

Financial Reporting Fraud in Indonesian Regional Banks: A Fraud Hexagon Analysis with Audit Committee Moderation

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Abstract: This study examines the influence of Fraud Hexagon elements on fraudulent financial reporting and investigates whether audit committee effectiveness moderates these relationships in Indonesian Regional Development Banks (BPDs). Using secondary data from all 27 Indonesian BPDs over the 2016-2025 period, the study analyzes 270 firm-year observations. Fraudulent financial reporting is measured using the Beneish M-Score, and hypotheses are tested using Moderated Regression Analysis (MRA) with Pooled Ordinary Least Squares and robust standard errors. The findings reveal that financial targets (ROA), opportunity represented by receivable growth (RGW), and arrogance measured by CEO photo frequency (PIC) significantly increase fraudulent financial reporting. Conversely, financial stability, external pressure, capability, rationalization, and collusion are not significant predictors. Audit committee effectiveness exhibits limited moderating influence, significantly interacting only with opportunity and rationalization while failing to moderate the remaining Fraud Hexagon dimensions. This study extends Fraud Hexagon literature by examining the rarely investigated context of state-owned regional banks and incorporating audit committee effectiveness as a moderating mechanism. The findings suggest that regulators and bank management should prioritize governance quality through strengthening audit committee competence, independence, and substantive oversight rather than focusing solely on committee size. The study enriches Fraud Hexagon Theory and agency theory by demonstrating that the determinants of fraudulent financial reporting and the effectiveness of audit committee oversight are context-dependent in government-owned banking institutions.

Keywords: Audit Committee Effectiveness, Fraud Hexagon, Fraudulent Financial Reporting, Regional Development Banks

A. Introduction

Fraudulent financial reporting is a form of fraud that has the most significant impact on organizational sustainability because it can cause financial losses, reduce investor confidence, and disrupt the stability of the financial system. According to the

Occupational Fraud 2024: A Report to the Nations report published by the Association of Certified Fraud Examiners (ACFE), fraudulent financial reporting only accounts for approximately 5% of total fraud cases worldwide, but results in the highest median loss of US\$766,000 per case (ACFE, 2024). In the banking sector, fraudulent financial reporting is a particular concern because banks are institutions that manage public funds and are highly dependent on public trust. A study by Achmad et al., (2023) shows that fraudulent financial reporting practices remain a serious threat in the Indonesian banking industry and are influenced by various internal and external factors related to pressures and weaknesses in corporate governance.

In the Indonesian context, Regional Development Banks (BPD) play a strategic role as financial intermediaries supporting regional economic development through credit distribution, regional cash management, and development project financing. However, increasing operational complexity and high-performance demands make BPDs vulnerable to financial reporting manipulation. A study by Zulqirofik & Raharja (2025) found that factors within the Fraud Hexagon, such as financial targets, financial stability, external pressure, ineffective supervision, and board turnover, significantly increase the potential for financial reporting fraud in Indonesian banks. Similarly, Sare & Kurniawati (2025) revealed that financial pressure and weak internal supervision are the main determinants of financial reporting manipulation in Indonesian banking companies. This condition indicates that financial reporting fraud in BPDs is not merely an organizational problem but also has the potential to disrupt regional economic stability and public trust in the banking system.

The development of fraud theory shows a shift from the Fraud Triangle Theory introduced by Cressey towards Fraud Diamond, Fraud Pentagon, and Fraud Hexagon Theory. Fraud Hexagon Theory developed by Vousinas (2019) explains that fraudulent behavior is influenced by six main elements, namely pressure, opportunity, rationalization, capability, ego, and collusion. This theory is considered more comprehensive because it includes elements of collusion and arrogance which are increasingly relevant in the modern business environment. Various empirical studies show that most of the Fraud Hexagon components influence financial reporting fraud (Achmad et al., 2023; Alfarago et al., 2023; Latif & Sahla, 2026; Nugroho & Diyanty, 2022; Sukmadilaga et al., 2022). However, the results of previous research still show inconsistencies, especially regarding the influence of rationalization, ego and collusion variables on the practice of fraudulent financial reporting. These differences in results indicate that there are other factors that can influence the relationship between the Fraud Hexagon elements and financial reporting fraud.

