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Comparative Analysis of Financial Performance of Coal Energy Companies on the IDX Before and During the COVID-19 Pandemic

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ABSTRACT

The study examines how the COVID-19 pandemic affected the financial performance of coal energy companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2021. Using a descriptive comparative method, the analysis focuses on financial data from annual reports to evaluate metrics like liquidity, solvency, activity, and profitability. The findings suggest that overall, there were minimal alterations in financial performance indicators before and during the pandemic, except for noticeable variations in the cash ratio and total asset turnover ratio.

Keywords: *Financial Performance, Liquidity Ratio, Solvency Ratio, Activity Ratio, Profitability Ratio*.

INTRODUCTION

The rapid development of the COVID-19 pandemic has significantly impacted the Indonesian economy, particularly in terms of government policies such as social restrictions that require everyone to work from home (1). These restrictions have led to most work and educational activities being conducted from home through online platforms, which in turn increased the demand for electricity (2). According to Hartanto Wibowo, Director of Primary Energy at PLN, electricity consumption in Indonesia in 2021 grew significantly, even surpassing consumption in 2019, before the COVID-19 pandemic (3). This increased demand for electricity ultimately led to a rise in coal prices throughout 2021 (4).

Previous research has explored the financial performance of various sectors during the pandemic, focusing on different financial ratios (5). Virena & Asroi studied the liquidity and solvency ratios of telecommunications companies, while Ediningsih & Satmoko analyzed the activity ratios of food and beverage companies. Additionally, Indiraswari & Rahmayanti examined profitability ratios (6). However, there is a gap in the literature regarding the financial performance of energy companies, particularly the coal subsector, during the pandemic (7,8).

Given the increased demand for electricity and the subsequent rise in coal prices, it is essential to understand the financial performance of companies in the coal subsector during this period (9). This study aims to fill this gap in the literature by comparing the financial performance of these companies before and during the COVID-19 pandemic. The financial performance compared includes liquidity ratios proxied by the Current Ratio and Cash Ratio, solvency ratios proxied by the Debt to Equity Ratio and Debt to Assets Ratio, activity ratios proxied by the Total Asset Turnover Ratio, and profitability ratios proxied by the Net Profit Margin and Return on Assets (9).

This research will contribute to existing knowledge by providing insights into the financial performance of coal energy companies during the pandemic, which can be beneficial for stakeholders, policymakers, and future research (10).

Theoretical Framework and Hypothesis Development

This study is grounded in two principal theories:

1. Signaling Theory: This theory posits that management conveying positive information about the company's status aims to signal potential investors, thereby enhancing the company's market value.
2. Financial Performance: This involves an assessment to ascertain how well a company has adhered to sound financial principles and achieved its objectives.

Based on these theories, the study formulates the following hypotheses:

1. There exists a notable disparity in liquidity ratios between the periods before and during the COVID-19 pandemic.
2. There exists a significant variance in solvency ratios between the periods before and during the COVID-19 pandemic.
3. There is a marked difference in activity ratios between the periods before and during the COVID-19 pandemic.
4. There is a substantial contrast in profitability ratios between the periods before and during the COVID-19 pandemic.

METHODS

This research utilizes a quantitative comparative method to examine the financial performance of companies within the coal energy subsector listed on the Indonesia Stock Exchange (IDX) from 2018 to 2021. The study primarily analyzes company financial performance using financial ratio analysis, encompassing Liquidity Ratios, Solvency Ratios, Activity Ratios, and Profitability Ratios as key variables. The unit of analysis in this study encompasses organizations, with the research population consisting of coal energy subsector companies listed on the IDX during the specified period. Using the Saturation Sampling technique, all members of the population are included as samples in this study.

The data used in this study are derived from the annual financial reports of coal energy subsector companies listed on the IDX, collected through documentation techniques. To ensure the reliability of the data, this study employs the Anderson-Darling Test to test data normality. If the data is not normally distributed, a non-parametric analysis using the Wilcoxon Signed Rank Test is applied. Data analysis involves the use of descriptive and inferential statistics. If the data is normally distributed, a paired t-test is used. However, if the data is not normally distributed, the Wilcoxon Signed Rank Test becomes the primary choice (11).

RESULTS AND DISCUSSION

This study uses a sample of all coal energy subsector companies listed on the Indonesia Stock Exchange from 2018 to 2021. Out of a total of 24 companies, one company did not publish its financial statements in 2020 and 2021, resulting in a final sample of 23 companies.

Descriptive analysis shows that the average liquidity, solvency, and profitability ratios of the companies changed during the Covid-19 pandemic period. Liquidity and solvency ratios increased, while profitability ratios showed a decline. The activity ratio, measured by the total asset turnover ratio, also showed a decrease during the pandemic period.

