

ISSN 2809-929X (Print)
ISSN 2809-9303(Online)

Journal of Social Commerce

Vol. 6 No. 1, 2026 (Page: 123-141)

DOI: <https://doi.org/10.56209/jommerce.v6i1.246>

Determinants of Stock Volatility: Trading Volume, Profitability, Earnings Volatility, and Book-to-Market Ratio

Amelia Nurlaeli Hidayah¹, Usman¹, Agus Prayitno¹, Ana Kadarningsih¹, Amalia Nur Chasanah¹

¹Management, Dian Nuswantoro University, Indonesia

Article History



Keywords

Stock Price Volatility
Trading Volume
Profitability
Earnings Volatility
Book-To-Market Ratio

JEL Classification

G12, G14, C23, O33

Abstract

This study aims to analyze the effect of Trading Volume, Profitability, Earnings Volatility, and Book-to-Market Ratio on stock price volatility of technology sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period. This research is motivated by the high level of stock price fluctuations in the rapidly growing technology sector, which is accompanied by considerable market uncertainty. This study employs a quantitative explanatory approach using secondary data obtained from financial statements and stock trading records. The sample was selected using a purposive sampling method based on data availability and consistency throughout the observation period. Panel data regression analysis was applied to examine the impact of the independent variables on stock price volatility. The results indicate that trading volume has a significant negative effect on stock price volatility, suggesting that higher market liquidity contributes to price stability. Profitability does not have a significant effect on stock price volatility, indicating that earnings information is largely anticipated by investors and does not trigger substantial market reactions. Earnings volatility has a significant positive effect on stock price volatility, implying that unstable earnings increase perceived risk and market uncertainty. Furthermore, the book-to-market ratio has a significant positive effect on stock price volatility, reflecting that firms with higher fundamental risk tend to experience greater price fluctuations.

Introduction

Capital markets are a crucial tool in the modern economy, pooling public funds to stimulate investment and economic progress (Dewi et al., 2024). Capital markets allow investors to invest their funds in various financial products, such as stocks, bonds, and mutual funds, with the goal of generating returns. However, given the notoriously unpredictable nature of stock

¹Corresponding Author: Amelia Nurlaeli Hidayah, Email: 211202207858@mhs.dinus.ac.id, Address: Jl. Imam Bonjol No.207, Pendrikan Kidul, Kec. Semarang Tengah, Kota Semarang, Jawa Tengah 50131, Indonesia

prices, it is crucial to examine the various factors that contribute to changes in stock price volatility, particularly in the context of rational investment decision-making.

In the digital era, the development of technology-based companies has transformed the structure of economic activities, particularly through the emergence of digital platforms that facilitate interactions between businesses and consumers. These platforms play a central role in the development of social commerce, where economic transactions are increasingly influenced by social interaction, digital reputation, and user engagement within online communities. As information spreads rapidly through digital networks and social media, investor perceptions and expectations regarding technology companies can be shaped not only by financial fundamentals but also by the dynamics of digital ecosystems surrounding these firms. Consequently, stock price movements in technology companies may reflect both financial performance and broader signals emerging from digital interactions and market sentiment (Liang & Turban, 2011; Hajli, 2015). Therefore, examining stock price volatility in technology companies becomes increasingly relevant to understand how financial indicators interact with market dynamics in the digital economy.

The rapid development of information and communication technology has driven the emergence of various technology companies in the Indonesian capital market. Technology company stocks are attractive to investors because they offer high growth potential, although they are also accompanied by significant price volatility. Despite the rapid growth of the technology sector, technology companies listed on the Indonesian Sharia Stock Index (ISSI) faced significant stock price fluctuations during the COVID-19 pandemic, making it difficult to maintain stable share prices. This was found by (Sari & Setiawan, 2023).

An overview of stock price fluctuations in technology sector companies can be seen in Figure 1.1, which shows the level of stock volatility of several technology issuers listed on the Indonesia Stock Exchange (IDX).

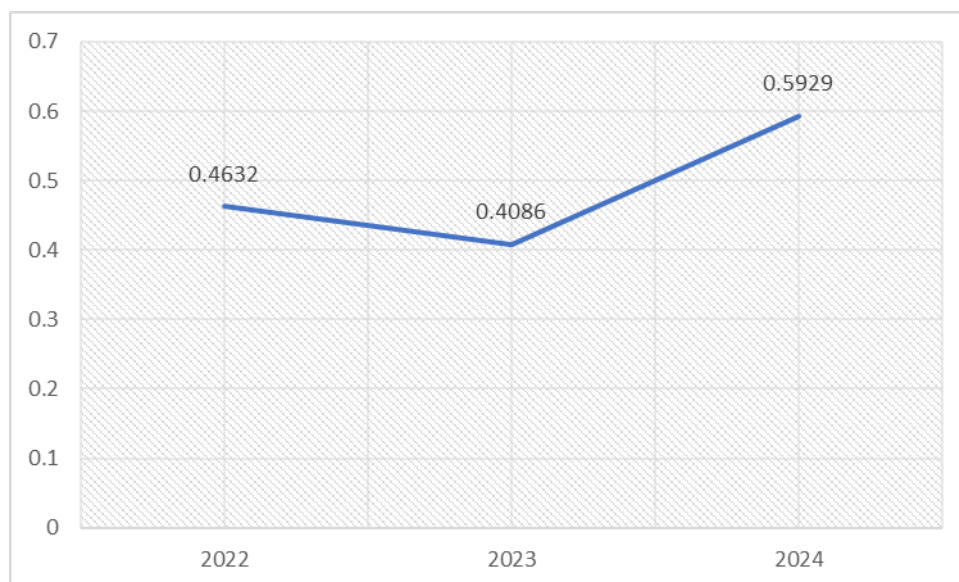


Figure 1. Graph of Stock Price Volatility in the Technology Sector for 2022-2024

Source: website <https://www.idx.co.id/id>

Figure 1 shows that stock price volatility in the technology sector experienced significant changes during the 2022–2024 period. In 2022, average volatility was recorded at 0.4632, then decreased in 2023 to 0.4086, before rising sharply to 0.5929 in 2024. This change in volatility indicates that the risk of stock price fluctuations in the technology sector remains relatively

high and unstable. This high volatility is thought to be influenced by several key factors, including trading volume, where increased stock transaction activity can drive more aggressive price movements. Furthermore, company profitability also plays a role in influencing investor perceptions of the company's performance prospects, which ultimately impacts stock price volatility. Another factor is earnings volatility, which reflects the instability of company profits, increasing investor uncertainty about future cash flows. Meanwhile, the book-to-market ratio reflects the market's assessment of a company's value, where the difference between book value and market value can trigger a market reaction reflected in stock price volatility. According to Dhingra et al. (2024), stock price volatility is an important indicator for assessing the level of risk and stability of the capital market, particularly in the technology sector, which is characterized by rapid growth, high levels of innovation, and high sensitivity to changes in market information. Technology companies on the Indonesia Stock Exchange (IDX) experience sharp stock price fluctuations in line with the dynamics of digital development, changes in consumer behavior, and macroeconomic uncertainty. This situation indicates that stock volatility in this sector not only reflects investment risk but also signals to investors about the prospects and market confidence in the company's value (Yulianti & Darmawanti, 2024).

