



Coal Prices and Stock Returns: Company Evidence Mining in Indonesia

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ABSTRACT:

This research aims to analyze the factors that influence disclosure Share Return (SR) of companies operating in the coal mining sector and listed in Indonesian Stock Exchange during the 2018-2022 period. In this study, we used the device Eviews software to process the data and apply a random effects regression model to test the relationship between internal and external variables as independent variables. This independent variable involves Total Asset Turnover (TATO), coal prices (HBA), currency exchange rates (ER or Exchange Rate or ER) and sales growth (SG). The results of this research show that variables Total Asset Turnover (TATO), rupiah exchange rate (ER), and sales growth (SG) does not have a significant effect on the company's stock return (SR). Meanwhile, the exchange rate variable currency (ER) and sales growth (SG) have a negative effect but are not significant on stock returns (SR). On the other hand, coal prices have a significant positive influence on industry.

Keywords: Stock Returns, Total Asset Turnover, Coal Prices, Exchange Rates, Growth, Sale

Introduction:

Coal prices have fallen and reached their lowest level in two years since June 29 2021, which is the first lowest point since May 2022, or about a year ago. Then in 2019, the mining sector experienced a decline of 12.83%, which hurt the movement of the Composite Stock Price Index (IHSG). This decline is due to the decline in coal prices throughout 2019, which occurred due to a surplus in stone supply embers in the global market. The Indonesian Coal Benchmark Price (HBA) during the 2006-2012 period peaked at US\$ 125 per metric ton, but after that, global coal prices experienced a significant decline until 2020, with HBA dropping to around US\$ 50 per metric ton, although it will rise again until 2022 to around US\$ 270. An interesting phenomenon has been occurring in recent years there has been a drastic decline in coal prices, which has hurt The performance of coal mining company shares in Indonesia is not in line with shareholder expectations. The decline in share prices in the mining sector was also influenced by the trade war between America United States and China, which heated up and resulted in a global economic slowdown and disrupted economic growth. Apart from that, trade wars also bring negative risks, namely when Mining sector share prices fall, so the performance of mining shares also declines (1). The Covid-19 pandemic has also dampened coal markets and prices, along with production Indonesian coal fell by 11% in 2020, reaching 510 million tonnes. Coal prices too influenced by fluctuations that occur due to the imbalance between supply and demand in the market oil(2).

Research results (3) found that TATO had a significant impact on stock returns, but the results are different from research conducted by (4), TATO does not have a significant impact on stock returns. Average activity tends to experience declines and average stock returns are fluctuating. According to (5) revealed that rising commodity prices can contribute to increasing stock returns. Meanwhile, according to (6) state that coal stock prices are related to the level of volatility in stock returns during the Covid-19 pandemic. According to research by (7) said that the increase in the rupiah exchange rate against the US dollar has a significant positive impact on returns share. This is contrary to research conducted by (8) which states that no there is a correlation between exchange rates and stock prices, and the two are variables that are not related to each other. According to (9), there is a significant impact from the Growth variable Sales are independent of the dependent Stock Return variable. Different According to (10), sales growth hurts share prices..

Methodology:

This research is included in the realm of causality research, which aims to assess hypotheses and see the relationship and impact between two or more variables on other variables. The main focus is to evaluate the influence of independent variables such as Total Asset Turnover (TATO), Price Coal (HBA), Foreign Currency Exchange Rates (ER), and Growth. The population of this study is coal mining companies listed on the Indonesia Stock Exchange post-2018. Election The sample was carried out using a purposive sampling method, where each data point in the population does not have the same opportunity to be sampled; only data that meets the requirements or Specific criteria established by researchers qualify for inclusion.

The specified sample selection criteria include:

- 1) Entry of coal mining companies which was listed on the Indonesian Stock Exchange after 2015 and did not experience delisting until 2015-2022;
- 2) Companies are required to publish financial reports for five consecutive years (2018-2022) with the required data available from 2018 to 2022;
- 3) There is no data deviates significantly from the general value (outlier), due to outlier data within a company can cause bias and impact research results. Based on these criteria, it is obtained The sample was 13 coal mining companies (see attached list) from a total of 22 companies coal mining listed on the Indonesia Stock Exchange in 2022.

This research aims to analyze the impact of TATO (Total Asset Turnover), HBA (Coal Prices), ER (Foreign Exchange Rates), and Sales Growth on internal stock returns mining sector. The formulation of research hypotheses is based on relevant and tested theoretical foundations through a series of statistical tests. The conclusions of this research were prepared based on the test results statistics. Management of secondary data that has been collected from various sources is carried out using some software, such as Microsoft Excel 365 and EViews 12.0. Data processing activities include creating tables and data analysis using Microsoft Excel 365 software. Temporary Therefore, in the panel data regression process, the author utilized EViews 12 software.

The research model used is as follows:

$$SR_{it} = \alpha + \beta_1 TATO_{it} + \beta_2 HBA_{it} + \beta_3 ER_{it} + \beta_4 SG + \varepsilon_{it}$$

Explained :

$$i = 1, 2, \dots, N; t = 1, 2, \dots, T$$

SR = Stock returns,

TATO = Total Asset Turnover

HBA = Coal prices,

ER = Exchange rate,

SG = Sales growth,

ε = error component,

β = slope,

α = Significance level

i = Company

t = Year

N = Number of observations,

T = trial time,

$N \times T$ = Number of data panels.

