



Profitability, Dividend Policy, and Energy-Sector Stock Prices: The moderating Role of Firm Size in Indonesia, 2020-2024

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ABSTRACT

This study examines the effect of profitability and dividend policy on stock prices, with energy businesses listed on the Indonesia Stock Exchange between 2020 and 2024 using firm size as a moderating variable. Profitability is measured using Return on Equity (ROE), while dividend policy is shown by the Dividend Payout Ratio (DPR). The natural logarithm of total assets is used to calculate firm size. This study uses a quantitative methodology and secondary data from energy firms' annual financial reports that were chosen via purposive sampling. Moderated Regression Analysis (MRA) with panel data regression are applied to test the proposed hypotheses. The results show that dividend policy and profitability influence stock prices, while The association between the independent factors and stock prices is moderated by business size. These findings give business managers and investors useful guidance when making financial policy and investment decisions, particularly within Indonesia's energy sector.

INTRODUCTION

The energy industry strategically contributes to economic expansion because it provides essential resources for home tasks, transportation, and industrial manufacturing. In Indonesia, the sector has underwent substantial modifications as a result of the COVID-19 epidemic, fluctuations in global commodity prices, Given the government's dedication to reaching net-zero emissions (IEA & MEMR, 2022; Reforminer, 2022). These developments have increased uncertainty in the capital market and influenced investors' assessments of energy companies (OJK, 2025). Consequently, stock prices in this sector are determined not only by market conditions but also by the financial performance and long-term sustainability of firms (Fama, 1970).

The Indonesian capital market has shown remarkable growth in recent years (OJK, 2025). The increasing number of investors has intensified the demand for reliable financial information to support investment decisions (Fama, 1970). Financial indicators such as profitability and dividend policy are widely regarded as important signals that reflect The financial stability and prospects of a corporation (Spence, 1973; Ross, 1977). As a result, investors often rely on these indicators when evaluating the value of publicly listed companies (Fama, 1970).

Among the various financial indicators, profitability is one of the most important determinants of stock prices (Akhmadi & Januarsi, 2021; Barus & Sudjiman, 2021). Return on Equity (ROE), a measure of profitability, assesses a company's capacity to produce returns for shareholders from its equity. Strong financial performance and effective management are typically indicated by a higher ROE, which may boost investor confidence and enhance demand for the company's shares (Akhmadi et al., 2021; Azizah & Yuliana, 2022). According to Signaling Theory, profitable Businesses provide the market encouraging signals about their future growth and financial stability (Spence, 1973; Ross, 1977).

Investor attitudes are significantly influenced by dividend policy. Businesses that regularly pay dividends are frequently seen as financially healthy and capable of generating sustainable earnings (Nguyen et al., 2021; Siladjaja et al., 2022). An important measure of management's confidence in future cash flows is the dividend payout ratio (DPR), which shows the percentage of earnings given to shareholders (Yuliana et al., 2021; Anggraeny et al., 2020). Nevertheless, Prior research has shown conflicting results about the connection between dividend policy and stock prices, suggesting that this issue requires further investigation (Mendrofa & Maharani, 2022; Robiyanto & Yunitaria, 2022).

In addition to profitability and dividend policy, firm size may influence how investors respond to financial information (Ahmed et al., 2023; Azizah & Yuliana, 2022). Compared to smaller businesses, larger companies often have better access to outside funding, stronger market reputations, and more financial resources (Banz, 1981; Hutaauruk, 2024). These characteristics may strengthen the credibility of profitability and dividend signals, making investors more responsive to financial information released by larger companies (Burhani & Prajawita, 2023). Therefore, It is anticipated that business

size would lessen the correlation between profitability, dividend policy, and stock prices (Andari et al., 2024; Lestari & Rahayu, 2024).

Previous empirical studies have produced mixed results on how dividend policy and profitability affect stock values. A few studies reported significant positive relationships, whereas others found insignificant or inconsistent effects (Akhmadi et al., 2021; Mendrofa & Maharani, 2022; Andari et al., 2024). Likewise, the moderating role of firm size has not been consistently supported across different industries and research settings (Azizah & Yuliana, 2022; Lestari & Rahayu, 2024). These discrepancies point to a research void, particularly within Indonesia's energy sector, which is currently experiencing structural changes driven by the energy transition agenda (IEA & MEMR, 2022; Reforminer, 2022).