The findings of a study by Haikal (2025) that trading volume and earnings volatility have a significant positive effect on stock price volatility. These results indicate that trading activity and the level of fluctuation in company profits play a significant role in shaping stock price movements in the capital market. Meanwhile, profitability reportedly does not show a significant effect, indicating differences in research findings regarding the role of profitability in stock volatility. Furthermore, earnings volatility is reported to have a significant influence on stock price volatility, as demonstrated in studies (Anggriani et al., 2025; Soukotta et al., 2023). The differences in the direction of influence found in previous studies indicate empirical inconsistencies, so the earnings volatility variable remains relevant for re-examination in a different context and research period.

A study by Ardiansah et al. (2025) found an adjusted R² value of 21.8%, indicating that trading volume, profitability, earnings volatility, and the book-to-market ratio only partially explain variations in stock price volatility. This finding indicates that stock volatility is influenced by various factors beyond the financial variables tested, including market conditions, investor sentiment, and macroeconomic factors. This finding suggests that previous research models still have limitations in explaining variations in stock price volatility comprehensively. This situation indicates that there is still room for research model development to gain a more comprehensive understanding of the determinants of stock price volatility. The presence of several insignificant predictors and poor model fit may be due to the study's observation period, which combines the COVID-19 and post-COVID-19 periods, namely 2021-2023. Therefore, it is necessary to consider revising the observation period to include the entire post-COVID-19 period. This revision is expected to produce more stable findings and accurately reflect the current state of the capital market after the COVID-19 pandemic crisis.

Several previous studies reported that leverage had no significant effect on stock price volatility (Maysaroh & Handayani, 2025; Wijaya et al., 2025). Similar findings were also presented by Nazir & Khairunisa (2022), who showed that company size did not significantly influence stock price volatility. These leverage and company size variables were not used in this study, so these findings are presented for comparison and context within previous research.

Meanwhile, Wijaya et al., (2025) found that the Book-to-Market Ratio had a negative and significant effect on stock price volatility. This ratio is used to assess a company's book and market value, with a higher value reflecting a lower volatility risk, as the stock price reflects the company's true financial condition (Wijaya et al., 2025). These findings suggest that the

Book-to-Market Ratio has the potential to be a predictor of stock price volatility, particularly in explaining the risk reflected in the comparison of a company's book value and market value.

Although the research by Sholichah et al. (2021) showed that profitability had no significant effect on stock price volatility. This finding differs from the research by Maysaroh & Handayani (2025), which found that profitability had a significant effect. These differences in research findings indicate empirical inconsistencies regarding the role of profitability in explaining stock price volatility. Therefore, profitability is retained as a research variable for further testing in the technology sector context, with a post-COVID-19 observation period. Based on previous research, this study expands on the study by Tan et al. (2024) by expanding the observation period to cover the entire post-COVID-19 period. This study retains the variables of profitability, trading volume, and earnings volatility, and adds the Book-to-Market Ratio as a substitute for leverage and company size. This development was undertaken to obtain a more relevant research model for explaining stock price volatility in the technology sector on the Indonesia Stock Exchange.

Literature Review

Several previous studies have shown varying results regarding factors influencing stock price volatility. Soukotta et al. (2023), who studied technology sector companies, found that trading volume had a positive and significant effect on stock price volatility, while earnings volatility had a significant negative effect. Furthermore, Maysaroh & Handayani (2025) study of companies listed on the IDX30 index showed that leverage and dividend policy had no significant effect on stock price volatility, while profitability had a significant negative effect. However, all variables simultaneously had no significant effect. In contrast to the two previous studies, Wijaya et al. (2025), who studied the mining sector, found that foreign ownership, leverage, and the book-to-market ratio had a negative effect on stock price volatility, while company size and turnover had a positive effect, with turnover being the most dominant factor influencing stock price volatility.

Theoretical Basis

Signalling theory, introduced by Spence (1978) explains that company management provides signals to investors through financial information to reduce information asymmetry. Information such as earnings, dividends, leverage, and investment policies serve as signals indicating a company's future prospects (Yulianti & Darmawati, 2024). Regarding stock price volatility, signaling theory plays a crucial role because investors interpret every piece of corporate information as a signal that can influence the supply and demand of shares. The stronger the positive signal received by the market, the more stable the stock price, while negative signals can increase volatility. Fama (1970) introduced the Efficient Market Theory, where stock prices fully accommodate and reflect all significant market information. In an efficient market, stock prices quickly respond to new information, resulting in random price movements. However, under certain conditions, such as high trading volume or significant changes in earnings, the market reaction can be excessive and lead to stock price volatility (Bhowmik & Wang, 2020)

Digital Information Environment in Technology Firms

The development of digital technology has significantly transformed the information environment surrounding firms, particularly those operating in the technology sector. In traditional capital markets, investors primarily relied on financial statements and official corporate disclosures when evaluating company performance. However, the emergence of

digital platforms, online communities, and social networks has accelerated the dissemination of information and created a more dynamic information environment. As a result, investors are now exposed to a broader range of information sources that may influence their perceptions and decision-making processes in financial markets.

According to Liang & Turban (2011), the development of digital platforms facilitates interactions and information exchange among users within digital ecosystems, which can influence economic behavior and decision-making processes. Furthermore, research conducted by Han (2023) shows that public sentiment expressed through online media can influence financial market dynamics and investor expectations. In the context of technology firms, this digital information environment allows information to spread rapidly among investors and market participants, potentially influencing stock price movements and volatility. Therefore, stock price volatility in technology companies may reflect not only financial fundamentals but also the rapid flow of information within digital networks and digital ecosystems.

Research Variable Study

Stock price volatility is a measure of uncertainty or the fluctuations in future stock movements (Jiang et al., 2024). Generally, volatility in financial markets reflects the level of risk faced by investors because it reflects fluctuations in stock price movements and their uncertainty. The higher the stock price volatility, the greater the stock price fluctuations over a given period. Stock price volatility indicators are as follows:

$$PV = \sqrt{\frac{1}{n} \sum \ln\left(\frac{Ht}{Lt}\right)^2}$$

Description:

PV: Stock price volatility

n: Number of observations

ln: Natural logarithm

H_t: Company's highest stock price in period *t*

L_t: Company's lowest stock price in period *t*

Trading volume is the total number of shares traded during a given period, reflecting market activity and liquidity. Trading volume is often used as a measure of investor interest and involvement in a company. The formula for calculating trading volume (Trading Volume Activity or TVA):

$$TVA = \frac{\sum \text{traded shares}}{\sum \text{outstanding shares}}$$

A high TVA value indicates greater stock liquidity and increased investor participation in the market. According to Harimbawa & Sulindawati (2022), trading volume has a positive effect on stock price volatility because the more intensive transaction activity, the more rapid price changes occur due to adjustments in supply and demand. Similar findings were also presented by Liu et al. (2023) who emphasized that trading volume is an important indicator of the intensity of information entering the market (information flow hypothesis). Therefore, an increase in trading volume indicates investor reaction to the latest information, which has the potential to cause stock price fluctuations.

