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The effect of financial performance, company size, and managerial ownership on indications of fraud with audit delay as a moderating variabel in energy – sector companies listed on the indonesian stock exchange for the period 2022 - 2024

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Abstract:

This study aims to examine the effect of financial performance, firm size, and managerial ownership on indications of fraud, with audit delay as a moderating variable in energy sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period. This research employs a quantitative approach using multiple linear regression analysis and Moderated Regression Analysis (MRA). The data used are secondary data obtained from companies' financial statements. The results show that financial performance have an effect on indications of fraud. Meanwhile, firm size and managerial ownership has no effect on indications of fraud. In testing the moderating variable, audit delay is not able to moderate the effect of financial performance and firm size on indications of fraud. However, audit delay is proven to weaken the relationship between managerial ownership and indications of fraud.

Keywords: *Financial Performance, Firm Size, Managerial Ownership, Indications Fraud, Audit Delay*

I. INTRODUCTION

The energy sector in Indonesia plays a vital role as a key driver of economic development (Rosalina et al., 2025). However, companies in this industry face dual pressures from internal factors such as operational efficiency and financial management (Rosalina et al., 2025). This sector makes a significant contribution to the Gross Domestic Product (GDP) as well as government revenue—which includes taxes and exports—making it one of the key pillars of Indonesia's economic structure (Nirwasita et al., 2024). Furthermore, energy companies listed on the Indonesia Stock Exchange make a major contribution to economic activity and national development (Firdauzi et al., 2024).

Energy companies in Indonesia hold a vital position in the economy but also face major challenges. Along with changes in sector classification, entities that were previously categorized under the mining sector are now allocated to the energy, raw materials, and industrial sectors based on their respective operational roles (Santani & Putra, 2024). This situation can lead to fraudulent behavior in financial reporting—specifically, the intentional falsification of financial data to deceive report readers (Muhammad Iqbal & Espas, 2024). Fraud in financial reporting has become a major concern due to the emergence of various accounting scandals (Novanda & Ritonga, 2025).

An example of fraud at an energy sector company in Indonesia is the case of PT Pertamina (Persero) in 2025. The actual fraud case at PT Pertamina (Persero) in 2025 became one of the biggest scandals in Indonesia's energy sector, indicating weak governance and internal oversight (Abimanyu et al., 2025). According to a CNBC Indonesia news article (2026), the potential losses amounted to Rp. 285 trillion. A Reuters news report (2025) stated that the identified fraud

schemes included fuel blending – for example, mixing Pertalite (RON 90) with Pertamax (RON 92) while still selling it at a higher price – which reflects the falsification of product quality and pricing.

On the largest scale, the Enron case came to light in 2001 when it was revealed that this U.S.-based energy company had engaged in systematic financial statement fraud. According to an article on the Bambootree website (2025), the primary method of Enron's financial statement manipulation stemmed from the use of complex yet deceptive accounting techniques. One of the methods used was mark-to-market accounting, which allowed Enron to record profits from long-term contracts based on projected future values rather than actual cash flows (Bambootree, 2025). Through this approach, profits could be recognized immediately even though the actual revenue had not yet been earned, making the company's financial performance appear highly profitable on paper.

From these cases, it is evident that fraud can cause harm to various parties. Such fraud is driven by a conscious and deliberate intent that prioritizes one's own interests at the expense of others (Sinaga & Utami, 2024). From the perspective of fraud theory, this pressure is one of the main factors that can trigger fraud (Karyono, 2013, cited in Suwena, 2021).

The research question in this study is how financial performance, firm size, and managerial ownership each influence indications of fraud, and whether audit delay moderates these relationships. The objective of this study is to analyze the effects of financial performance, firm size, and managerial ownership on indications of fraud, as well as to determine whether audit delay moderates these relationships.

II. METHOD

This study is quantitative in nature and uses secondary data obtained from companies' financial reports on the official website of the Indonesia Stock Exchange (IDX). The population for this study consists of energy sector companies listed on the IDX; during the study period, there were 91 such companies. The sampling method used was a saturated sample, with the entire population—all energy sector companies listed on the IDX for the 2022–2024 period—serving as the sample. This study employed multiple linear regression analysis and Moderated Regression Analysis (MRA). Additionally, tests such as descriptive statistics, classical assumption tests, and hypothesis testing were also conducted.

