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# Determinants of Financial Statement Fraud: The Roles of Pressure, Opportunity, and Rationalization with Audit Committee as a Moderating Variable in State-Owned Enterprises

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**Abstract**

*This study examines the determinants of financial statement fraud by analyzing the effects of pressure, opportunity, and rationalization, as well as the moderating role of the audit committee in Indonesian State-Owned Enterprises (SOEs). The research is grounded in Agency Theory and the Fraud Triangle Theory, which explain that fraudulent financial reporting arises from managerial pressure, opportunities created by weak internal controls, and rationalization of unethical behavior. This study employs a quantitative approach using secondary data obtained from the annual reports of State-Owned Enterprises listed on the Indonesia Stock Exchange during the 2021–2025 period. The sample was selected using a purposive sampling technique, and the data were analyzed using panel data regression with a Moderated Regression Analysis (MRA) approach. Pressure is proxied by Return on Assets (ROA), opportunity by the proportion of independent commissioners, and rationalization by changes in directors, while financial statement fraud is measured using the F-Score. The findings indicate that pressure, opportunity, and rationalization significantly influence financial statement fraud. Furthermore, the audit committee weakens the influence of pressure, opportunity, and rationalization on financial statement fraud by strengthening financial oversight, improving internal control effectiveness, and enhancing the quality of corporate governance. These findings contribute to the literature on fraud detection and provide practical implications for regulators, investors, and State-Owned Enterprises in strengthening governance mechanisms to mitigate financial reporting fraud.*



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**Keywords: Financial Statement Fraud, Fraud Triangle, Pressure, Opportunity, Rationalization, Audit Committee, State-Owned Enterprises.**

## INTRODUCTION

Financial statements constitute one of the primary sources of information used by investors to evaluate a company's financial performance and make informed investment decisions. By analyzing financial statements, investors can obtain a comprehensive understanding of a firm's financial condition, profitability, liquidity, and operational performance, thereby reducing information asymmetry between management and stakeholders (Hery, 2023). For companies, financial statements also function as a medium for communicating financial performance to shareholders and the public while demonstrating management's accountability in utilizing corporate resources and generating value (Jogiyanto, 2022)

Financial statement fraud occurs across various industrial sectors in Indonesia, particularly among publicly listed companies involved in government procurement projects. Companies operating in infrastructure-related industries, including construction, transportation, and telecommunications, are especially vulnerable because of the substantial value and complexity of government contracts. Several firms in these sectors have even been included on the blacklist of the Indonesian National Public Procurement Agency due to procurement irregularities (Damayani et al., 2019).

Among the most notable cases are PT Waskita Karya (Persero) Tbk, which was investigated by the Financial and Development Supervisory Agency (BPKP) for alleged financial statement manipulation dating back to 2016, resulting in estimated state losses of approximately IDR 2.5 trillion. Similarly, PT Garuda Indonesia (Persero) Tbk was required by the Financial Services Authority (OJK) to restate its 2018 financial statements after improperly recognizing receivables as revenue, leading to reported losses of approximately IDR 2.45 trillion. Other significant cases include procurement fraud at PT Indofarma Tbk, financial reporting integrity violations at PT Kimia Farma Tbk, irregularities in revenue and investment management at PT Perusahaan Gas Negara (Persero) Tbk, and audit findings involving PT Semen Indonesia (Persero) Tbk, which collectively indicate substantial potential state financial losses. These recurring incidents demonstrate that financial statement fraud remains a critical governance issue within Indonesian SOEs

Financial statement fraud in SOEs deserves particular attention because it not only harms corporate performance but also generates substantial economic losses for the



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government, undermines public trust in state asset management, and threatens national economic stability. Furthermore, SOEs operate within a unique institutional environment that combines public accountability with commercial objectives, creating more complex governance structures and increasing the likelihood of fraudulent behavior (Suryakusuma & Stephanus, 2023).

