

The Effect of Return On Assets and Debt to Equity Ratio on Stock Prices of Energy sector companies contained in LQ45 (2018-2022 Period)

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Abstract

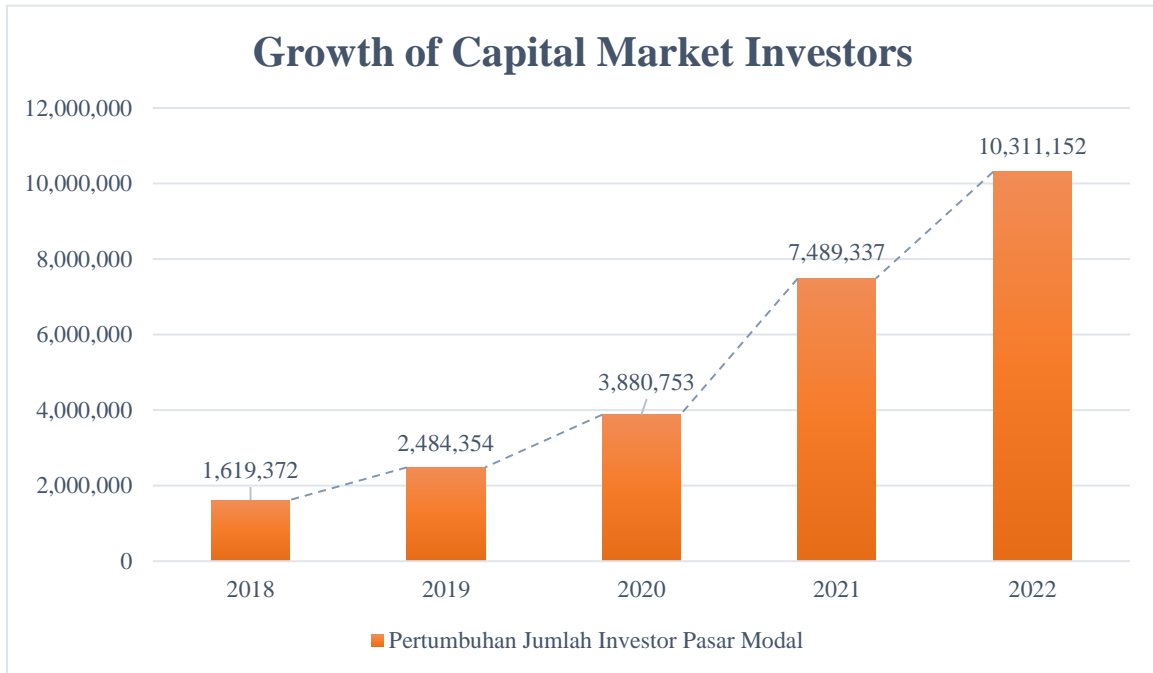
Investment is a form of investment made by individuals or groups with the aim of obtaining profits from these activities. One of the sectors of concern in 2018-2022 is the Energy sector. The energy sector became an excellent choice in investing in this period. This is based on the fact that energy is currently the most central sector because it has a direct impact on a number of aspects, such as transportation, logistics, foodstuffs, deflation and inflation. coupled with the Covid-19 pandemic in 2020-2021, many people need transportation. Before investors decide to invest their own funds, they will conduct a fundamental analysis. The method used in this study is quantitative data that shows the value of ROA, DER, and stock prices obtained from the company's financial statements. The sampling technique used is the *Nonprobability Sampling* technique type of *Purposive sampling*. *Purposive* sampling is sampling that involves sampling units selected according to certain criteria with the aim of obtaining sampling units with desired characteristics. So the number of samples to be studied amounted to 25 samples from 5 issuers.

ROA and DER partially have a significant influence on Stock Prices in Energy sector companies contained in LQ45 for the 2018-2022 period. With ROA as the variable that has the greatest influence. Simultaneously, ROA and DER have a significant influence on Stock Prices in Energy sector companies contained in LQ45 for the 2018-2022 period.

Keywords: ROA; DER; Stock Price

1. Introduction

The development of the investment world today has caused many people to be more active in investing. Investment is a form of investment made by individuals or groups with the aim of obtaining profits from these activities.