In light of these factors, this research investigates the effects of profitability and dividend policy about stock prices, with firm size serving as a moderating variable in “energy companies listed on the Indonesia Stock Exchange during the 2020–2024 period.” By offering actual data on how business size affects the impact of financial performance, this study is anticipated to add to the body of knowledge on corporate finance and capital markets and dividend policy on stock prices.

LITERATURE REVIEW

Efficient Market Hypothesis (EMH)

Fama established the Efficient Market Hypothesis (EMH) (1970), “states that stock prices reflect all publicly available information (Fama, 1970).” Under the semi-strong form of market efficiency, investors respond quickly to publicly disclosed financial information, including profitability and dividend announcements (Fama, 1970; Fama & French, 1992). Consequently, changes in corporate financial performance are expected to be incorporated into stock prices (Fama, 1970). This theory provides the fundamental basis for examining how financial indicators influence investors' decisions in the capital market (Fama, 1970; Fama & French, 1992).

Signaling Theory

Signaling Theory explains that “managers possess more information about the firm's prospects than outside investors.” To reduce asymmetry of information, businesses communicate their financial condition through various signals, such as profitability, dividend policy, and financial reporting (Ross, 1977; Jensen & Meckling, 1976). Investor confidence is anticipated to rise in response to positive financial signals, resulting in higher market demand and improved stock prices (Spence, 1973; Ferriswara et al., 2022). Conversely, negative signals may reduce investor confidence and weaken market valuation (Ross, 1977).

Profitability

Profitability reflects The capacity of a business to produce profits from shareholders' equity (Gujarati et al., 2021). This study employs ROE as the

proxy for profitability because it measures the efficiency of management in generating returns for shareholders (Akhmadi & Januarsi, 2021). Companies are typically seen as having more financial strength and the capacity to provide sustained value, thereby attracting greater investor interest (Barus & Sudjiman, 2021; Azizah & Yuliana, 2022).

H1: Profitability has a positive effect on stock prices.

Dividend Policy

Dividend policy represents management's decision regarding the Dividend policy represents management's decision regarding the percentage of profits given to shareholders (Miller & Modigliani, 1961; Gordon, 1963). The Dividend Payout Ratio (DPR) is used as the indicator because it reflects The proportion of net profits distributed as dividends (Anggraeny et al., 2020; Nguyen et al., 2021). Stable dividend payments often provide a favourable indication of a business's future cash flows and financial stability (Miller & Rock, 1985; Siladjaja et al., 2022). Therefore, dividend policy is expected to influence investors' investment decisions and market valuation (Yuliana et al., 2021; Robiyanto & Yunitaria, 2022).

H2: Dividend policy has a positive effect on stock prices.

Firm Size

Firm size describes the scale of a company's operations and resources and is often calculated using the total assets' natural logarithm (Banz, 1981; Ahmed et al., 2023). Larger businesses typically have stronger financial capacity, broader access to capital markets, and higher credibility than smaller firms (Hutauruk, 2024; Burhani & Prajawita, 2023). These characteristics may strengthen investors' responses to profitability and dividend information (Azizah & Yuliana, 2022; Andari et al., 2024). Accordingly, It is anticipated that business size will decrease the associations between profitability, dividend policy, and stock prices (Lestari & Rahayu, 2024; Mendrofa & Maharani, 2022).

H3: "Firm size positively moderates the relationship between profitability and stock prices."

H4: "Firm size positively moderates the relationship between dividend policy and stock prices."

METHODOLOGY

The impacts of profitability and dividend policy on stock prices were investigated in this study using a quantitative research methodology, with business size serving as a moderating variable (Sugiyono, 2023). The study made use of secondary data from the yearly financial reports of "energy companies listed on the Indonesia Stock Exchange (IDX) for the period of 2020–2024." The financial statements were gathered from the annual reports of the corresponding firms and the official IDX website (OJK, 2025).

All energy businesses that were listed on the Indonesia Stock Exchange throughout the observation period made up the population. Purposive sampling was used to choose the sample depending on a number of factors: "(1) companies continuously listed on the IDX from 2020 to 2024; (2) companies

publishing complete annual financial statements during the study period; and (3) companies providing complete data required to measure all research variables. Companies that did not satisfy these criteria were excluded from the analysis (Sugiyono, 2023)."