One governance mechanism that is considered effective in suppressing fraudulent practices is the effectiveness of the audit committee. The audit committee has a

supervisory function over the financial reporting process, the effectiveness of internal control, and compliance with applicable regulations. Research by Sari et al., (2022) found that the audit committee was able to weaken the influence of several elements of the Fraud Hexagon on fraudulent financial reporting. Other research also shows that the effectiveness of the audit committee and independent commissioners plays an important role in improving the quality of financial reporting and reducing the possibility of fraud (Sari et al., 2024). However, Puspa & Pamungkas (2026) show that the effectiveness of the audit committee is not always successful in reducing the risk of fraud, especially when the organization faces high pressure and collusive practices involving various parties. Therefore, the effectiveness of audit committees remains an interesting empirical issue for further study, especially in the context of Regional Development Banks in Indonesia. Although research on the Fraud Hexagon has grown rapidly in recent years, there are still several research gaps. First, most of the previous research was conducted on manufacturing companies, mining companies, or public companies in general (Alfarago et al., 2023; Apriliana & Agustina, 2017; Sari et al., 2022), while research that specifically examines Regional Development Banks is still very limited. Second, previous research mostly tested the direct influence of the Fraud Hexagon variable on financial reporting fraud without integrating the effectiveness of the audit committee as a moderating variable. Third, the characteristics of government ownership in BPDs allow for the emergence of political pressure, regional development targets, and the potential for collusion that are different compared to other commercial banks, thus requiring special empirical testing. Thus, this research attempts to fill this gap by examining the relationship between the Fraud Hexagon and financial reporting fraud and analyzing the role of audit committee effectiveness in the context of Regional Development Banks in Indonesia.

Based on this description, the main objective of this research is to analyze the influence of Fraud Hexagon elements on financial reporting fraud and examine the role of the audit committee's effectiveness in moderating this relationship at Regional Development Banks in Indonesia. This research proposes a hypothesis that the factors of pressure, opportunity, rationalization, capability, ego and collusion have a positive influence on financial reporting fraud, while the effectiveness of the audit committee is predicted to be able to weaken this influence. Therefore, the research questions asked are: (1) do the elements of the Fraud Hexagon influence financial reporting fraud at Regional Development Banks in Indonesia? and (2) is the effectiveness of the audit committee able to moderate the relationship between the elements of the Fraud Hexagon and financial reporting fraud? It is hoped that the results of this research can provide a theoretical contribution in the development of Fraud Hexagon Theory as well as provide practical implications for regulators and banking management in strengthening governance and fraud prevention systems. The hypothesis proposed is:

H1a: Pressure has a positive effect on fraudulent financial reporting.

H1b: The effectiveness of the audit committee weakens the effect of pressure on

- fraudulent financial reporting.
- H2a: Opportunity has a positive effect on financial reporting fraud.
- H2b: Audit committee effectiveness weakens the influence of opportunities on financial reporting fraud.
- H3a: Rationalization has a positive effect on financial statement fraud.
- H3b: Audit committee effectiveness weakens the influence of rationalization on financial statement fraud.
- H4a: Capability has a positive effect on fraudulent financial reporting.
- H4b: Audit committee effectiveness weakens the influence of capability on fraudulent financial reporting.
- H5a: Arrogance has a positive effect on fraudulent financial reporting.
- H5b: Audit committee effectiveness weakens the effect of arrogance on fraudulent financial reporting.
- H6a: Collusion has a positive effect on fraudulent financial reporting.
- H6b: The effectiveness of the audit committee weakens the influence of collusion on fraudulent financial reporting.

B. Methods

The population and sample for this research includes all Regional Development Banks (BPD) in Indonesia in the 2016–2025 period, totaling 27 banks. Ten years of observations yielded 270 firm-year observations. All data analyzed is secondary data collected from the financial reports and annual reports of each BPD. Equation (1) is used to test the influence of elements in the Fraud Hexagon on fraudulent financial reporting practices.

$$MScore_{it} = \alpha + \beta_1 AGR_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 BOD_{it} + \beta_5 BOC_{it} + \beta_6 RGW_{it} + \beta_7 IND_{it} + \beta_8 AUD_{it} + \beta_9 PIC_{it} + \beta_{10} AUDCOM_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

where MScore indicates fraudulent financial reporting, X1 (AGR) to X9 (PIC) represent the six key elements of the Fraud Hexagon, X10 (AUDCOM) is a moderating variable, *i* refers to the company, *t* indicates the observation year, and ε is the error term.

