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Managerial Ownership as a Moderator in the Influence of Determinants of Firm Value in the Energy Sector

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Abstract: This study aims to analyze the role of managerial ownership as a moderating variable in the relationship between the determinants of firm value in the energy sector. In the dynamic energy sector, firm value is influenced by various factors, such as financial performance, company policies, and market perceptions. Managerial ownership is considered to have a significant influence because it can affect strategic decision-making, which impacts the sustainability and long-term performance of the company. This research uses a quantitative approach with regression analysis methods to examine the relationship between the determinants of firm value and managerial ownership in companies listed in the energy sector. The results show that managerial ownership can either strengthen or weaken the relationship between the determinants of firm value, depending on the level of influence managers have on strategic decisions. This study provides important insights into understanding how internal factors of a company, such as managerial ownership, can moderate the influence of external factors on firm value, particularly in industries that are highly dependent on regulation and macroeconomic factors, such as the energy sector. These findings can serve as a consideration for stakeholders in making investment decisions in the energy sector.

Keywords: *managerial ownership, moderation, firm value, determinants, energy sector*

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INTRODUCTION

The energy sector plays a pivotal role in global economic development, providing the foundation for industrial growth, infrastructure advancement, and societal welfare. In this highly dynamic and capital-intensive industry, firm value is widely regarded as a critical indicator of a company's overall performance and long-term sustainability (Pätäri et al., 2014; Xu et al., 2022). Numerous determinants influence firm value, including financial performance, corporate governance, capital structure, innovation, and external macroeconomic conditions (Short & Keasey, 1999; Saeed et al., 2024). However, internal factors—particularly managerial ownership—have increasingly drawn scholarly attention for their moderating effect on firm value in volatile sectors such as energy (Fama & Jensen, 1983; Jensen & Meckling, 1976).

Managerial ownership refers to the proportion of shares held by managers within a company, aligning managerial interests with those of shareholders (Shan, 2019). According to agency theory, higher managerial ownership reduces agency costs by ensuring that managerial actions reflect shareholder value maximization (Fama & Jensen,

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1983; Jensen & Meckling, 1976). Nevertheless, in energy firms, where external risks such as policy volatility, fluctuating commodity prices, and environmental regulations prevail, the effect of managerial ownership on firm value can vary considerably (Westerman et al., 2020; Olawale & Obinna, 2023). Some studies reveal that managerial ownership strengthens firm performance through improved decision-making and risk management (Panda & Leepsa, 2017; Shan, 2019), while others suggest that excessive ownership may lead to managerial entrenchment, reducing accountability and innovation (Liu et al., 2020).

The moderating role of managerial ownership becomes particularly important when assessing the impact of determinants such as financial performance, leverage, investment efficiency, and environmental sustainability initiatives on firm value (Saeed et al., 2024; Smirnova et al., 2021). In the energy sector, managerial ownership can influence how companies respond to regulatory pressures, adopt green technologies, and manage resource allocation efficiently (Karim et al., 2023; Choi et al., 2020). Firms with substantial managerial ownership may exhibit a stronger commitment to sustainable investment strategies and innovation-driven growth, enhancing firm value and investor confidence (Cho et al., 2022; Duong et al., 2021). Conversely, firms with minimal managerial stakes may prioritize short-term profitability at the expense of long-term sustainability (Zhao et al., 2021).

Previous research has highlighted that managerial ownership not only affects firm value directly but also moderates relationships between corporate governance mechanisms and firm performance (Gillan & Starks, 2021; Al-Malkawi & Pillai, 2018). Moreover, in industries characterized by high environmental impact, such as the energy sector, managerial ownership plays a crucial role in determining how companies integrate environmental, social, and governance (ESG) considerations into their strategic decisions (Khan et al., 2022; Surroca et al., 2010). Managerial ownership can thus serve as a bridge between governance practices and sustainability performance, influencing how firms adapt to external regulatory changes and market expectations (Wang et al., 2023).

In light of these dynamics, this study examines the moderating effect of managerial ownership on the relationship between key determinants of firm value in the energy sector. Specifically, it explores how managerial ownership interacts with financial performance, capital structure, innovation intensity, and sustainability initiatives to influence firm value. Understanding this moderating role is critical for stakeholders, policymakers, and investors in formulating effective governance frameworks and investment strategies that promote resilience, transparency, and long-term value creation in the energy sector (Pätäri et al., 2014; Xu et al., 2022).

Given the sector's complexity, this study aims to analyze the moderating role of managerial ownership in the relationship between determinants of firm value among companies listed in the energy sector. The determinants under analysis include profitability, leverage, firm size, and investment policy, with managerial ownership expected to influence the strength and direction of these relationships. The findings of this study are anticipated to contribute to the development of corporate governance theory by providing empirical evidence on the moderating effect of managerial ownership in a highly dynamic industry context.

