

ENTERPRISE RISK MANAGEMENT, SUSTAINABILITY REPORTING, AND FIRM VALUE: THE MODERATING ROLE OF FINANCIAL PERFORMANCE

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Abstract

This study aims to analyze the effects of Enterprise Risk Management (ERM) and Sustainability Report disclosure on firm value, with Return on Equity (ROE) as a moderating variable, among energy sector companies listed on the Indonesia Stock Exchange during 2020–2024. This study employs a quantitative approach using panel data regression. Secondary data were collected from annual reports, sustainability reports, and financial statements of 18 energy sector companies, resulting in 90 observations. ERM was measured using the Enterprise Risk Management Disclosure Index based on the COSO framework, Sustainability Report disclosure using the Sustainability Report Disclosure Index based on Global Reporting Initiative (GRI) standards, firm value using Tobin's Q, and ROE using the ratio of net income to shareholders' equity. The results indicate that ERM disclosure has no significant effect on firm value ($\beta = 0.077902$; $p = 0.8953$), whereas Sustainability Report disclosure has a significant negative effect ($\beta = -0.617959$; $p = 0.0007$). ROE also has no significant direct effect on firm value ($\beta = 0.032236$; $p = 0.7672$). Furthermore, ROE significantly moderates the relationship between ERM disclosure and firm value in a negative direction ($\beta = -4.891053$; $p = 0.0446$) and the relationship between Sustainability Report disclosure and firm value in a positive direction ($\beta = 5.677508$; $p = 0.0453$). These findings suggest that profitability conditions influence how investors perceive risk management and sustainability disclosures. Therefore, energy sector companies should improve the quality and relevance of their ERM and sustainability disclosures while considering profitability to support firm value creation and strengthen investor confidence.

Keywords: Enterprise Risk Management, Sustainability Report, Return on Equity, Company Value, Energy Sector

1. Introduction

The energy sector is one of the strategic sectors that has an important role in supporting Indonesia's economic growth through the provision of energy needs for industry and society. In recent years, the sector has faced quite complex challenges, such as fluctuations in energy commodity prices, transition pressures to sustainable energy, and increasing demands for Environmental, Social, and Governance (ESG) implementation (Valadeva et al., 2024). This condition causes energy sector companies to be required to not only focus on achieving profitability, but also on risk management and business sustainability in order to maintain and increase company value. Company value is an important indicator that reflects investors' perception of the company's future performance and prospects (Barokah et al., 2023).

In an effort to increase company value, one of the important aspects that is of concern is the implementation of Enterprise Risk Management (ERM). ERM is an integrated



approach to managing risks that can affect the achievement of company goals. The implementation of ERM is believed to increase the effectiveness of decision-making and provide positive signals to investors regarding the company's ability to manage uncertainty (Rizky & Widiyati, 2025). Several studies show that ERM affects company value (Adji & Muhammad, 2024; Fangbethia et al., 2025). However, there are different research results that show that ERM does not have a significant effect on company value (Wibisono & Prabowo, 2024). The inconsistency of the results of this study shows that the influence of ERM on company value can still not be concluded conclusively.

In addition to ERM, Sustainability Reports are also an important factor in increasing company transparency and accountability. The disclosure of the Sustainability Report reflects the company's commitment to economic, social, and environmental aspects that are increasingly of concern to stakeholders. Based on Stakeholder Theory, the company is not only responsible to shareholders, but also to all parties affected by the company's activities (Suwardi & Werastuti, 2022). Research shows that Sustainability Report has an effect on company value. However, there are other studies that show that Sustainability Reports have no effect on company value (Atahau & Kausar, 2022; Pratami & Jamil, 2020), so there are still significant differences in research results.

In addition to these factors, financial performance is also an important determinant in determining the value of the company. Financial performance reflects a company's ability to efficiently generate profits from its capital. One of the most commonly used indicators is Return on Equity (ROE), which is a ratio that shows the level of return on shareholder capital (Lado & Anggraini, 2025). Research by Barokah et al. (2023) shows that financial performance affects a company's value. ROE can also strengthen investors' perception of the effectiveness of company management, including in the implementation of ERM and the disclosure of Sustainability Reports.

Based on the results of these previous researches, there are still inconsistencies (research gaps) related to the influence of ERM and Sustainability Report on company value. In addition, research examining the role of Return on Equity as a moderation variable in these relationships, especially in energy sector companies in Indonesia, is still relatively limited. This suggests the need for further research to provide more comprehensive empirical evidence.

The urgency of this research is driven by several critical factors. First, the energy sector is one of the strategic sectors that has an important role in supporting Indonesia's economic growth, yet it faces complex challenges such as fluctuations in energy commodity prices, transition pressures to sustainable energy, and increasing demands for ESG implementation. Second, the implementation of ERM is believed to increase the effectiveness of decision-making and provide positive signals to investors, yet empirical evidence on its effect on company value remains inconsistent. Third, the disclosure of Sustainability Reports reflects the company's commitment to economic, social, and environmental aspects, yet empirical evidence on its effect on company value also remains inconsistent. Fourth, financial performance, particularly Return on Equity, is an important determinant of company value, yet research examining its moderating role in the relationship between ERM, Sustainability Report, and company value remains limited. Fifth, the 2020–2024 period represents a unique context characterized by post-pandemic economic recovery, global uncertainty, and increasing demands for sustainability disclosure in the energy sector.