Profitability refers to the ability of a firm to make profits out of its activities. One such measure that is often used to measure profitability is Return on Assets (ROA). ROA is another ratio that is widely used to measure profitability.

$$\text{ROA} = \frac{\text{Net Profit After Tax}}{\text{Total Assets}} \times 100\%$$

High levels of profitability are good indicators of financial strength, increase investor trust and reduce the risk of fluctuations in stock prices. Weak profitability on the other hand evokes investor concerns with regards to the future standing of the firm. Sholichah et al. (2021) found that there is an inverse relationship between profitability and the volatility of the stock price. The more the profit is, the lower the tendency to extreme price volatility is since such securities are considered as stable and promising by investors.

Earnings Volatility

The volatility of earnings is the measure of instability of earnings in a firm, which is expressed in the ability of the firm to make operating profit relative to its assets. The sensitivity of earnings to change in the operational activity is used to proxy earnings volatility in the current study as a ratio of operating profit (EBIT) to total assets. A high EBIT -to-total-assets ratio indicates the increased likelihood of change in earnings, and thus, this consequence might affect the risk perceptions of investors. The mathematical model on the earnings volatility is outlined as follows:

$$\text{Earning Volatility} = \sqrt{\frac{\sum(E_i - \bar{E})^2}{n - 1}}$$

with:

E_i = earnings per share in period i

\bar{E} = average earnings per share

n = number of observation periods

According to Utami & Purwohandoko (2021), earnings volatility has a positive effect on stock price volatility because earnings changes are perceived as a signal by investors. When earnings fluctuate widely, investors perceive the company as high risk, resulting in a stronger market reaction to financial information, leading to increased stock price fluctuations. However, in certain contexts, as found in Cahyawati & Miftah (2022), earnings volatility can also have a negative effect if earnings volatility discourages investors from transacting, resulting in reduced price volatility.

Book-to-Market Ratio

The Book-to-Market Ratio (B/M) is the ratio between the book value of equity and the market value of the stock. This ratio reflects investors' perceptions of the company's intrinsic value compared to the current market price. The formula for calculating the Book-to-Market Ratio is:

$$\text{B/M Ratio} = \frac{\text{Book Value of Equity}}{\text{Stock Market Value}}$$

Book Value of Equity = Total Assets – Total Liabilities

Market Value of Equity = Closing Stock Price × Number of Shares Outstanding

According to Haikal (2025), a high B/M ratio indicates an undervalued stock, which often attracts investor interest and has the potential to generate high returns, but is also accompanied by greater price volatility due to changes in market perception. Conversely, stocks with a low B/M (overvalued) tend to have more stable price movements because they reflect high market expectations.

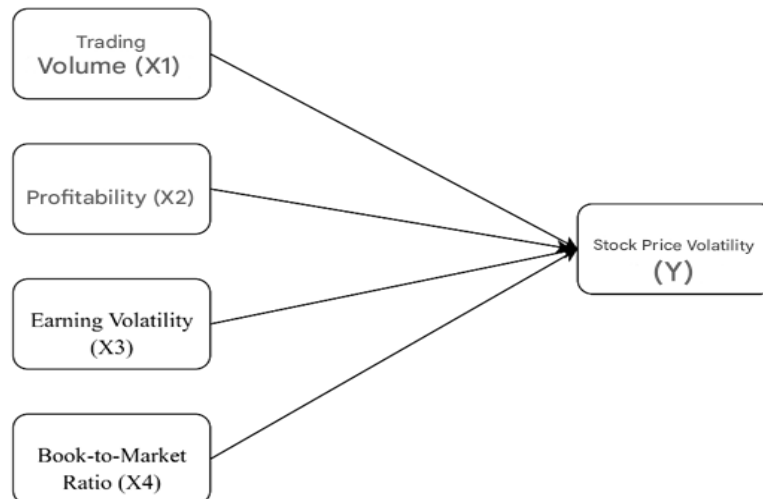


Figure 2. Conceptual Framework

Stock price volatility (Y) is influenced by fundamental and technical factors. Trading volume and earnings volatility reflect market dynamics, while profitability and the book-to-market ratio reflect a company's fundamental condition. The interaction between these factors determines the level of stock price fluctuations in the technology sector.

Hypothesis Development

According to Spence's signaling theory (1978), stock trading volume can be interpreted as a signal by investors regarding new information in the market. An increase in trading volume indicates a reaction to information that triggers more intense stock buying and selling activity. When a company's shares experience a surge in trading volume, this indicates that investors are responding to information they deem important, whether positive or negative. This condition drives increased stock price volatility as a result of an imbalance between supply and demand in the market. Research by Harimbawa & Sulindawati (2022) and Putra (2024) also shows that trading volume has a positive and significant effect on stock price volatility because it reflects dynamic market activity.

H1: Trading volume has a positive effect on stock price volatility.

According to Spence's signaling theory (1978), profits can be used to help investors assess a company's future. Companies with high profit margins provide a positive signal of their financial strength and potential for generating long-term profits. This lowers investors' perceptions of risk, resulting in more stable stock trading activity. This finding is supported by research by Saetban (2023), which found that profitability positively influences stock price volatility in LQ45 companies due to the high investor response to earnings information.

H2: Profitability positively influences stock price volatility.

According to Spence's signaling theory (1978) earnings volatility, or the instability of a company's earnings, also serves as a signal to investors regarding the risk and uncertainty of the company's performance. High earnings volatility reflects inconsistent financial performance, which investors perceive as a negative signal. Consequently, investors react by selling shares to avoid risk, thereby increasing trading activity and increasing stock price volatility. This finding aligns with research by Utami & Purwohandoko (2021) and Cahyawati & Miftah (2022), which confirms that earnings volatility influences stock price fluctuations because it reflects uncertainty about the company's future value.

H3: Earning volatility positively influences stock price volatility.

According to the signaling theory proposed by Spence (1978), the book-to-market ratio can be used as a signal for investors to identify whether a stock is undervalued or overvalued. Stocks with a high book-to-market ratio signal that the market price is relatively lower than their book value, thus attracting investors oriented towards long-term profit potential. However, this condition also has the potential to increase stock price volatility because changes in investor perceptions of the company's fundamental value can trigger a stronger market reaction. This finding is supported by Shibanda et al. (2024), who showed that book-to-market is a significant factor influencing stock risk premiums in emerging markets. Conversely, stocks with a low book-to-market ratio reflect overvalued conditions, where market expectations are already largely reflected in the stock price, resulting in more stable movements. Haikal (2025) states that differences in investor perceptions of a company's fundamental value are what cause variations in stock price volatility between companies.

