associated with a decrease in stock price volatility. Consequently, this empirical finding does not support the research hypothesis, which posited that Foreign Portfolio Investment exerts a positive effect on stock price volatility. The inverse relationship observed suggests that greater inflows of foreign capital into the sampled firms contribute to enhanced market stability, thereby dampening stock price fluctuations. Thus, the research

hypothesis is rejected, as the empirical evidence demonstrates a negative relationship between Foreign Portfolio Investment and stock price volatility.

From the perspective of Portfolio Theory, investors aim to construct an optimal portfolio that minimizes risk for a given level of expected return through diversification. International portfolio diversification enables investors to reduce firm-specific risk by allocating investments across different assets and markets (Leković, 2018). In this context, the inflow of Foreign Portfolio Investment reflects international portfolio diversification across countries. Foreign investors generally adopt longer investment horizons, follow buy-and-hold investment strategies, and invest in firms with stronger information environments, which may contribute to lower stock price volatility (Vo, 2015); (Thanatawee, 2021).

The Effect of Local Institutional Ownership on Stock Price Volatility

The regression results indicate that the Local Institutional Ownership (LIN) variable yields a coefficient of 0.432 with a p-value of 0.001. At a significance level of $\alpha = 5\%$, the p-value is well below the 0.05 threshold, confirming that Local Institutional Ownership exerts a statistically positive influence on stock price volatility. This positive relationship suggests that an increase in local institutional ownership is associated with heightened stock price volatility. Consequently, this empirical finding does not support the research hypothesis, which posited that Local Institutional Ownership would exert a negative effect on stock price volatility. The discrepancy suggests that local institutional ownership in the sampled firms has not yet fostered market stability; conversely, it tends to stimulate trading activities that exacerbate stock price fluctuations. Thus, the research hypothesis is rejected, as the empirical results demonstrate a positive relationship between Local Institutional Ownership and stock price volatility.

This positive relationship may be explained by the trading behavior of local institutional investors, whose trading activities can substantially influence market dynamics because of the large volume of transactions they execute. Differences in investment horizons and trading strategies may lead to heterogeneous trading behavior, which can influence market dynamics during periods of intensive trading (Koesrindartoto et al., 2018); (Kim & Yi, 2015). This mechanism is consistent with Market Microstructure Theory, which suggests that stock prices are determined through the interaction of supply and demand within the market. Higher trading activity intensifies transaction frequency, which effectively amplifies price fluctuations and leads to increased market volatility (Tan, 2020).

The Effect of Foreign Institutional Ownership on Stock Price Volatility

The regression results demonstrate that the Foreign Institutional Ownership (FIN) variable yields a coefficient of -0.423 with a p-value of 0.013. At a significance level of $\alpha = 5\%$, this value is well below the 0.05 threshold, indicating that Foreign Institutional Ownership exerts a statistically negative influence on stock price volatility. This negative relationship suggests that an increase in foreign institutional ownership is associated with a decrease in stock price volatility. Consequently, this empirical finding does not support the research hypothesis, which posited that Foreign Institutional Ownership would exert a positive effect on stock price volatility. The observed inverse relationship indicates that foreign institutional ownership in the sampled firms, in fact, enhances market stability and attenuates stock price fluctuations. Thus, the research hypothesis is rejected, as the empirical

results demonstrate a negative relationship between Foreign Institutional Ownership and stock price volatility.

This can be attributed to the ability of foreign institutional investors to improve price efficiency through the incorporation of new information into stock prices. By introducing valuable information and displacing less-informed retail investors, foreign institutional investors enhance stock price informativeness and facilitate more efficient price discovery (Kacperczyk et al., 2021). Within the framework of Market Microstructure Theory, the participation of better-informed investors improves the information content of prices and enhances price discovery, thereby increasing market efficiency (Kacperczyk et al., 2021).

The Effect of Local Individual Ownership on Stock Price Volatility

The regression results indicate that the Local Individual Ownership (LID) variable yields a coefficient of -0.066 with a p-value of 0.713. At a significance level of $\alpha = 5\%$, the p-value exceeds the 0.05 threshold. Therefore, it can be concluded that Local Individual Ownership does not exert an influence on stock price volatility. Although the coefficient exhibits a negative sign, this influence is not sufficiently robust to explain the variations in stock price volatility. Consequently, this empirical finding is inconsistent with the research hypothesis, which posited that Local Individual Ownership would exert a positive effect on stock price volatility. Thus, the research hypothesis is rejected, as the empirical results do not demonstrate a positive relationship between Local Individual Ownership and stock price volatility.