Picture 1 Data Growth in the Number of Capital Market Investors in Indonesia in 2018-2022

From the picture above, it can be seen that from 2018 to 2022 the number of investors increased by 8,691,780 people. The highest increase occurred in 2020 to 2021, a period where the COVID-19 pandemic occurred with an increase of 3,608,584 people. The increase in the number of investors has resulted in many sectors of the company being sought after by new and old investors. One of the sectors of concern in 2018-2022 is the energy sector. The energy sector became an excellent choice in investing in this period. This is based on the fact that energy is one of the fast-growing sectors because transportation equipment such as ambulances still need energy to pick up Covid-19 patients or to deliver medicines. Before the investors decide to invest the funds they have, they will do a fundamental analysis such as fundamental analysis. According to (Ariyani et al., 2018) Fundamental Analysis is one way of analyzing stock prices that emphasizes the performance of a company that issues its shares in the capital market and economic analysis that later affects the sustainability of the company's life.

In this study, fundamental analysis was carried out using ratios such as Return On Assets (ROA) and Debt to Equity Ratio (DER). According to (Sondakh et al., 2019) Return On Assets (ROA) is the ability of a business unit to obtain a return on a number of assets owned by the business unit. Return on Asset (ROA) is commonly used to see the extent to which the ability of the assets owned by the company can generate profits. Of all profitability and profitability ratios, this ratio is the most important ratio among others. According to (Bulutoding et al., 2018) Debt to Equity Ratio (DER) is the company's ability to meet all its obligations, which is indicated by how much part of its own capital is used to pay debts.

2. Literature Review

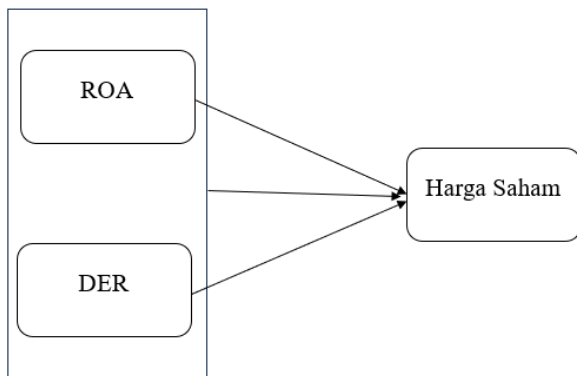
In this study, there are 2 ratios that are used as an assessment such as ROA (Return On Assets) and DER (Debt to Equity Ratio). In connection with the analysis carried out, namely ROA and DER against Share Price of Energy sector companies contained in LQ45 (Period 2018-2022) There is research (Mufarikhah & Dinda Amitha, 2019) with the title "The Effect of ROA and DER on Stock Prices in Manufacturing Companies on the IDX" by conducting multiple linear regression tests shows that the variables ROA (Return On Assets) and DER (Debt to Equity Ratio) have no influence on Stock Prices either partially or simultaneously.

In addition, there is research (Erick, 2021) with the title "The Effect of Return On Asset (Roa), Debt To Equity Ratio (Der), And Earning Per Share (Eps) On Stock Prices Of Mining Companies (Coal Industry Sector) Listed On The Indonesia Stock Exchange (IDX) In 2016-2018" by conducting multiple linear regression tests shows that partially EPS (Earning Per Share) has an influence on stock prices while ROA (Return On Assets) and DER (Debt to Equity Ratio) have no influence on stock prices. Simultaneously, these three variables have a significant influence on stock prices.

Research (Alex et al., 2022) with the title "The Effect of Earning Per Share, ROE, DER and BVS on Stock Prices at Government Banks Listed on the Indonesia Stock Exchange" by conducting regression techniques panel data shows that Earning per share (EPS) has no effect on stock prices, Return on Assets (ROE) affects stock prices with a positive direction of influence, Debt to Equity (DER) affects stock prices with a negative direction and Book Value Equity (BVS) affects stock prices with a direction negative.

3. Methodology

3.1. Model Framework



Picture 2. Model Framework

3.2. Data Collection Techniques

The source of the data used is secondary data related to the stock price of the energy sector listed in LQ45. The data is sourced from the site, (*Indo Premier*, n.d.) and ([Http://www.idx.co.id](http://www.idx.co.id), n.d.), and added with other research and journals related to this research.

3.3. Population and Sample

The population in this study is energy sector companies listed in LQ45 for the period 2018 – 2022. So that 25 samples were obtained from 5 issuers.