H4: The book-to-market ratio has a positive effect on stock price volatility

Methods

This research employs a quantitative explanatory approach. This technique uses empirical hypothesis testing to illustrate the causal relationships between research variables (Sugiyono, 2020). Quantitative methods are based on the use of secondary data in the form of numerical values, such as financial ratios and stock transactions. This data is scientifically evaluated to determine how trading volume (X1), profitability (X2), earnings volatility (X3), and the book-to-market ratio (X4) affect stock price volatility (Y). According to Nazir (1988), explanatory research focuses on investigating causal correlations between variables with the goal of understanding phenomena that can be evaluated consistently, objectively, and structurally. Therefore, this method is considered appropriate for describing and testing the influence of independent variables on the dependent variable in a study.

Population and Sample

The sample size of this empirical study will be all the enterprises operating within the technology industry and listed in the Indonesia Stock Exchange (IDX) between 2022 and 2024. Purposive sampling was used, which implies that in this method, cases are selected through the use of the predetermined criteria, which correlate with the overall research objectives (Sugiyono, 2020). The selection of samples criteria will be as follows: (1) Technological industry companies, which were listed on the IDX throughout 2022-2024, (2) Companies that prepare complete annual financial reports, (3) Companies, the stock price and trading volume data of which are available. The given methodological decision is compatible with the existing literature by Harimbawa & Sulindawati (2022) and Utami & Purwohandoko (2021), who also used the purposive sampling approach in their research on stock price volatility. A sample of 25 firms in the technology sector was finally chosen on the above criteria.

Data Type and Source

This study utilizes secondary data derived from annual financial reports and stock trading data. Data sources come from: (1) The Indonesia Stock Exchange (www.idx.co.id) provides financial data and company profiles; (2) Yahoo Finance provides daily stock price data; (3) Check the official websites of each relevant company for additional data verification. Secondary data, as defined by Church (2002), is data that has been collected and published by a third party for use in empirical analysis. The data collection procedure was conducted using a documentation approach, which included collecting, documenting, and evaluating secondary data from financial reports and other official sources.

Data Analysis Techniques

Data analytical processes included descriptive statistical analysis, classical econometric testing of assumptions, and the panel data regression analysis based on the EViews software. Descriptive statistics were created to explain the salient features of each variable that include measures of central tendency and dispersion including minimum, maximum, mean, and standard deviation. Before the panel data regression was undertaken, the classical tests of assumptions that included tests of normality, multicollinearity, heteroscedasticity, and autocorrelation were carried out to test adherence to the necessary econometric conditions. After the validation of the same assumptions, the panel data regression models were discovered after comparative analysis of Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM). The selection of the model was done depending on the results of the inferential tests, which are Chow test, Hausman test and Lagrange Multiplier (LM) test. The analysis further proceeded to test the effect of independent factors on the volatility of stock prices using the following specification of the model:

$$VOL_{it} = \alpha + \beta_1 VTR_{it} + \beta_2 ROA_{it} + \beta_3 EVOL_{it} + \beta_4 BMR_{it} + \varepsilon_{it}$$

Description:

VOL_{it} : Stock price volatility of company i in period t

VTR_{it} : Trading volume

ROA_{it} : Profitability

$EVOL_{it}$: Earning volatility

BMR_{it} : Book-to-market ratio

ε_{it} : Error term

Additionally, the coefficient of determination (R^2) test aims to assess the extent to which variations in stock price volatility are explained by independent variables. The partial significance test (t-test) is used to examine the influence of each variable individually, while the simultaneous test (F-test) is used to assess the influence of all independent variables collectively on stock price volatility.

Results and Discussion

Table 1 shows that Stock Price Volatility (Y) variable has a minimum of 0.000000 and a maximum of 1.370806 with a mean of 0.488218. Such distribution indicates that whereas some companies show comparatively stable price movement, others are very volatile. The value of standard deviation of 0.318224 represents inter-firm variability, but relatively small. The lowest value of Trading Volume (X1) variable is 0.000181, and the highest value is 5.033189. The average of 0.310393 shows that, on a mean observation, the trading activity in the firms included in the sample was not that high throughout the observation. The standard deviation of 0.725330, however, indicates the existence of heterogeneity in the trading activity, where there are firms that will have significantly larger volumes.

Table 1. Results of Descriptive Statistical Test Analysis

Variables	Mean	Maximum	Minimum	Std. Dev.
Stock Price Volatility (Y)	0.488218	1.370806	0.000000	0.318224
Trading Volume (X1)	0.310393	5.033189	0.000181	0.725330
Profitability (X2)	-1.283488	20.43856	-125.6083	19.79021
Earnings Volatility (X3)	2.109443	11.68538	-0.028279	2.667805
Book to Market Ratio (X4)	1.333022	13.77798	0.000084	2.238069

Source: Secondary data processed with EViews 12, 2025

Profitability (X2) is centred between 20.43856 and -125.6083 and the mean is -1.283488. The negative mean shows that the sample firms were more likely to record losses during the period of evaluation. The standard deviation of 19.79021 is relatively large, which highlights the high spread of the results of profitability between the firms. The variable Earnings Volatility (X3) ranges between -0.028279 and 11.68538 with a mean of 2.109443. This implies that though there is a segment of companies that have a small shift in profitability, there are other companies whose volatility is significantly greater. The standard deviation of 2.667805 shows that earnings volatility varies among the sample.

The minimum of Book-to-Market Ratio (X4) is 0.000084, and the maximum value is 13.77798; the mean value of Book-to-Market Ratio is 1.333022. This mean implies that the majority of the firms have book values that are relatively in line with their market values, although a small proportion of the firms are with a much higher valuation than their book values. The standard deviation is 2.238069 which shows that there is significant variation in the book to market ratio of the firms.

Results of Panel Data Regression Model Selection

Table 2. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.946674	(18,34)	0.5353

Source: Data processing results using EViews 12

Based on Table 2, the cross-section F-probability value is 0.5353, which is greater than the 0.05 significance level. This indicates that the fixed effect model is not superior to the common effect model. Therefore, based on the Chow test results, the common effect model is the appropriate model to use in this study.

Table 3. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.132057	4	0.7115

Source: Data processing results using EViews 12

Based on Table 3, the probability value (p-value) is 0.7115, which is greater than the 0.05 significance level. This indicates that there is no significant difference between the Fixed Effect and Random Effect estimates. Therefore, the more appropriate model to use based on the Hausman Test is the Random Effect Model.

Table 4. Lagrange Test Results

	Cross-section	Time	Both
Breusch-Pagan	2.368767 (0.1238)	0.667403 (0.4140)	3.036170 (0.0814)

Source: Data processing results using EViews 12

According to Table 4, the probability value of the Breusch-Pagan test for the combined effect (both) is 0.0814, which is greater than the 0.05 significance level. This indicates that there are no significant random effects either between individuals (cross-section) or over time. Therefore, the Lagrange Multiplier Test results indicate that the Random Effects model is not suitable for use, and the most appropriate model for this study is the Common Effects Model.