Results

Data analysis

Table 1 shows descriptive statistics for research variables, including mean, median, maximum value, minimum value, and standard deviation (standard deviation). Standard deviation is a statistical measure that measures how spread out the data in a data set is relative to the mean value, given significant differences in the value of each variable. The highest value in terms of standard deviation was recorded in the Stock Return (SR) variable, which reached 5.243063. This indicates that the Stock Return variable has a higher risk compared to other variables. On the other hand, the Exchange Rate (ER) variable has the lowest risk, only around 0.016413. The dependent variable, namely Stock Return (SR), has an average of 2.646154 with a standard deviation of around 5.243063. During the research period, there was also a minimum value of -6.70000 for Share Returns, which was related to TOBA Share Issuers in 2019, and a maximum value of 22,6000, which was recorded for BYAN Share Issuers in 2022.

In this research, a panel data regression model is used to estimate the factors that influence mining company stock returns. There are three models applied: the general effects model, the fixed effects model, and the random effects model. To perform further analysis, paired tests were used for each of these models. Based on the results of paired tests which include the Chow test, LM Breusch-Pagan (BP) test, and Hausman test, we can determine the panel data regression method that is most suitable for estimating and analyzing factors that influence share returns of mining companies listed on the Stock Exchange Indonesia during the 2018-2022 period. The test results show that the common effect model is the most suitable for use in this analysis. Thus, we can use this model to identify the factors that influenced mining company stock returns during the period.

Panel Data and Regression

In this research, a panel data regression analysis model with a common effect model approach is used. The reason for selecting the common effect model as an approach to data analysis is based on the results of paired tests involving the Chow test, the LM Breusch-Pagan (BP) test, and the Hausman test for the three common effect models that have been selected. This method is used to estimate and analyze factors that influence stock returns of coal mining companies listed on the Indonesia Stock Exchange during the 2018-2022 period. The results of panel data analysis using the common effects model are shown in Table 3. The results of the common effects model estimation can be written in the following panel data regression equation:

$$SR = 1.84554670562 + 0.137090739443 * TATO + 5.99951549477 * HBA - 2.51684775108 * ER - 0.0490624597462 * SG$$

The coefficient of determination (R²) is a metric that measures how big a role the independent variable plays in explaining variations in the dependent variable. The results of the coefficient of determination in this study are found in Table 4 and through the equation model, we can conclude that the influence of Total Assets Turnover (TATO), Coal Prices (HBA), Exchange Rates (ER), and Sales Growth on Stock Returns (SR) is around 0.141963 (Adjusted R-squared = 0.141963). This means that these variables contribute around 14.20% to the variation in Stock Returns (SR), while most of the remaining variation is influenced by other factors not examined in this research. This indicates that other factors outside those investigated in this research also have an important role in influencing Stock Returns (SR).

Measurement Hypothesis

To assess the impact of the independent variables on the dependent variable, we ran a t-test for each regression coefficient in the common effects model to determine whether each independent variable used in this research had a significant impact on mining company Stock Returns (SR). coal as the dependent variable. This test was carried out at a 95% confidence level, which means a significance level (alpha) of five percent. ($\alpha = 0.05$), Or maybe with a confidence level of 90% or alpha equal to ten percent ($\alpha = 0.10$). Partial statistical tests for each factor that influences coal mining company stock returns can be found in Table 5.

From the results of the hypothesis testing above, it can be concluded that the coal price variable has an α value that is lower than the significance level of 0.05. In addition, the variables Total Assets Turnover (TATO), Exchange Rate (ER), and Sales Growth (SG) have an α value that is lower than the significance level of 0.10. The empirical findings in this research support the research hypothesis which states that the coal price variable (HBA) has a significant influence on the share returns of coal mining companies listed on the Indonesia Stock Exchange during the 2018-2022 period. However, the variables Total Asset Turnover (TATO), Exchange Rate (ER), and Sales Growth (SG) have an α value that is higher than the 0.05 significance level. These empirical findings do not support the research hypothesis which states that TATO, ER, and SG have a significant influence on the share returns of mining companies listed on the Indonesia Stock Exchange during the 2018-2022 period.

