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Research Article

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The Influence of DER, ROA, EPS, and NPM on Stock Prices in IDX ENERGY Sector Companies in 2017–2022

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Abstract: *This study aims to analyze the influence of Debt-to-Equity Ratio (DER), Return on Assets (ROA), Earnings per Share (EPS), and Net Profit Margin (NPM) on stock prices of energy sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2017–2022. A quantitative approach with an explanatory method was employed in this study. The research sample consisted of 26 companies selected through purposive sampling, resulting in a total of 156 annual observations. Secondary data were obtained from annual financial reports published on the official websites of IDX. Data analysis was conducted using multiple linear regression with the help of SPSS, along with classical assumption testing to ensure model validity. The results indicate that simultaneously, the four independent variables have a significant effect on stock prices. Partially, DER has a negative and significant effect, ROA and EPS have positive and significant effects, while NPM does not significantly influence stock prices. The adjusted R^2 value of 0.392 implies that 39.2% of the variation in stock prices can be explained by this model. These findings reinforce the relevance of financial ratios as tools for fundamental stock analysis. The practical implication of this study encourages corporate management to enhance asset efficiency and earnings per share performance to attract investors. The study also contributes theoretically to the development of stock valuation models based on financial ratios in the energy sector.*

Keywords: *Stock Price; Debt to Equity Ratio; Return on Assets; Earnings per Share; Net Profit Margin; IDX ENERGY.*

Introduction

Indonesia's capital market has grown rapidly in recent decades and has become one of the main instruments in supporting national economic growth. The Indonesia Stock Exchange (IDX) reflects the condition of the capital market by providing various sectoral indices, one of which is the energy sector (IDX ENERGY). This sector is a strategic pillar in national development because it provides major energy resources such as oil, gas, coal, and renewable energy. However, the energy sector is also very vulnerable to global fluctuations, such as changes in energy commodity prices, government energy policies, and geopolitical uncertainty that affect the stability of stock prices of companies in this sector.

Financial management is a managerial activity related to planning, budgeting, acquiring, managing, and controlling funds owned by an organization to achieve the goal of maximizing the company's value (Noviana, 2020). According to Brigham & Houston quoted (Zaelani, 2025), financial management has three main functions: funding decisions, investment decisions, and dividend decisions. In the context of public companies, financial management is very important in determining how an entity creates added value through the management of its financial resources.

The main objective of financial management is to maximize shareholder wealth as reflected in the company's stock price. Therefore, all managerial decisions, including capital structure and operational efficiency, must be measured for their impact on the company's market value (Iskandar, 2025).

Stock price is an important indicator that reflects the value of a company in the eyes of investors and is the basis for making investment decisions (Wahrudin, 2020). In practice, stock prices are influenced by various internal and external factors. Financial ratios are one of the internal indicators widely used in fundamental analysis to assess company performance (Sofyan, 2020). DER, ROA, EPS, and NPM are the four main financial ratios commonly used to evaluate a company's financial health and growth prospects.

Financial reports are the main source of information for stakeholders to evaluate the financial condition, performance, and cash flow of a company. The main components of financial reports include the balance sheet, income statement, statement of changes in equity, cash flow statement, and notes to the financial statements (Rusmana, 2020).

Financial reports prepared in accordance with financial accounting standards contain important information such as total debt, capital, revenue, net profit, assets, and the number of shares outstanding, all of which form the basis for calculating financial ratios such as DER, ROA, EPS, and NPM.

Although many studies have been conducted on the influence of financial ratios on stock prices, most previous studies have focused more on the manufacturing and banking sectors. Studies on the energy sector, especially after the formation of the IDX ENERGY index in 2017, are still relatively limited. In addition, the results of previous studies still show inconsistencies, such as the influence of DER which in some studies has a positive effect, but in other studies it shows a negative effect on stock prices. This indicates an empirical gap that needs to be explored further.

Financial ratios are quantitative analysis tools to assess company performance based on data in financial statements (Arifudin, 2020).

Some of the main ratios used in fundamental analysis include:

Debt to Equity Ratio (DER): DER is a ratio that measures the proportion of a company's funding that comes from debt compared to its own capital. This ratio reflects the company's capital structure and the financial risk borne by shareholders.

Several previous studies have shown that DER has a significant influence on stock prices, as shown by (Abdullah et al, 2016) and (Artika et al, 2023), which state that high DER can reduce investor interest because it is considered to increase the risk of bankruptcy.

Return on Assets (ROA): ROA is a profitability ratio that measures a company's ability to generate profits from its total assets. This ratio indicates management's efficiency in utilizing all the company's resources to make a profit.

Research by (Dzakwan et al, 2023) and (Hardiyanti & Munari, 2022) proves that ROA has a positive and significant effect on stock prices because it shows the company's effectiveness in creating value.

