The Effect of ROE and RETE on Stock Returns of Coal Companies Listed on the Indonesia Stock Exchange for the 2022–2024 Period

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Abstract
This study examines the effect of the Return on Equity Ratio (ROE) and the Retained Earnings to Total Equity Ratio (RETE) on stock returns of coal energy sector companies listed on the Indonesia Stock Exchange during 2022–2024. A quantitative approach was employed using secondary data from financial statements and stock price records. The sample comprised 75 observations selected through purposive sampling based on predetermined criteria. Data were analyzed using panel data regression with EViews 12 to assess both partial and simultaneous effects of the independent variables on stock returns. The findings show that ROE has a significant partial effect on stock returns, while RETE does not have a significant partial effect. However, simultaneously, ROE and RETE have a significant effect on stock returns.

INTRODUCTION

The capital market plays a strategic role as an intermediary between parties with surplus funds and those in need of funds, while also serving as a platform for investors to obtain stock returns in the form of dividends and capital gains (Tandelilin, 2017). Stock return is a key indicator in investment decision-making; however, it is inherently volatile due to various influencing factors, particularly a company's financial performance (Kasmir, 2019).

In recent years, the coal energy sector in Indonesia has experienced significant dynamics. The year 2022 was marked by a surge in coal prices, which improved company performance, whereas in 2023, a decline in coal prices led to weakened stock returns, despite some companies reporting increased revenues. This phenomenon indicates a discrepancy between financial performance and stock returns.

Theoretically, this condition can be explained by signaling theory, which suggests that financial information serves as a signal for investors in assessing a company's prospects (Brigham & Houston, 2019). Financial ratios such as Return on Equity (ROE) and Retained Earnings to Total Equity (RETE) are used as indicators of company performance and financial structure. ROE reflects a company's ability to generate profits from equity, while RETE indicates the strength of internal financing (DeAngelo et al., 2006).

However, previous studies have shown inconsistent results regarding the effect of ROE and RETE on stock returns. In addition, most prior research still relies on data from before 2022, thus not fully reflecting the most recent conditions in the coal energy sector. This highlights the existence of a research gap that necessitates further investigation using more up-to-date data.

Based on these considerations, this study aims to analyze the effect of Return on Equity (ROE) and Retained Earnings to Total Equity (RETE) on stock returns of coal energy sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period, both partially and simultaneously. It is expected that this study will provide empirical contributions to the literature and serve as a reference for investors in making investment decisions.

METHODOLOGY

Research Design

This study employs a quantitative approach with an associative method to analyze the effect of Return on Equity (ROE) and Retained Earnings to Total Equity (RETE) on stock returns of coal energy sector companies during the 2022–2024 period.

Research Variables

The variables in this study consist of:

- Independent variable:
  1. *Return on Equity* (ROE) $= \frac{Net\ Income}{Total\ Equity}$
  2. *Retained Earnings to Total Equity* (RETE) $= \frac{Total\ Retained\ Earning}{Total\ Equity}$
- Dependent variable:
  1. *Stock Return* $= \frac{Dividend\ T+1}{Price\ T0}$

Population and Sample

The research object consists of coal energy sector companies listed on the Indonesia Stock Exchange. The sampling technique employed is purposive sampling, with the following criteria: companies listed during the 2022–2024 period, having complete financial statements, not experiencing delisting, and possessing a minimum market capitalization of IDR 1 trillion. A total of 25 companies were obtained, resulting in 75 observations.

Data and Instruments

The data used in this study are secondary data in the form of financial statements, stock prices, and dividends. Data collection was carried out through a documentation study from official sources. The research instrument consists of a worksheet used to calculate the variable values.

Data Analysis Technique

The analysis employs panel data regression using EViews, conducted through the following stages:

1. Descriptive statistics
2. Model selection (common effect, fixed effect, and random effect)
3. Classical assumption tests
4. Hypothesis testing (t-test and F-test)
5. Coefficient of determination (R^2)

Research Procedure

The research is carried out through the following steps: problem identification, data collection, data processing, panel data regression analysis, and drawing conclusions.