One of the most widely accepted frameworks for explaining fraudulent behavior is the Fraud Triangle Theory, originally proposed by Cressey and subsequently refined by Crowe Horwath and other researchers (Hidayat & Triyono, 2022). According to this theory, fraudulent financial reporting arises from three fundamental elements: pressure, opportunity, and rationalization. In addition to these three determinants, the effectiveness of the audit committee plays a crucial role in preventing financial reporting fraud. Audit committees that fail to conduct adequate supervision, periodic reviews, and evaluations of financial reporting processes may weaken fraud detection and prevention mechanisms (Anggraini & Praptiningsih, 2022). Therefore, an effective audit committee is expected to strengthen corporate governance by enhancing financial reporting quality, internal control effectiveness, regulatory compliance, and coordination with both internal and external auditors.

Although several fraud detection models have been developed, including the Fraud Diamond, Fraud Pentagon, and Fraud Hexagon, this study adopts the Fraud Triangle Theory because it remains the most fundamental and widely accepted framework for explaining the causes of fraudulent financial reporting (Ningsih & Syarief, 2022). Conceptually, additional constructs incorporated into the Fraud Pentagon and Fraud Hexagon remain closely related to the original Fraud Triangle dimensions. For example, capability is closely associated with opportunity, since individual capability can only be exercised when opportunities exist. Likewise, arrogance can be interpreted as an extension of rationalization, reflecting a stronger sense of entitlement to commit fraudulent acts

## OBJECTIVES

This article intends

1. Pressure has a significant effect on financial statement fraud
2. Opportunity has a significant effect on financial statement fraud
3. Rationalization has a significant effect on financial statement fraud
4. The audit committee moderates the relationship between pressure and financial statement fraud



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5. The audit committee moderates the relationship between opportunity and financial statement fraud
6. The audit committee moderates the relationship between rationalization and financial statement fraud

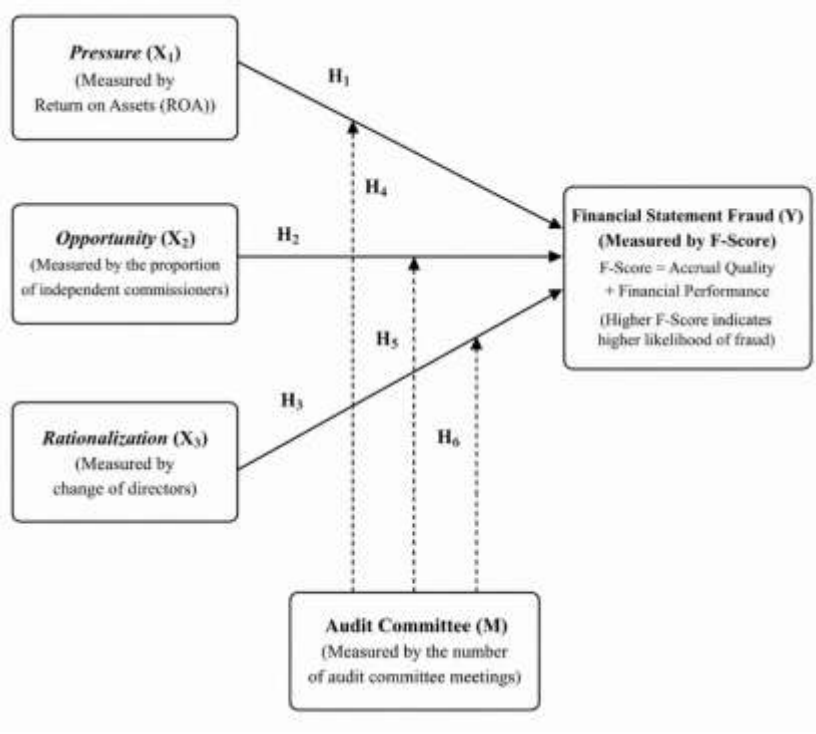



**Figure 1: Reseaerch Framework**

This study employed a quantitative causal research design to examine the effects of pressure, opportunity, and rationalization on financial statement fraud, with the audit committee serving as a moderating variable. The study used panel data collected from Indonesian State-Owned Enterprises (SOEs) listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. Secondary data were obtained from the annual reports and financial statements available on the official websites of the Indonesia Stock Exchange and the sampled companies.

The dependent variable, financial statement fraud, was measured using the F-Score model, which consists of Accrual Quality and Financial Performance (Almalita, 2025). Pressure was proxied by Return on Assets (ROA), opportunity by the proportion


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of independent commissioners (BDOUT), rationalization by changes in directors (DCHANGE), and the audit committee by the number of audit committee meetings.

