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The Influence of EPS, ROE, DER, and GDP on Stock Price in the Mining Sector Period 2019 – 2022

Moses Hendricks Tharob[1], Didit Herlianto[2]*

Abstract

The purpose of this study was to analyze the effect of Earnings per Share (EPS), Return on Equity Ratio (ROE), Debt to Equity Ratio (DER), and Gross Domestic Product (GDP) on Mining Sector Stock Prices for the 2019 - 2022 period. The data was collected employing secondary data obtained from the official website of the Indonesian Stock Exchange (IDX) and the financial statements of each research object company. Methods of data analysis include descriptive analysis and quantitative analysis using multiple linear regression. The results of this study found that: EPS, ROE, DER, and GDP have a jointly significant effect on Mining Sector Stock Prices for the 2019 - 2022 period. EPS and ROE partially have a positive and significant effect on Mining Sector Stock Prices for the 2019 - 2022 period. Meanwhile, DER and GDP partially have no significant effect on Mining Sector Stock Prices for the 2019 – 2022 period.

***Keywords:** DER, EPS, Stock Price, GDP, ROE*

Introduction

In the decision to buy or sell shares, an analysis of the issuer's shares is required. There are two popular analyzes used to analyze stocks, namely fundamental analysis and technical analysis. Fundamental analysis is an analysis of macroeconomic factors that affect the performance of all companies, followed by industry analysis, and finally an analysis of the companies issuing the relevant securities to assess whether the securities issued are profitable or detrimental to investors. Technical analysis is a technique for predicting the direction of stock movements and other stock market indicators based on historical market data such as price and volume information (Tendelilin, 2017). In this study, researchers focused on the fundamental analysis of a company, with various variable perspectives, namely from the appraisal/market aspect (EPS), profitability aspect (ROE), solvency aspect (DER), and macro aspect (GDP).

The valuation/market aspect is used to measure the company's management ability to create market value above investment costs, in this study represented by *Earning per Share* (EPS). Dandelion (2017) explains that *Earning Per Share* (EPS) is a company's net profit that is ready to be distributed to shareholders divided by the number of company shares circulating on the stock exchange. The higher the EPS,

[1,2] *UPN "Veteran" Yogyakarta*
* *Corresponding author, email: diditgatra@yahoo.co.id*

the higher the amount of dividends each shareholder gets, because EPS describes the amount of dividends per share. Therefore EPS is used as one of the ratios that are highly viewed by prospective stock buyers of the issuer.

Another aspect that influences stock prices is profitability. The profitability ratio is intended to see information about the company's ability to gain profits by utilizing the company's available resources. In this research, the aspect of profitability is measured by *Return on Equity* (ROE). Brigham & Houston (2018) writes that ROE is the ratio of return on equity, which is a net profit for shareholders divided by total shareholder equity. ROE shows the rate of return they earn. The greater the ROE results, the better the company's performance. An increased ratio indicates that management's performance is good in managing operational funding sources effectively to generate a net profit.

Debt management is also a basis for investor decisions. One of the ratios used by investors is the debt-*to-equity ratio* (DER). According to Brigham & Houston (2018), DER is a ratio that measures the percentage of funds provided by creditors by comparing the company's total debt to the total equity owned. Debt in a company becomes a part of the capital used by management to improve production performance.

The mining sector is very vulnerable to world economic turmoil. Within a single country, the level of resilience to economic turmoil is commonly seen in the country's Gross Domestic Growth (GDP). GDP growth indicates an increase in consumer purchasing power for company products. Purchasing power describes a person's financial security. If there is economic turmoil, a person tends to save his money to create the financial security that he usually has. There are 2 logics of direct influence and indirect influence on why GDP affects stock prices. The direct effect is buying shares on the stock exchange by investors, but in a pandemic like this, investors tend to hold back their money or invest in safer instruments. The indirect effect is an increase in purchases of the company's products. In the increase in purchases of this product, positive results are seen in the financial statements, both monthly and annually, which cause mining sector companies to have strong financial fundamentals. This causes investors to be brave to buy company shares directly. Therefore, GDP growth is a positive signal for investment.