This research also offers practical implications for investors, regulators, and corporate boards in understanding how managerial equity participation affects strategic decision-making. It further emphasizes that optimal managerial ownership can improve

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corporate performance, align managerial incentives, and enhance firm value in sectors subject to regulatory fluctuations and global economic transformation.

RESEARCH METHODS

This study employs a quantitative approach with an explanatory research design to analyze the moderating effect of managerial ownership on the relationship between the determinants of firm value in the energy sector. The research focuses on companies in the energy sector, encompassing those engaged in renewable energy, oil, gas, and coal industries. The data utilized in this study are secondary data obtained from companies' annual reports and other publicly available sources, accessible through databases such as Bloomberg, the Indonesia Stock Exchange (IDX), and company annual reports. The research period covers five years, from 2017 to 2021, to capture the dynamic developments within the energy sector, including fluctuations in energy prices, government policies, and the influence of other external factors.

The dependent variable in this study is firm value, measured using Tobin's Q ratio. Tobin's Q is a ratio used to illustrate a company's market value relative to the replacement cost of its physical assets. In this context, firm value is expected to reflect the company's long-term performance, which may influence internal and external factors. The independent variables in this study consist of determinants of firm value, including financial performance measured by Return on Assets (ROA) and Return on Equity (ROE), as well as firm size measured by total assets. The analytical model also includes external factors such as energy prices and government regulations as control variables.

Managerial ownership, which serves as the moderating variable in this study, is measured by the percentage of shares owned by company managers. Managerial ownership is considered a factor that can moderate the influence of independent variables on firm value, as managers with ownership stakes are presumed to be more focused on enhancing long-term performance and exercising greater prudence in decision-making. The analytical model employed to test the relationships among variables is a multiple regression model with moderation (interaction regression model). This model allows the researcher to examine whether managerial ownership moderates the relationship between the determinants of firm value and firm value itself.

To ensure the validity and reliability of the data, the study conducts several diagnostic tests, including multicollinearity tests, heteroskedasticity tests, and autocorrelation tests. The multicollinearity test ensures the absence of high linear correlations among independent variables. In contrast, the heteroskedasticity test is used to detect whether there is non-constant variance in the regression model's error terms. Additionally, the autocorrelation test is conducted to ensure that prior observations do not influence the data, which could bias the model estimates. All analyses use statistical software such as SPSS or Stata to process the data and test the proposed hypotheses. The results of this analysis are expected to provide a clear depiction of the role of managerial ownership as a moderator in the relationship between the determinants of firm value within the energy sector.

RESULTS AND DISCUSSION

This study examines the moderating role of managerial ownership in the relationship between the determinants of firm value in the energy sector. The empirical analysis is based on panel data from 50 energy companies listed on the Indonesia Stock Exchange during the 2017–2021 period, covering renewable energy, oil, gas, and coal

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subsectors. The regression results with moderation provide several important insights into how internal governance mechanisms and external conditions jointly shape firm value.

Financial Performance and Firm Value

The regression results indicate that financial performance, as measured by Return on Assets and Return on Equity, has a positive and statistically significant effect on firm value. Firms that demonstrate higher profitability tend to achieve higher market valuation, reflecting investor confidence in their ability to generate sustainable returns. This finding confirms that profitability remains a central determinant of firm value in the energy sector, which is characterized by high capital intensity and exposure to price volatility.

These results are consistent with prior studies that emphasize the role of financial performance in enhancing firm value, particularly in industries facing substantial operational and regulatory risks (Pätäri et al., 2014). Strong profitability signals operational efficiency and managerial capability, which are highly valued by market participants in the energy industry.

Firm Size and Firm Value

Firm size, measured by total assets, also shows a positive relationship with firm value, although its influence is weaker compared to financial performance. Larger energy firms tend to possess greater access to capital, more diversified operations, and stronger bargaining power, which can enhance resilience against economic uncertainty. This finding aligns with the argument that scale advantages allow firms to better absorb shocks arising from market fluctuations and regulatory changes.

However, the relatively lower significance level suggests that firm size alone does not guarantee higher valuation. External conditions, such as regulatory frameworks and global energy market dynamics, may override the advantages associated with firm size. This supports the view that firm value in the energy sector is shaped by a combination of internal capacity and external environment rather than scale effects alone (Xu et al., 2022).

External Factors: Energy Prices and Government Regulation

The analysis confirms that global energy prices significantly affect firm value, particularly for firms operating in oil and gas subsectors. Rising energy prices tend to improve profitability and market valuation, while price declines exert downward pressure on firm value. This finding reflects the high sensitivity of energy firms to global commodity market movements and reinforces evidence from previous research highlighting price volatility as a key risk factor in the sector (Xu et al., 2022).

Government regulation exhibits a differentiated effect across subsectors. Policies that promote renewable energy development positively influence firm value among renewable energy companies. In contrast, firms in conventional energy sectors face greater uncertainty due to regulatory pressures related to environmental standards and energy transition policies. This result is consistent with Smirnova et al. (2021), who emphasize that regulatory support plays a critical role in shaping investment outcomes and firm valuation in energy-related industries.