RESULTS

Descriptive Statistics

Table 1 Descriptive Statistics

	X1	X2	Y
Mean	0.266476	0.207280	0.067316
Median	0.203900	0.657900	0.013949
Maximum	1.246600	0.999800	0.733318
Minimum	-0.587300	-8.269000	0.000000

The results of descriptive statistics indicate that Return on Equity (X1) has a mean value of 0.266, with a maximum of 1.246 and a minimum of -0.587. Retained Earnings to Total Equity (X2) has a mean of 0.207, with a maximum of 0.999 and a minimum of -8.269. Meanwhile, stock return (Y) has a mean of 0.067, with a maximum of 0.733 and a minimum of 0.000. These results indicate that there is variation in the values of each variable during the study period.

Regression Model Selection

Uji Chow

Effects Test	Statistic	d.f.	Prob.
Cross-section Chi-square	47,07350	24	0,0033

Uji Hausman

Effects Test	Statistic	d.f.	Prob.
Cross-section Chi-square	0,45832	2	0,7952

Uji Lagrange Multiplier

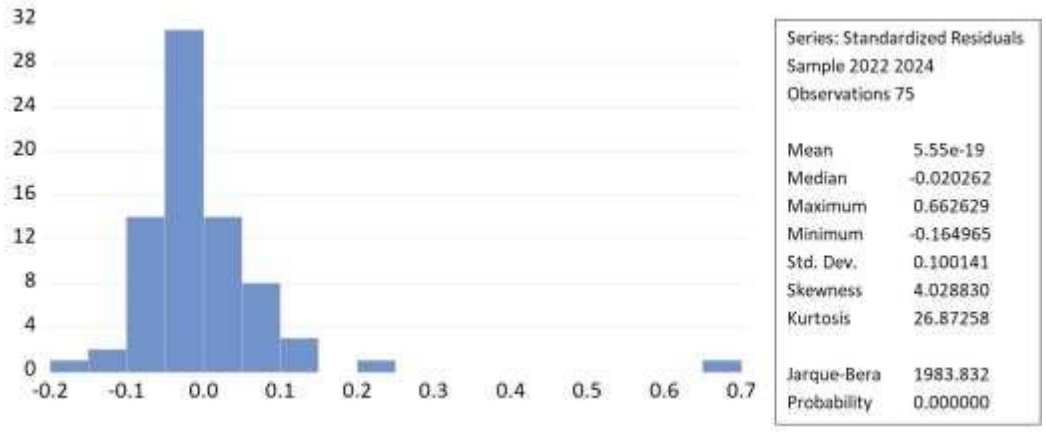
	Test Hypothesis	Time	Both
	Cross-section		
Breusch-Pagan	2,757536	0,004710	2,762245
	0,0968	0,9453	0,0965

Based on the results of panel data model testing, the Chow test shows a probability value of 0.0033 (< 0.05), indicating that the Fixed Effect Model is more appropriate than the Common Effect Model. However, the Hausman test yields a probability value of 0.7952 (> 0.05), suggesting that the Random Effect Model is more suitable than the Fixed Effect Model. Furthermore, the Lagrange Multiplier (Breusch–Pagan) test produces a probability value of 0.0968 (> 0.05), indicating that the Common Effect Model is more appropriate than the Random Effect Model. Thus, based on the overall results of these tests, the most appropriate model to be used in this study is the Common Effect Model (CEM).

Classical Assumption Tests

Normality Test

Figure 1 Normality Test



The method used to test normality is the Jarque–Bera test, with the decision criterion based on the probability value: if the probability value is greater than 0.05, the residuals are considered normally distributed. Based on the test results using EViews 12, as presented in Table 4.1.8, the Jarque–Bera (JB) value is 1983.832 with a p-value of 0.00000. Since the p-value (0.00000) < 0.05, it can be concluded that the residuals in the regression model are not normally distributed. However, based on the Central Limit Theorem, when the sample size is sufficiently large, the sampling distribution of the mean tends to approach a normal distribution even if the population data are not normally distributed. This indicates that for large samples, the normal distribution approach can still be applied in statistical analysis because the sampling distribution of the mean tends to be bell-shaped (Holmes et al., 2017). According to *Introductory Statistics 2e*, a sample size is considered sufficiently large if it is at least 30 ($n \geq 30$). Therefore, in this study, statistical analysis remains valid even though the initial data are not normally distributed.

Multicollinearity Test

Table 2 Multicollinearity Test

	X1	X2
X1	1	0.2353
X2	0.2353	1

Based on the results of the correlation analysis among independent variables, the correlation value between ROE (X1) and RETE (X2) is 0.235359, which is below the common threshold of 0.80. This indicates that there is no strong relationship between the two variables, meaning that each variable provides distinct information in explaining the dependent variable. Thus, it can be concluded that the regression model in this study does not suffer from multicollinearity. Therefore, the variables ROE and RETE satisfy the classical assumptions, produce stable regression coefficients, can be properly interpreted, and yield more accurate analytical results.