Previous research has shown significant but fragmented findings regarding the determinants of company value. Studies have demonstrated that ERM affects company



value, with effective risk management providing positive signals to investors regarding the company's ability to manage uncertainty (Adji & Muhammad, 2024; Fangbethia et al., 2025). Research has shown that Sustainability Report affects company value, with sustainability disclosure reflecting the company's commitment to economic, social, and environmental aspects. Research has also shown that financial performance affects company value, with ROE reflecting the level of return on shareholder capital (Barokah et al., 2023). However, other studies have reported contradictory findings, indicating that ERM does not significantly affect company value (Wibisono & Prabowo, 2024) and that Sustainability Reports do not affect company value (Atahau & Kausar, 2022; Pratami & Jamil, 2020). These inconsistencies suggest that the relationships among ERM, Sustainability Report, financial performance, and company value remain underexplored, particularly in the context of energy sector companies in Indonesia during the 2020–2024 period.

The research gap in this study lies in the limited understanding of how ERM and Sustainability Report jointly influence company value, and whether Return on Equity moderates these relationships. While individual studies have examined the direct effects of ERM or Sustainability Report on company value, the integrated framework connecting these factors remains underexplored (Adji & Muhammad, 2024; Fangbethia et al., 2025; Wibisono & Prabowo, 2024). Additionally, most previous studies have focused on the direct effects of ERM and Sustainability Report on company value, leaving a significant gap in knowledge regarding the moderating role of Return on Equity in these relationships. Furthermore, empirical evidence on the determinants of company value in the energy sector in Indonesia remains limited, particularly in the context of increasing demands for sustainability disclosure and risk management.

The novelty of this research lies in several aspects. First, this study focuses on energy sector companies listed on the Indonesia Stock Exchange during the 2020–2024 period, representing a unique context characterized by post-pandemic economic recovery, global uncertainty, and increasing demands for sustainability disclosure. Second, this study develops an integrative model that simultaneously examines the influence of ERM and Sustainability Report on company value, with Return on Equity as a moderating variable, providing a more comprehensive understanding of the determinants of company value in the energy sector. Third, this study positions Return on Equity as a moderating variable, enabling the examination of whether financial performance strengthens or weakens the relationship between ERM, Sustainability Report, and company value. Fourth, this study contributes to the limited empirical evidence on company value determinants in the energy sector in Indonesia, providing insights into how ERM, Sustainability Report, and financial performance collectively influence company value. Fifth, this study extends the application of Stakeholder Theory and Signaling Theory to the context of energy sector companies in Indonesia, validating theoretical predictions in an under-researched institutional context.

The purpose of this study is to analyze the influence of Enterprise Risk Management and Sustainability Report on company value, as well as examine the role of Return on Equity in moderating the relationship in energy sector companies listed on the Indonesia Stock Exchange for the 2020–2024 period. The choice of this goal was driven by the limited understanding of how ERM and Sustainability Report collectively influence company value and the need for empirical evidence that can inform company management and investors in decision-making. With a comprehensive examination of these factors, this study aims to provide a deeper understanding of whether company



value is primarily driven by risk management and sustainability disclosure or by financial performance.

The contribution of this research is multifaceted. From a theoretical perspective, this research contributes to the enrichment of literature on company value by proposing and testing an integrative model that links ERM and Sustainability Report with company value, extending the application of Stakeholder Theory and Signaling Theory to the context of energy sector companies in Indonesia. The findings contribute to the understanding of how ERM and Sustainability Report influence company value and how Return on Equity moderates these relationships, providing a more nuanced theoretical framework for analyzing company value in the energy sector. From a practical perspective, this study provides actionable insights for company management, investors, and policymakers in designing effective strategies to improve company value. For company management, the findings provide guidance on which risk management and sustainability disclosure elements should be prioritized in enhancing company value. For investors, the results offer insights into the importance of ERM, Sustainability Report, and financial performance in assessing company value and making informed investment decisions. For policymakers, this study provides empirical evidence to support the development of policies that promote risk management and sustainability disclosure in the energy sector. For academics, this study contributes to the growing body of literature on company value in the energy sector, providing a foundation for future research on ERM, Sustainability Report, and financial performance.

2. Theoretical Background

2.1 Signaling Theory

Signaling Theory explains that companies convey information to investors through disclosure to reduce information asymmetry between management and external parties (Spence, 1973). In this study, Enterprise Risk Management and Sustainability Report disclosure are seen as signals regarding company quality, risk management capability, and company commitment to sustainability practices (Brigham & Houston, 2015; Marsuki & Efendi, 2024). These positive signals can increase investor confidence and improve the company's value (Rizky & Widiyati, 2025). However, when sustainability disclosure is not supported by substantive implementation, investors may view the disclosure as symbolic, thereby lowering the company's credibility. In addition, weak risk management can also weaken the credibility of a company's sustainability disclosure.