Classical Assumption Test

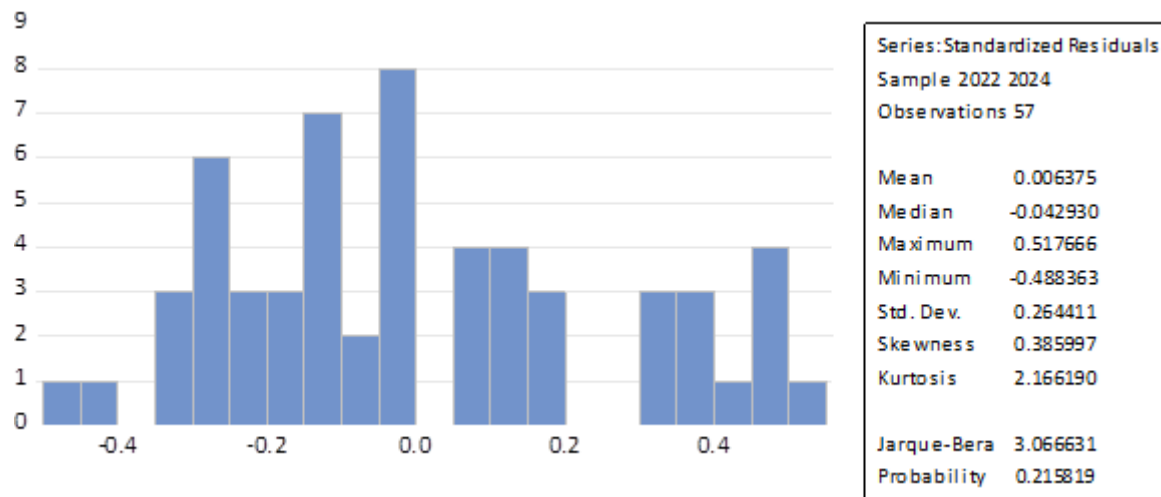


Figure 3. Normality Test Results

Source: Data processing results using EViews 12

Figure 2 shows a Jarque-Bera statistic of 3.066631 with a probability value of 0.215819. This probability value is greater than the 0.05 (5%) significance level, thus concluding that the residual data in the regression model is normally distributed. Therefore, the assumption of normality in this study has been met.

Table 5. Multicollinearity Test Results

Variables	Centered VIF
Trading Volume (X1)	1.253777
Profitability (X2)	1.102432
Earning Volatility (X3)	1.312460
Book To Market Ratio (X4)	1.059098

Source: Data processing results using EViews 12

Table 5 shows that all independent variables have VIF values <10. Therefore, it can be concluded that the regression model in this study does not exhibit multicollinearity.

Table 6. Heteroscedasticity Test Results

F-statistic	Obs*R-squared	Prob
0.568338	2.387564	0.6649

Source: Data processing results using EViews 12

Based on the results of the Heteroscedasticity Test using the Breusch–Pagan–Godfrey method, the F-statistic probability value was 0.6867 and the Chi-Square probability value (Obs*R-squared) was 0.6649. All probability values are greater than the 0.05 (5%) significance level. This indicates that there are no symptoms of heteroscedasticity in the regression model. Therefore, it can be concluded that the regression model meets the assumption of homoscedasticity.

Table 7. Autocorrelation Test Results

F-statistic	Obs*R-squared	Prob
1.431666	3.087394	0.2136

Source: Data processing results using EViews 12

Based on the results of the Autocorrelation Test using the Breusch–Godfrey Serial Correlation LM Test, the F-statistic probability value was 0.2485 and the Chi-Square probability value (Obs*R-squared) was 0.2136. All probability values are greater than the 0.05 (5%) significance level. Therefore, it can be concluded that there are no autocorrelation symptoms in the regression model. This means that the regression model meets the assumption of freedom from autocorrelation.

Multiple Linear Regression Analysis

Table 8. Panel Data Regression Estimation Results

Variables	Coefficient	Std. Error
Trading Volume (X1)	-0.077077	0.020640
Profitability (X2)	-0.000734	0.000816
<i>Earning Volatility</i> (X3)	0.053101	0.011000
<i>Book To Market Ratio</i> (X4)	0.057248	0.018403
C	0.315799	0.030681

Source: Data processing results using EViews 12

The estimation results show the following regression model:

$$VOL_{it} = 0.315799 - 0.077077 VTR_{it} - 0.000734 ROA_{it} + 0.053101 EVOL_{it} + 0.057248 BMR_{it} + \varepsilon_{it}$$

The Trading Volume coefficient of -0.077077 indicates that trading volume has a negative effect on stock price volatility. This means that the higher the stock trading activity, the lower the stock price volatility. This indicates that stocks with high liquidity have more stable price movements. In the context of technology companies operating within digital ecosystems, higher trading activity may also reflect faster information dissemination among investors through digital platforms and online investor communities. Efficient information absorption in these digital environments can reduce uncertainty and contribute to more stable price movements.

The Profitability coefficient of -0.000734 indicates a negative effect on stock price volatility, although the effect is not statistically significant. This finding suggests that profitability may not be the primary consideration for investors in technology sector companies. In many technology-based firms, investors often prioritize long-term growth potential, platform expansion, and user engagement rather than short-term accounting profits. As a result, stock price movements may be driven more by expectations regarding the firm's digital ecosystem and market position rather than its current profitability performance.

The Earnings Volatility coefficient of 0.053101 indicates a positive effect on stock price volatility. This means that the higher the fluctuation in a company's earnings, the higher the stock price volatility. Technology firms often rely heavily on intangible assets, innovation activities, and platform-based business models, which can create higher uncertainty regarding future performance. This condition may increase information asymmetry among investors, causing earnings volatility to become a stronger signal that influences stock price fluctuations.

The Book-to-Market Ratio coefficient of 0.057248 indicates a positive effect on stock price volatility. In technology companies, market valuation is often strongly influenced by expectations regarding digital platform growth, innovation capability, and user network expansion. Therefore, differences between book value and market value may reflect varying investor expectations regarding the firm's future position in the digital economy, which can lead to greater stock price volatility.

The constant value of 0.315799 indicates that if all independent variables are assumed to be zero, the stock price volatility level will be 0.315799.

Hypothesis Testing

Table 9. t-Test Results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
Trading Volume (X1)	-0.077077	0.020640	-3.734391	0.0005
Profitability (X2)	-0.000734	0.000816	-0.899733	0.3724
<i>Earning Volatility</i> (X3)	0.053101	0.011000	4.827511	0.0000
<i>Book To Market Ratio</i> (X4)	0.057248	0.018403	3.110716	0.0030
C	0.315799	0.030681	10.29309	0.0000

Source: Data processing results using EViews 12

The Trading Volume variable has a t-statistic of -3.734391 with a probability value of 0.0005, which is less than the 0.05 significance level. This indicates that Trading Volume has a significant and negative effect on stock price volatility. This means that the higher the trading volume, the lower the stock price volatility, indicating that stocks with high liquidity have more stable price movements.

The Profitability variable has a t-statistic of -0.899733 with a probability value of 0.3724, which is greater than the 0.05 significance level. Therefore, it can be concluded that Profitability does not have a significant effect on stock price volatility. This indicates that the company's profit level did not directly influence stock price fluctuations during the study period. The Earning Volatility variable has a t-statistic of 4.827511 with a probability value of 0.0000, which is less than the 0.05 significance level. Therefore, Earning Volatility has a significant and positive effect on stock price volatility. This means that the higher the fluctuation in company earnings, the higher the stock price volatility tends to be, as earnings volatility increases investor uncertainty.