Table 1. Statistical Data Description Of Research Variables

Measurement	SR	TATO	HBA	ER	SG
Mean	2.646154	0.789514	0.120837	0.005823	0.365566
Median	1.000000	0.696000	0.131770	0.012929	0.275514
Maximum	22.600000	2.586000	0.560814	0.021595	1.765170
Minimum	-6.700000	0.153800	-0.339006	-0.022891	-0.777947
Std. Dev.	5.243063	0.454043	0.382036	0.016413	0.626362

Source: Processed data Eviews 12

Table 2. Conclusion of panel data regression model testing

Method	Testing	Result
Chow-test	Common effect versus fixed effect	Common Effect
Lagrange multiplier-BP	Common effect versus random effect	Random Effect
Hausman test	Fixed effect versus random effect	Common Effect

Table 3. Random effect testing results

Variable	Coefficient
C	1.845547
TATO	0.137091

HBA	5.999515
ER	-2.516848
SG	-0.049062

Source: Processed data Eviews 12

Table 4. The coefficient of determination

Weighted statistics			
R-squared	0.195591	Mean dependent var	2.646154
Adjusted R-squared	0.141963	S.D. dependent var	5.243063
S.E. of regression	4.856663	Sum squared resid	1415.231
F-statistic	3.647224	Durbin-Watson stat	1.958673
Prob(F-statistic)	0.010026		

Table 5. Hypothesis test results (t-test)

Variable	Std. Error	t-statistic	Prob.	Conclusion
TATO	1.426529	0.096101	0.9238	Not Significant
HBA	2.282405	2.628594	0.0109	Significant
ER	44.95873	-0.05598	0.9555	Not Significant
SG	1.188561	-0.04128	0.9672	Not Significant

Discussion

Based on the empirical findings, it appears that the Total Assets Turnover (TATO) variable has a positive influence on the Share Return (SR) of mining companies, but this influence does not reach a high enough level of significance. These results are by the initial research hypothesis which states that TATO influences stock returns. This finding is in line with theory which indicates that the higher the Total Assets Turnover (TATO), the more efficient the company is in utilizing its assets. TATO is one of the indicators used to assess the extent to which company management can optimize the use of its assets. High Total Asset Turnover (TATO) reflects management's ability to utilize all company assets to achieve profits. These results also support previous research conducted by (11) and (12). Even though the effect of TATO on Stock Returns (SR) is positive, this result does not reach the expected level of significance. This indicates that other factors may also play a role in influencing mining company stock returns.

Based on research findings, it is concluded that the coal price variable (HBA) has a positive and significant impact on the Share Return (SR) of coal mining companies in Indonesia. An increase in coal prices directly increases the mining company's potential revenue. Additionally, it should be noted that when coal prices rise, the market also begins to look for alternative energy options such as butane gas to reduce dependence on coal. In this case, coal mining companies in Indonesia can benefit from increasing coal prices as well as market potential for alternative energy. These results are supported by previous research that had similar findings, namely research according to (13) and (14).

Based on the research results, it was concluded that the rupiah exchange rate had a negative influence on the Share Return (SR) of mining companies, but this influence did not reach a high level of significance. These results indicate that the decline in the rupiah exchange rate hurts the performance of mining company shares. This happens because most of the products produced by mining companies are exported, and in sales transactions, foreign currency is used as a means of payment (15). The rate of increase in the rupiah exchange rate usually also has an impact on increasing share prices due to increased income or profits. This research is consistent with the Arbitrage Pricing Theory (APT) theory which indicates that stock returns are not only influenced by the market portfolio but also by other risk factors, such as macroeconomic variables, in this case, the rupiah exchange rate. The findings in this research are relevant to previous research that has been conducted. In the context of APT, macroeconomic risks, such as changes in exchange rates,

play an important role in determining stock returns, in addition to the market portfolio risks that are generally taken into account. This research provides further understanding of how macroeconomic factors, such as the rupiah exchange rate, can influence company stock performance (15) and (16).

Based on the research results, it was concluded that the Sales Growth (SG) value had a negative influence on the Share Return (SR) of mining companies, but this influence did not reach a high level of significance. Sales growth is determined by environmental and industry conditions; a balance between strategic growth and short-term profits; profits fluctuate throughout the product cycle; and, growth is necessary to build the resources and scale that generate profitability. This is certainly not in line with research conducted by (9) and (17) which states that there is a significant influence between stock returns on sales growth.

Conclusion

The research results show that the variables Total Assets Turnover (TATO), Exchange Rate (ER), and Sales Growth (SG) do not have a significant influence on the Stock Return (SR) of coal mining companies listed on the Indonesia Stock Exchange during the 2018-2022 period. In particular, the Exchange Rate (ER) and Sales Growth (SG) variables have a negative, but not significant, influence on the Share Return (SR) of mining companies listed on the Indonesia Stock Exchange during that period. On the other hand, the coal price variable has a positive and significant influence on the Share Return (SR) of mining companies listed on the Indonesia Stock Exchange during the same period. Managerial implications or suggestions from research results relate to variables that significantly influence Stock Returns (SR). This highlights the importance for investors and potential investors to pay attention to the variables that can influence the performance of a company's shares when they make investment decisions in the stock market. Bearing in mind that Stock Return (SR) is often used as the main indicator in assessing company performance by investors. In addition, this research recommendation can be expanded by considering various internal factors, such as company size, company age, and public share ownership, as well as external factors, such as interest rates, money supply, and inflation rate. It should be noted that the data in this study covers the COVID-19 pandemic period, so future research can consider extending the period to better understand the impact of the pandemic on stock performance. Furthermore, this research can be expanded to cover other industrial sectors, as well as consider other countries, such as Middle Eastern countries which are the world's main oil producers. Thus, research can provide more comprehensive insight into the factors that influence stock returns in a broader context.

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