This result can be attributed to the characteristics of local individual investors, who generally have more limited access to information and fewer financial resources than institutional investors. Consequently, their trades are typically smaller in scale and are less likely to dominate aggregate market order flow (Harris, 2003); (Suárez, 2021). From the perspective of Market Microstructure Theory, informed traders play a more prominent role in the price discovery process because they trade on superior information, whereas uninformed traders primarily provide liquidity and contribute less to the incorporation of information into prices. Therefore, the relatively small trading influence of local individual investors can explain why Local Individual Ownership does not exhibit a statistically significant effect on stock price volatility in this study.

The Effect of Foreign Individual Ownership on Stock Price Volatility

The regression results indicate that the Foreign Individual Ownership (FID) variable yields a coefficient of 3.513 with a p-value of 0.026. At a significance level of $\alpha = 5\%$, the p-value is below the 0.05 threshold, confirming that Foreign Individual Ownership exerts a statistically positive influence on stock price volatility.

This positive relationship indicates that an increase in foreign individual ownership is associated with heightened stock price volatility. Consequently, this empirical finding is consistent with the research hypothesis, which posited that Foreign Individual Ownership exerts a positive effect on stock price volatility. The results indicate that an increase in foreign individual ownership within these firms tends to heighten price fluctuations in the market. Thus, the research hypothesis is accepted, as the empirical evidence confirms a positive relationship between Foreign Individual Ownership and stock price volatility.

This outcome can be attributed to the trading behavior of foreign individual investors, who are generally more active in responding to changes in market conditions. Frequent

portfolio adjustments and shorter trading horizons may increase transaction intensity and contribute to greater short-term price fluctuations (Koesrindartoto et al., 2018). Consistent with Market Microstructure Theory, higher trading intensity increases order flow and accelerates the incorporation of information into prices, which may amplify short-term stock price volatility (Tan, 2020).

CONCLUSION

Based on the empirical analysis and discussion regarding the effects of Foreign Portfolio Investment (FPI) and public ownership structures on stock price volatility in the energy sector during the 2021–2024 period, it can be concluded that Foreign Portfolio Investment (FPI) has a significant negative effect on stock price volatility, indicating that greater foreign portfolio investment inflows tend to reduce stock price fluctuations among energy sector companies. Similarly, foreign institutional ownership also exhibits a significant negative effect on stock price volatility, suggesting that higher participation by foreign institutional investors contributes to greater market stability by reducing price fluctuations. In contrast, local institutional ownership has a significant positive effect on stock price volatility, implying that an increase in domestic institutional ownership is associated with higher stock price fluctuations. Meanwhile, local individual ownership does not have a significant effect on stock price volatility, indicating that domestic individual investors have not yet exerted a meaningful influence on stock price movements. Finally, foreign individual ownership demonstrates a significant positive effect on stock price volatility, suggesting that greater ownership by foreign individual investors tends to increase stock price fluctuations within Indonesia's energy sector.

REFERENCES

- Alfred Boediman, Raden Aswin Rahadi, & Bagus Aditya Nugraha. (2021). An Overview Of Indonesian Renewable Energy Studies And Its Investment Opportunities. *Indonesian Journal Of Energy*, 4(2), 87–100. <https://doi.org/10.33116/Ije.V4i2.123>
- Alghifari, E. S., Hermawan, A., Gunardi, A., Rahayu, A., & Wibowo, L. A. (2022). Corporate Financial Strategy In An Emerging Market: Evidence From Indonesia. *Journal Of Risk And Financial Management*, 15(8). <https://doi.org/10.3390/Jrfm15080362>
- Andersen, T. G., Cebiroglu, Gg., & Hautsch, N. (2017). Volatility, Information Feedback And Market Microstructure Noise: A Tale Of Two Regimes. *Ssrn Electronic Journal*, 569. <https://doi.org/10.2139/Ssrn.2921097>
- Camanho, N., Hau, H., & Rey, H. (2018). Global Portfolio Rebalancing And Exchange Rates. In *Nber Working Paper Series* (24320; Nber Working Paper Series). <https://doi.org/10.3386/W24320>
- Cont, R., Kukanov, A., & Stoikov, S. (2013). The Price Impact Of Order Book Events. *Journal Of Financial Econometrics*, 12(1), 47–88. <https://doi.org/10.1093/Jjfinec/Nbt003>
- Farhan, M., & Kim, S. S. (2023). Pengaruh Kepemilikan Investor Institusi Asing Terhadap