The Book-to-Market Ratio variable has a t-statistic of 3.110716 with a probability value of 0.0030, which is less than the 0.05 significance level. This indicates that the Book-to-Market Ratio has a significant and positive effect on stock price volatility. The higher the book-to-market ratio, which indicates undervalued stocks, the higher the stock price volatility tends to be.

Table 10. F Test Results

F statistic	21.35180
Prob(F statistic)	0.000000

Source: Data processing results using EViews 12

Based on Table 10, the F-statistic value is 21.35180 with a probability value of 0.000000, which is less than the 0.05 significance level. This indicates that the variables Trading Volume, Profitability, Earnings Volatility, and Book-to-Market Ratio simultaneously have a significant effect on Stock Price Volatility. Therefore, the regression model used in this study is deemed fit, as all independent variables are able to explain variations in changes in stock price volatility.

Table 11. Results of the Coefficient of Determination (R²) Test

Adjusted R squared	0.592452
---------------------------	-----------------

Source: Data processing results using EViews 12

Table 11 shows an Adjusted R-squared value of 0.592452. This indicates that 59.25% of the variation in stock price volatility can be explained by the variables Trading Volume, Profitability, Earnings Volatility, and Book-to-Market Ratio in the regression model.

Meanwhile, the remaining 40.75% is explained by factors outside this research model, such as market conditions, investor sentiment, macroeconomic risks, and other company fundamentals.

Trading Volume on Stock Price Volatility

The t-test evidence shows that Trading Volume (X1) has a negative and significant impact on the volatility of stock price. The implication of this discovery is that the great volume of trading is linked to the decrease in the volatility of the stock price. Thus, the hypothesis of the positive impact of trading volume on stock price volatility was not confirmed empirically in this research. The relationship being observed could be explained by the Market Microstructure Theory that states that markets with high liquidity exhibit higher market depth which will reduce transaction pressure and will not cause any significant market fluctuations in price (O'Hara, 1995). A high level of trading activity would indicate a large population of market participants and increased frequency of transaction therefore leading to a more effective and stable price-making process. The Liquidity Hypothesis further explains that stocks that have improved liquidity contribute to the rapid and even incorporation of information into prices and price uncertainty is reduced (Chordia et al., 2001). In this kind of a market environment, higher trading volume acts as a deflector of prices and not an initiator of volatility at that. In the context of technology sector companies, trading activity may also reflect the rapid dissemination of information among investors through digital platforms and online investor communities. The presence of digital information channels allows market participants to access and process information more efficiently, which may contribute to greater liquidity and more stable price movements in technology stocks.

This outcome is in line with the empirical findings of Asmara (2024) who reported a negative significant association between the trading volume and stock price volatility. These findings support the idea that high trading activity does not always result in price uncertainty, but, in certain market circumstances, it may encourage market stability and efficiency. Moreover, the results of the current research are consistent with the findings of Putri & Juniwati (2025), who showed that trading volume also significantly changes the stock price volatility of companies included in the IDX MES BUMN 17 index. It was also found that high trading activity helps to make markets more efficient and enhance liquidity of stock thereby leading to more stable price formation and a lesser likelihood of stock price fluctuations in the Indonesia Stock Exchange.

Profitability Against Stock Price Volatility

Findings of the t -tests indicate that the profitability (X2) does not have statistically significant impact on stock-price volatility. In this regard, it can be observed that the ability of a firm to make profit does not directly affect the price movements within the period of study. Theoretically, Signaling Theory (Spence, 1978) states that the profitability acts as a positive indicator of the performance of a firm currently and in the future. However, the empirical results of the current study indicate that investors are not always found to show a strong reaction to earnings announcement especially when such announcement is expected or considered to be a habit. Furthermore, with a semi-strong version of the Efficient Market Hypothesis, a financial report, such as profitability, will be assumed to be included in the price of stocks upon their publication, thus neutralizing the chances of a significant price response (Fama, 1970). In technology-based firms, profitability may not always be the primary factor considered by investors. Many technology companies operate within digital ecosystems where market valuation is often driven by expectations regarding innovation capability, platform expansion, and user engagement rather than short-term accounting profits. Therefore, investors may focus more on long-term growth potential than current profitability performance when assessing technology firms. Accordingly, the changes in profitability do not always initiate an increase

in the volatility of stock-prices. This is consistent with the research by Irmawati & Sunarto (2023), which shows that profitability does not have a significant influence on stock -price volatility across the firms listed on the LQ45 index when in the 2020–2023 period, and hence supports the claim that profitability is not the most relevant factor of stock -price volatility under specific market conditions.

Earnings Volatility on Stock Price Volatility

The findings of t -tests show that there is a positive and statistically significant impact of earnings volatility (X3) on stock-price volatility. As a result, the higher the variation in the earnings of a firm, the higher the volatility of the share price of a firm. This empirical observation is in line with the Risk-Based Theory, according to which a high volatility in the earnings reflects an increased operational risk, hence raising the uncertainty of the investor in relation to the future cash flows (Wiguna & Murwaningsari, 2022). This type of environment compels the investor to carry out more aggressive portfolio rebalancing, which ultimately increases the stock-price volatility. Further, the Information Uncertainty Theory argues that high volatility of earnings increases the information asymmetry in the market resulting in the investors being more sensitive to new information when it comes (Peng et al., 2020). Such sensitivity raises greater price volatilities. This condition may be particularly relevant for technology firms, which often rely heavily on intangible assets, research and development activities, and platform-based business models. These characteristics can increase uncertainty regarding future performance, causing investors to respond more strongly to fluctuations in earnings.

The findings of the present study are in line with the findings of Dahlia & Zulaihati (2025) who also found a positive and significant correlation between earnings volatility and stock-price volatility. According to their analysis, volatile earnings create uncertainty related to the financial performance of a firm, and thus it will promote investors to respond more substantially to earnings disclosures. This fact also coincides with those of Utami & Purwohandoko (2021) where they found that earnings volatility has a positive impact on stock-price volatility; the reason is that earnings changes are a salient signal to investors when considering the future of a company as well as the risk profile. In the case of unstable earnings, investors make quick portfolio rebalancing, which intensifies volatility in the prices on the market.

Book-To-Market Ratio Against Stock Price Volatility

The results of statistical tests point to the fact that Book-to-Market Ratio (X4) has a positive and statistically significant effect on the volatility of stock prices. Therefore, the increased book-to-market ratio is associated with the increased risk of fluctuations in price. Value stocks are often stocks that have a high book value when compared to their market value and they have a high fundamental risk.