3.4. Sampling Techniques

Sampling technique is the process of selecting and determining the type and calculating the size of the sample to be studied. In this study, the technique used is the *Nonprobability Sampling* technique type of *Purposive sampling*. *Purposive* sampling is sampling that involves sampling units selected according to certain criteria with the aim of obtaining sampling units with desired characteristics. In this study the criteria needed are:

1. Companies located in the energy sector contained in LQ45.
2. Have complete and clear data.

So the number of samples to be studied amounted to 25 samples from 5 issuers.

3.5. Data Analysis Techniques

3.5.1. Descriptive Statistics

According to (Sugiyono, 2013) Descriptive statistical analysis is a statistically used statistic that is used to help analyze data by describing or illustrating data as it is collected, without intending to draw broad conclusions or generalizations.

3.5.2. Classical Assumption Test

Classical assumption tests are used to see or test a model that is feasible or not used in research. (Sugiyono, 2013). There are several kinds of classical assumption tests such as Normality Test, Multicollinearity Test, Autocorrelation Test.

3.5.2.1. Normality Test

The normality test is to test whether the residual values that have been standardized in the regression model are normally distributed or not. The residual value is said to be normally distributed if the standardized residual value is mostly close to its mean value.

To find out the normally distributed data can be done Kolmogorov – Smirnov statistical test (K-S test). Here is the K-S Test hypothesis (Ghozali, 2006).

1. The data is normally distributed, if the significant value > 0.05
2. The data is abnormally distributed, if the significant value < 0.05

3.5.2.2. Multicollinearity Test

A multicollinearity test is performed to test the regression model whether the model has a correlation between independent variables. To determine the presence or absence of symptoms of multicollinearity can be seen from the magnitude of the value of Tolerance and VIF (Variance Inflation Factor) through data processing programs

such as SPSS. According to (Ghozali, 2013) The common value commonly used is a Tolerance value of > 0.1 or $VIF < 10$, so multicollinearity does not occur.

3.5.2.2. Autocorrelation Test

The autocorrelation test aims to see whether in the linear regression model there is a correlation between confounding errors in period t with confounding errors in period $t-1$ (previous). Thus, autocorrelation tests can only be performed on time series data, because what is meant by autocorrelation is a value in a particular sample or observation that is strongly influenced by the value of previous observations.

The condition that must be met is the absence of autocorrelation in the regression model. The test method that is often used is the Durbin-Watson test (DW test) with the following conditions: (Ghozali, 2013)

- 1) If d is smaller than dL or greater than $(4-dL)$ then there is an autocorrelation.
- 2) If d lies between dU and $(4-dU)$, then it means that there is no autocorrelation.
- 3) If d lies between dL and dU or between $(4-dU)$ and $(4-dL)$, then there is no definite conclusion.

3.6. Multiple Linear Regression Test

According to (Ghozali, 2013) Multiple linear regression is a regression model that involves more than one independent variable. Multiple linear regression analysis is performed to determine the direction and how much influence the independent variable has on the dependent variable. The Regression Equation in this study is:

$$Y = \alpha + \beta x_1 + \beta x_2 + e$$

Information:

- Y = Stock Price
- x_1 = ROA (*Return On Asset*)
- x_2 = DER (*Debt to Equity Ratio*)
- α = Constant
- β = Regression Coefficient Value
- e = error (confounding variable)

3.7. Test t (Partial)

The t-test is performed to find out whether each independent variable has a significant influence on the dependent variable. The requirements for the t (Partial) Test are: (Ghozali, 2013).

1. The independent variable has an effect on the dependent variable, if the significance value < 0.05
2. The independent variable has no effect on the dependent variable, if the significance value > 0.05

3.8. F Test (Simultaneous)

The F test is performed to test whether all independent variables can explain the significant influence on the dependent variable. The conditions that must be met in the F (Simultaneous) test are: (Ghozali, 2013).

1. The independent variables together affect the dependent variable, if the significance value < 0.05 .

2. The independent variables together have no effect on the dependent variable, if the significance value > 0.05.

3.9. Determinant Coefficient Test (R²)

The coefficient of determination test (R²) is performed to help determine the percentage of variation in the independent variable that affects the dependent variable. If the calculation result (R²) is greater or closer to 1, then the independent variable has a strong effect on the dependent variable.