In the problems that have been described, the purpose of this study is to analyze the effect of *earnings per share, return on equity, debt to equity ratio,* and gross domestic product on mining sector stock prices for the period 2019 to 2022.

Literature Review

Financial Ratios

Brigham & Houston (2018) writes that financial statement analysis can provide investors with an understanding of the company's strengths and weaknesses. Forecasting the company's financial performance in the future is very important. Financial ratios are activities of comparing numbers in the financial statements to produce more detailed information about the performance of a company. There are five groups of financial ratios, namely: 1) liquidity ratios, 2) asset management ratios/activity ratios, 3) debt management ratios/solvability ratios/ *leverage ratios,* 4) profitability ratios, and 5) market value ratios.

Earning per Share

Earning per share (EPS) is one of the ratios of market value ratios. According to Tandelilin (2017), EPS is used to measure management success in achieving profits for company owners. This ratio is a comparison between the income generated (net income) and the number of shares outstanding. EPS describes the company's profitability which is reflected in each share. For investors, EPS information is the most basic and useful information, because it can describe the company's *earnings prospects* in the future. EPS can be calculated by the formula:

$$EPS = \frac{laba\ bersih}{jumlah\ saham\ beredar}$$

Return on Equity

Return on Equity (ROE) is one of the ratios of profitability ratios. According to Brigham & Houston (2018), this ratio provides an overview of how companies use and utilize assets profitably. ROE is one way to calculate a company's efficiency by comparing the profits available to the owners of their capital with the amount of their capital that generates these profits. *Return on equity* can be calculated using the formula:

$$ROE = \frac{laba\ bersih}{total\ ekuitas}$$

Debt to Equity Ratio

According to Kasmir (2015), the Debt to equity ratio is the ratio used to find out every rupiah of capital that is used as collateral for debt. According to Henry (2016), DER is a ratio of money used to measure the ratio between total debt and total equity. The higher the DER, the smaller the amount of owner's capital that can be used as collateral for debt. According to Henry (2016), the formula for calculating DER is:

$$DER = \frac{total\ liabilitas}{total\ ekuitas}$$

Gross domestic product

According to Sadono Sukirno (2015), GDP can be interpreted as the value of goods and services produced within the country in one year. In the economy, in both developed and developing countries, goods, and services are produced not only by companies owned by residents of these countries but by factors of production originating from abroad. Thus, GDP is the value of goods and services in a country produced by the factors of production belonging to the citizens of that country and foreign countries. Theoretically, the formula for calculating GDP using the expenditure approach is:

$$GDP = C + G + I + NX$$

Hypothesis Development

Internal and external factors of the company affect stock prices. Various internal factors, especially those described above regarding financial ratios have a direct impact on stock prices because these ratios are aspects of the company's performance results in managing its assets. External factors in question are factors that cannot
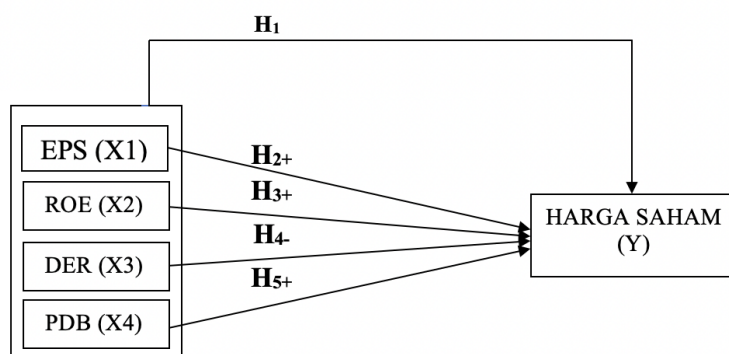
Figure 1. Conceptual framework

be controlled by companies such as disasters, political stability, changes in laws, and economic stability of the country. In this study, the aspect of financial ratios is represented by EPS (market value aspect), ROE (profitability ratio), DER (debt ratio), and GDP as external factors.