The population consisted of 30 State-Owned Enterprises, and the research sample was selected using purposive sampling based on the availability of complete annual reports and financial data throughout the observation period. Data analysis was conducted using panel data regression with EViews 10. The appropriate estimation model was determined through the Chow test, Hausman test, and Lagrange Multiplier (LM) test. Classical assumption tests, including normality, heteroscedasticity, multicollinearity, and autocorrelation, were performed to ensure model validity. The research hypotheses were tested using Moderated Regression Analysis (MRA)

## DISCUSSION

The population consisted of State-Owned Enterprises (SOEs) listed on the Indonesia Stock Exchange (IDX) during 2020–2024. Using purposive sampling, 22 companies met the research criteria. With a five-year observation period, the study generated 110 balanced panel observations

**Table 1: Descriptive Statistics**

| | FSF | ROA | BDOUT | DCHANGE | KA |
|---|---|---|---|---|---|
| Mean | 0.140480 | 0.044317 | 0.462402 | 0.636364 | 20.46364 |
| Maximum | 2.764600 | 0.370700 | 0.666700 | 1.000000 | 40.00000 |
| Minimum | -2.863500 | 0.000200 | 0.200000 | 0.000000 | 5.000000 |
| Std. Dev. | 0.721190 | 0.086373 | 0.102369 | 0.483247 | 9.367793 |

The mean value of Financial Statement Fraud (FSF) measured using the F-Score was 0.140, indicating a relatively low level of financial statement fraud risk among Indonesian SOEs. The maximum and minimum FSF values were 2.765 and −2.864, respectively. The average Pressure (ROA) was 0.044, suggesting that the sampled firms generated an average return on assets of 4.4%. Opportunity (BDOUT) had a mean of 0.462, indicating that independent commissioners represented approximately 46.2% of the board of commissioners. Rationalization (DCHANGE) had a mean value of 0.636, implying that approximately 63.6% of the observations experienced changes in board directors during the observation period. The Audit Committee (KA) held an average of 20.46 meetings annually, indicating relatively active audit committee oversight.


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Before testing the hypotheses using panel data regression, classical assumption tests were conducted to ensure that the regression models satisfied the assumptions of the Best Linear Unbiased Estimator (BLUE). Since this study employed two regression models—a baseline model and a moderated regression model—the assumption tests were performed separately for each model. For Model 1, the Jarque–Bera probability value was 0.211, exceeding the significance level of 0.05. Therefore, the null hypothesis was accepted, indicating that the residuals were normally distributed. Similarly, Model 2, which included the moderating variable, produced a Jarque–Bera probability value of 0.561 ($p > 0.05$). Thus, the residuals of the moderated regression model also satisfied the normality assumption.

For Model 1, the correlation coefficients among Pressure (ROA), Opportunity (BDOUT), and Rationalization (DCHANGE) were all substantially below the threshold of 0.90, indicating the absence of multicollinearity. Likewise, Model 2, which incorporated the Audit Committee (KA) and the interaction terms (ROA×KA, BDOUT×KA, and DCHANGE×KA), also exhibited correlation coefficients below 0.90. Therefore, no multicollinearity problem was detected in either regression model.

For Model 1, the probability values of the F-statistic, Obs*R-squared, and Scaled Explained Sum of Squares were 0.1532, 0.1538, and 0.1588, respectively. Since all probability values exceeded 0.05, the null hypothesis of homoscedasticity was accepted, indicating that the model was free from heteroscedasticity. Similarly, Model 2 yielded probability values of 0.7849, 0.7833, and 0.7832, all above the 0.05 significance level. Therefore, the moderated regression model also satisfied the homoscedasticity assumption.

For Model 1, the probability values for the F-statistic and Obs*R-squared were both 0.8850, exceeding the 0.05 significance level. These results indicate that the residuals were free from serial correlation. Similarly, Model 2 produced probability values of 0.5000 for both the F-statistic and Obs*R-squared, confirming the absence of autocorrelation.