Based on Value Premium Theory, equity with a large book-to-market ratio tends to be viewed as underpriced by the market due to certain risk factors in that equity, e.g. volatility of performance or low growth potential. This perception acts as a motivation to investors to provide larger amounts of risk thus leading to increased price volatility. The current results are in line with the results that were obtained by Dahlia & Zulaihati (2025) who recorded that the volatility of earnings has a positive and statistically significant influence on the stock price volatility. As explained in the present study, the volatility in earnings is used to convey a certain uncertainty about the financial performance of a firm hence causing the investors to respond to earnings information more sensitively. Further, the Fundamental Risk Hypothesis argues that companies with a high book to market ratio have the increased uncertainty of intrinsic value, a

factor that causes the market to experience greater price changes (Nekrasov & Shroff, 2009). In technology companies, differences between book value and market value may also reflect investor expectations regarding the firm's future position within the digital economy. Companies with strong digital ecosystems or large user networks may receive higher market valuations, which can create larger gaps between book value and market value and contribute to higher stock price volatility

Also, the reported result can be considered consistent with the study by Utami & Purwohandoko (2021), who determined that the earnings volatility has a positive influence on the stock price volatility because the changes in earnings are a salient indicator of the prospects and risks appraised by investors when assessing the company. In case earnings are unstable then investors are likely to have quick portfolio changes and thus an increase in market prices. Previous literature has shown that there is a strong correlation between the book-to-market (B/M) ratio and the stock price risk and volatility. Bali et al. (2024) contended that changes in the value of firms, shown in the book-to-market volatility, indicate uncertainty in value, namely, fundamental uncertainty, which increases the risk of stock prices. Companies that have a large B/M ratio tend to have low expectations, and thus the market reacts with exaggerated price fluctuations. This conclusion is supported by the fact that Shibanda et al. (2024) have shown that book to market is a salient predictor of stock risk premiums in emerging markets. Therefore, a large B/M value can be interpreted as the sign of growing fundamental uncertainty in a company, which, in turn, causes the volatility of stock prices.

Conclusion

This study demonstrates that stock price volatility in Indonesian technology sector firms is shaped more strongly by market liquidity and risk related fundamentals than by profitability alone. The findings show that trading volume has a significant negative effect on stock price volatility, suggesting that more active trading contributes to greater price stability through improved liquidity and more efficient information absorption in the market. By contrast, profitability does not significantly affect stock price volatility, indicating that current profit performance is not the main signal driving investor reactions in this sector. This pattern suggests that investors in technology firms are more responsive to indicators associated with uncertainty, valuation, and future prospects than to short term accounting returns. In addition, earnings volatility and the book to market ratio are both found to have significant positive effects on stock price volatility, confirming that instability in firm performance and stronger valuation gaps increase investor uncertainty and intensify market fluctuations.

This shows that, in technology-based firms operating within a digital information environment, stock price movements are influenced not only by internal financial conditions but also by how risk and firm value are interpreted by the market. The study therefore reinforces the view that technology sector stocks are especially sensitive to signals related to earnings stability and valuation pressure. From a practical perspective, the results imply that investors should place greater attention on earnings volatility, liquidity conditions, and book to market positions when assessing risk in technology stocks, while corporate managers need to strengthen earnings stability and maintain market confidence in order to reduce excessive price fluctuations. Although the model explains a substantial proportion of stock price volatility, there remains room for future research to incorporate broader explanatory factors such as investor sentiment, macroeconomic conditions, ownership structure, and digital market dynamics so that the behavior of technology stock volatility can be understood more comprehensively in emerging capital markets.

References

- Anggriani, R. D. A. N., Pratiwi, I. R., & Erfiansyah, E. (2024). The influence of earnings volatility and market risk on stock prices. *Greenation International Journal of Economics and Accounting*, 2(4), 285-293. <https://doi.org/10.38035/gijea.v2i4.280>
- Ardiansah, M. A., Wiratno, A., & Farida, Y. N. (2025). Pengaruh Leverage, Volume Perdagangan, Ukuran Perusahaan, Profitabilitas, Earning Volatility Terhadap Volatilitas Harga Saham (Studi Pada Perusahaan Sektor Teknologi Di BEI Tahun 2021-2023). *Jurnal Riset Akuntansi Soedirman (JRAS)*, 04(01), 169–181.
- Asmara, G. P. D. S. N. (2024). Pengaruh Volume dan Frekuensi Perdagangan Terhadap Volatilitas Harga Saham Pada Perusahaan Indeks LQ45. *Ikraith-Ekonomika*, 8(1), 160–170. <https://doi.org/10.37817/ikraith-ekonomika.v8i1.4289>
- Bali, T. G., Del Viva, L., El Hefnawy, M., & Trigeorgis, L. (2024). Value Uncertainty. *Management Science*, 70(7), 4548–4563. <https://doi.org/10.1287/mnsc.2023.4888>
- Bhowmik, R., & Wang, S. (2020). Stock market volatility and return analysis: A systematic literature review. *Entropy*, 22(5), 522. <https://doi.org/10.3390/e22050522>
- Cahyawati, R. P., & Miftah, M. (2022). Pengaruh Volatilitas Laba, Kebijakan Dividen, Dan Leverage Terhadap Volatilitas Harga Saham Idx30. *Jurnal Riset Akuntansi Dan Keuangan*, 10(3), 541–554. <https://doi.org/10.17509/jrak.v10i3.44213>
- Chordia, T., Roll, R., & Subrahmanyam, A. (2001). Market liquidity and trading activity. *Journal of Finance*, 56(2), 501–530. <https://doi.org/10.1111/0022-1082.00335>
- Church, R. M. (2002). The effective use of secondary data. *Learning and motivation*, 33(1), 32-45. <https://doi.org/10.1006/lmot.2001.1098>
- Dahlia, H., & Zulaihati, S. (2025). Pengaruh Kebijakan Dividen dan Leverage Terhadap Volatilitas Harga Saham dengan Ukuran Perusahaan sebagai Variabel Moderasi pada Perusahaan Sektor Keuangan yang Terdaftar di Bursa Efek Indonesia Tahun 2020-2023. *Ekopedia: Jurnal Ilmiah Ekonomi*, 1(3), 1092-1114. <https://doi.org/10.63822/11tex318>
- Dewi, L. P., Fitria, S. A., Nidia, S. P., & Sitio, V. (2024). Pasar modal dan pengaruhnya terhadap perekonomian di Indonesia. *JAKA (JURNAL AKUNTANSI, KEUANGAN, DAN AUDITING) Упередмети: Fakultas Ekonomi dan Bisnis Universitas Dian Nuswantoro*, 5(1), 196-214. <https://doi.org/10.56696/jaka.v5i1.10755>
- Dhingra, B., Batra, S., Aggarwal, V., Yadav, M., & Kumar, P. (2024). Stock market volatility: a systematic review. *Journal of Modelling in Management*, 19(3), 925-952. <https://doi.org/10.1108/JM2-04-2023-0080>
- Fama, E. F. (1970). *Efficient Capital Markets: a Review of Theory and Empirical Work: Journal of Finance*, 25, May, pp. 383-417 (Issue pp. 383-417). R. Lowbridge (Module Leader). <https://books.google.co.id/books?id=ox48PAAACAAJ>
- Haikal, F. (2025). The impact of trading volume, leverage, earning volatility, firm size, and dividend yield on stock price volatility. *Jurnal Maneksi (Management Ekonomi Dan Akuntansi)*, 14(1), 194-204. <https://doi.org/10.31959/jm.v14i1.2861>
- Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management*, 35(2), 183–191. <https://doi.org/10.1016/j.ijinfomgt.2014.12.005>

