

Research Paper

Firm value and stock price volatility: The moderating role of esg performance

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Abstract

This study aims to explore the impact of firm value on stock price volatility and the role of ESG performance in moderating this relationship. Using data from non-financial companies listed on the Indonesia Stock Exchange for the period 2014-2023, this study employs a quantitative research approach with Generalized Least Square (GLS) testing. The hypothesis testing method used is regression analysis using Stata17. The study revealed a negative and significant correlation between firm value and stock price volatility, indicating that higher firm value is associated with lower stock price volatility. Additionally, the findings suggested that ESG performance strengthens the relationship between firm value and stock price volatility. The study concludes that improving ESG performance leads to a better corporate reputation, which in turn leads to lower stock price volatility. This research contributes to the existing ESG literature and provides valuable insights for management, regulators, investors, and other stakeholders involved with companies.

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Abstrak

Tujuan dari penelitian ini adalah untuk menguji dampak nilai perusahaan terhadap volatilitas harga saham. Penelitian ini lebih lanjut menyelidiki peran moderasi kinerja ESG pada hubungan antara nilai perusahaan dan volatilitas harga saham. Dengan menggunakan data perusahaan-perusahaan non-keuangan yang terdaftar di Bursa Efek Indonesia untuk periode 2014-2023, penelitian ini menggunakan metode penelitian pendekatan kuantitatif dengan pengujian Generalized Least Square (GLS). Metode pengujian hipotesis yang digunakan adalah analisis regresi menggunakan Stata17. Kami menemukan hubungan yang negatif dan signifikan antara nilai perusahaan dan volatilitas harga saham. Temuan ini juga menunjukkan bahwa perusahaan dengan nilai perusahaan yang lebih tinggi akan menghasilkan volatilitas harga saham yang lebih rendah. Lebih lanjut, kinerja ESG memperkuat hubungan nilai perusahaan dan volatilitas harga saham. Hasil penelitian ini memberikan bukti empiris bahwa perusahaan yang meningkatkan reputasi perusahaannya melalui kinerja ESG, dapat mendapatkan penilaian yang lebih baik dari stakeholder, sehingga semakin rendah volatilitas harga sahamnya. Penelitian ini memberikan kontribusi pada literatur ESG yang sudah ada dan memberikan wawasan kepada manajemen, regulator, investor, dan pihak-pihak lain yang terlibat dengan perusahaan.

Kata Kunci: ESG, Harga Saham, Nilai Perusahaan, Volatilitas

1. Introduction

The capital market is one of the largest investment markets in the world, attracting many investors and institutions who choose to invest their capital, especially in stock instruments. Stock price movements are one of the factors most often considered before making an investment decision. This complex phenomenon refers to the change in the value of a stock over time, which is influenced by various internal factors, such as the performance of the company in question, as well as external factors, such as economic conditions, government policies, market supply and demand, and public purchasing tendencies (Feng et al., 2023). Stock price volatility is an indication of the public's estimate of a company's intrinsic value. Therefore, an examination of trends in stock price movements is often undertaken with the aim of explaining the underlying causes and consequences. Stock price volatility can be influenced by the value of the company.

A company's reputation can be determined by a number of indicators, including the effectiveness of the company's management. A key indicator of the effectiveness of a company's management is often reflected in the company's share price. In the context of investment, stock price is an important factor that investors consider before making investment decisions. When stock prices experience high volatility, investors tend to perceive a stock as a risky investment, while stocks with low volatility are preferred by investors because they are considered to reduce the risk borne by investors (Jao et al., 2020).

The reputation of a company is not only determined by its financial performance, but also by its non-financial performance, namely Environmental, Social, and Governance (ESG) performance. Companies in Indonesia implement ESG principles in operational activities, which are then published through sustainability reports in accordance with the Financial Services Authority Regulation number 51/POJK.03/2017 (Rahmaniati & Ekawati, 2024). In addition, the contribution of companies in Indonesia in ESG activities is increasing in line with the Indonesian government's participation in the Sustainable Development Goals / SDGs 2030 program initiated by the United Nations. The SDGs aim to encourage individuals to integrate ESG considerations into their investment and business decisions. In addition, the existence of ESG IDX Leaders,

which consists of companies that demonstrate commendable financial and ESG performance, motivates many companies to strive to improve their reputation through ESG implementation.