In addition to testing the direct effect of the six Fraud Hexagon elements on fraudulent financial reporting, this study also explores the role of audit committee effectiveness (AUDCOM) as a moderating variable. Equation (2) is constructed to test whether audit committee effectiveness can weaken the effect of the six Fraud Hexagon elements on fraudulent financial reporting by examining the interaction effects between the variables.

$$MScore_{it} = \alpha + \beta_1 AGR_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 BOD_{it} + \beta_5 BOC_{it} + \beta_6 RGW_{it} + \beta_7 IND_{it} + \beta_8 AUD_{it} + \beta_9 PIC_{it} + \beta_{10} AUDCOM_{it} + \beta_{11} (AGR \times AUDCOM)_{it} + \beta_{12} (LEV \times AUDCOM)_{it} + \beta_{13} (ROA \times AUDCOM)_{it} + \beta_{14} (BOD \times AUDCOM)_{it} + \beta_{15} (BOC \times$$

$$AUDCOM)_{it} + B16(RGW \times AUDCOM)_{it} + B17(IND \times AUDCOM)_{it} + B18(AUD \times AUDCOM)_{it} + B19(PIC \times AUDCOM)_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

The panel data model selection was conducted using the Chow test and the Lagrangian Multiplier (LM) test. The Chow test results showed a probability value of 0.8586 (>0.05), indicating that the Fixed Effect Model was no better than the Common Effect Model. Furthermore, the LM test results showed a Prob value > chibar2 of 1.0000 (>0.05), indicating the absence of individual effects between companies. Therefore, the most appropriate model for use in this study is the Common Effect Model (Pooled OLS).

Furthermore, the heteroscedasticity test results indicated a violation of the homoscedasticity assumption, while the autocorrelation test indicated no autocorrelation. Therefore, parameter estimation was performed using the Pooled OLS method with robust standard errors to obtain a consistent and efficient estimator.

This research uses the Beneish M-Score as a proxy for fraudulent financial reporting. This model was developed by Beneish (1999) to identify possible earnings manipulation through eight financial ratios that reflect management incentives and opportunities in manipulating financial statements. Various subsequent studies have also used the Beneish M-Score as a measure of fraudulent financial reporting and proven its ability to detect indications of financial report manipulation (Khatun et al., 2022; Kumalasari & Puspaningsih, 2024; Lu & Zhao, 2021; Narsa et al., 2023; Zulfani & Zuhrotun, 2025). Below are presented eight financial ratios to measure M-Score:

Table 1. Proxy for measuring fraudulent financial reporting

No.	Description and symbols	Operationalization
1.	Gross Margin Indeks (GMI)	$\frac{(Gross\ Profit \div Sales)_{t-1}}{(Gross\ Profit \div Sales)_t}$
2.	Sales Growth Indeks (SGI)	$\frac{Sales_t}{Sales_{t-1}}$
3.	Total Accrual to Total Aset (TATA)	$\frac{(Operating\ Income - Cash\ Flow\ from\ Operation)_t}{Total\ Asset_t}$
4.	Depreciation Indeks (DEPI)	$\frac{[Depreciation / (PPE + Depreciation)]_{t-1}}{[Depreciation / (PPE + Depreciation)]_t}$
5.	Day's Sales in Receivables Indeks (DSRI)	$\frac{(Receivables - Sales)_t}{Receivables - Sales_{t-1}}$
6.	Leverage Indeks (LVGI)	$\frac{(Total\ Liabilities \div Total\ Asset)_t}{(Total\ Liabilities \div Total\ Asset)_{t-1}}$
7.	Sales, general and administrative expenses index (SGAI)	$\frac{(Sales, General \& Administrative\ Expense \div Sales)_t}{(Sales, General \& Administrative\ Expense \div Sales)_{t-1}}$
8.	Asset Quality Index (AQI)	$\frac{(1 - \frac{Current\ Asset + Property, Plant \& Equipment}{Total\ Asset})_t}{(1 - \frac{Current\ Asset + Property, Plant \& Equipment}{Total\ Asset})_{t-1}}$

Source: Khatun et al. (2022), Lu & Zhao (2021), Narsa et al. (2023)

Furthermore, the six elements of fraud hexagon theory (Vousinas, 2019) are used as independent variables with measurements presented in Table 2. This research also includes audit committee effectiveness as a moderating variable which is proxied by the size of the audit committee, namely the number of audit committee members, as used in the research of Sari et al. (2022) dan Abdullah & Said (2019).