H1. EPS, ROE, DER, and GDP have an effect on mining sector stock prices for the 2019-2022 period

According to Tandelilin (2017), *Earning Per Share* (EPS) is used to measure management's success in achieving profits for company owners. An increase in the EPS value will be followed by an increase in stock prices, this is because the EPS value will determine the investor's decision to invest their funds. "If the company's profits are high, investors will be interested in buying these shares, so that the share price will increase"

H2. EPS affects the share price of the mining sector for the 2019-2022 period

According to Henry (2016), *Return on Equity* (ROE) is a ratio that shows the results of using company capital in creating net profit. The higher the ROE ratio, the higher the firm value, this is certainly an attraction for investors to invest in the company. So, a company that has a high ROE will have a positive influence on investors to hunt for the company's shares and of course, the share price will also increase.

H3. ROE affects the share price of the mining sector for the 2019-2022 period

According to Henry (2016), DER is a ratio of money used to measure the ratio between total debt and total equity. The higher the DER, the smaller the amount of owner's capital that can be used as collateral for debt. Arifin & Agustami (2016) states that a high debt-to-equity ratio harms company performance, because the debt level is higher, which means the interest expense will be greater so that it can reduce profits, so stock prices tend to decrease, and vice versa. *a small* level of *debt to equity ratio* indicates better performance because it causes a higher rate of return, under conditions such as stock prices will rise.

H4. DER has an effect on mining sector stock prices for the 2019-2022 period

According to Sukirno (2015), GDP can be interpreted as the value of goods and services produced within the country in one year. In simple terms, an increase in GDP will improve the country's economic growth, increase people's purchasing power, and open investment opportunities. With the increase in people's purchasing

power, the company will increase production and will bring high profits and this will make investors interested in buying the company's shares, so that the company's stock price will rise. GDP has a relationship with stock prices.

H5. GDP has an effect on mining sector stock prices for the 2019-2022 period

Methods

Based on the method used, this type of research is quantitative research. The research used is quantitative. According to Sugiyono, (2016), quantitative selection is intended to summarize and connect data and try to find out whether a variable can influence other variables (causality). The population of this study is issuers on the Indonesian stock exchange in the mining sector. The criteria for determining the sample, namely: Mining sector companies listed on the Indonesia Stock Exchange (IDX) and surviving during the study period (2019-2022 period). The company data is taken from IDX's official website (idx.co.id) and the company's official financial reports. Based on the predetermined sample selection criteria, a total of 44 (forty-four) companies were obtained. The independent variables in this study are *earnings per share* (X1), *return on equity* (X2), *debt-to-equity ratio* (X3), and gross domestic product (X4). The dependent variable in this study is the stock price (Y). With multiple linear regression as an analytical technique assisted by SPSS *Statistics* 21 software.

Results and Discussion

Result

Regression Analysis

Based on Table 1, the regression results can be known as follows:

$$Y_{\text{Share Price}} = 5734.861 + 4.387\text{EPS} + 0.100\text{ROE} - 0.005\text{DER} - 0.000021\text{PDB}$$

Classic assumption test

Normality test

Kolmogorov-Smirnov normality test seen in Table 2 shows a significance value of 0.010 which is greater than 0.05, thus it can be stated that the data is normally distributed.

Table 1. Multiple Linear Regression Results

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	std. Error	Betas		
1	(Constant)	5734.433	5499.188		1.043	.299
	EPS	4.387	.434	.662	10.101	.000
	ROE	.100	048	.136	2097	038
	DER	-.005	007	-.041	-.647	.519
	GDP	-2.147E-5	.000	-.044	-.663	.508

a. Dependent Variable: Share_Price

Table 2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		U
N		176
Normal Parameters [a,b]	Means	3030.82
	std. Deviation	7485746
Most Extreme Differences	Absolute	.343
	Positive	.332
	Negative	-.343
Test Statistics		.343
Symp. Sig. (2-tailed)		.010 [c]

a. Test distribution is Normal.

b. Calculated from data.

Table 3. Multicollinearity Test Results

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Collinearity Statistics	
	B	std. Error	Betas			Tolerance	VIF
(Constant)	522.861	583.4917		.090	0.929		
EPS	31765726	6866.162	0.343	4.626	0.000	0.933	1.071
ROE	538.409	640.794	0.066	0.840	0.402	0.836	1.197
DER	42.669	271.071	0.012	0.157	0.875	0.845	1.183
GDP	9.482E-5	0.000	0.021	0.276	0.783	0.923	1.083

Multicollinearity Test

Based on the results of the multicollinearity test in Table 3, it shows that the variables EPS, ROE, DER, and PDB have *tolerance values* of 0.933, 0.836, 0.845, and 0.923 respectively. While the VIF values of the four independent variables consisting of EPS, ROE, DER, and PDB have respectively 1.071, 1.197, 1.183, and 1.083. This shows that there is no independent variable that has a *tolerance value* of less than 0.10 and no independent variable has a VIF value of 10, so it can be concluded that there is no multicollinearity between the independent variables in the regression model.