2.2 Agency Theory

Agency Theory explains that conflicts of interest between management and shareholders may arise due to information asymmetry and differences in corporate objectives (Jensen & Meckling, 1976). In this study, Enterprise Risk Management and Sustainability Report disclosure function as monitoring mechanisms to reduce opportunistic managerial behavior through greater transparency and accountability. Strong risk management and sustainability disclosure can increase investor confidence and improve company value because firms are perceived to have more effective control systems. Conversely, weak risk management is often associated with opportunistic financial behavior that may weaken sustainability credibility. When low sustainability disclosure is accompanied by weak risk management, investors may question corporate integrity, thereby influencing market perception and company value.



2.3 Company Value

Company value reflects investors' perception of the company's future performance and prospects. Company value is an important indicator that reflects how the market assesses the overall performance and prospects of a company. In this study, company value was measured using Tobin's Q, which is a ratio that compares the company's market value with its total assets, so that it can reflect the overall market assessment of the company (Nasution et al., 2024). Tobin's Q is commonly used in empirical research because it captures both the market valuation and the replacement cost of assets, providing a comprehensive measure of company value.

2.4 Enterprise Risk Management

Enterprise Risk Management is an integrated risk management system to identify, assess, and control company risks in achieving organizational goals (COSO, 2017). Enterprise Risk Management encompasses the processes, tools, and techniques used by organizations to manage risks and seize opportunities related to the achievement of their objectives. In this study, Enterprise Risk Management was measured using the Enterprise Risk Management Disclosure Index (ERMDI) based on the COSO framework. The index value is calculated by comparing the number of ERM items that the company discloses to the overall disclosure items. In this study, Enterprise Risk Management was measured using dummy variables, namely a value of 1 for companies that implement Enterprise Risk Management and 0 for companies that do not implement Enterprise Risk Management.

2.5 Sustainability Report

Sustainability Report is a form of non-financial reporting that reveals the company's performance in economic, social, and environmental aspects. Sustainability Report reflects the company's commitment to sustainability practices and its accountability to stakeholders. The indicators used to assess the disclosure of the Sustainability Report are in accordance with the disclosure of GRI standards. The GRI standards provide a comprehensive framework for sustainability reporting, covering economic, environmental, and social dimensions. Higher levels of sustainability disclosure indicate greater transparency and accountability, which can enhance investor confidence and company value.

2.6 Financial Performance (Return on Equity)

Financial performance refers to the company's ability to efficiently generate profits from its capital. Return on Equity is a profitability ratio that shows the company's ability to generate net profit based on its own capital. This information shows how efficient the company is in utilizing assets to make a profit. Return on Equity is commonly used in empirical research because it captures the effectiveness of management in generating returns for shareholders. Higher Return on Equity indicates better financial performance, which can signal positive prospects to investors and enhance company value.

2.7 Hypothesis Development

2.7.1 Enterprise Risk Management Affects Company Value

Enterprise Risk Management (ERM) is an integrated risk management system to identify, assess, and control company risks in achieving organizational goals (COSO, 2017). Based on signal theory, the implementation of ERM provides a positive signal to



investors regarding the company's ability to manage risk and implement good governance, thereby potentially increasing the company's value. In addition, agency theory explains that ERM can reduce information asymmetry between management and shareholders through increased transparency. Research by Yulia and Basuki (2023) shows that Enterprise Risk Management has a positive effect on company value. Based on the theoretical explanation and empirical findings, the following hypothesis is proposed:

H1: Enterprise Risk Management has a positive effect on the company's value.

2.7.2 Sustainability Report Affects Company Value

Sustainability Report is a report that reveals the company's performance in economic, social, and environmental aspects. Based on signal theory, the disclosure of the Sustainability Report provides investors with positive information about the company's commitment to sustainability, while the agency theory explains that the disclosure can reduce the asymmetry of information between management and shareholders. Thus, the disclosure of the Sustainability Report is expected to increase investor confidence and company value. Research by Maharani et al. (2025) shows that Sustainability Report has a positive effect on company value. Based on the theoretical explanation and empirical findings, the following hypothesis is proposed:

H2: Sustainability Report has a positive effect on the company's value.

2.7.3 Financial Performance Affects Company Value

Financial performance proxied with Return on Equity (ROE) shows the company's ability to generate profits based on the capital it has. Based on signal theory, high ROE is a positive signal for investors regarding the company's prospects so that it can increase the company's value. From the perspective of agency theory, good financial performance reflects the success of management in managing company resources for the benefit of shareholders. Based on the theoretical explanation and empirical findings, the following hypothesis is proposed:

H3: Financial performance has a positive effect on the company's value.

2.7.4 Enterprise Risk Management Affects Company Value Moderated by Financial Performance

The implementation of Enterprise Risk Management will provide greater benefits if supported by good financial performance. Based on signal theory, the combination of ERM and high Return on Equity provides a stronger signal regarding the quality of the company's management, thereby increasing investor confidence. Research by Yulia and Basuki (2023) shows that profitability is able to strengthen the relationship between Enterprise Risk Management and company value. Based on the theoretical explanation and empirical findings, the following hypothesis is proposed:

H4: Financial performance moderates the influence of Enterprise Risk Management on the value of the company.