Heteroskedasticity Test

Table 3 Heteroskedasticity Test

Dependent variable: ABS(RESID)
Method: Panel Least Squares
Date: 01/18/26 Time: 21:03
Sample: 2022 2024
Periods included: 3
*Cross-section*s included: 25
Total panel (balanced) observations: 75

Variable	Coefficient	Std. Error	t-*Statistic*	Prob.
C	0.048460	0.012231	3.962055	0.0002
X1	0.040184	0.030989	1.296737	0.1989
X2	0.003387	0.006278	0.539452	0.5912

Root MSE	0.078125	R-squared	0.032736
Mean dependent var	0.059870	*Adjusted R-squared*	0.005868
S.D. dependent var	0.079971	S.E. of regression	0.079736
Akaike info criterion	-2.181011	Sum squared resid	0.457765
Schwarz criterion	-2.088311	Log likelihood	84.78791
Hannan-Quinn criter.	-2.143997	F-*statistic*	1.218399
Durbin-Watson stat	2.946152	Prob(F-*statistic*)	0.301726

Based on Table 3, it can be concluded that the regression model does not suffer from heteroskedasticity, as indicated by the probability values of 0.1989 and 0.5912, both of which are greater than the significance level of 0.05. This suggests that the residual variance is constant (homoskedasticity) and that there is no uneven pattern in the distribution of the data. Therefore, the regression model is appropriate for further analysis and produces more accurate and reliable estimates, as there is no bias in the standard error values.

Autocorrelation Test

Table 4 Autocorrelation Test

Root MSE	0.099471	R-squared	0.126868
Mean dependent var	0.067316	*Adjusted R-squared*	0.102614
S.D. dependent var	0.107170	S.E. of regression	0.101522
Akaike info criterion	-1.697897	Sum squared resid	0.742089
Schwarz criterion	-1.605197	Log likelihood	66.67112
Hannan-Quinn criter.	-1.660883	F-*statistic*	5.230887
Durbin-Watson stat	2.136926	Prob(F-*statistic*)	0.007566

Based on Table 4, the Durbin–Watson (DW) value is 2.136926. Meanwhile, based on the Durbin–Watson table, the upper bound (dU) is 1.6802 and the lower bound (dL) is 1.5709. The comparison shows that the DW value lies between dU and (4 – dU), namely 1.6802 < 2.136926 < 2.4291. Therefore, it can be concluded that the regression model does not exhibit autocorrelation.

Hypothesis Testing

Partial Test (t-test)

Tabel 5 Partial Test (t-test)

Variable	Coefficient	Std. Error	t-*Statistic*	Prob.
C	0.037920	0.015573	2.435025	0.0174
X1	0.102461	0.039456	2.596840	0.0114
X2	0.010095	0.007993	1.262906	0.2107

The results of the partial test indicate that Return on Equity (ROE) has a significant effect on stock returns, as shown by the significance value of 0.0114 < 0.05 and the t-statistic of 2.596840 > t-table of 1.993. Thus, ROE is able to explain variations in stock returns, and the null hypothesis (H_0) is rejected. In contrast, Retained Earnings to Total Equity (RETE) does not have a significant effect on stock returns, as indicated by the significance value of 0.2107 > 0.05 and the t-statistic of 1.262906 < t-table of 1.993. Therefore, RETE is not able to explain variations in stock returns, and the null hypothesis (H_0) is accepted. This finding suggests that ROE is a more important factor considered by investors compared to RETE in influencing stock returns.

Simultaneous Test (F-test) and Coefficient of Determination

Table 6 Simultaneous Test (F-test) and Coefficient of Determination

Root MSE	0.099471	R-squared	0.126868
Mean dependent var	0.067316	*Adjusted R-squared*	0.102614
S.D. dependent var	0.107170	S.E. of regression	0.101522
Akaike info criterion	-1.697897	Sum squared resid	0.742089
Schwarz criterion	-1.605197	Log likelihood	66.67112

Hannan-Quinn criter.	-1.660883	F-*statistic*	5.230887
Durbin-Watson stat	2.136926	Prob(F-*statistic*)	0.007566

Based on the simultaneous test (F-test), the probability value of the F-statistic is 0.007566 < 0.05 and the F-statistic value is 5.230887 > F-table of 3.124. Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. This indicates that Return on Equity (ROE) and Retained Earnings to Total Equity (RETE) simultaneously have a significant effect on stock returns in coal sector companies during the 2022–2024 period.