Table 2. Fraud Hexagon Elements

No	Fraud Hexagon Element	Variable	Symbol	Measurement	Source
Independent Variables					
1.	Pressure (X1)	Financial Stability	AGR	$\frac{\text{Total Asset}_t - \text{Total Asset}_{t-1}}{\text{Total Asset}_{t-1}}$	Skousen et al. (2009)
		External Pressure	LEV	$\frac{\text{Total Debt}}{\text{Total Asset}}$	Skousen et al. (2009)
		Financial Target	ROA	$\frac{\text{Net Income}}{\text{Total Asset}}$	Skousen et al. (2009)
2.	Capability (X2)	Change of Director	BOD	The value is 1 if there is a change in the company's board of directors and 0 otherwise.	Achmad et al. (2023)
3.	Collusion (X3)	A conspiracy between several parties to commit fraud.	BOC	Number of commissioners holding multiple positions.	Achmad et al. (2023)
4.	Opportunity (X4)	Nature of industry	RGW	$\frac{\text{Receivables}_t - \text{Receivables}_{t-1}}{\text{Sales}_t - \text{Sales}_{t-1}}$	Narsa et al. (2023)
		Effectiveness of supervision	IND	Number of Independent Commissioners / Total Board of Commissioners	Narsa et al. (2023)
5.	Rationalization (X5)	Change in auditor	AUD	The value is 1 if there is a change in the company's auditor and 0 if not.	Skousen et al. (2009)
6.	Arrogance (X6)	A person's selfish attitude in showing off his power.	PIC	Number of CEO photos displayed in annual financial reports.	Achmad et al. (2023)

Source: processed by the author, 2025

C. Results and Discussion

Descriptive Statistics

Based on Table 3, the research sample consists of 270 observations for all variables. The dependent variable M-Score has an average of -2.354 which is below the threshold of -2.22, indicating that in general the companies in the sample are not indicated to have committed financial statement fraud. From the pressure element, the AGR (financial stability) variable recorded an average of 0.093 which reflects moderate asset growth, while LEV (external pressure) had a high average of 0.798 which indicates the company's heavy dependence on debt in its capital structure. Meanwhile, ROA (financial target) only reached an average of 0.016 with several companies recording negative values, reflecting the profitability pressure experienced by some sample companies.

Table 3. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
M-Score	270	-2.35426	.5256451	-3.99683	1.90128
AGR	270	.0933039	.0988248	-.340859	.6580748
LEV	270	.7976841	.1846955	.0541264	.932134
ROA	270	.0158246	.0117115	-.097188	.0496584
BOD	270	.5888889	.492949	0	1
BOC	270	.8518519	1.001994	0	4
RGW	270	4.888956	23.25918	-89.84143	91.14155
IND	270	.6120194	.1764782	0.25	1
AUD	270	.337037	.4735755	0	1
PIC	270	2.755556	.9122599	1	7
AUDCOM	270	3.666667	.9084486	2	7

Source: processed by the author, 2025

From the capability element, the BOD variable shows an average of 0.589, which means that approximately 58.9% of companies experienced changes in the board of directors during the observation period. The collusion element, proxied by the BOC, has an average of 0.852, indicating that on average there is less than one commissioner holding concurrent positions. In the opportunity element, the RGW variable has a very large standard deviation (23.259) with a range of -89.841 to 91.142, reflecting high variations in the ratio of receivables to sales between companies, while IND recorded an average of 0.612, indicating that more than 60% of board members are independent commissioners, reflecting relatively good supervisory effectiveness.

Next to the rationalization element, the AUD variable shows an average of 0.337, indicating that only around 33.7% of companies changed auditors during the research period. Finally, the element of arrogance as measured by the number of CEO photos in the annual report (PIC) has an average of 2.756 with a maximum value of 7, indicating that there are variations in power display behavior among company executives. Overall, these descriptive statistics reflect the diversity of sample company characteristics from all elements of the fraud hexagon as a basis for further analysis.

Statistical Test Results

Hypothesis testing in this study was conducted using Moderated Regression Analysis (MRA) with the Pooled OLS method and robust standard errors, as reported in Table 4. Model 1 tests the direct effect of Fraud Hexagon elements on fraudulent financial reporting as measured by the Beneish M-Score, while Model 2 includes the moderating variable of audit committee effectiveness (AUDCOM) along with all its interaction variables. The Adjusted R² value of Model 1 is 0.109 and Model 2 is 0.112, indicating that both models are able to explain variations in fraudulent financial reporting, albeit in moderate proportions. The significant F-statistic value in both models (Model 1: 2.06**; Model 2: 2.35**) confirms that the

overall model is feasible and has meaningful explanatory power.

