The Effect of Free Cash Flow and Liquidity on Financial Performance in Energy Sector Companies Listed on the Indonesia Stock Exchange

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Abstract

This research investigates the impact of free cash flow and liquidity on the financial performance of energy-sector issuers registered on the Indonesia Stock Exchange (IDX). The study employs a quantitative approach, utilizing multiple linear regression as the analytical tool. A purposive sampling method was applied based on specific criteria, resulting in the selection of 51 issuers as the subjects of the study. Covering a five-year observation period, the analysis comprises a total of 255 observations. This research relies on secondary data collected from issuers' annual financial statements available through the official IDX website. The findings indicate that both free cash flow and liquidity have a significant positive impact on financial performance. Consequently, it can be concluded that higher free cash flow and greater liquidity are associated with better financial performance among energy-sector issuers on the IDX throughout the observed period.

Keywords: *Free Cash Flow, Liquidity, Financial Performance, Energy.*

A. INTRODUCTION

The energy sector is classified as a strategic sector that plays a crucial role in supporting the national economy because it provides energy sources for industrial and community activities, ranging from production, distribution, and transportation to household consumption. This sector also contributes to state revenue and national investment. In 2021, the energy and mineral resources sector recorded non-tax state revenue (PNBP) of IDR 189.2 trillion, or 156% of the government target, demonstrating the sector's substantial contribution to the country's economic conditions and the importance of managing company's financial outcomes within it (Kementerian ESDM, 2022). The increase in investment in the energy sector also requires companies to demonstrate satisfactory financial performance to maintain business sustainability and attract investors. This situation indicates that energy sector companies need to utilize resources effectively to achieve optimal financial performance.

Corporate performance indicates how effectively a business fulfills its organizational goals, conduct operational activities consistently, maintain business continuity, and generate optimal profits. Financial performance is the result of an assessment conducted to measure the extent to which a company's financial activities comply with applicable regulations. According to Widyastuti & Paramitalaksmi (2024), financial performance represents an overview of a company's financial

condition, which is examined using financial analysis tools to measure the company's level of success in conducting its day-to-day business operations. A company's financial performance serves as an indicator of its capacity to generate profits, manage assets, fulfill obligations, and increase company value. This information is also important for investors, lenders, and other external stakeholders to evaluate a firm's future potential and financial stability. Financial performance assessment plays an important role because it can demonstrate a company's ability to maintain business stability amid increasingly intense business competition (Putri et al., 2024).

Energy sector companies face various challenges that may affect their financial performance, encompassing volatility in energy commodity prices and shifts in global energy policies, and economic uncertainty. Changes in commodity prices can affect revenue, particularly for coal and petroleum companies, while energy transition policies and the use of environmentally friendly energy encourage companies to adjust their business strategies. Indonesia's coal industry experienced a production surge to 836 million tons in 2024. However, this increase was considered temporary because it was part of the fluctuating commodity industry cycle and did not yet reflect a long-term structural advantage. This condition demonstrates the need for sound financial management to enable energy sector companies to maintain their performance amid economic and market dynamics (Energy Shift Institute, 2025). Companies are also required to maintain cash flow stability, manage obligations, and improve operational efficiency to survive amid uncertain economic conditions.

One determinant that can affect financial performance is free cash flow (Firmansyah et al., 2023). FCF represents cash flow from operating activities whose utilization is under management's control, whether for project financing, dividend payments, or retention as a cash balance (Zanetty & Efendi, 2022). FCF also indicates how well a business can produce cash flow once operating expenses and capital investment requirements have been covered. High FCF provides companies with the flexibility to support operations, expand their businesses, and fulfill obligations to investors and creditors. Conversely, low FCF can limit the company's capacity to fund its operational and investments.

Another factor affecting financial performance is liquidity. According to Kasmir (2023), a company is considered illiquid if it is unable to settle its short-term financial obligations when they fall due. Liquidity indicates a company's ability to fulfill short-term obligations by utilizing current assets, while also reflecting its ability to manage working capital effectively. Good liquidity indicates that a company can meet its obligations without disrupting its operational activities and can also increase investor confidence because it reflects a relatively stable financial condition. Conversely, suboptimal management of FCF and liquidity can lead to difficulties in meeting obligations, making investments, and conducting operations, ultimately reducing profitability, investor confidence, and business sustainability. Therefore, the management of FCF and liquidity is an important element in efforts to maintain the stability and sustainability of financial performance.

Studies related to the impact of FCF on financial performance have continued to produce inconsistent results. Dedek Ningsi Lingga et al. (2024) found that FCF had a significant effect on financial performance, demonstrating that the greater the free cash flow, the better a company's ability to improve its financial performance. However, Ganut Muhharomi et al. (2021) found that free cash flow had no effect on financial performance. These differences in research findings indicate that the effect of FCF on financial performance requires further investigation.