ESG performance serves as a signaling mechanism, through which positive social feedback is conveyed to stakeholders and a good corporate reputation is established. By conveying positive signals about ESG performance to stakeholders, companies reduce information asymmetry by providing better disclosure to them (Hetz, 2016). Company managers act as signalers, publishing sustainability reports to demonstrate their engagement in sustainable business practices to stakeholders as signal receivers. This non-financial information can enrich stakeholders' knowledge of company performance and assist managers in making economic decisions relating to the company. The most widely accepted definition of 'sustainability' is growth, which meets the needs of the present without sacrificing future generations to meet their needs (Santoso, 2024). A responsible company that considers ESG concerns will focus on sustainable growth (Putri *et al.*, 2024).

Research on ESG performance, firm value, and stock price volatility provides mixed results. Research related to firm value and ESG performance found positive (Fuadah *et al.*, 2022; Yoon *et al.*, 2018) and negative relationships (Yu & Xiao, 2022). Furthermore, some research related to firm value and stock price volatility Related to ESG performance and stock prices, research from (Wang *et al.*, 2023) provides empirical evidence that there is a negative relationship between ESG performance and stock price volatility, higher ESG performance can reduce stock price volatility. Furthermore, research from Leite & Uysal (2023) found empirical evidence that high ESG performance as a determinant of investor reaction to positive new information. However, research on ESG performance as a moderator between firm value and stock price volatility is limited. This study places signaling theory at the core of the research theory, with the aim of providing empirical evidence relating to ESG performance and stock price volatility in Indonesia. This study is expected to contribute to the ESG-related literature in Indonesia by analyzing the effect of firm value or corporate reputation on stock price volatility, with ESG performance as a moderating variable.

2. Theoretical Background and Hypothesis

Signalling Theory

Information asymmetry can occur when one party has more information than the other parties involved. In a corporate context, this can lead to agency conflicts between the agent, namely management, and also the principal, namely stakeholders. Companies with good performance will try to reduce information asymmetry by sending reliable 'signals' to the market (Arévalo *et al.*, 2024; Jensen & Meckling, 1976). Investors are risk-averse, and negative signals that affect a company's reputation should have a greater impact than positive signals. These negative signals refer to the quality of the company declining due to poor performance, such as earnings management. Positive signals refer to companies that get various things that improve the company's reputation, for example, good ESG performance (Yasar *et al.*, 2020).

Various studies have explained that ESG performance is a signaling mechanism that provides good social responsiveness to stakeholders, thereby creating a good corporate reputation. By disclosing positive signals about ESG performance to stakeholders, companies reduce information asymmetry in providing better disclosures to stakeholders (Hetz, 2016). Company managers act as signalers, publishing sustainability reports as a signal about their involvement in developing sustainable business practices to stakeholders as signal receivers. This non-financial information can increase stakeholders' knowledge of company performance and support managers in making company-related economic decisions (Connelly *et al.*, 2011; Friske *et al.*, 2023).

Environmental, Social and Governance (ESG) Performance

The implementation of Environmental, Social, and Governance (ESG) performance policies is an important aspect of business operations. ESG can serve as a safeguard for companies facing various potential risks (Fiorillo et al., 2024). A company's ESG performance is projected by its ESG score, which is divided into three main categories: environmental performance (e.g., environmental impact, resource consumption, impact on ecosystems, and waste management); social performance (impact on communities and suppliers, working conditions and environment, and other social impacts); and governance performance (corporate transparency, shareholder and board relations, corruption, and other issues) (Clément et al., 2023).