Heteroscedasticity Test

Table 4 shows that there are no independent variables that significantly affect the dependent variable. This can be seen from the significance probability > 0.05 which means there is no heteroscedasticity in the regression model of this study.

Table 4. Heteroscedasticity Test Results

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	9486028	5243.683		1.809	.073
	EPS	.533	.414	.114	1.287	.200
	ROE	061	045	.118	1.350	.179
	DER	-.007	007	-.094	-1.096	.275
	GDP	-3.631E-5	.000	-.104	-1.177	.241

a. Dependent Variables: RES2

Table 5. Autocorrelation Test Results

Summary Model [b]

Model	R	R Square	Adjusted R Square	std. An error in the Estimate	Durbin-Watson
1	.690 [a]	.476	.460	5883.38931	2.186

a. Predictors: (Constant), PDB, DER, ROE, EPS

b. Dependent Variable: Share_Price

Autocorrelation Test

Durbin-Watson test (DW) seen in Table 5 shows that the DW value is 2.186. This value will then be compared with the dL and dU values. This value is taken from the Durbin-Watson table with a significance value of 5%, with a sample size of 176 (n = 176) and an independent variable (k) of 4, the dL value = 1.7072 and the dU value = 1.800. Then a decision is made with the condition that dL < DW < 4-dU, then 1.7072 < 2.186 < (4 – 1.800), namely 1.7072 < 2.186 < 2.200. The results of decision-making showed that there was no autocorrelation in the research regression model.

Hypothesis testing

F test

Based on the test results showed in Table 6 obtained an F value of 6.027 with a significance value of 0.000. The calculated F value is greater than the table F value (6.027 > 2.42) and the significance value shows <0.05, so the EPS, ROE, DER, and PDB variables together have a significant effect on the stock price, so that H1 is supported.

Coefficient of Determination (R [2])

Based on the test results showed in Table 7, the coefficient of determination (R [2]) obtained an Adjusted R Square value of 0.460. This shows that EPS, ROE, DER, and GDP affect the stock price variable by 46% while the remaining 54% is influenced by other variables outside this study.

Table 6. F Test Results

ANOVA [a]

Model		Sum of Squares	Df	MeanSquare	F	Sig.
1	Regression	1211696183.000	4	302924045700	6027	.000 [b]
	residual	8594673031000	171	50261245790		
	Total	9806369214.000	175			

a. Dependent Variable: PRICE_SAHAM

b. Predictors: (Constant), PDB, DER, EPS, ROE

Table 7. Test Results for the Coefficient of Determination

Summary Model [b]

Model	R	R Square	Adjusted R Square	std. An error in the Estimate	Durbin-Watson
1	.690 [a]	.476	.460	5883.38931	2.186

a. Predictors: (Constant), PDB, DER, ROE, EPS

b. Dependent Variable: Share_Price

Table 8. Coefficient Test Results with T Test

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	std. Error	Betas		
1	(Constant)	5734.433	5499.188		1.043	.299
	EPS	4.387	.434	.662	10.101	.000
	ROE	.100	048	.136	2097	038
	DER	-.005	007	-.041	-.647	.519
	GDP	-2.147E-5	.000	-.044	-.663	.508

a. Dependent Variable: Share_Price

Coefficient Test with t Test

Effect of EPS (X_1) on Stock Price (Y)

Based on the results of the multiple linear regression test in Table 8, the results show that the *Earning per Share variable* has a t-value of 10.101 with a significance value of 0.000. The calculated t value is 10.101 and the significance value is less than 0.05 (0.000 <0.05) indicating that *Earning per Share* has a significant positive effect on Stock Price, so that H2 is supported.