4. Result and Analysis

4.1. Descriptive Statistics

Table 1 Descriptive Statistics

| Descriptive Statistics | | | | | |
|------------------------|----|---------|---------|---------|----------------|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| ROA | 25 | -3.51 | 27.71 | 9.5960 | 8.10309 |
| DER | 25 | .10 | 1.55 | .7440 | .41926 |
| Share Price | 25 | 264 | 4320 | 1777.48 | 1068.689 |
| Valid N (listwise) | 25 | | | | |

Based on table 1 it can be concluded that:

1. The variable ROA (X1) has a minimum value of -3.51% while it has a maximum value of 27.71%, with an average of 9.5960 and the standard deviation of ROA data is 8.10309.
2. The DER variable (X2) has a minimum value of 0.10 while it has a maximum value of 1.55, with an average of 0.7440 and the standard deviation of the DER data is 0.41926.
3. The Stock Price variable has a minimum value of 264 while it has a maximum value of 4320, with an average of 1777.48 and the standard deviation of Stock Price data is 1068.689.

4.2. Classical Assumption Test

4.2.1. Normality Test

Table 2 Normality Test of Stock Prices

| | | Unstandardized Residual |
|----------------------------------|----------------|-------------------------|
| N | | 25 |
| Normal Parameters ^{a,b} | Mean | .0000000 |
| | Std. Deviation | 718.15881532 |
| Most Extreme Differences | Absolute | .119 |

| | | |
|------------------------|----------|-------------------|
| | Positive | .119 |
| | Negative | -.066 |
| Test Statistics | | .119 |
| Asymp. Sig. (2-tailed) | | .200 ^c |

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.

Based on table 2 it can be seen that the significance value with the Kolmogorov-smirnov test of 0.200 is greater than the basic significance level of 0.05. So it can be concluded that the research data on Stock Prices is normally distributed.

4.2.2. Multicollinearity Test

Table 3 Multicollinearity Test of Stock Prices

| Type | Collinearity Statistics | |
|--------------|-------------------------|-------|
| | Tolerance | VIF |
| 1 (Constant) | | |
| ROA | .724 | 1.382 |
| DER | .724 | 1.382 |

a. Dependent Variable: Stock Price

Based on table 3, it can be seen that the Tolerance and VIF values are 0.724 and 1.382 for ROA against Stock Price and 0.724 and 1.382 for DER variables against Stock Price. this value is greater than the Tolerance level of 0.1 and VIF below 10. So it can be concluded that research data on Stock Prices does not occur multicollinearity.

4.2.3. Autocorrelation Test

Table 4 Autocorrelation Test to Stock Prices

| Type | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|------|-------|----------|-------------------|----------------------------|---------------|
| 1 | .741a | .548 | .507 | 750.092 | 1.618 |

- a. Predictors: (Constant), DER, ROA
- b. Dependent Variable: Stock Price

Based on table 4, it can be seen that the value of Autocorrelation with the Durbin-Watson method from the ROA and DER Variables to Stock Price is 1.618, this value is greater than the dU value of 1.5495 and (4-dU) 2.4505, which means that there is no autocorrelation in this study.

4.3. Multiple Linear Regression Test

Regression Equation

$$Y = \alpha + \beta x_1 + \beta x_2 + e$$

Table 5 Multiple Linear Regression Test of Stock Price

| Type | Unstandardized Coefficients | | Standardized Coefficients | | |
|--------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | t | Sig. |
| 1 (Constant) | -105.195 | 491.512 | | -.214 | .833 |
| ROA | 114.618 | 22.214 | .869 | 5.160 | .000 |
| DER | 1052.158 | 429.339 | .413 | 2.451 | .023 |

a. Dependent Variable: Stock Price

Based on table 5, the regression equation for the ROA and DER variables against Stock Price is obtained as follows:

$$Y = -105.195 + 114.618x_1 + 1052.158x_2$$

Based on the results of the regression equation above, the following conclusions can be drawn:

1. The negative value for constant number (a) is -105.195. This means that in the absence of the ROA independent variable, and the DER variable of the Stock Price will decrease by 105,195.
2. The positive value of the regression coefficient for the ROA variable (x^1) is 114.618. A positive value shows that there is a correlation between ROA and Stock Price. This means that every increase in ROA by one unit will increase the Stock Price by 114,618 units, assuming the other variables are constant.
3. The positive value of the regression coefficient for the variable DER (x^2) is 1052.158. A positive value indicates that there is a correlation between DER and Stock Price. This means that every increase in DER by one unit will increase the Share Price by 1052,158 units, assuming the other variables are constant.