2.7.5 Sustainability Report Affects Company Value Moderated by Financial Performance

The disclosure of the Sustainability Report will be more trusted by investors if the company also has good financial performance. Based on signal theory, a high Return on Equity strengthens the credibility of the sustainability information conveyed by the



company so that it can increase the company's value. Research by Muhammad Nadhif and Halkadri (2025) shows that Return on Equity is able to strengthen the influence of Sustainability Report on company value. Based on the theoretical explanation and empirical findings, the following hypothesis is proposed:

H5: Financial performance moderates the impact of the Sustainability Report on the company's value.

2.8 Conceptual Framework

The conceptual framework in this study is designed to explain the causal relationship between variables and to describe the interaction of the role of moderation variables.

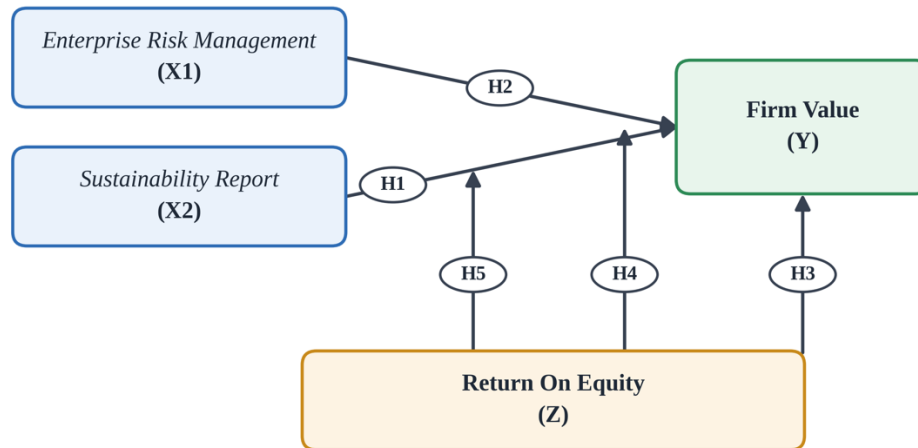


Figure 1. Conceptual Framework
Source: Processed Author (2026)

3. Methods

3.1 Research Design

This study uses a quantitative approach with the panel data regression method to analyze the influence of Enterprise Risk Management (ERM) and Sustainability Report (SR) on company value with Return on Equity (ROE) as a moderation variable. The quantitative approach is considered appropriate because the study aims to empirically test the proposed hypotheses using statistical analysis of numerical data derived from annual reports, sustainability reports, and financial statements. The panel data regression method enables the examination of causal relationships between independent variables (Enterprise Risk Management and Sustainability Report), moderating variable (Return on Equity), and dependent variable (Company Value). The type of data used is secondary data obtained from annual reports, sustainability reports, and financial statements of energy sector companies listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 period.

3.2 Population and Sample

The population in this study is all energy sector companies listed on the IDX during the 2020–2024 period, totaling 89 companies. The sampling technique uses purposive sampling with certain criteria that have been set. The sample selection was based on criteria relevant to the research objectives, including: (1) energy sector companies listed on the IDX from the period 2020–2024; (2) companies that publish annual reports consecutively for the period 2020–2024; and (3) companies that publish sustainability

reports consecutively for the period 2020–2024. Based on these criteria, 18 companies were obtained as a research sample with a total of 90 observations.

Table 1. Sample Selection

No.	Remarks	Quantity
1	Energy Sector Companies listed on the IDX from the period 2020–2024	89
2	Energy Sector Companies Listed on the IDX that do not publish Annual Reports for the period 2020–2024 consecutively	-20
3	Energy Sector Companies Listed on the IDX that do not publish Sustainability Reports for the period 2020–2024 consecutively	-51
	Research Sample	18
	Total Research Data for the Period 2020 to 2024	90

Source: Data processed by the author (2026)

3.3 Data Collection Techniques

This study uses secondary data obtained from various official sources. Data were collected from annual reports, sustainability reports, and financial statements of energy sector companies listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 period. The data collection procedure involved several sequential steps: (1) identification of energy sector companies listed on the IDX during the 2020–2024 period; (2) selection of companies meeting the predetermined purposive sampling criteria, including consecutive publication of annual reports and sustainability reports; (3) collection of company value data from financial statements and market data; (4) collection of Enterprise Risk Management disclosure data from annual reports based on the COSO framework; (5) collection of Sustainability Report disclosure data from sustainability reports based on GRI standards; (6) collection of Return on Equity data from financial statements; and (7) documentation of all extracted data systematically organized into a panel dataset suitable for statistical analysis. The secondary data sources employed in this research are considered reliable as they represent official publications from authorized institutions and established data providers.