Firm Value

The intrinsic value of a company is defined as its enterprise value and is usually assessed through stock performance analysis (Chung et al., 2024). Firm value is influenced by a number of factors, which can be classified as micro or macro factors. Micro factors are intrinsic to the firm and include profitability, liquidity ratio, size effect (measured by market capitalization), leverage, price-earnings ratio (E/P), dynamic financing, cash retention, payout policy, entrepreneurial and strategic thinking, research and development, advertising expenditure, corporate cash holdings, human resources, strong brand equity, innovation, corporate resource management, and corporate social media activities. Macroeconomic factors, including news from the media, inflation, and exchange rates, have been shown to affect stock returns. In addition, firm value can be maximized through the implementation of ESG performance (Narula et al., 2024).

Stock Price Volatility

Stock price volatility can be defined as the tendency of prices to change in unpredictable ways. The term “volatility” is used to describe the degree to which random variables spread and the potential for future asset prices to be uncertain. As stated by Bhowmik & Wang (2020), the occurrence of stock price volatility can be attributed to the leverage effect and the feedback hypothesis. The leverage effect is often defined as the emergence of news related to signal theory that can affect stock prices, such as unfavorable news, which can result in a decrease in stock prices and an increase in the leverage factor, which then causes an increase in stock volatility. Conversely, the level of volatility will decrease. Feedback volatility can be succinctly defined as the unpredictable volatility of a stock that will pose a risk in the future.

Hypothesis Development

Corporate reputation represents the quality of the company's management and can increase the confidence of shareholders to become owners of the company. Companies with a high reputation are more solid, so it is considered a factor that determines the trust of shareholders. Corporate reputation can determine the volatility of stock prices (Bravo, 2016). Corporate reputation has an important role in reducing uncertainty in information disclosure. Information disclosed by companies with higher reputation is considered to have high credibility, which is a key factor for shareholders in making decisions (Schwarzkopf, 2007).

Research from OuYang et al. (2017) revealed that the media has an important role in conveying signals related to company performance. The media recodes the information received from the company and compiles it in such a way that it can be used as material for company evaluation. The media serves to mediate stakeholder uncertainty about company characteristics, or acts as a reputation signal. Shareholders assume that reputation influences their decisions, and thus the share price. As a result, a fluctuating increase or decrease in reputation becomes a signal for market interest in stocks, and affects the fluctuating share price of the company (Blajer-Gołębiewska & Nowak, 2024). Thus, an increase in firm value will reduce

volatility in the company's stock price, conversely, a decrease in firm value will encourage volatility in the company's stock price. Based on this explanation, this study builds the following hypothesis:

H1: Firm Value has a negative effect on stock price volatility

At the global level, ESG regulation is becoming increasingly important due to the exponential growth of sustainable investment and market demand for disclosure. In response to this, emerging markets have campaigned for various specific regulations to meet the increasing needs of stakeholders (Pandey *et al.*, 2024). ESG activities are in line with stakeholder needs and can increase company value. The company will have a good image in the eyes of stakeholders if it manages a good relationship with them. There are two mechanisms of ESG performance in creating value. First, higher ESG performance increases expected cash flow and lowers the discount rate. Second, ESG performance can maximize shareholder returns. Shareholders can assess environmental and social risks with the cash flow generated by the company. Shareholders can benefit from owning an ESG-performing company, resulting in an increase in the company's reputation (Yu & Xiao, 2022).

Companies that have a good reputation in ESG performance have increased returns because they have better navigation of market dynamics. This is because companies with good ESG performance have generated good perceptions, reduced risks, and have higher resilience (Pandey *et al.*, 2024). Research from Shakil (2022) found empirical evidence that ESG performance bridges the information gap between companies and stakeholders. Stakeholders will give less reaction due to a good perception of the company's concern for the environment and society and high ESG performance protects the company as protection insurance. The higher the company's involvement in reputation-enhancing ESG performance, the lower the stakeholder reaction, thus the lower the volatility of the company's stock price. Thus, ESG performance can strengthen the relationship between firm value and stock price volatility. Companies with good ESG performance provide an increase in corporate reputation which emphasizes stock price volatility. Based on this explanation, this study develops the following hypothesis:

H2: ESG performance strengthens the relationship between firm value and stock price volatility

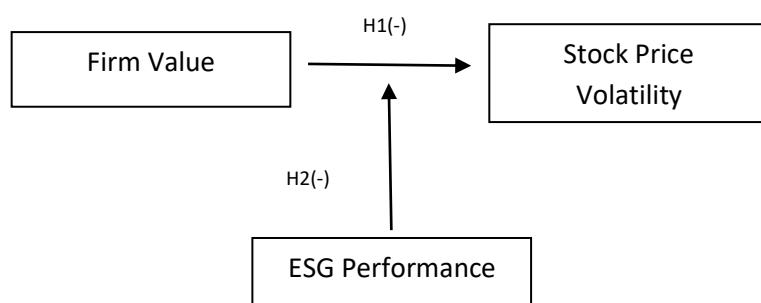


Figure 1. Research model

3. Methodology

Sample and Procedures

This study uses purposive sampling with sample criteria including non-financial companies listed on the Indonesia Stock Exchange (IDX) during the period 2014–2023, having ESG performance scores recorded in the Thomson Reuters database, and having the data completeness required

in this study. Based on these criteria, 252 companies were found to be eligible for inclusion in the sample, with an observation period of nine years, from 2014 to 2023.

Measurement

The independent variable in this study is firm value, measured by Tobin's Q, sourced from the Thomson Reuters database. Tobin's Q is an indicator used to evaluate the company's financial performance, especially regarding company value. Tobin's Q can explain the company's performance over a long period of time, including future profit projections, because it reflects the current market estimate of the return value of each dollar of investment made. A high Tobin's Q value indicates that the market value of a company is also high, thus facilitating investment activities (Samy El-Deeb et al., 2023). The following Tobin's Q formula is used:

$$\text{Tobin's Q} = \frac{\text{total market value of firm}}{\text{total asset value of firm}}$$

The dependent variable in this study is the volatility of the company's stock price, which is measured using the Baskin (1989) Model which is detailed in the following formula:

$$\text{PVOL}_{i,t} = \sqrt{\frac{\text{PH}_{i,t} - \text{PL}_{i,t}}{\left(\frac{\text{PH}_{i,t} - \text{PL}_{i,t}}{2}\right)^2}}$$

Furthermore, this study incorporates control variables into the analysis. The first variable is leverage, which is calculated by dividing total debt by total equity (Soewarno et al., 2017). The second control variable is SIZE which is calculated using the natural logarithm of total revenue and represents the size of the company (Lim & Rokhim, 2020).

Data Analysis Technique

This study uses quantitative research to analyze the relationship between independent and dependent variables by including variables that moderate the relationship between the two (Moderated Regression Analysis) (Butar & Itan, 2025). The study uses secondary data in the form of company financial reports and ESG scores accessed from the OSIRIS and Thomson Reuters databases. The study explains the relationship between company value as an independent variable and stock price volatility as a dependent variable moderated by ESG performance. This study uses the generalized least squares (GLS) method to test the hypothesis. The GLS method is used to ensure that the regression method is Best Linear Unbiased Estimation (BLUE) (White, 1980). The GLS multiple linear regression analysis is performed using STATA 17 software.

4. Results and Discussion

Results

Table 1 presents the descriptive statistics of the research variables. TQ, which represents company market value, shows a minimum value of 0.305, a maximum of 14.415, and a mean of 1.722, indicating variation in firm value among the observed companies. ESG, measured by the ESG score, ranges from 8.162 to 88.857, with an average value of 48.944, suggesting differing levels of environmental, social, and governance performance across firms.