Research findings regarding liquidity have also shown varied results. Mursidah et al. (2023) reported that liquidity did not have a statistically significant impact on financial performance, which may occur when current assets are not utilized optimally to generate profits. In contrast, Febriani et al. (2023) stated that liquidity ratios affected the the company's financial results in the F&B energy sector. These differences in findings suggest that the relationship between liquidity and financial performance requires further investigation.

In previous studies, results concerning the impact of FCF and liquidity on financial performance have remained inconsistent, particularly in the energy sector, which is characterized by its sensitivity to commodity price fluctuations, global economic dynamics, shifts in energy policies, and uncertainty in international markets. Therefore, empirical research on the effects of FCF and liquidity on the financial performance of energy sector companies listed on the Indonesia Stock Exchange (IDX) is important. This research covers the period from 2021 to 2025 to provide an up-to-date overview of the financial performance of companies in the energy sector and the factors influencing it in response to an ever-changing business environment.

B. METHOD

The method applied in this study is quantitative approach with a causal-associative design to investigate how free cash flow and liquidity influence the financial performance of energy-sector firms registered on the Indonesia Stock Exchange (IDX). The quantitative method is used to test hypotheses through numerical data and statistical analysis (Sugiyono, 2023:16), while the causal associative approach is employed to identify cause-and-effect relationships between variables (Sugiyono, 2023:66). The research was conducted from June 11 to July 25, 2026, focusing on energy sector companies listed on the IDX during the 2021–2025 period.

The population in this study consisted of 91 energy sector companies listed on the IDX during the 2021–2025 period. Sugiyono (2023:126) stated that a population is the entirety of objects or subjects possessing specific characteristics to be studied and used as a basis for drawing conclusions. Sample selection was carried out through purposive sampling, a non-probability technique that involves selecting observations according to specific requirements stipulating that companies must have consistently listed from 2021 to 2025, consistently published annual financial statements, and not experienced delisting (Sugiyono, 2023:133). Based on these criteria, 51 companies

were selected, resulting in 255 observations over five years.

The research data consisted of secondary data collected through documentation of the annual financial statements of energy sector companies for 2021–2025, obtained from the official IDX website, namely www.idx.co.id. Free cash flow was measured based on the concept proposed by Kieso et al. (2024), using the formula Free Cash Flow = Cash Provided by Operating Activities − Capital Expenditure − Dividends. Liquidity was measured using the current ratio, which describes a company's ability to repay short-term debt using current assets (Sari & Tri Lestari, 2022), as applied by Ganut Muhhamaromi et al. (2021), Zanetti et al. (2022), and Mursidah et al. (2023), using the formula Current Ratio = Current Assets/Current Liabilities. Financial performance was measured using ROA, as applied by Nurzaeni et al. (2023) and Zanetti et al. (2022), using the formula ROA = Net Income/Total Assets.

Data analysis was conducted using SPSS through descriptive statistics and classical assumption tests, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests. Descriptive statistics provide an overview data without generalization (Sugiyono, 2023:206). The normality test employed the Kolmogorov–Smirnov test, where a significance value of >0.05 indicates that the residuals are normally distributed (Wibowo, 2023:341). The multicollinearity test used a VIF value of 0.05 suggests that heteroscedasticity is not present (Wibowo, 2023). Meanwhile, autocorrelation was tested using the Durbin–Watson test, where dU < d < 4−dU indicates the absence of autocorrelation (Ghozali, 2021:162).

The effects of FCF and liquidity on financial performance were examined using multiple linear regression expressed as $Y = \alpha + \beta_1X_1 + \beta_2X_2 + e$. The hypotheses was conducted using the F-test, t-test, and R^2-test. The F-test is used to analyze the combined effects of the independent variables, while the t-test is applied to examine their partial effects at a significance level of 0.05. According to Ghozali (2021), a significance value of.

C. RESULTS AND DISCUSSION

1. Descriptive Statistical Analysis

The descriptive statistics obtained from the analysis are presented below:

Table 1. Initial Descriptive Statistical Analysis

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
Kinerja Keuangan	255	-4.070,14	6,90	-34,9324	309,84466
Free Cash Flow	255	-29.379.639.544,31	3.413.006.152,79	-1.171.740.740,8924	3.731.188.568,43783
Likuiditas	255	0,00	444,01	3,9795	27,75008
Valid N (listwise)	255				

Based on Table 1, the study used 255 observations from 51 energy sector companies during 2021–2025. Free Cash Flow had a mean of -IDR 1,171,740,740.89,

liquidity had a mean of 3.9793, and ROA had a mean of -34.9324. Extreme values in several observations caused the data to be non-normally distributed; therefore, outlier treatment was performed by removing 15 observations from MBSS, TEBE, MYOH, INPS, PSSI, and ELSA. The number of observations was subsequently reduced to 240 for further analysis.