III. RESULTS AND DISCUSSION

Based on the table below, the descriptive statistical analysis shows that the dataset used in this study consists of 241 data samples drawn from the financial statements of companies in the energy sector for the 2022–2024 period.

Tabel 1

Results of Descriptive Statistical Tests

	N	Minimum	Maximum	Mean	Std. Deviation
KINERJA KEUANGAN	241	.00	29.77	2.2819	3.00855
UKURAN PERUSAHAAN	241	22.08	32.75	28.7324	1.89642
MANAGERIAL OWNERSHIP	241	.00	1.00	.0686	.16991
INDIKASI FRAUD	241	-18.87	7393.86	28.6653	476.41789
AUDIT DELAY	241	31.00	766.00	92.8113	57.73000
Valid N (listwise)	241				

The results of the multicollinearity test show that all independent variables have tolerance values above 0.10 and VIF values below 10; therefore, it can be concluded that there is no multicollinearity in the regression model. Based on the test results, it can be stated that there is no multicollinearity among the independent variables used in this study. Therefore, this test has met the requirements and the study can proceed to the next stage of testing.

Based on the results of the heteroscedasticity test using the Glazer test, it can be concluded that the regression model does not exhibit heteroscedasticity. This is indicated by the significance values (Sig.) of all independent variables being above the 0.05 significance level. The financial performance variable has a significance value of 0.459, firm size of 0.471, managerial ownership of 0.295, and audit delay of 0.538. This study meets the requirements and can be used for further analysis because it satisfies one of the classical assumptions, namely, freedom from heteroscedasticity.

The results of the Durbin-Watson autocorrelation test, with a value of 2.046, indicate that the residuals are not autocorrelated. The Durbin-Watson test is used to detect serial correlation in the residuals of a regression model. A DW value within a certain range (generally close to 2) indicates the absence of autocorrelation—whether positive or negative—and thus the model is considered to satisfy the classical assumptions. Therefore, it can be concluded that there is no autocorrelation in the regression model, whether positive or negative.

The results of the multiple linear regression analysis show that only the independent variable—financial performance—has a significant effect on the dependent variable, with a significance value of 0.001. The significance values for the variables firm size and managerial ownership are 0.309 and 0.138, respectively, indicating that these variables do not influence the indication of fraud. Based on this equation, it can be concluded that the constant value of -3.808 means that if all independent variables were zero, the fraud indicator would be at that level.

Tabel 2
multiple linear regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-3.808	.788		-4.833	.000
KINERJA KEUANGAN	.331	.101	.319	3.281	.001
UKURAN PERUSAHAAN	.028	.028	.098	1.022	.309
MANAGERIAL OWNERSHIP	.401	.268	.141	1.497	.138

a. Dependent Variable: INDIKASI FRAUD

Sumber: Output SPSS versi 22 (data processed 2026)

Moderated Regression Analysis (MRA) was used in this study to determine whether the moderating variable – audit delay – moderates the relationship between the independent variables and the dependent variable.

Tabel 3
Moderated Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.806	10.071		.477	.634
KINERJA KEUANGAN	-.217	1.498	-.210	-.145	.885
UKURAN PERUSAHAAN	-.277	.370	-.964	-.749	.456
MANAGERIAL OWNERSHIP	5.153	2.316	1.807	2.225	.029
AUDIT DELAY	-.101	.121	-1.971	-.837	.405
MX1	.007	.018	.573	.404	.687
MX2	.004	.004	2.139	.807	.422
MX3	-.060	.029	-1.613	-2.048	.043

Sumber: Output SPSS versi 22 (data processed 2026)

For the moderating variable indicated by the MX1 interaction, the significance level was 0.687, indicating that audit delay does not moderate the effect of financial performance on indications of fraud. The moderation variable indicated by the MX2 interaction had a coefficient of 0.422, indicating that audit delay does not moderate the effect of firm size on fraud indicators. MX3 had a significant effect of 0.043 and a beta coefficient of -0.060, meaning that this moderation variable moderates and weakens the relationship between managerial ownership and fraud indicators.

Given a significance level of 0.001—which is less than 0.05—it can be concluded that the variables of financial performance, firm size, and managerial ownership simultaneously influence indications of fraud and are significant. In the t-test, the financial performance variable had a significance value of 0.001 (> 0.05) and a t-value of 3.281, indicating a positive effect on fraud indicators; however, the hypothesis was rejected. The firm size variable also showed a significance value of 0.309 (> 0.05) with a t-value of 1.022, indicating no significant effect, and the hypothesis was rejected. Furthermore, the managerial ownership variable had a significance value of 0.138 (< 0.05) and a t-value of 1.497, meaning it had no effect on fraud indicators, and the hypothesis was rejected.