3.4 Operational Definition of Variables

Table 2. Operational Definition and Measurement of Variables

Variable	Definition	Measurement	Scale	Source
Company Value (Y)	Investors' perception of the company's future performance and prospects	Tobin's Q = $\frac{\text{Market Value} + \text{Liabilities}}{\text{Total Assets}}$	Ratio	Annual reports, financial statements
Enterprise Risk Management (X ₁)	Integrated risk management system to identify, assess, and control company risks	ERMDI = $\frac{\text{Total Implemented Items}}{20 \text{ Items}}$	Ratio	Annual reports
Sustainability Report (X ₂)	Non-financial reporting that	SRDI = n / k	Ratio	Sustainability reports



Variable	Definition	Measurement	Scale	Source
	reveals the company's performance in economic, social, and environmental aspects			
Return on Equity (Z)	Profitability ratio that shows the company's ability to generate net profit based on its own capital	ROE = Net Income / Shareholder's Equity	Ratio	Financial statements

Source: Developed for this research (2026)

3.5 Data Analysis Techniques

Data analysis in this study was conducted using panel data regression with the assistance of statistical software. The analysis stages included descriptive statistics, panel data model selection, classical assumption tests, multiple linear regression analysis, moderated regression analysis, and hypothesis testing. Descriptive statistics were employed to describe the characteristics of the research data, including mean, median, standard deviation, minimum, and maximum values for all variables examined in the study. The selection of the appropriate panel data regression model was carried out through three main stages. First, the Chow test was conducted to compare whether the Common Effect Model (CEM) or Fixed Effect Model (FEM) was the better model to use; if the probability value was less than 0.05, FEM was selected over CEM. Second, the Hausman test was conducted to determine whether the best model was FEM or Random Effect Model (REM); if the probability value was less than 0.05, FEM was selected over REM. Third, the Lagrange Multiplier test was conducted to confirm whether REM was more appropriate than CEM; if the probability value was less than 0.05, REM was selected over CEM.

Prior to hypothesis testing, classical assumption tests were conducted to ensure that the regression model satisfied the required assumptions so that the estimation results were more reliable. The tests included the normality test to examine whether residuals were normally distributed, where a probability value greater than 0.05 indicated a normal distribution; the multicollinearity test using Variance Inflation Factor (VIF) to detect high correlations among independent variables, where a VIF value less than 10 indicated no multicollinearity; the heteroscedasticity test to examine whether residuals had constant variance, where a probability value greater than 0.05 indicated no heteroscedasticity; and the autocorrelation test to detect serial correlation, where a probability value greater than 0.05 indicated no autocorrelation.

Multiple linear regression analysis was conducted to examine the effect of Enterprise Risk Management and Sustainability Report on company value. The regression model used in this study was formulated as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z + \varepsilon$$

Where:

Y = Company Value



α = Constant
 β_1 – β_3 = Regression coefficients
 X_1 = Enterprise Risk Management
 X_2 = Sustainability Report
 Z = Return on Equity
 ε = Error term

Moderated Regression Analysis (MRA) was used to test whether Return on Equity moderates the relationship between Enterprise Risk Management, Sustainability Report, and company value. The MRA model was formulated as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z + \beta_4 (X_1 \times Z) + \beta_5 (X_2 \times Z) + \varepsilon$$

Where:

Y = Company Value
 α = Constant
 β_1 – β_5 = Regression coefficients
 X_1 = Enterprise Risk Management
 X_2 = Sustainability Report
 Z = Return on Equity
 $X_1 \times Z$ = Interaction between Enterprise Risk Management and Return on Equity
 $X_2 \times Z$ = Interaction between Sustainability Report and Return on Equity
 ε = Error term

Hypothesis testing was conducted using several methods. The F-test was used to examine the simultaneous effect of independent variables on company value. The t-test was used to determine the partial effect of each independent variable on company value. The coefficient of determination (R^2) was used to determine the model's ability to explain variations in company value. All hypothesis tests were conducted at a significance level of 5% ($p < 0.05$).

4. Results and Discussion

4.1 Results

Table 3. Statistic Descriptive

	Mean	Med	Max	Min	SD	Obs.
NP	1,340252	1,020550	6,313200	0,267400	0,930572	90
ERM	0,884923	0,894400	0,974700	0,591600	0,072920	90
SR	0,810683	0,816500	0,984200	0,471400	0,111639	90
ROE	0,036893	0,069900	0,716800	-3,891900	0,466436	90

Source: Data processed by researchers (E-Views), 2026.

The descriptive statistics show that the average Company Value (NP) with Tobin's Q is 1,340252, indicating that, on average, the market values energy sector companies above their book value. A Tobin's Q exceeding one generally reflects favorable market expectations because investors perceive firms as having stronger growth prospects and long-term business sustainability. Nevertheless, the standard deviation of 0,930572 suggests that company valuation differs considerably across companies during the observation period.

The mean Enterprise Risk Management (ERM) score of 0,884923 suggests that most firms have disclosed ERM information at a relatively comprehensive level. This condition indicates increasing corporate attention toward risk management transparency and governance-related reporting. Based on the COSO framework, disclosure levels above 0,80 are commonly associated with relatively extensive ERM disclosure practices.



Similarly, the average Sustainability Report (SR) value of 0,810683 indicates that companies have actively communicated information regarding economic, social, and environmental responsibilities. Meanwhile, the Return on Equity (ROE) average of 0,036893 reflects a relatively low level of profitability, implying that most firms have not fully optimized their capital to generate net profit.