Table 1. Statistical Test Results

Variable	Obs	Mean	Std. dev.	Min	Max
TQ	280	1.722429	1.571702	.3052901	14.41466
ESG	280	48.94448	20.79344	8.162385	88.8574
PVOL	280	.0608229	.0500769	.0087875	.3713907
DER	280	2.129507	11.60156	-7.173955	190.307
SIZE	280	30.78059	1.071656	26.18531	33.33939

Source: Data processed by Stata 17, 2024

SIZE, which proxies company size, has a minimum value of 26.185 and a maximum value of 33.339, with a mean of 30.781, reflecting relatively stable firm size within the sample. DER, representing company leverage, shows considerable dispersion, with values ranging from -7.174 to 190.307 and an average of 2.130, indicating substantial differences in capital structure among firms. Overall, the descriptive statistics suggest sufficient variability across variables to support further empirical analysis.

Table 2. Regression Test Results Model 1

Variables	Coefficient	Z	P Z
TQ	-.0019054	-2.43	0.015**
DER	-3.03e-06	-0.04	0.965
SIZE	-.0037926	-2.42	0.016**
_cons	.1750718	3.60	0.000
Wald Chi2		11.24	
Prob > Chi2		0.0105	
Adjusted R ²		0.1793	
N		252	
Dependent Variable		PVOL	

** significant at $\alpha = 5\%$

Source: Data processed by Stata 17, 2024

The first hypothesis in this study is that firm value has a negative effect on stock price volatility. The regression results show that firm value proxied by Tobin'sQ (TQ) has a significant negative effect on stock price volatility with a coefficient of -0.019054 and a significance level of 0.015, smaller than 5%. These results provide empirical evidence that the higher the firm value, the lower the stock price volatility.

The regression test results of Model 2 of this study are presented in Table 3. The second hypothesis in this study is that ESG performance strengthens the relationship between firm value and stock price volatility. The regression results show that ESG performance proxied by ESG score moderates the relationship between firm value and stock price volatility with a coefficient of -.0001429 and a significance level of 0.001, smaller than 5%. These results provide empirical evidence that ESG performance strengthens the negative relationship between firm value and stock price volatility.

Table 3. Model 2 Moderation Test Results

Variable	Coefficient	Z	P Z
TQESG	-.0001429	-3.32	0.001**
ESG	.0002873	3.08	0.002**
TQ	-.0001711	-0.19	0.849
DER	-.0000285	-0.42	0.677
SIZE	-.0048374	-2.96	0.003**
_cons	.200544	4.07	0.000
Wald Chi2		26.19	
Prob > Chi2		0.0001	
Adjusted R ²		0.1681	
N		252	
Dependent Variable		PVOL	

** significant at $\alpha = 5\%$

Source: Data processed by Stata 17, 2024

This study also includes several control variables, including DER and SIZE. The regression results show that the SIZE variable has a coefficient value of -0.0048374 with a significance level of 0.003 which is below the 5% limit. This indicates that SIZE has a negative effect on PVOL, where larger company size is associated with reduced stock price volatility.

Discussion

Effect of Firm Value on Stock Price Volatility

The first hypothesis of this study states that firm value has a negative effect on stock price volatility. Empirical evidence in this study supports this hypothesis. The higher the firm value perceived by stakeholders, the lower the volatility observed in the company's stock price. The results of this study support the research of Blajer-Gołębiewska (2021), which states that stock market prices reflect the fundamental value of every event related to a company. Companies that openly disclose negative events will experience abnormal fluctuations in their stock prices. Conversely, companies that disclose positive events will have more stable stock prices. In addition to information from companies, rumors disclosed by the media actually increase the effect of stock price fluctuations more significantly (Shi et al., 2023).

This study is also consistent with the findings of previous research. Research from Chapman et al. (2019) which states that high firm value, determined by the role of investor relations, can reduce stock price volatility through the process of information assimilation. This research underscores the importance of investor relations in disseminating favorable signals to the market, thereby facilitating corporate information disclosure and reducing stock price volatility. In addition, it also accelerates the price discovery process and improves the accuracy and uniformity of analysts' projections.