Regarding the moderator variables, MX1 and MX2, neither moderated the relationship between the independent and dependent variables because their p-values were above 0.05, and the hypotheses were rejected. Meanwhile, MX3 has a significance value of 0.043 (< 0.05) with a t-value of -2.048, indicating that this interaction variable moderates the effect of financial performance on fraud indicators, and the hypothesis is rejected. Thus, only financial performance and the moderating effect of MX3 were found to have a significant partial effect on fraud indicators, while the other variables had no significant effect.

The coefficient of determination was found to be 0.164. This indicates that the independent variables account for 16.4% of the variation in the dependent variable. In other words, 16.4% of the variation in the dependent variable can be explained by the regression model used, while the remaining 83.6% is influenced by other factors outside the model that were not examined in this study.

The Effect of Financial Performance on Indications of Fraud

Financial performance showed a significance level of 0.001 (>0.05) with a coefficient of 0.331; thus, it can be concluded that financial performance has a positive effect on indications of fraud. When companies are required to meet profit targets, asset growth targets, or specific financial ratios, management tends to strive to maintain an image of high performance in order to retain market confidence. Such pressure can lead to manipulative actions, especially when a company's actual results fall short of established expectations. Under these conditions, the higher the demands for financial performance, the greater the likelihood of fraudulent practices as an attempt to conceal the company's weaknesses or embellish its financial statements.

This statement is supported by research conducted by Yobel & Pamungkas (2024). The study explains that financial performance has a positive and significant effect on fraud. This suggests that the higher a company's financial performance, the greater the likelihood that the issuer will engage in fraudulent acts in an effort to avoid breaching established debt covenants.

One study showing that financial performance affects fraud is the research by Khomariah & Khomsiyah (2023). This study states that a high liquidity ratio indicates a company has a strong ability to meet its short-term obligations, thereby reducing the risk of default. This situation can increase investor interest in investing capital because the company is deemed capable of effectively managing its financial obligations. Conversely, companies experiencing liquidity problems tend to face pressures that may drive management to manipulate financial statements—for example, by concealing or underreporting information related to their debt.

The Effect of Company Size on Indications of Fraud

Company size has a significance value of 0.309 (>0.05) with a coefficient of 0.028, which means that the company size variable does not have a significant effect on indications of fraud. Logically, the size of a company does not guarantee the presence or absence of fraud. Large companies do have more complex internal control systems, but they also have a greater potential for manipulation due to the complexity of their operations. Conversely, small companies are simpler but may have weaker oversight. These conditions make company size an inconsistent predictor of fraud.

A number of empirical studies also support the finding that company size does not have a significant effect on fraud. For example, according to a study by Gultom et al. (2022), this is because total assets—used as an indicator of company size—do not show any influence on improper financial reporting practices. Essentially, both large and small companies tend to want to present a favorable picture to their stakeholders. This suggests that fraud can occur regardless of a company's size. Consequently, company size cannot be used as a basis for management to create opportunities, exert pressure, or justify the manipulation of financial statements. Research consistent with these findings includes a study by Resimasari et al. (2023). Additionally, a study by Fitriyani & Noviyanti (2021) also yielded the same results. Thus, it can be concluded that company size—whether large or small—is not a determining factor in the occurrence of fraud, as both companies that commit fraud and those that do not have an equal likelihood of engaging in financial statement manipulation.

The Effect of Managerial Ownership on Indications of Fraud

Managerial ownership showed a p-value of 0.138 (<0.05) with a coefficient of 0.401, indicating that it does not have a significant effect on indications of fraud. This is because management's ownership of shares does not necessarily ensure that fraudulent behavior within the company can be controlled. Even though managers own shares and are personally affected by the company's decisions, fraud can still occur if internal oversight, organizational culture, and the company's control systems are not functioning effectively. Under certain conditions, management that owns shares may actually be more focused on increasing the company's value and maintaining profit stability rather than.

Empirically, this study is supported by Angelina & Chariri (2022). Their research explains that a company's condition is influenced by various factors and is therefore not determined solely by managerial ownership. Other factors, such as the roles of employees, individual and institutional shareholders, and other stakeholders, also influence a company's sustainability. Therefore, managerial ownership does not yet play a dominant role. Furthermore, few companies currently provide equity-based compensation to management; consequently, the implementation of equity-based compensation as a measure to reduce fraud in financial statements has not yet been fully effective.