Earnings per Share (EPS): EPS measures the amount of net income available for each share of common stock. EPS is an important indicator for investors because it is directly related to dividend potential and stock value growth.

Studies by (Hery, 2020) and (Dzakwan et al, 2023) show that EPS has a significant impact on stock prices, especially in profit-sensitive sectors such as energy.

Net Profit Margin (NPM): NPM shows how much percentage of net profit a company earns from its total sales. NPM reflects the company's operational efficiency and ability to control costs.

Several studies, such as by (Rheza, 2016) and (Fahmi, 2015), show that the influence of NPM on stock prices is not always significant, especially in sectors that have fluctuating profit margins such as the energy sector.

Stock price is an indicator of a company's market value formed through the interaction of supply and demand in the capital market. Stock prices reflect investor expectations of the company's performance and prospects. Stock prices are influenced by various factors, both internal and external, one of which is the financial ratio that reflects the company's condition and performance (Labetubun, 2021).

Based on this background, this study focuses on analyzing the effect of DER, ROA, EPS, and NPM on the stock prices of energy sector companies listed on the IDX during the period 2017–2022. This study is expected to fill the gap in the literature and contribute to the development of a stock valuation model based on financial ratios in the dynamic energy sector.

Theoretically, this study enriches the literature related to the influence of financial ratios on the market value of companies in the energy sector and tests the relevance of capital structure theory and signaling theory in the context of the Indonesian capital market. Practically, the results of this study are expected to provide useful information for investors, financial analysts, and company management in making strategic decisions.

Method

According to Rahardjo quoted (Judijanto, 2025) that the research method is one way to obtain and seek tentative truth, not absolute truth. The result is scientific truth. Scientific truth is a truth that is open to being continuously tested, criticized, and even revised. Therefore, there is no best method for seeking truth, but what exists is the right method for a particular purpose according to the existing phenomenon. Budiharto quoted (Suryana, 2024) that the selection of research methods must be adjusted to the research being conducted so that the results are optimal.

Based on the title above, Ridwan and Tita Lestari in (Arifudin, 2024) explain that the research design used is quantitative research. Quantitative research methods are research whose results are presented in the form of descriptions using numbers and statistics. Sugiyono in (Tanjung, 2020) explains that quantitative research methodology is a scientific method for obtaining valid data with the aim of finding, proving, and developing knowledge so that in turn it can be used to understand, solve, and anticipate problems in certain fields. Meanwhile, according to (Rusmana, 2021) explains that quantitative research is a systematic approach used to collect, analyse and interpret numerical data.

This study uses a quantitative approach with a causal-comparative research type. This approach is used to determine the effect of independent variables, namely Debt to Equity Ratio (DER), Return on Assets (ROA), Earning per Share (EPS), and Net Profit Margin (NPM) on the dependent variable, namely stock price. The quantitative approach was chosen because this study uses data in the form of numbers from financial reports which are then processed statistically to test the hypothesis. This study is also explanatory because it explains the causal relationship between variables.

The population in this study is all energy sector companies listed in the IDX ENERGY index on the Indonesia Stock Exchange (IDX) during the period 2017 to 2022, consisting of 88 companies. The sampling technique used purposive sampling, with the following criteria: 1) Energy sector companies that are consistently listed in IDX ENERGY during 2017 to 2022, 2) Have complete annual financial reports that can be publicly accessed on the IDX website or other official sources, 3) Have not been delisted during the observation period, and 4) Present the required financial ratio information, such as total debt, total equity, net income, total assets, number of shares outstanding, and net sales.

Based on these criteria, a sample of 26 companies was obtained with a total of 156 observations (26 companies × 6 years). The data used in this study are secondary data sourced from the company's annual

financial reports obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id), IDN Financials, and from the official websites of each company. The data includes: 1) Total debt and total equity (to calculate DER), 2) Net profit and total assets (to calculate ROA), 3) Net profit and number of shares outstanding (to calculate EPS), 4) Net profit and net sales (to calculate NPM), and 5) Year-end closing stock price.

Furthermore, Amir Hamzah said that data collection means various efforts to collect facts related to the topic or discussion that is being or will be explored (Damayanti, 2020). These details can be found in scientific literature, research, and scientific writings, dissertations, theses, and other written sources. According to (Rohimah, 2024) data collection can be done in various circumstances, using different sources, and using different techniques.

The data collection technique is done by documentation, namely downloading, and processing the company's annual financial report that matches the sample criteria. The financial data collected is then input into SPSS version 26 software to be analyzed statistically.

Sugiyono in (Arifudin, 2022) explains that data analysis is an activity after data from all respondents or other data sources are collected. Data analysis can be done if the data is collected and then the data is used to draw objective and logical conclusions. In line with this opinion, M. Kasiran in (Juhadi, 2020) argues that this method is intended to summarize data in a form that is easy to understand and easy to interpret so that the relationship between research problems can be studied and tested.