Effect of ROE (X $_2$) on Stock Prices (Y)

Based on the results of the multiple linear regression test in Table 8, the results show that the *Return on Equity variable* has a t-value of 2.097 with a significance value of 0.038. The calculated t value is 2.097 and the significance value is less than 0.05 (0.038 <0.05) indicating that *Return on Equity* has a significant positive effect on stock prices, so H3 is supported.

Effect of DER (X $_3$) on Stock Price (Y)

Based on the results of the multiple linear regression test in Table 8, the results show that the *Debt to Equity Ratio variable* has a t value of -0.647 with a significance value of 0.519. The t value is -0.647 and the significance value is greater than 0.05 (0.519 <0.05) indicating that *the Debt to Equity Ratio* has a non-significant negative effect on stock prices, so H4 is not supported.

Effect of GDP (X $_4$) on Stock Prices (Y)

Based on the results of multiple linear regression tests in Table 8, the results show that the variable is Gross Domestic Product has a calculated t value of -0.663 with a significance value of 0.508. The calculated t value is -0.663 and a significance value greater than 0.05 (0.508 <0.05) indicates that the Gross Domestic Product has no significant negative effect on stock prices, so H5 is not supported.

Discussion

Effect of EPS, ROE, DER, and GDP on stock prices

The results of this study indicate that the variables EPS, ROE, DER, and PDB together have a significant effect on stock prices. As seen from the results of the *Adjusted R Square test* in this study, a value of 0.46 was obtained. This means that the influence of *Earning per Share, Return on Equity Ratio, Debt to Equity Ratio,* and Gross Domestic Product on Mining Sector Stock Prices is 46%, while the remaining 54% is influenced by other variables not examined in this study.

Effect of *Earning per Share* (EPS) on stock prices

The results of this study indicate that the *Earning per Share variable* has a positive and significant effect on stock prices partially. EPS is a financial ratio commonly used by investors to analyze a company's ability to make profits based on the shares it owns and illustrates the company's profitability which is directly reflected on each share of stock. The higher the EPS, the higher the interest of investors to invest. This is because the greater the profit earned by shareholders.

Effect of *Return on Equity* (ROE) on stock prices

The results showed that the ROE variable had a positive and significant effect on stock prices partially. *Return on Equity* (ROE) is a comparison between net income to total equity. ROE is used to measure the rate of return on shareholder investment. ROE is one of the profitability ratios in financial analysis. This can clearly show that investors in the stock market, especially the mining sector, buy shares in companies that can generate profits in their business operations.

Effect of *Debt to Equity Ratio* (DER) on stock prices

The results showed that the DER variable had no significant effect on stock prices partially. *Debt to Equity Ratio* (DER) is a ratio of total liabilities to total equity. DER is included in the solvency ratio in financial ratio analysis, where DER has a role for investors, namely showing how much the company's debt affects performance and how this debt affects asset management. DER which is not significant to stock prices indicates an anomaly and investors have confidence and hope that in the future the company's performance will go well, considering that the mining sector is a heavy industry where this industry has the possibility of *large* profits for the company and has an impact directly for stock investors, both *capital gains* and *gaps* in buying and selling stock prices that rise in the future.

Effect of Gross Domestic Product (GDP) on stock prices

The GDP variable has no significant effect on stock prices partially. Gross Domestic Product (GDP) is a measure of all economic *output* within a given country during a certain period, usually a year or a quarter. GDP is calculated by adding up the total value of a country's annual *output* of goods and services. GDP is one of the external influence factors on stock prices. The Covid -19 pandemic has had a lot of influence on declining GDP, but this is not important for many stock investors, especially those who invest in the mining sector. They are speculators. This is naturally the case considering that the stock price during Covid-19 was a "discount" price for speculators who hoped that the stock price *would bounce back.*

Conclusion

- ☑ EPS, ROE, DER, and GDP have a significant effect on mining sector stock prices for the 2019-2022 period
- ☑ EPS has a positive and significant effect on mining sector stock prices for the 2019-2022 period
- ☑ ROE has a positive and significant effect on mining sector stock prices for the 2019-2022 period
- ☑ DER does not affect the share price of the mining sector for the 2019-2022 period
- ☑ GDP does not affect the share price of the mining sector for the 2019-2022 period

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