The average Company Value (NP) with Tobin's Q of 1,340252 indicates that, on average, the market values energy sector companies above their book value. A Tobin's Q exceeding one generally reflects favorable market expectations because investors perceive firms as having stronger growth prospects and long-term business sustainability. However, the relatively large standard deviation indicates uneven company valuation among firms within the sample. In addition, the Return on Equity (ROE) variable records an average value of 0,036893 with a notably high standard deviation of 0,466436, suggesting substantial disparities in the consistency between profitability and actual financial implementation. This pattern implies that while some companies demonstrate more substantive financial performance, others may rely more heavily on symbolic financial communication.

Furthermore, the mean ERM value of 0,884923 indicates that most sampled firms can be categorized as having strong ERM implementation based on the COSO framework. Larger firms are typically subject to greater public scrutiny and stakeholder pressure, encouraging broader ERM disclosure and stronger governance transparency. Meanwhile, the average of Sustainability Report (SR) with a value of 0,810683 or 81,07% remains below the maximum disclosure level of 100%, indicating the possibility of incomplete sustainability disclosure practices among several firms during the observation period. The wide range between the minimum and maximum SR values also reflects considerable differences in corporate sustainability behavior across companies.

Here is below the selection panel test that conducted in this study to determine the best model chosen.

Table 4. Selection Panel Test

Model	Testing	Prob.	Sig.	Conclusion	Result
1	Chow	0,0000	0,050	(0,0000<0,050)	FEM
	Hausman	0,0482	0,050	(0,0482<0,050)	FEM
	LM	0,0000	0,050	(0,0000<0,050)	REM
2	Chow	0,0000	0,050	(0,0000<0,050)	FEM
	Hausman	0,0214	0,050	(0,0214<0,050)	FEM
	LM	0,0000	0,050	(0,0000<0,050)	REM

Source: Data processed by researchers (E-Views), 2026.

Table 4 shows the model 1 has chosen Fixed Effect Model based on Chow and Hausman Test because of the value is on the significance criteria 0,050. While the model 2 also shows the same situation, Fixed Effect Model is the best panel model chosen. After the selection panel test conducted, classic assumptions test is needed to ensure that the regression model fulfils the basic statistical assumptions required to have unbiased and reliable estimation results. Therefore, the results of classic assumption tests are presented is follows:

Table 5. Classic Assumption Test

Multicollinearity	NP	ERM	SR	ROE
NP	1,000000			
ERM	0,053000	1,000000		
SR	0,001000	0,736000	1,000000	



Multicollinearity	NP	ERM	SR	ROE
ROE	-0,068000	0,296000	0,426000	1,000000
Heteroscedasticity		0,132		
Normality		0,477		
Autocorrelation		1,966		

Source: Data processed by researchers (E-Views), 2026.

Table 5 shows the multicollinearity test results the value under 0,80 which means no correlation between each variable in this regression. The heteroscedasticity test also shows the value above 0,050 ($p=0,132$), which means that the data in this regression is homogeneous. Normality test also finds 0,477 above the sig. value 0,050 and means that the data in this study unbiased. Then the autocorrelation test shows DW 1,966, it means there is no autocorrelation in this regression.

Based on the classical assumption test results, panel data regression analysis was subsequently conducted to examine the effect of Enterprise Risk Management and Sustainability Report on company value, as well as the moderating role of Return on Equity. The regression results are presented in Table 6.

Table 6. Hypothesis Test Results

Variable	Model 1		Model 2		Result
	Coeff.	Prob.	Coeff.	Prob.	
C	4,093073	0,0452**	4,093073	0,0452**	
ERM	0,077902	0,8953	-1,770011	0,4565	H1 rejected
SR	-0,617959	0,0007***	-1,554876	0,0650	H2 accepted
ROE	0,032236	0,7672			H3 rejected
ERM X ROE			-4,891053	0,0446**	H4 accepted
SR X ROE			5,677508	0,0453**	H5 accepted
R Squared	0,914		0,905		
Prob (F-Stat)	0,000		0,000		

Note: Significantly at * $p<0,10$, ** $p<0,05$, *** $p<0,01$

Source: Data processed by researchers (E-Views), 2026.

Based on the panel data regression results presented in Table 6, the regression equations of this study can be formulated as follows:

Model 1 Main Effect Model:

$$NP = 4,093073 + 0,077902ERM - 0,617959SR + 0,032236ROE + \varepsilon$$

Model 2 (Moderated Regression Analysis Model):

$$NP = 4,093073 - 1,770011ERM - 1,554876SR - 4,891053(ERMROE) + 5,677508(SRROE) + \varepsilon$$

Based on the regression results presented in Table 6, this study examines the direct effect of Enterprise Risk Management and Sustainability Report on company value, as well as the moderating role of Return on Equity in the relationship between risk management, sustainability disclosure, and company valuation. The regression analysis was conducted using the Fixed Effect Model (FEM), which was selected as the most appropriate panel estimation model based on the Chow test and Hausman test results.