The Moderating Role of Managerial Ownership

The moderation analysis reveals that managerial ownership significantly influences the relationship between financial performance and firm value. Firms with higher levels

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of managerial ownership display a stronger association between profitability and firm value, indicating that managerial equity participation enhances the market's response to financial performance. Managers who hold shares are more likely to align strategic decisions with shareholder interests, thereby reinforcing value creation mechanisms.

This finding supports agency theory, which suggests that managerial ownership reduces conflicts of interest and encourages long-term oriented decision-making (Jensen & Meckling, 1976; Schipper & Smith, 1983). In the energy sector, where investment decisions often involve long payback periods and substantial risk, ownership incentives appear particularly effective in strengthening performance outcomes.

Conversely, firms with low managerial ownership exhibit a weaker link between financial performance and firm value. This suggests that limited ownership stakes may reduce managerial commitment to long-term value maximization, potentially increasing the focus on short-term performance. Such conditions may weaken investor confidence, especially in an industry exposed to external shocks and regulatory uncertainty.

The moderating effect of managerial ownership is more pronounced under conditions of high energy price volatility. Managers with substantial ownership stakes tend to adopt more cautious and adaptive strategies in response to price fluctuations, which contributes to performance stability and firm value preservation. This finding is in line with Shan (2019), who argues that managerial ownership enhances strategic discipline and risk awareness.

Managerial Ownership Level and Governance Balance

Despite its positive moderating role, managerial ownership does not uniformly improve firm value across all contexts. Excessively high managerial ownership may lead to overly centralized decision-making and reduced external oversight. This condition can increase the risk of managerial entrenchment and weaken governance effectiveness, as highlighted by Fama and Jensen (1983).

The results indicate that firms with moderate levels of managerial ownership tend to demonstrate greater adaptability to regulatory changes and market uncertainty. Moderate ownership allows managers to remain motivated while still being subject to external monitoring, creating a more balanced governance structure. This finding supports the argument that optimal ownership structures, rather than extreme ownership concentration, are more effective in enhancing firm value (Harrison & Gules, 2020).

Summary of Empirical Findings

To clarify the main empirical results, Table 1 summarizes the direction and significance of the relationships identified in this study.

Table 1. Summary of Empirical Findings

Variable	Effect on Firm Value	Role of Managerial Ownership
Financial Performance (ROA, ROE)	Positive and significant	**Strengthens the relationship**
Firm Size	Positive, weaker significance	Limited moderating effect
Energy Prices	Significant external influence	Stronger moderation under high volatility
Government Regulation	Subsector-dependent effect	Indirect moderation through strategy
Managerial Ownership	No direct uniform effect	Significant moderating role

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Overall, the findings demonstrate that managerial ownership plays a critical role in shaping how internal performance indicators and external conditions affect firm value in the energy sector. Managerial ownership influences strategic decision-making, risk response, and governance effectiveness, making it a key factor in understanding firm valuation dynamics within this highly regulated and volatile industry.

CONCLUSION

This study confirms that managerial ownership plays an important moderating role in shaping the relationship between the determinants of firm value and firm value in the energy sector. The empirical findings show that financial performance, reflected by Return on Assets and Return on Equity, remains a key driver of firm value. This relationship becomes stronger when managerial ownership is higher, indicating that equity participation by managers enhances their commitment to long-term value creation.

The results also demonstrate that external factors, particularly energy price fluctuations and government regulation, significantly influence firm value. Firms operating in fossil energy subsectors are more sensitive to changes in global energy prices, while renewable energy firms benefit more from supportive regulatory policies. In this context, managerial ownership helps firms respond more effectively to external uncertainty. Managers with ownership stakes tend to adopt more prudent and adaptive strategies, which supports performance stability and protects firm value.

However, the findings suggest that the impact of managerial ownership is not uniformly positive. Excessively high managerial ownership may reduce external monitoring and increase the risk of concentrated decision-making. Firms with moderate levels of managerial ownership appear to achieve a more balanced governance structure, allowing them to align managerial incentives with shareholder interests while maintaining accountability.

From a practical perspective, the study highlights the importance of designing ownership structures that support effective corporate governance in the energy sector. Companies are encouraged to consider managerial ownership as part of a broader governance framework rather than as an isolated mechanism. For investors, managerial ownership can serve as a useful signal when evaluating firm value under conditions of market volatility and regulatory change. Regulators may also consider policies that promote transparency and balance between managerial incentives and minority shareholder protection.

Overall, this study contributes to the corporate governance literature by providing empirical evidence on the moderating role of managerial ownership in a highly regulated and volatile industry. The findings emphasize that optimal managerial ownership can strengthen the relationship between firm performance and firm value, supporting sustainable value creation in the energy sector.

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