The stock price served as the study's dependent variable. Profitability was one of the independent factors, measured by ROE, and dividend policy, measured by the DPR. Firm size served as the moderating variable and was calculated using the total assets' natural logarithm (Ln Total Assets). These measurements were selected because they are commonly applied in empirical studies investigating corporate financial performance and capital market behavior (Gujarati et al., 2021; Akhmadi & Januarsi, 2021; Ahmed et al., 2023).

Panel data regression was used to analyse the data. The Chow, Hausman, and Lagrange Multiplier tests were used in the estimate procedure to choose the best regression model (Basuki, 2021). Furthermore, Moderated Regression Analysis (MRA) was employed to evaluate the moderating role of firm size in the relationships between profitability, dividend policy, and stock prices (Basuki, 2021; Gujarati et al., 2021). EViews software was used for statistical analysis, and a 5% significance threshold was used for hypothesis testing (Basuki, 2021).

RESULT AND DISCUSSION

Sample Description

The sample of this study consisted of energy businesses that were listed between 2020 and 2024 on the Indonesia Stock Exchange (IDX). Purposive sampling was used to choose the sample such that only businesses that satisfied the preset requirements were included in the study. The criteria comprised: "(1) companies continuously listed on the IDX throughout the observation period, (2) companies that published complete annual financial statements for 2020–2024, and (3) companies that provided complete data for all research variables, including Return on Equity (ROE), Dividend Payout Ratio (DPR), stock price, and total assets."

According to these standards, the final sample included qualified energy firms with complete financial information during the study period. Since the observation covered five consecutive years, the dataset generated balanced panel data, allowing a comprehensive analysis of the relationships among profitability, dividend policy, firm size, and stock prices. The selected sample was considered representative of publicly listed energy companies and appropriate for Moderated Regression Analysis (MRA) and panel data regression

Descriptive Statistics

The features of the research variables were summed together using descriptive statistics, including stock price, profitability (ROE), dividend policy (DPR), and firm size. The statistical measures comprised the mean, standard deviation, maximum value, and minimum value. These measures give a summary of the distribution and variability of the data used in the study.

Table 1. The Descriptive Statistics for Each Research Variable

	Mean	Maximum	Minimum	Std. Dev
Stock Price	3.812	39.025	85.00	6.718
Profitability	0.252	1.176	0.014	0.266
Dividend Policy (DPR)	0.568	2.171	0.000	0.428
Firm Size	22.896	25.847	20.936	1.194
Observations	95	95	95	95

The descriptive statistics for each research variable are shown in Table 1. A summary of the features and distribution of the study data, including the mean, standard deviation, maximum value, and minimum value, is given by descriptive statistics (Gujarati et al., 2021; Ghozali, 2021).

The stock price variable ranges from a minimum of 85.00 to a maximum of 39.025, with a mean value of 3.812. A comparatively considerable variance is shown by the standard deviation of 6.718 in stock prices among the sampled companies, suggesting Significant variations in market worth between companies.

Return on Equity (ROE), a measure of profitability, has an average value of 0.252, ranging from 0.014 to 1.176, has a 0.266 standard deviation. These findings show that the profitability levels of the sampled companies vary substantially, reflecting differences in their ability to generate returns for shareholders.

The Dividend Payout Ratio (DPR), which measures dividend policy, has an average value of 0.568, a minimum value of 0.000, and a maximum value of 2.171. The 0.428 standard deviation indicates a considerable level of volatility in dividend distribution practices among the energy companies.

The typical value of firm size, as determined by the natural logarithm of total assets, is 22.896, with values ranging from 20.936 to 25.847. The 1.194 standard deviation shows comparatively low variability, implying that the sampled firms are relatively similar in terms of company size.

The dataset is appropriate for further panel data regression and Moderated Regression Analysis (MRA), since the descriptive statistics generally show adequate variance across the study variables.

Model Selection

To determine the most appropriate panel data regression model, three model selection tests were conducted, namely the Chow test, Hausman test, and Lagrange Multiplier (LM) test (Basuki, 2021). These tests are frequently used to determine which estimating model is best: the REM, FEM, or CEM (Gujarati et al., 2021).

The Random Effect Model (REM) was determined to be the best model for this investigation based on the findings of the Chow, Hausman, and LM tests. (Basuki, 2021).