Panel regression model selection was conducted using the Chow Test and Hausman Test. The Chow Test produced probability values of 0.0000 for both regression models, indicating that the Fixed Effect Model (FEM) was preferred over the Common Effect Model. Subsequently, the Hausman Test also yielded probability values of 0.0000, confirming that the Fixed Effect Model was more appropriate than the Random Effect Model. Since both tests consistently selected the Fixed Effect Model, the Lagrange Multiplier Test was not required


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**Table 2: Hypothesis Testing**

| Hypothesis | Relationship | B | t-value | p-value | Decision |
|---|---|---|---|---|---|
| H1 | Pressure → Financial Statement Fraud | 3.159 | 3.094 | 0.000 | Supported |
| H2 | Opportunity → Financial Statement Fraud | 0.164 | 0.177 | 0.860 | Not Supported |
| H3 | Rationalization → Financial Statement Fraud | 2.191 | 2.094 | 0.007 | Supported |
| H4 | Audit Committee × Pressure → Financial Statement Fraud | −5.146 | −4.406 | 0.000 | Supported |
| H5 | Audit Committee × Opportunity → Financial Statement Fraud | −0.241 | −2.313 | 0.023 | Supported |
| H6 | Audit Committee × Rationalization → Financial Statement Fraud | −5.040 | −4.394 | 0.000 | Supported |

The empirical findings indicate that pressure, proxied by Return on Assets (ROA), has a positive and statistically significant effect on Financial Statement Fraud (FSF) in Indonesian State-Owned Enterprises (SOEs). The regression results reveal a coefficient of 3.158, a t-statistic of 3.093, and a p-value of 0.000, which is below the 5% significance level. Therefore, the first hypothesis (H1) is supported. This finding suggests that higher financial pressure increases the likelihood of management engaging in fraudulent financial reporting. In this study, ROA represents management's ability to generate profits from company assets and serves as an indicator of financial performance expected by shareholders, creditors, regulators, and other stakeholders. Within SOEs, profitability is not only associated with business performance but also reflects management's accountability in utilizing public assets efficiently. Consequently, management experiences considerable pressure to maintain or improve profitability, particularly when organizational performance is closely monitored by the government as the controlling shareholder. These findings are consistent with Signaling Theory, which argues that firms attempt to transmit positive signals regarding their future prospects through financial reporting. Profitability, particularly ROA, represents one of the strongest positive signals received by investors and other stakeholders because it reflects efficient asset utilization


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and sound corporate performance. However, when actual financial performance fails to meet stakeholder expectations, management may create false signals through earnings manipulation to preserve organizational legitimacy and stakeholder confidence. In SOEs, maintaining positive financial signals becomes even more critical because accountability extends beyond investors to the government and the public. Consequently, pressure to maintain a favorable corporate image may encourage fraudulent financial reporting.

The hypothesis testing results demonstrate that opportunity, measured by the proportion of independent commissioners (BDOUT), does not significantly influence Financial Statement Fraud in SOEs. The estimated regression coefficient is 0.163, with a t-statistic of 0.177 and a p-value of 0.859, which exceeds the 5% significance level. Therefore, the second hypothesis (H2) is rejected. These findings are consistent with Agency Theory, which emphasizes that governance structures alone may not sufficiently reduce agency conflicts between principals and agents. Effective monitoring requires more than structural compliance; it also depends on the quality of oversight, access to relevant corporate information, and the effectiveness of internal control systems. Therefore, fulfilling regulatory requirements regarding board independence does not necessarily eliminate opportunities for management to engage in opportunistic financial reporting.

The empirical results indicate that rationalization, proxied by changes in the board of directors (DCHANGE), positively and significantly affects Financial Statement Fraud in SOEs. The regression coefficient is 2.191, the t-statistic equals 2.094, and the p-value is 0.007, indicating statistical significance at the 5% level. Accordingly, the third hypothesis (H3) is accepted. The findings suggest that SOEs experiencing changes in top management are more likely to engage in financial statement fraud than firms with stable executive leadership. Director turnover is widely recognized as a proxy for rationalization within Fraud Triangle Theory, as leadership transitions often involve changes in corporate strategy, operational policies, performance targets, and organizational culture. During transition periods, newly appointed executives frequently encounter substantial pressure to demonstrate superior performance within a relatively short timeframe, potentially leading to justifications for manipulating financial reports to maintain organizational stability or satisfy stakeholder expectations. These findings also support Agency Theory, which argues that conflicts of interest exist between shareholders and managers. Government shareholders expect directors to maximize firm value and improve organizational efficiency, whereas directors seek to secure favorable performance evaluations, maintain their positions, and enhance professional reputations. During


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leadership transitions, these conflicting objectives may increase managerial incentives to manipulate financial reports rather than improve genuine operational performance.