The results of this study reinforce signaling theory, which emphasizes the role of corporate information in shaping investor perceptions. High corporate value serves as a positive signal that can reduce information asymmetry and suppress stock price volatility. For management, these findings underscore the importance of maintaining corporate value through strong fundamental performance and transparent information disclosure. Strengthening investor relations is also an important strategy for minimizing the impact of rumors and information uncertainty in the market. For investors, corporate value can be used as an indicator

in assessing stock volatility risk. In addition, these results provide input for regulators to continue promoting information disclosure in order to create capital market stability.

Moderating Role of ESG Performance

The second hypothesis of this study wants to prove that ESG performance plays a role in strengthening the relationship between firm value and stock price volatility. This study provides empirical evidence indicating that ESG performance strengthens the relationship between firm value and stock price volatility. Research from Shakil (2022) provides empirical evidence that ESG performance in textile companies has a role in reducing volatility and market risk. ESG performance enhances the company's reputation in the stock market, creating protection for the company in times of declining financial performance. Stakeholders help the company in difficult times by maintaining investment in the company. ESG-related news is value relevant, with research from Serafeim & Yoon (2023) providing evidence that positive news generates a positive market reaction and negative news generates a negative reaction. The reaction from positive news is associated with 75 basis points higher stock returns than negative news. This research is also supported by the findings of Xu *et al.* (2025) ESG performance affects the stock price volatility risk of listed companies by reducing the level of corporate earnings management and improving corporate reputation. This can reduce idiosyncratic risk and extreme risk in stock prices. The increased information and transparency generated during the ESG governance process contributes to a more accurate evaluation of firm value by investors leading to reduced volatility of stock prices.

Research from Saminem *et al.* (2024) discusses integrated reporting that is effective in increasing market perceptions of company value. The value of the company increases along with the good sustainable performance of the company, resulting in an increase in stock prices. In addition, Pandey *et al.* (2024) indicate that increasingly stringent ESG regulations and policies in emerging markets motivate companies to be more transparent in ESG disclosure. By doing so, companies not only meet stakeholder expectations, but also mitigate information asymmetries that may affect stock price volatility and enhance corporate value and reputation. This will influence investment decisions and subsequently the company's share price.

The results of this study imply that ESG performance plays a strategic role as a mechanism for strengthening corporate value signals in reducing stock price volatility. Good ESG integration enhances stakeholder reputation and trust, giving companies stronger protection against market volatility, especially during periods of declining financial performance. For management, these findings emphasize the importance of making ESG part of long-term strategy, rather than merely regulatory compliance. Transparency and quality of ESG disclosure have been shown to reduce information asymmetry and idiosyncratic stock risk. For investors, ESG performance can be used as an additional indicator in assessing company stability and risk. Furthermore, these results support the role of regulators in strengthening ESG policies to create a more stable and sustainable capital market.

5. Conclusion

This study aims to analyze the relationship between firm value and stock price volatility, with ESG performance as a moderating variable. This study provides empirical evidence that the higher the firm value, the lower the stock price volatility. Firm value has a role in reducing information uncertainty, so the company can be considered to have high credibility. Companies that provide a good image will increase the trust of shareholders, so that stock price volatility decreases because the company has good value. Then, this study provides empirical evidence that companies with good ESG performance will strengthen the negative relationship between firm value and stock price volatility. ESG performance has a significant impact on market

reaction, with positive news increasing stock prices and negative news decreasing them. Good ESG performance can reduce stock price volatility by increasing transparency and corporate reputation. In addition, effective integrated reporting can improve market perceptions of firm value. Strict ESG policies also promote corporate transparency, reduce information asymmetry, and enhance corporate value and reputation, which in turn influence investment decisions and stock prices.

Limitations

This study has several limitations. First, this research is limited to using samples from Indonesia. Second, the sample is limited to non-financial companies. Third, observations are limited to 2014-2023. This study can provide several suggestions for future research. First, future research can expand the research sample (country, year, and company sector). Second, research can add other moderating or mediating variables to analyze variables that can affect the relationship between firm value and stock price volatility.

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