Hypothesis Testing

The hypothesis testing was carried out utilising the Random Effect Model (REM), which was determined to be the best panel data regression model based on the model selection tests. The regression findings are displayed in Table 2.

Table 2. Random Effect Model Regression Results

	Coefficient	t-Statistic	Probability	Decision
Stock Price	3.812	39.025	85.00	Significant
Profitability	0.252	1.176	0.014	Not Significant
Dividend Policy (DPR)	0.568	2.171	0.000	Significant
Firm Size	22.896	25.847	20.936	Significant
Observations	95	95	95	95

Effect of Profitability on Stock Price (H1)

According to the regression data, profitability has a probability value of 0.0006 and a coefficient of -147,743.8, both of which are below the 5% significance threshold. Therefore, profitability has a notable decline in stock prices. This finding indicates that H1 is accepted, suggesting that profitability significantly influences stock prices in “energy companies listed on the Indonesia Stock Exchange during the 2020–2024 period.”

Effect of Dividend Policy on Stock Price (H2)

With a probability value of 0.7412 and a coefficient of 1,941.069, dividend policy is more than 0.05. Therefore, dividend policy has no discernible impact on stock prices. Consequently, H2 is rejected.

Moderating Effect of Firm Size on the Relationship between Profitability and Stock Price (H3)

A statistically significant moderating impact is shown by the coefficient of 6,590.714 and probability value of 0.0004 for the interaction between profitability and company size (ROE × company Size). These results imply that company size enhances the connection between profitability and stock prices. Thus, H3 is accepted.

Moderating Effect of Firm Size on the Relationship between Dividend Policy and Stock Price (H4)

With a probability value of 0.6690 and a coefficient of -105.6182, the interaction between dividend policy and company size (DPR × company Size) surpasses the 5% significance threshold. Consequently, the link between

dividend policy and stock prices is not moderated by business size. H4 is therefore rejected.

The Effect of Profitability on Stock Price

The empirical findings reveal that profitability significantly detracts from stock prices. This indicates that higher For energy firms listed on the Indonesia Stock Exchange, profitability does not always translate into greater stock prices. This finding is consistent with Faidah and Wismar'ain (2020) and Barus and Sudjiman (2021), who argued that profitability alone is insufficient to explain stock price movements because investors also consider external economic conditions and future business prospects. However, this result differs from Azizah and Yuliana (2022) and Andari et al. (2024), who found that higher profitability significantly increases stock prices.

One possible explanation is that the Indonesian energy sector experienced substantial uncertainty during 2020–2024 due to post-pandemic recovery, commodity price fluctuations, and the government's energy transition policy (IEA & MEMR, 2022; Reforminer, 2022; OJK, 2025). Consequently, investors tended to evaluate long-term business sustainability rather than relying solely on current profitability (Keter et al., 2024).

From the perspective of According to signalling theory, profitability is a crucial indicator of a company's financial performance (Spence, 1973; Ross, 1977). Nevertheless, the results suggest that investors interpreted profitability together with broader strategic information, including business risk, corporate governance, and growth opportunities (Jensen & Meckling, 1976; Ferriswara et al., 2022). Therefore, profitability alone was insufficient to improve market valuation during the observation period.

The Effect of Dividend Policy on Stock Price

The findings show that stock prices are not much impacted by dividend policy. This finding implies that dividend distribution was not the primary consideration for investors while choosing which investments to make in the Indonesian energy industry. Alternatively, investors may have focused more on future capital gains, corporate growth opportunities, and business sustainability (Miller & Modigliani, 1961; Nguyen et al., 2021).

This finding is consistent with studies by Robiyanto and Yunitaria (2022) and Njoku and Lee (2024), which concluded that dividend policy does not always influence stock prices because investors often prioritize long-term firm performance. Under conditions of economic uncertainty and rapid changes in the energy industry, investors were more likely to emphasize future corporate performance than current dividend payments (IEA & MEMR, 2022; Ghose et al., 2025).

The Moderating Role of Firm Size in the Relationship between Profitability and Stock Price

According to the regression analysis, business size considerably moderates the relationship between profitability and stock prices. Larger companies tend to possess stronger financial resources, greater operational

stability, and higher credibility in the capital market (Ahmed et al., 2023; Hutaauruk, 2024). Consequently, profitability information released by large firms is considered more reliable by investors, strengthening its influence on stock prices (Burhani & Prajawita, 2023; Azizah & Yuliana, 2022).