Model 1 explains the direct relationship between the independent variables and company value, while Model 2 incorporates interaction variables to examine the moderating effect of Return on Equity through Moderated Regression Analysis (MRA). The regression results indicate that Enterprise Risk Management does not significantly



influence company value, while Sustainability Report significantly influences company value in a negative direction. Furthermore, the R-squared values of 0,914 in Model 1 and 0,905 in Model 2 indicate that the regression models have strong explanatory power in explaining variations in company value among energy sector companies during the observation period. The probability values of the F-statistic in both models are below 0,05, confirming that the regression models are statistically significant and appropriate for hypothesis testing.

4.2 Discussion

4.2.1 Enterprise Risk Management does not affect Company Value

The hypothesis testing results indicate that Enterprise Risk Management does not have a significant effect on company value, with a coefficient value of 0,077902 and a probability value of 0,8953, indicating that H1 is rejected. This finding suggests that ERM disclosure has not yet been the main consideration of investors in valuing companies. From the perspective of signal theory and agency theory, ERM has not been able to provide strong signals or reduce information asymmetry effectively so that it does not have a significant impact on the company's value. This result differs from studies that found that ERM positively affects company value (Yulia & Basuki, 2023). The difference may be explained by the characteristics of the energy sector, which is capital-intensive and subject to commodity price fluctuations, making risk management disclosure less informative for investors in the short term.

4.2.2 Sustainability Report affects Company Value

The hypothesis testing results indicate that Sustainability Report has a significant negative effect on company value, with a coefficient value of -0,617959 and a probability value of 0,0007, indicating that H2 is accepted. This finding suggests that the disclosure of the Sustainability Report has not been fully perceived positively by investors. In the perspective of signal theory, the information has not provided a strong positive signal, although in theory it should boost investor confidence. This finding is consistent with Atahau and Kausar (2022) and Pratami and Jamil (2020), who found that Sustainability Reports do not always improve company value because investors may question the credibility of sustainability disclosure when it is not supported by substantive implementation. The negative effect suggests that investors in the energy sector may perceive sustainability disclosure as symbolic rather than substantive, particularly when it is not accompanied by strong financial performance.

4.2.3 Financial Performance (Return on Equity) does not affect Company Value

The hypothesis testing results indicate that Return on Equity does not have a significant effect on company value, with a coefficient value of 0,032236 and a probability value of 0,7672, indicating that H3 is rejected. This finding suggests that profitability is not yet the main factor that investors consider in valuing companies. In terms of signal theory and agency theory, ROE has not been able to provide a strong signal in influencing the company's value. This finding differs from Barokah et al. (2023), who found that financial performance affects company value. The difference may be explained by the characteristics of the energy sector, which is capital-intensive and subject to commodity price fluctuations, making profitability less stable and less informative for investors.



4.2.4 Return on Equity moderates the relationship between Enterprise Risk Management and Company Value

The hypothesis testing results indicate that Return on Equity significantly moderates the influence of Enterprise Risk Management on company value, with a coefficient value of -4,891053 and a probability value of 0,0446, indicating that H4 is accepted. A negative coefficient indicates that ROE weakens the relationship between ERM and company value, meaning that increased profitability actually causes the effect of ERM disclosure on company value to decrease. These findings indicate that in companies with higher levels of profitability, investors tend to focus more on actual financial performance than on the risk management information disclosed by the company. As a result, the role of ERM in increasing the company's value has become less dominant. This finding is consistent with Yulia and Basuki (2023), who found that profitability is able to moderate the relationship between Enterprise Risk Management and company value.

4.2.5 Return on Equity moderates the relationship between Sustainability Report and Company Value

The hypothesis testing results indicate that Return on Equity significantly moderates the influence of Sustainability Report on company value, with a coefficient value of 5,677508 and a probability value of 0,0453, indicating that H5 is accepted. The positive coefficient indicates that ROE strengthens the influence of the Sustainability Report on the company's value, so that the higher the level of profitability of the company, the stronger the impact of the disclosure of the Sustainability Report on the increase in the company's value. These results show that good financial performance increases the credibility of the sustainability information submitted by the company, so that investors respond more positively to the disclosure of the Sustainability Report in the company's value assessment. This finding is consistent with Muhammad Nadhif and Halkadri (2025), who found that Return on Equity is able to strengthen the influence of Sustainability Report on company value.

5. Conclusion

This study aimed to analyze the influence of Enterprise Risk Management and Sustainability Report on company value, as well as examine the role of Return on Equity in moderating the relationship in energy sector companies listed on the Indonesia Stock Exchange for the 2020–2024 period. Using a quantitative approach with panel data regression method on 18 energy sector companies with 90 observations, the study successfully tested the direct and moderating relationships among the research variables and evaluated the proposed hypotheses through statistical analysis.

The results indicate that Enterprise Risk Management does not have a significant effect on company value, with a coefficient value of 0.077902 and a probability value of 0.8953, indicating that H1 is rejected. ERM disclosure has not yet been the main consideration of investors in valuing companies. From the perspective of signal theory and agency theory, ERM has not been able to provide strong signals or reduce information asymmetry effectively so that it does not have a significant impact on the company's value. In contrast, Sustainability Report has a significant negative effect on company value, with a coefficient value of -0.617959 and a probability value of 0.0007, indicating that H2 is accepted. The disclosure of the Sustainability Report has not been fully perceived positively by investors. In the perspective of signal theory, the information has not provided a strong positive signal, although in theory it should boost investor confidence.