- Volatilitas Harga Saham Di Indeks Kompas100. *Owner*, 7(2), 1382–1390. <https://doi.org/10.33395/Owner.V7i2.1403>
- Harris, L. (2003). *Trading And Exchanges: Market Microstructure For Practitioners* (1st Ed.). Oxford University Press.
- Herusetya, A. (2025). *Praktik Stata 18.0 Pada Pemodelan Analisis Data Panel Studi Ilmu Akuntansi Dan Keuangan* (M. Nasrudin (Ed.); 1st Ed.). Pt Nasya Expanding Management.
- Ibrohim, S. A. (2024). Analisis Hubungan Volatilitas Pasar Saham, Foreign Portfolio Investment, Dan Indikator Makroekonomi Pada Saham Syariah Sektor Energi Di Indonesia Tahun 2011-2023. *Jurnal Manajemen Dan Usahawan Indonesia*, 47(2). <https://doi.org/10.7454/Jmui.V47i2.1091>
- Jankensgård, H., & Vilhelmsson, A. (2018). The Shareholder Base Hypothesis Of Stock Return Volatility: Empirical Evidence. *Financial Management*, 47(1), 55–79. <https://doi.org/10.1111/Fima.12184>
- Kacperczyk, M., Sundaresan, S., & Wang, T. (2021). Do Foreign Institutional Investors Improve Price Efficiency? *Review Of Financial Studies*, 34(3), 1317–1367. <https://doi.org/10.1093/Rfs/Hhaa076>
- Kim, J. B., & Yi, C. H. (2015). Foreign Versus Domestic Institutional Investors In Emerging Markets: Who Contributes More To Firm-Specific Information Flow? *China Journal Of Accounting Research*, 8(1), 1–23. <https://doi.org/10.1016/J.Cjar.2015.01.001>
- Koesrindartoto, D. P., Yugiantoro, S., Wijaya, R. S., & Usman, B. (2018). *Investors Behavior And Trading Strategies: Evidence From Indonesia Stock Exchange* (Wp/18/04; Issue December). <https://www.ojk.go.id/Id/Data-Dan-Statistik/Research/Working-Paper/Documents/Wp-18-04r.pdf>
- Leković, M. (2018). Investment Diversification As A Strategy For Reducing Investment Risk. *Ekonomski Horizonti*, 20(2), 173–187. <https://doi.org/10.5937/Ekonhor1802173l>
- Myers, S. C. (2001). *Capital Structure. Journal Of Economic Perspectives—Volume 15, Number 2—Spring 2001—Pages 81–102*. 15(2), 81–102.
- Sasikirono, N., Febriana, M. R., Sudana, I. M., & Meidiaswati, H. (2020). The Effect Of Foreign Ownership On Stock Return Volatility In Egyptian Stock Market “An Empirical Investigation.” *Journal Of Innovation In Business And Economics*, 4(1), 39–48. <https://doi.org/10.21608/Jces.2015.51644>
- Sirullah, A. A., & Hanafi, S. M. (2023). Determinan Volatilitas Harga Saham Di Top 10 Konstituen 5-Asean Determinants Of Stock Price Volatility In The Top 10 Constituents Of 5-Asean. *Jurnal Akuntansi Akunesa*, 12(1), 68–77. <https://doi.org/10.26740/Akunesa>
- Suárez, P. B. (2021). *Behavioral Biases Of Retail Investors: Quantitative Behavioral Finance Analysis And Application*. Universidad Pontificia Comillas.

- Tan, Y. (2020). *High Frequency Trading Volatility , Market Microstructure Noise And Institutional Investors*. University Of Illinois At Chicago.
- Thanatawee, Y. (2021). The Impact Of Foreign Ownership On Stock Price Volatility : Evidence From Thailand. *Journal Of Asian Finance, Economics And Business*, 8(1), 7–14. <https://doi.org/10.13106/Jafeb.2021.Vol8.No1.007>
- Vo, X. V. (2015). Foreign Ownership And Stock Return Volatility – Evidence From Vietnam. *Journal Of Multinational Financial Management*, 30, 101–109. <https://doi.org/10.1016/J.Mulf.2015.03.004>
- Wijaya, E., Nurhazizah, S., & Samsudin, S. (2025). The Effect Of Foreign Ownership On Stock Return Volatility With Financial Ratio As Control Variables. *Jurnal Fokus Manajemen Bisnis*, 15(1), 140–153. <https://doi.org/10.12928/Fokus.V15i1.12011>
- Wuryani, E. (2022). Capital Structure And Financial Performance: The Case Of Microfinance Institutions Of Indonesia. *International Journal Of Economic And Finance Studies*, 14(2), 381–398. <https://doi.org/10.34109/Ijefs.20220018>
- Zhao, X. (2020). Do The Stock Returns Of Clean Energy Corporations Respond To Oil Price Shocks And Policy Uncertainty? *Journal Of Economic Structures*, 9(1). <https://doi.org/10.1186/S40008-020-00229-X>