Results and Discussion

Descriptive Statistics

Descriptive statistics provide a general quantitative overview of the variables studied: DER, ROA, EPS, NPM, and Stock Price, from 156 observations (26 companies × 6 years).

Variabel	N	Minimum	Maksimum	Rate	Standard Deviation
DER	156	0.0823	9.7584	1.6509	1.5854
ROA	156	-0.3501	0.4195	0.0486	0.0881
EPS	156	-650.71	2471.37	248.64	431.57
NPM	156	-2.0184	2.4656	0.0931	0.3951
Share Price	156	50	14350	2317.06	3165.62

Classical Assumption Test

1. Normality: Kolmogorov-Smirnov significance of 0.200 (> 0.05) → data is normally distributed.
2. Multicollinearity: All variables have Tolerance > 0.1 and VIF < 10 → no multicollinearity.
3. Heteroscedasticity: Based on the Glejser test, all variables > 0.05 → no heteroscedasticity occurs.
4. Autocorrelation: Durbin-Watson value of 2.016 → there is no autocorrelation.

Multiple Linear Regression Analysis

Regression model: Y = 1182,267 – 186,921 DER + 11,917,058 ROA + 2,571 EPS – 748,096 NPM

Partial Significance Test (t-Test)

Variabel	t-Count	Sig.	Interpretation
DER	-2.335	0.021	Significant negative
ROA	3.799	0.000	Significantly positive
EPS	2.969	0.003	Significantly positive
NPM	-0.894	0.373	Not significant

Simultaneous Significance Test (F Test)

F count: 26.037

Sig: 0.000 (< 0.05) → DER, ROA, EPS, and NPM simultaneously have a significant effect on stock prices.

Coefficient of Determination

$R^2 = 0.407$

Adjusted $R^2 = 0.392$ → 39.2% of stock price variation is explained by this model.

Discussion and Correlation to Theory

1. Debt to Equity Ratio (DER)
   a) Significant negative impact on stock prices. This supports Capital Structure Theory, which states that a capital structure that relies too much on debt will increase the risk of bankruptcy and have a negative impact on investor perception.
   b) In context Signaling Theory, High DER gives a negative signal to investors regarding the stability and solvency of the company.
2. Return on Assets (ROA)
   a) Significant positive influence on stock prices. This supports Signaling Theory, because high ROA indicates management efficiency in managing assets, which is a positive signal for investors.
   b) High ROA also shows that the company can generate optimal profits, increasing the attractiveness of the stock market.
3. Earnings per Share (EPS)
   a) Significantly positive towards stock prices. This is in line with Signaling Theory, where high EPS provides a direct signal about the company's profitability to the market.
   b) Also, in accordance with Efficient Market Theory, where earnings per share information is directly reflected in the stock price.
4. Net Profit Margin (NPM)
   a) No significant effect. This can be explained because in the energy sector, profit margin is not always the main indicator in investor assessment.
   b) Although NPM is an efficiency indicator, these results show that Signaling Theory not always universally applicable-especially in highly volatile sectors like energy.
5. Simultaneous Analysis

The results of the F test show that the four variables simultaneously affect stock prices. This supports the approach. Multifactor model in Asset Valuation Theory, which states that stock prices are influenced by various fundamental factors.

6. Empirical Relation

In line with previous studies: (Dzakwan et al, 2023), (Artika et al, 2023), (Hardiyanti, 2022), and (Abdullah et al, 2016).

These results indicate that in making investment decisions, investors in the energy sector tend to consider asset utilization efficiency (ROA) and profitability per share (EPS) more than net profit margin (NPM) or financing structure (DER), unless the DER is too high which is a risk signal.

Conclusion

Based on the results of research on the influence of Debt to Equity Ratio (DER), Return on Assets (ROA), Earning per Share (EPS), and Net Profit Margin (NPM) on stock prices in companies in the IDX ENERGY sector for the period 2017–2022, several conclusions can be drawn as follows: 1) Simultaneously, the four independent variables (DER, ROA, EPS, and NPM) have a significant effect on stock prices. This shows that overall financial performance is an important factor that influences investor perceptions and decisions on stocks in the energy sector, and 2) Partially: a) DER has a negative and significant effect on stock prices. This means that the higher the proportion of debt to capital, the lower the stock price. This shows that a debt-dominated capital structure gives a negative signal to investors, in accordance with the capital structure theory, b) ROA has a positive and significant effect on stock prices. This shows that the efficiency of company asset management in generating profits is an important indicator for investors in assessing company performance, c) EPS has a positive and significant effect on stock prices. High EPS indicates that the company can generate earnings per share, which is a positive signal for investors, and d) NPM does not significantly affect stock prices. Net profit margin is not a primary focus for investors in assessing energy sector companies, which tend to be more influenced by asset efficiency and profitability per share.

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