4.4. Test t (Partial)

Table 6 Partial t-Test of Stock Prices

| Type | Unstandardized Coefficients | | Standardized Coefficients | | |
|--------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | t | Sig. |
| 1 (Constant) | -105.195 | 491.512 | | -.214 | .833 |
| ROA | 114.618 | 22.214 | .869 | 5.160 | .000 |
| DER | 1052.158 | 429.339 | .413 | 2.451 | .023 |

a. Dependent Variable: Stock Price

By using criteria:

1. The independent variable has an effect on the dependent variable, if the significance value < 0.05
2. The independent variable has no effect on the dependent variable, if the significance value > 0.05

Based on table 6, the results of the t (partial) ROA and DER variables on Stock Price are obtained as follows:

1. Partial effect of ROA (Return On Assets) on Stock Price

The significance value of ROA of 0.000 is less than the significance value of 0.05 which means that H_1 is accepted and H_0 is rejected. This states that the variable ROA (Return On Assets) partially affects the Stock Price. Thus, the variable ROA (Return On Asset) partially has a positive effect on the Stock Price.

2. Partial effect of DER (Debt to Equity Ratio) on Stock Price

The significance value of DER of 0.023 is less than the significance value of 0.05 which means that H_1 is accepted and H_0 is rejected. This states that the variable DER (Debt to Equity Ratio) partially affects the Stock Price. Thus, the variable DER (Debt to Equity Ratio) partially has a positive effect on the Stock Price.

4.5. F Test (Simultaneous)

Table 7 F Test (Simultaneous) of Stock Prices

| Type | Sum of Squares | Df | Mean Square | F | Sig. |
|--------------|----------------|----|-------------|--------|-------|
| 1 Regression | 15032244.224 | 2 | 7516122.112 | 13.359 | .000b |
| Residuals | 12378050.016 | 22 | 562638.637 | | |
| Total | 27410294.240 | 24 | | | |

a. Dependent Variable: Stock Price

b. Predictors: (Constant), DER, ROA

Based on table 7, the results of the F (Simultaneous) ROA and DER variables together on the Stock Price are obtained as follows:

The significance value of ROA and DER of 0.000 is less than the significance value of 0.05 which means that H_1 is accepted and H_0 is rejected. This states that the variables ROA and DER simultaneously affect the Stock Price. Thus, the variables ROA and DER simultaneously have a positive effect on the Stock Price.

4.6. Determinant Coefficient Test (R^2)

Table 8 Test of the Coefficient of Determinant (R^2) of Stock Price

| Type | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|------|-------|----------|-------------------|----------------------------|
| 1 | .741a | .548 | .507 | 750.092 |

a. Predictors: (Constant), DER, ROA

b. Dependent Variable: Stock Price

Based on the results of the determinant coefficient (R^2) presented in table 8, it is known that the ROA and DER variables have an influence on the Stock Price variable of 0.548 (54.8%). The rest is influenced by other variables.

4.7. Discussion

The effect of ROA (Return On Assets) on Stock Prices

The significance value of ROA of 0.000 is smaller than the significance value of 0.05 which means that the variable ROA (Return On Assets) partially affects the Stock Price. These results are also in line with research (Bulutoding et al., 2018) which states that the greater the ROA in a company, the better the company's financial performance. High ROA can also attract investors to invest because it is considered that the company is able to utilize its assets for business.

Effect of DER (Debt to Equity Ratio) on Stock Price

The significance value of DER of 0.023 is smaller than the significance value of 0.05 which means that the variable DER (Debt to Equity Ratio) partially affects the Stock Price. These results are also in line with research (Nirmolo & Widjajanti, 2018) which states that the size of the DER value in the company can affect the high and low stock price.

5. Conclusion

Based on the results of the study, it can be concluded that:

1. ROA and DER partially have a significant influence on Stock Prices in Energy sector companies contained in LQ45 for the 2018-2022 period. With ROA as the variable that has the greatest influence.
2. ROA and DER simultaneously have a significant influence on Stock Prices in Energy sector companies contained in LQ45 for the 2018-2022 period.

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