Table 2. Descriptive Statistical Analysis After Outlier Removal

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
Kinerja Keuangan	240	-0,41	0,62	0,0875	0,14610
Free Cash Flow	240	-29.379.639.544,31	3.413.006.152,79	-506.494.047,9945	2.533.006.025,81067
Likuiditas	240	0,01	7,55	1,9311	1,42873
Valid N (listwise)	240				

Based on Table 2, after outlier treatment, the number of observations was reduced to 240. Free Cash Flow had a minimum value of -IDR 29,379,639,544.31 and a maximum value of IDR 3,413,006,152.79, with a mean of -IDR 506,494,047.99 and a standard deviation of IDR 2,533,006,025.81. These extreme values indicate differences in the companies' ability to generate free cash flow. Liquidity ranged from 0.01 to 7.55, with an average of 1.9311 with a std. deviation of 1.42873. This suggests notable differences in the companies' ability to meet short-term obligations, although liquidity was relatively more homogeneous than FCF. Financial performance, measured using ROA, the variable recorded its lowest value at -0.41 and its highest at 0.62, yielding a mean value of 0.0875 and a std. deviation of 0.14610. Negative values indicate that some companies incurred losses, while positive values demonstrate their ability to generate profits from their assets.

2. Classical Assumption Tests

a. Normality Test

Normality testing produced the following results:

Table 3. Initial Normality Test

Keterangan	Unstandardized Residual
N	255
Mean	0,0000000
Std. Deviation	7,23933285
Most Extreme Differences Absolute	0,459
Positive	0,459
Negative	-0,406
Test Statistic	0,459
Asymp. Sig. (2-tailed)	<0,001

As shown in Table 3, the Asymp. Sig. (2-tailed) value is below 0.001, falling short of the 0.05 threshold and suggesting that the data do not follow a normal distribution. Therefore, 15 extreme observations were excluded as outliers. Table 4 presents the results of the normality test after outlier removal, as follows:

Table 4. Normality Test After Outlier Removal

Keterangan	Unstandardized Residual
N	240
Mean	0,0000000
Std. Deviation	0,72505056
Most Extreme Differences Absolute	0,056
Positive	0,043
Negative	-0,056
Test Statistic	0,056
Asymp. Sig. (2-tailed)	0,068

Table 4 reports an Asymp. Sig. (2-tailed) value of 0.068, exceeding the 0.05 significance level, thereby indicating that the data satisfy the assumption of normalit. After outlier removal, 240 observations were used and deemed suitable for subsequent regression analysis.

b. Multicollinearity Test

The multicollinearity assessment results for this study are presented below:

Table 5. Multicollinearity Test

Model	Variabel	Tolerance	VIF
1	*Free Cash Flow*	1,000	1,000
1	Likuiditas	1,000	1,000

Based on Table 5, Tolerance (1.000 > 0.10) and VIF (1.000 < 10) confirm no multicollinearity. In addition to satisfying the multicollinearity assumption, the regression model was suitable for further analysis.

c. Heteroscedasticity Test

The heteroscedasticity test yielded the following results:

Table 6. Heteroscedasticity Test

Model	Variabel	B	Std. Error	Beta	t	Sig.
1	(Constant)	1,166	0,313	—	3,732	<0,001
	Free Cash Flow	-0,051	0,028	-0,119	-1,858	0,064
	Likuiditas	-0,154	0,081	-0,121	-1,897	0,059

Based on Table 6, the significance value for FCF was 0.064 and that for liquidity was 0.059, both > 0.05. These results indicate the absence of heteroscedasticity; Consequently, the model is appropriate for conducting further subsequent analysis.

d. Autocorrelation Test

The findings of the autocorrelation test performed in this study are presented below:

Table 7. Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,068	0,005	-0,004	0,69854	2,040

Referring to Table 7, the Durbin–Watson value of 2.040 lies between dU = 1.6930 and 4 − dU = 2.3070 (1.6930 < 2.040 < 2.3070). The findings suggest that autocorrelation is absent, indicating that the regression model meets the

autocorrelation assumption.

e. Multiple Linear Regression Analysis

The findings derived from the multiple regression model are summarized as follows:

Table 8. Multiple Linear Regression Analysis

Model	Variabel	B	Std. Error	Beta	t	Sig.
1	(Constant)	-1,366	0,101	—	-13,529	<0,001
	Free Cash Flow	0,020	0,009	0,138	2,276	0,024
	Likuiditas	0,140	0,026	0,324	5,328	<0,001

Based on Table 8, the following multiple linear regression equation was obtained: Y = -1.366 + 0.020X1 + 0.140X2 + e. The constant of -1.366 indicates that when FCF and liquidity are equal to 0, financial performance is predicted to be -1.366. The free cash flow variable has a regression coefficient of 0.020 and a significance level of 0.024 < 0.05, indicating a positive and significant effect on financial performance. This means that an increase in free cash flow tends to be followed by an increase in financial performance. The The liquidity variable exhibits a regression coefficient of 0.140 and a significance value of.

3. Hypothesis Test

a. F-Test

Table 9 displays the findings obtained from the F-test conducted in this study.

Table 9. F-Test

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1. Regression	0,721	2	0,361	17,010	< 0,001
Residual	5,026	237	0,021	–	–
Total	5,747	239	–	–	–

As reported in Table 9, the F-test yields a calculated F-statistic of 17.010 and a significance value below 0.001, falling under the 0.05 threshold. Consequently, the null hypothesis (H_0) is rejected in favor of the alternative hypothesis (H_a). These findings demonstrate that Free Cash Flow (FCF) and liquidity jointly exert a statistically significant influence on Financial Performance (ROA) among energy sector firms listed on the Indonesia Stock Exchange (IDX).

b. T-Test

The t-test findings for the variables examined in this study are summarized below:

Table 10. t-Test

Model	Variabel	B	Std. Error	Beta	t	Sig.
1	(Constant)	-1,366	0,101	—	-13,529	<0,001
	Free Cash Flow	0,020	0,009	0,138	2,276	0,024
	Likuiditas	0,140	0,026	0,324	5,328	<0,001

Based on Table 10, FCF demonstrates a positive and significant relationship with financial performance, as indicated by a t-statistic of 2.276 and a p-value of 0.024, and a regression coefficient of 0.020. Meanwhile, liquidity also has a positive

and statistically significant effect, with a calculated t-value of 5.328, a significance value of less than 0.001, and a regression coefficient of 0.140. Thus, both research hypotheses are accepted.

c. Coefficient of Determination Analysis

The following section presents the results of the study's coefficient of determination analysis:

Table 11. Coefficient of Determination Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,354	0,126	0,118	0,14562

Based on Table 11, the Adjusted R Square value of 0.118 indicates that Free Cash Flow and liquidity can explain 11.8% of the changes in financial performance, whereas the other 88.2% can be attributed to factors beyond the scope of the regression model, such as profitability, sales growth, leverage, and company size.

Based on the regression test results, FCF has a regression coefficient of 0.020, a calculated t-value of 2.276, and a significance value of 0.024 < 0.05. Accordingly, H_{01} is rejected and H_{a1} is accepted, indicating that FCF has a positive and significant effect on financial performance. This result is consistent with signaling theory, which explains that FCF serves as a positive signal to investors regarding a company's capacity to generate cash once obligations have been met its operating and investment needs. This finding is supported by the studies of Muzzaki and Gandakusuma (2023), Sinaga (2025), and several other previous studies. Although Rangga and Agnes (2025) obtained contrasting results, this study demonstrates that effective FCF management can support improvements in a company's financial performance.

The regression analysis indicates that liquidity has a coefficient of 0.140, a t-statistic of 5.328, and a p-value < 0.001. Given that the p-value falls below 0.05 significance threshold, H_{02} is rejected and H_{a2} is accepted. Therefore, liquidity positively and significantly influences financial performance. These results align with signaling theory, which explains that optimal liquidity conveys a favorable message to investors and creditors about a company's capacity to meet its short-term liabilities and maintain financial stability. This finding is supported by the studies of Febriani Affi and Hasim As'ari (2023), Iman et al. (2021), and Zaudra Afifah Nurzaeni et al. (2023). Although Ganut Muhharomi et al. (2021) obtained different results, this study demonstrates that optimal liquidity management can support improvements in financial performance.

D. CONCLUSION

The results of the study show that free cash flow and liquidity have a significant positive effect on the company's financial performance. FCF has a regression coefficient of 0.020 with a significance value of 0.024, while liquidity has a regression coefficient of 0.140 with a significance value of less than 0.001. The significance levels for both variables are below the 0.05 threshold, indicating support for the alternative hypotheses put forward in this study. These results states that a company's financial condition can serve as a positive signal to investors and creditors

which align with signalling theory. Therefore, efficient FCF management and an adequate level of liquidity have the potential to improve the company's financial performance.

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