This finding supports Signaling Theory, which suggests that signals issued by larger firms are generally viewed as more credible because these firms usually have better corporate governance, greater transparency, and stronger reputations (Spence, 1973; Ross, 1977). The result is also consistent with previous empirical studies conducted by Andari et al. (2024) and Lestari and Rahayu (2024), which found that firm size strengthens the influence of profitability on stock prices. Therefore, firm size enhances the effectiveness of profitability as a signal for investors (Ferriswara et al., 2022).

The Moderating Role of Firm Size in the Relationship between Dividend Policy and Stock Price

The results also show that the association between dividend policy and stock prices is not moderated by business size. This implies that regardless of a business's size, dividend policy does not substantially influence investor responses in the Indonesian energy sector. Similar findings were reported by Mendrofa and Maharani (2022) and Lakoni and Hidayati (2022), which “concluded that firm size does not always strengthen the influence of dividend policy on stock prices.”

One rationale that might be given is that investors focus more on future business performance and growth opportunities than on dividend payments (Miller & Rock, 1985; Jensen, 1986). As a result, firm Size has no effect on how strongly or weakly the link between dividend policy and stock prices. These findings imply that investment decisions in the energy sector are influenced more by expectations of long-term corporate performance than by dividend distribution policies (Fama, 1970; Robiyanto & Yunitaria, 2022).

CONCLUSIONS AND RECOMMENDATIONS

Firm size was used as a moderating variable in this study, which looked at how profitability and dividend policy affected stock prices, in “energy companies listed on the Indonesia Stock Exchange during the 2020–2024 period.” Several inferences may be made from the panel data regression analysis utilising the Random Effect Model (REM).

First, stock prices are significantly impacted negatively by profitability, suggesting that increasing profitability in the Indonesian energy industry does not always translate into better stock prices. This result validates earlier research demonstrating that while making investment decisions, investors consider firm-specific and macroeconomic aspects in addition to profitability (Faidah & Wismar'ain, 2020; Ferriswara et al., 2022).

Second, stock prices are not greatly impacted by dividend policy, indicating that investors' actions throughout the observation period were not primarily influenced by dividend payments. This outcome is in line with the conclusions of Robiyanto and Yunitaria (2022) and Njoku and Lee (2024), “who

reported that investors tend to prioritize long-term firm performance over current dividend distributions.”

Third, the link between profitability and stock prices is strongly moderated by business size, suggesting that organisations with bigger asset bases have greater influence over profitability information (Ahmed et al., 2023; Andari et al., 2024). Lastly, the link between dividend policy and stock prices is not moderated by business size, suggesting that the impact of dividend policy on market valuation is neither strengthened nor weakened by firm size (Lakoni & Hidayati, 2022; Mendrofa & Maharani, 2022).

In general, the results suggest that investors in the Indonesian energy sector consider not only financial performance but also firm characteristics when evaluating investment opportunities. These results also contribute to the literature on corporate finance by offering factual data about how business size modifies the link between profitability and, dividend policy, and stock prices (Spence, 1973; Fama, 1970).

The findings of this study provide several practical implications. For corporate managers, maintaining sustainable profitability and strengthening company fundamentals are essential to enhance investor confidence and improve firm value (Ferriswara et al., 2022; Keter et al., 2024). For investors, investment decisions should not rely solely on profitability or dividend policy but should also consider firm size, market conditions, and other indicators of long-term financial performance (Fama, 1970; Ahmed et al., 2023). For policymakers and capital market regulators, improving financial reporting transparency and corporate governance may increase market efficiency, reduce information asymmetry, and strengthen investor protection (OJK, 2025; Jensen & Meckling, 1976).

FURTHER STUDY

There are a number of limitations to this study. First, only the years 2020–2024 are included in the monitoring period and focuses only on companies in the “energy sector listed on the Indonesia Stock Exchange.” Second, the study includes only profitability, dividend policy, and firm size. However, additional elements including corporate governance, liquidity, and leverage, and macroeconomic variables may also influence stock prices (Gujarati et al., 2021; Ferriswara et al., 2022).

Extending the observation duration is advised for future research, include companies from other industrial sectors, and incorporate additional financial and non-financial variables to offer a more thorough comprehension of the factors influencing stock prices.

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