The negative effect suggests that investors in the energy sector may perceive sustainability disclosure as symbolic rather than substantive, particularly when it is not accompanied by strong financial performance. Furthermore, Return on Equity does not have a significant effect on company value, with a coefficient value of 0.032236 and a probability value of 0.7672, indicating that H3 is rejected. Profitability is not yet the main factor that investors consider in valuing companies.

The moderating role of Return on Equity was also examined through the interaction terms. The interaction between Enterprise Risk Management and Return on Equity (ERM $\times$ ROE) shows a negative and significant coefficient ($\beta = -4.891053$; $p = 0.0446$), indicating that Return on Equity significantly moderates the influence of Enterprise Risk Management on company value in a negative direction. This finding suggests that increased profitability actually causes the effect of ERM disclosure on company value to decrease. In companies with higher levels of profitability, investors tend to focus more on actual financial performance than on the risk management information disclosed by the company. Therefore, H4 is accepted. Meanwhile, the interaction between Sustainability Report and Return on Equity (SR $\times$ ROE) shows a positive and significant coefficient ($\beta = 5.677508$; $p = 0.0453$), indicating that Return on Equity significantly moderates the influence of Sustainability Report on company value in a positive direction. This finding suggests that good financial performance increases the credibility of the sustainability information submitted by the company, so that investors respond more positively to the disclosure of the Sustainability Report in the company's value assessment. Therefore, H5 is accepted. The model explains 91.4% of the variance in company value in Model 1 and 90.5% in Model 2, indicating that the regression models have strong explanatory power.

The theoretical implications of this study extend the application of Signaling Theory and Agency Theory to the context of energy sector companies in Indonesia. The finding that Enterprise Risk Management does not significantly influence company value challenges Signaling Theory's assumption that risk management disclosure always provides positive signals to investors (Spence, 1973). The finding that Sustainability Report significantly influences company value in a negative direction challenges Stakeholder Theory's assumption that sustainability disclosure always enhances company value (Freeman, 1984). The finding that Return on Equity significantly moderates the relationship between ERM, Sustainability Report, and company value supports Signaling Theory's emphasis on the role of financial performance in strengthening the credibility of corporate disclosure. This study also contributes to the limited empirical evidence on company value determinants in the energy sector in Indonesia, providing insights into how ERM, Sustainability Report, and financial performance collectively influence company value during the 2020–2024 period.

Based on these findings, several recommendations can be proposed. Company management should improve the quality of Enterprise Risk Management disclosure by ensuring that risk management practices are substantive rather than symbolic, and by communicating risk management outcomes more effectively to investors. Management should also enhance the credibility of Sustainability Report disclosure by aligning sustainability reporting with actual sustainability implementation, and by integrating sustainability practices into core business strategies. Since Return on Equity significantly moderates the relationship between ERM, Sustainability Report, and company value, management should consider the level of profitability when designing risk management and sustainability disclosure strategies. Investors should consider both financial and non-



financial information when assessing company value, including the quality of ERM and Sustainability Report disclosure, as well as the level of profitability. Policymakers should continue to strengthen regulations on risk management and sustainability disclosure in the energy sector to promote transparency and accountability.

This study has several limitations that should be acknowledged. First, the study focuses only on energy sector companies listed on the Indonesia Stock Exchange, which may limit the generalizability of the findings to other sectors or regions. Second, the study uses a panel data regression design, which limits the ability to establish causal relationships between variables. Third, the study relies on secondary data from annual reports, sustainability reports, and financial statements, which may be subject to reporting limitations and data availability constraints. Fourth, the model's explanatory power is relatively strong, with an R-square value of 0.914 in Model 1 and 0.905 in Model 2, but other factors not included in the model may still influence company value. Fifth, the study examines only ERM, Sustainability Report, and Return on Equity as determinants of company value, without considering other potential determinants such as corporate governance, firm size, or capital structure.

For future research, it is recommended to expand the scope of study by involving other sectors or countries to improve the generalizability of the findings. Future studies may also incorporate additional variables, such as corporate governance, firm size, capital structure, and environmental performance, to provide a more comprehensive understanding of the factors affecting company value. Additionally, qualitative or mixed-method approaches may be employed to gain deeper insights into the challenges and effectiveness of ERM and Sustainability Report implementation in the energy sector. Researchers should also employ longitudinal designs to examine how company value evolves over time as risk management and sustainability practices develop.

In conclusion, this study contributes to the growing body of literature on risk management and sustainability reporting by providing empirical evidence on the determinants of company value in the energy sector in Indonesia. The findings suggest that Enterprise Risk Management does not significantly influence company value, while Sustainability Report significantly influences company value in a negative direction. Return on Equity significantly moderates the relationship between ERM, Sustainability Report, and company value. As Indonesia continues to strengthen its risk management and sustainability disclosure practices, understanding these factors becomes increasingly important for developing effective strategies to enhance company value, strengthen investor confidence, and promote sustainable business growth in the energy sector.

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