The findings indicate that the Audit Committee significantly moderates the relationship between pressure and Financial Statement Fraud. The interaction term (ROA × Audit Committee) produces a coefficient of −5.145, a t-statistic of −4.406, and a p-value of 0.000, indicating a significant negative moderating effect. Therefore, the fourth hypothesis (H4) is supported. In this study, audit committee effectiveness is measured by the frequency of audit committee meetings. More frequent meetings indicate stronger monitoring activities involving financial reporting quality, internal control systems, risk management practices, compliance with accounting standards, and follow-up actions on internal and external audit findings. Such continuous oversight increases the probability that irregularities in financial reporting will be detected before they develop into material financial statement fraud. This moderating effect is particularly relevant for SOEs, where management faces multiple performance expectations, including profitability, efficient utilization of public assets, public service obligations, and government performance targets. The findings suggest that active audit committees serve as an important governance mechanism capable of mitigating the adverse effects of financial pressure by encouraging managers to achieve performance improvements through legitimate operational activities rather than accounting manipulation.

The empirical results reveal that the Audit Committee significantly moderates the relationship between opportunity and Financial Statement Fraud. The interaction coefficient (BDOUT × Audit Committee) equals −0.240, with a t-statistic of −2.313 and a p-value of 0.023, supporting the fifth hypothesis (H5). Within SOEs, governance regulations require both independent commissioners and audit committees as key governance mechanisms. However, this study demonstrates that governance structures alone are insufficient to reduce fraud risk. Instead, active audit committee involvement substantially enhances monitoring effectiveness, thereby limiting opportunities for management to manipulate financial statements. These findings provide additional support for Agency Theory, suggesting that effective monitoring mechanisms reduce information asymmetry and constrain opportunistic managerial behavior

The results further indicate that the Audit Committee significantly moderates the relationship between rationalization and Financial Statement Fraud. The interaction between director changes and the audit committee (DCHANGE × Audit Committee) produces a coefficient of −5.039, a t-statistic of −4.393, and a p-value of 0.000, confirming the sixth hypothesis (H6). The negative interaction coefficient indicates that an effective


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audit committee reduces the influence of managerial rationalization on fraudulent financial reporting. Although changes in executive leadership increase the likelihood of rationalizing unethical accounting practices, intensive monitoring by the audit committee substantially mitigates this risk. However, the findings demonstrate that active audit committees effectively constrain such rationalization processes. Frequent audit committee meetings facilitate continuous monitoring of financial reporting quality, internal control effectiveness, accounting policy implementation, and audit recommendations throughout leadership transition periods. Consequently, management is encouraged to improve actual operational performance rather than manipulate accounting information

## CONCLUSION

This study examined the influence of the Fraud Triangle dimensions, namely pressure, opportunity, and rationalization, on Financial Statement Fraud (FSF) in Indonesian State-Owned Enterprises (SOEs), while also investigating the moderating role of the Audit Committee. The findings demonstrate that pressure, proxied by Return on Assets (ROA), and rationalization, proxied by changes in the board of directors, have a positive and significant effect on financial statement fraud. In contrast, opportunity, measured by the proportion of independent commissioners, does not significantly influence fraudulent financial reporting. Furthermore, the Audit Committee significantly moderates the relationships between pressure, opportunity, and rationalization and financial statement fraud by weakening their effects, highlighting its critical role in strengthening corporate governance and enhancing the quality of financial reporting.

The findings imply that SOEs should adopt more balanced performance evaluation systems that emphasize not only financial outcomes but also corporate governance, compliance, risk management, and sustainability. Moreover, organizations should focus on improving the effectiveness of governance mechanisms by strengthening the supervisory capacity of independent commissioners, ensuring transparent leadership transitions, and enhancing the effectiveness of audit committees through more intensive monitoring and coordination with internal and external auditors. These measures are expected to reduce opportunities and incentives for fraudulent financial reporting while promoting greater transparency and accountability in SOEs


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