Table 1: Anderson Darling Test

Variable	*N*	*P-Value (Specs)*	*P-Value (Result)*	*Data Distribution*	*Analytical Method*
CR Before Covid-19	22	0,05	0,35	Normal	*Paired*
CR During Covid-19	22	0,05	0,13	Normal	*t-test*
Cash Ratio Before Covid-19	22	0,05	0,01	Abnormal	*Wilcoxon*
Cash Ratio During Covid-19	22	0,05	0,21	Normal	*Signed Rank Test*
DAR Before Covid-19	23	0,05	0,63	Normal	*Paired*
DAR During Covid-19	23	0,05	0,05	Normal	*t-test*
DER Before Covid-19	22	0,05	0,00	Abnormal	*Wilcoxon*
DER During Covid-19	22	0,05	0,00	Abnormal	*Signed Rank Test*
TATO Before Covid-19	23	0,05	0,05	Normal	*Paired*
TATO During Covid-19	23	0,05	0,22	Normal	*t-test*
NPM Before Covid-19	22	0,05	0,22	Normal	*Paired*
NPM During Covid-19	22	0,05	0,09	Normal	*t-test*
ROA Before Covid-19	23	0,05	0,04	Abnormal	*Wilcoxon*
ROA During Covid-19	23	0,05	0,25	Normal	*Signed Rank Test*

In data testing, Grubbs' Test was used to identify outliers or unusual data points. The test results indicated several outliers, which were subsequently excluded from the statistical analysis to enhance the reliability of the analysis. The Normality Test using the Anderson Darling Test showed that some variables were normally distributed while others were not. For normally distributed data, the paired t-test statistical analysis technique was used. Meanwhile, for non-normally distributed data, the Wilcoxon Signed Rank Test non-parametric analysis technique was employed.

Table 2. Statistical Test Results for Financial Ratios

Variable	Test Method	P Value	Conclusion
Current Ratio	*Paired t-test*	0,31	There is no significant difference
Cash Ratio	*Wilcoxon Signed Rank Test*	0,001	There is a significant difference
Debt to Equity Ratio	*Wilcoxon Signed Rank Test*	1,000	There is no significant difference

Variable	Test Method	P Value	Conclusion
Debt to Assets Ratio	*Paired t-test*	0,860	There is no significant difference
Total Asset Turnover Ratio	*Paired t-test*	0,008	There is a significant difference
Net Profit Margin	*Paired t-test*	0,765	There is no significant difference
Return on Assets Ratio	*Wilcoxon Signed Rank Test*	0,727	There is no significant difference

The results of the paired t-test indicate that there is no significant difference in the current ratio before and during the pandemic. The current ratio is an important indicator of a company's short-term liquidity. The fact that this ratio remained stable suggests that coal mining companies have effectively managed their current assets during this challenging period. In an industry like coal mining, where commodity price fluctuations can have a significant impact on revenue, maintaining liquidity is crucial.

The results of the Wilcoxon Signed Rank Test on the cash ratio show a significant difference in the cash ratio before and during the pandemic. The cash ratio measures a company's cash and cash equivalents relative to its short-term liabilities (12). A significant change in this ratio indicates that companies may have adjusted their cash management strategies during the pandemic, perhaps by holding more cash to face uncertainty. In the context of the coal mining industry, this could be a response to coal price volatility and potential disruptions in mining operations (13).

The results for the debt-to-equity ratio indicate that there is no significant difference in the debt-to-equity ratio before and during the pandemic. This ratio measures the extent to which a company is financed by debt compared to equity (14). The stability of this ratio suggests that coal mining companies have managed to maintain their capital structure during the pandemic. This is crucial in an industry like coal mining, where substantial capital investments are required, and companies often rely heavily on debt for financing. Similarly, there is no significant difference in the debt-to-assets ratio before and during the pandemic. This ratio measures the extent to which a company's total assets are financed by debt. The stability of this ratio indicates that coal mining companies have managed to maintain their debt proportion relative to total assets, even amid uncertain conditions (15).

The results of the total asset turnover ratio test show a significant difference in the total asset turnover ratio before and during the pandemic. This ratio measures the efficiency with which a company uses its assets to generate sales. A significant change in this ratio indicates that the company's efficiency in utilizing its assets may have shifted during the pandemic. In the coal mining industry, this could reflect changes in mining operations or coal sales (16).

The results of the net profit margin ratio test indicate no significant difference in the net profit margin before and during the pandemic. The net profit margin measures how much of each dollar of sales a company retains as net income. The stability of this margin suggests that coal mining companies have managed to maintain their profitability despite the challenges posed by the pandemic (17).

The results for the return on assets (ROA) ratio test show no significant difference in ROA before and during the pandemic. ROA measures a company's efficiency in generating profit from its total assets. The stability of ROA indicates that coal mining companies have maintained their efficiency in generating profits, even under uncertain conditions (18).

Overall, these results suggest that coal mining companies have demonstrated strong resilience in facing the challenges posed by the Covid-19 pandemic. While there are some areas, such as cash management and asset utilization efficiency, where companies may need to adjust their strategies, they have generally succeeded in maintaining their financial performance (19). This highlights the inherent strength of the coal mining industry, which, despite often being subject to commodity price volatility and operational challenges, continues to deliver solid financial performance (20).

CONCLUSIONS

Based on the research conducted, the results indicate that there is no significant difference measured by the current ratio, but there is a significant difference measured by the cash ratio before and during the pandemic. For the solvency ratios measured by the debt-to-equity ratio and the debt-to-assets ratio, there is no significant difference before and during the pandemic. The activity ratio measured by the total asset turnover ratio shows a significant difference before and during the Covid-19 pandemic. Meanwhile, the profitability ratios measured by the net profit margin and the return on assets ratio show no significant difference before and during the pandemic.

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