Based on Table 6, the coefficient of determination (Adjusted R-squared) is 0.102614, indicating that ROE and RETE are only able to explain 10.26% of the variation in stock returns, suggesting that the model has limited explanatory power. The remaining 89.74% is influenced by other factors outside the model, such as macroeconomic conditions, market sentiment, and other external factors. Therefore, future research is recommended to include additional variables to improve model comprehensiveness.

DISCUSSION

The Effect of Return on Equity on Stock Returns

The results show that Return on Equity (ROE) has a significant effect on stock returns. This indicates that a company's ability to generate profit from its equity is an important factor considered by investors in making investment decisions. The higher the ROE, the greater the investor confidence in the company's performance, which in turn increases stock returns. This finding is consistent with signaling theory, which states that information about a company's profitability serves as a positive signal for investors regarding future prospects. This signal increases demand for stocks, thereby affecting stock prices and returns. The results are also consistent with previous studies that found a positive and significant effect of ROE on stock returns. However, some studies have reported different findings, where ROE does not have a significant effect. These differences may be due to variations in economic conditions, research periods, and industry characteristics. In this study, the coal energy sector during 2022–2024 experienced high price volatility, making investors more responsive to profitability indicators such as ROE.

The Effect of Retained Earnings to Total Equity on Stock Returns

The results show that Retained Earnings to Total Equity (RETE) does not have a significant effect on stock returns. This indicates that the proportion of retained earnings in a company's equity structure is not a primary consideration for investors in making investment decisions. This finding suggests that investors place greater emphasis on indicators that directly reflect a company's ability to generate profits rather than on retained earnings policies. Additionally, investors may

prefer dividend distributions over retained earnings, which explains why RETE does not significantly affect stock returns.

These findings are consistent with several previous studies that found no significant effect of RETE on stock returns. However, other studies suggest that RETE may have a positive effect, as retained earnings are considered an internal source of financing that supports company growth. These differing results indicate that the effect of RETE on stock returns remains inconsistent and is influenced by market conditions and investor preferences.

The Effect of ROE and RETE on Stock Returns

The results indicate that Return on Equity (ROE) and Retained Earnings to Total Equity (RETE) simultaneously have a significant effect on stock returns. This suggests that the combination of profitability and internal capital structure plays a role in influencing investment decisions.

Although RETE is not significant individually, its presence alongside ROE still contributes to explaining variations in stock returns. This indicates that investors do not rely on a single financial indicator but rather consider overall company performance.

Compared to previous studies, this research contributes by providing more recent empirical evidence for the 2022–2024 period. Additionally, the inclusion of RETE offers a broader perspective in analyzing factors affecting stock returns. The differing results, particularly for RETE, suggest opportunities for future research to include additional variables such as macroeconomic conditions or market sentiment.

CONCLUSION

Based on the results of hypothesis testing, it can be concluded that Return on Equity (ROE) has a significant effect on stock returns; therefore, the first hypothesis (H1) is accepted and the null hypothesis (H01) is rejected. This indicates that ROE is able to explain changes in stock returns in this study.

Meanwhile, Retained Earnings to Total Equity (RETE) does not have a significant effect on stock returns; thus, the second hypothesis (H2) is not supported and the null hypothesis (H02) is accepted. This shows that RETE is not able to significantly explain variations in stock returns within the research model.

However, simultaneously, ROE and RETE have a significant effect on stock returns; therefore, the third hypothesis (H3) is accepted and the null hypothesis (H03) is rejected. This means that both independent variables collectively are able to explain changes in stock returns in the model used.

Based on these findings, it is recommended that future research incorporate additional variables such as macroeconomic factors, market sentiment, or investor behavior variables to obtain more comprehensive results in explaining stock returns. Furthermore, the use of a longer research

period and cross-sector comparisons may provide broader insights into the relationship between financial performance and stock returns.

For practitioners and investors, it is advisable not to rely solely on a single financial indicator, but to consider various aspects of company performance comprehensively when making investment decisions. These findings may also serve as a basis for further research in understanding investor behavior in responding to financial information in the capital market.

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