The moderating effect of audit delay on the influence of financial performance on indications of fraud

Audit delay as a moderator with a significant value of 0.687 indicates that the variable does not moderate the relationship between financial performance and indications of fraud. This is because the length of the audit completion process does not necessarily strengthen or weaken the relationship between a company's financial performance and the likelihood of fraud. Thus, even if an audit delay occurs, this condition does not directly alter the effect of financial performance on the potential for fraud, as audit delay relates only to the time required to complete the audit, not to the quality of oversight or the effectiveness of fraud detection itself.

Furthermore, the moderating role of audit delay may indicate limitations in this study, as previous research has not extensively addressed the complexity of the relationships among the variables. A number of previous studies have primarily treated audit delay as either an independent or dependent variable; consequently, its use as a moderating variable in the relationship between financial performance and fraud remains limited. This situation has not yet provided a thorough explanation of the interrelationships among the variables; therefore, further research with a more comprehensive approach is needed to provide a deeper understanding.

The Ability of Audit Delay to Moderate the Effect of Firm Size on Indications of Fraud

Audit delay, as a moderating variable, yielded a significant value of 0.422; thus, audit delay does not moderate the effect of firm size on indications of fraud. This is because audit delay is more closely related to technical factors in the audit process, such as the complexity of the audit, the completeness of documentation, the quality of communication between the auditor and the firm, and the auditor's workload during a specific period. These factors are not always influenced by company size or the level of fraud occurring. Thus, even if a company experiences an audit delay, this does not necessarily indicate that company size has a stronger relationship with fraud. Conversely, companies that are able to complete audits on time are not guaranteed to be free from fraudulent practices.

The role of audit delay as a moderating variable also highlights a limitation of this study: few previous studies have adequately captured the complexity of the relationships among the variables. Most previous studies have tended to treat audit delay as an independent or dependent variable, rather than as a moderating variable; consequently, empirical evidence regarding its role as a moderator remains relatively limited and has yielded inconsistent results.

Audit delay moderates the effect of managerial ownership on indications of fraud

Audit delay significantly moderates the effect of managerial ownership on indications of fraud, with a value of 0.043 and a negative beta coefficient of -0.060. Furthermore, this indicates that although audit delay moderates the effect of managerial ownership on the potential for fraud, the presence of the moderating variable reduces that effect because the direction of the moderation is negative. This can be interpreted to mean that factors such as internal oversight, audit quality, or the implementation of good corporate governance can serve as a counterbalance to managerial power. Thus, the stronger the existing control mechanisms, the more the negative impact of high managerial ownership on fraud can be mitigated.

In theory, high managerial ownership typically reduces the potential for fraud because managers also act as owners, so their interests align with those of shareholders (agency theory). This is supported by the findings of Tjia et al. (2025), which show that audit delays moderate the relationship between managerial ownership and financial statement fraud. These findings indicate that when the audit process is conducted in a more timely manner, managerial ownership plays a more effective role in curbing financial statement manipulation.

IV. CONCLUSION

Based on the research findings and discussion in the previous chapter, it can be concluded that the coefficient of determination (R^2) is 0.164. This indicates that the ability of the variables—including financial performance, firm size, managerial ownership, and audit delay—to explain the variation in the dependent variable is 16.4%. This means that 16.4% of the variation in the dependent variable can be explained by the regression model used, while the remaining

83.6% is influenced by other factors outside the model that were not examined in this study. Based on the results of the data analysis conducted, the conclusions are as follows:

1. Financial performance has a positive effect on fraud indicators in energy sector companies listed on the IDX during the 2022–2024 period.
2. Company size has no effect on fraud indicators in energy sector companies listed on the IDX during the 2022–2024 period.
3. Managerial ownership has no effect on fraud indicators in energy sector companies listed on the IDX during the 2022–2024 period.
4. Audit delay does not moderate the effect of financial performance on fraud indicators in energy sector companies listed on the IDX during the 2022–2024 period.
5. Audit delay does not moderate the effect of firm size on fraud indicators in energy sector companies listed on the IDX during the 2022–2024 period.
6. Audit delay moderates and weakens the effect of managerial ownership on fraud indicators in energy sector companies listed on the IDX during the 2022–2024

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