- Han, Y. (2023). The Influence of Investor Sentiment on Stock Volatility: Empirical Tests from the Financial Social Media Platform. <https://doi.org/10.6082/uchicago.6098>
- Harimbawa, I. N. T. R., & Sulindawati, N. L. G. E. (2022). Pengaruh Volume Perdagangan Saham, Order Imbalance, Frekuensi Perdagangan, Dan Volatilitas Laba Terhadap Volatilitas Harga Saham. *Vokasi: Jurnal Riset Akuntansi*, 11(01), 82–92. <https://doi.org/10.23887/vjra.v11i01.49750>
- Irmawati, D., & Sunarto, S. (2025). Pengaruh profitabilitas, leverage dan ukuran perusahaan terhadap volatilitas harga saham pada perusahaan yang masuk pada indeks LQ45 yang terdaftar di Bursa Efek Indonesia (BEI) tahun 2020–2023. *Journal of Economic, Business and Accounting (COSTING)*, 8(5), 2443–2452. <https://journal.ipm2kpe.or.id/index.php/COSTING/article/view/14659>
- Jiang, Y., Liu, X., & Lu, Z. (2024). Financial uncertainty and stock market volatility. *European Financial Management*, 30(3), 1618–1667. <https://doi.org/10.1111/eufm.12456>Digital Object Identifier (DOI)
- Liang, T. P., & Turban, E. (2011). Introduction to the special issue social commerce: a research framework for social commerce. *International Journal of Electronic Commerce*, 16(2), 5–14. <https://www.jstor.org/stable/23106391>
- Liu, M., Choo, W. C., Lee, C. C., & Lee, C. C. (2023). Trading volume and realized volatility forecasting: Evidence from the China stock market. *Journal of Forecasting*, 42(1), 76–100. <https://doi.org/10.1002/for.2897>Digital Object Identifier (DOI)
- Maysaroh, S., & Handayani, A. (2025). Leverage, Dividend Policy, and Profitability Effects on IDX30 Stock Price Volatility During 2019–2023. *Jurnal Ilmiah Manajemen Kesatuan*, 13(2), 1051–1060. <https://doi.org/10.37641/jimkes.v13i2.3159>
- Nazir, M. (1988). *Metode Penelitian*. Jakarta: Ghalia Indonesia.
- Nazir, N., & Khairunisa, N. (2022). Pengaruh Leverage, Kebijakan Dividend Dan Ukuran Perusahaan Terhadap Volatilitas Harga Saham. *Jurnal Ekonomi Trisakti*, 2(2), 833–844. <https://doi.org/10.25105/jet.v2i2.14419>
- Nekrasov, A., & Shroff, P. K. (2009). Fundamentals-based risk measurement in valuation. *The Accounting Review*, 84(6), 1983–2011. <https://doi.org/10.2308/accr.2009.84.6.1983>
- O'Hara, M. (1998). *Market Microstructure Theory*. Wiley. <https://books.google.co.id/books?id=D-PGBwAAQBAJ>
- Peng, Z., Johnstone, D., & Christodoulou, D. (2020). Asymmetric impact of earnings news on investor uncertainty. *Journal of Business Finance & Accounting*, 47(1-2), 3–26. <https://doi.org/10.1111/jbfa.12428>Digital Object Identifier (DOI)
- Putri, N. S., & Juniwati, E. J. (2025). The Effect of Stock Trading Volume, Earning Volatility and Interest Rate on Stock Price Volatility in Companies Listed on IDX MES BUMN 17 for the 2021–2023 Period. *Journal of Applied Islamic Economics and Finance*, 5(3), 58–69. <https://doi.org/10.35313/jaief.v5i3.6768>
- Saetban, L. F. (2025). Pengaruh Rasio Profitabilitas, Leverage Dan Dividend Payout Terhadap Volatilitas Harga Saham Pada Perusahaan Indeks LQ45 Yang Terdaftar Di Bursa Efek Indonesia. *Syntax Literate: Jurnal Ilmiah Indonesia*, 10(3), 2530–2548. https://doi.org/10.1007/978-3-031-25984-5_300648

- Sari, W., & Setiyawan, S. (2023). The volatility of technological stocks of the Indonesian Sharia Index during the COVID-19 pandemic. *Journal of Accounting Information System*, 6(1), 53–62. <https://doi.org/10.32627/aims.v6i1.705>
- Shibanda, G., Tobias, O., & Tabitha, N. (2024). Size, Book to Market Factors and Trading Volume Adjustment on Equity Risk Premium an Empirical Evidence from NSE, Kenya. *Journal of Finance and Economics*, 12(4), 89–101. <https://doi.org/10.12691/jfe-12-4-2>
- Sholichah, F., Asfiah, N., Ambarwati, T., Widagdo, B., Ulfa, M., & Jihadi, M. (2021). The effects of profitability and solvability on stock prices: Empirical evidence from Indonesia. *The Journal of Asian Finance, Economics and Business*, 8(3), 885-894. <https://doi.org/10.13106/jafeb.2021.vol8.no3.0885>
- Soukotta, A., Yusuf, M., Zarkasi, Z., & Efendi, E. (2023). Corporate Actions, Earning Volatility, And Exchange Rate Influence On Stock Price Stability. *Inisiatif: Jurnal Ekonomi, Akuntansi dan Manajemen*, 2(2), 197-214. <https://doi.org/10.30640/inisiatif.v2i2.807>
- Spence, M. (1978). Job market signaling. In *Uncertainty in economics* (pp. 281-306). Academic Press. <https://doi.org/10.1016/B978-0-12-214850-7.50025-5>
- Sugiyono. (2020). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta.
- Tan, Q., Rasheed, M. H., & Rasheed, M. S. (2024). Post-COVID-19 technology adoption and noise trading: elucidation of investors' sentiments across cultures. *China Accounting and Finance Review*, 26(4), 431-458. <https://doi.org/10.1108/CAFR-08-2023-0106>
- Utami, A. R., & Purwohandoko. (2021). Pengaruh Kebijakan Dividen, Leverage, Earning Volatility, dan Volume Perdagangan Terhadap Volatilitas Harga Saham Pada Sektor Finance. *Jurnal Ilmu Manajemen*, 9(1), 68–81. <https://doi.org/10.26740/jim.v9n1.p68-81>
- Wiguna, S., & Murwaningsari, E. (2022). The effect of systematic risk, operating cash flow and growth opportunities on future earnings response coefficients (FERC), working capital as A moderation variable. *International Journal of Social and Management Studies*, 3(2), 34-45. <https://doi.org/10.5555/ijosmas.v3i2.111>
- 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>
- Yulianti, P., & Darmawati, D. (2024). Pengaruh Kinerja Lingkungan, Sosial, Tata Kelola, Dan Akuntansi Hijau Terhadap Volatilitas Saham. *Jurnal Ekonomi Trisakti*, 4(2), 673–684. <https://doi.org/10.25105/v4i2.20935>