Table 4. Moderated Regression Analysis (MRA) Test Results

Variable	Model 1	Model 2
Pressure (AGR)	0.765	0.092
Pressure (LEV)	0.250	-0.091
Pressure (ROA)	9.092***	23.310
Capability (BOD)	0.084	0.025
Collusion (BOC)	0.045	0.067
Opportunity (RGW)	0.003**	-0.012*
Opportunity (IND)	0.092	0.244
Rationalization (AUD)	0.057	-0.461*
Arrogance (PIC)	0.106**	0.032
Audit Committe (AUDCOM)	0.035	-0.105
AGR × AUDCOM		0.126
LEV × AUDCOM		0.105
ROA × AUDCOM		-3.977
BOD × AUDCOM		0.009
BOC × AUDCOM		-0.004
RGW × AUDCOM		0.004**
IND × AUDCOM		-0.034
AUD × AUDCOM		0.144**
PIC × AUDCOM		0.021
Adjusted R ²	0.109	0.112
F-statistic	2.06**	2.35**
N	270	270

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Source: processed by the author, 2025

The Effect of Pressure on Fraudulent Financial Reporting (H1a)

The pressure element in this research is proxied by three variables, namely AGR (financial stability), LEV (external pressure), and ROA (financial target). The test results in Model 1 show that only ROA has a significant effect on fraudulent financial reporting with a positive coefficient of 9.092 at the 1% significance level ($p < 0.01$), while AGR (0.765) and LEV (0.250) are not significant. Thus, H1a is partially supported, especially through the financial target proxy. These results are consistent with the agency theory perspective (Jensen & Meckling, 1976), which explains that management, as an agent, faces pressure to meet profitability targets set by shareholders (local governments) and regulators. When ROA is at a low level, as reflected by an average of only 0.016, with several regional development banks (BPDs) recording negative values (Table 3), management has an incentive to manipulate financial reports to appear better. From the Fraud Hexagon perspective, financial pressure is the element most consistently found to influence financial reporting fraud because it directly motivates management to present performance that is better than the actual condition (Vousinas, 2019). Awang & Ismail (2018) showed that financial pressure is one of the main determinants of intention to commit financial reporting fraud in the banking sector. Individuals under high

performance demands tend to rationalize manipulative actions more easily. This finding is supported by Awang (2019), who stated that pressure originating from the institutional environment, including stakeholder demands for profitability, significantly influences the emergence of fraudulent intentions in financial reporting.

Achmad et al. (2022) found something similar in the context of Indonesian BUMN which showed that financial targets were the most dominant pressure element in encouraging fraudulent financial reporting, and Zulfani & Zuhrotun (2025) who found ROA had a significant effect in testing the Fraud Hexagon using the Beneish M-Score. Alfarago et al. (2023) and Skousen et al. (2009) also emphasized that high profitability pressure increases management incentives to present financial reports unfairly, and Zulqirofik & Raharja (2025) and Achmad et al. (2023) confirm the relevance of financial targets in the Indonesian banking context.

The insignificance of AGR and LEV can be understood in the context of BPD. The high average LEV of 0.798 (Table 3) reflects that high use of debt is a normal and structural thing in banking, so it does not necessarily encourage manipulation. Latif & Sahla (2026) explain that third party funds are a normal operational characteristic of banking so that a high debt ratio does not always reflect financial pressure that encourages fraud. Ratmono & Frendy (2022) who researched BPD in Indonesia also found that not all pressure proxies uniformly influence fraud, and the relevance of each proxy is very dependent on the characteristics of the industry and organizational culture that surrounds it.

The Effect of Opportunity on Financial Reporting Fraud (H2a)

The opportunity element is proxied by RGW (nature of industry) and IND (effectiveness of supervision). The test results in Model 1 indicate that RGW has a positive and significant effect on fraudulent financial reporting, with a coefficient of 0.003 at the 5% significance level ($p < 0.05$), while IND (0.092) is insignificant. Thus, H2a is partially supported through the RGW proxy.

The significance of RGW reflects that the irregularity between receivables growth and sales growth signals a clear opportunity for manipulation. This is relevant considering that RGW exhibits very high variability in the sample, with a standard deviation of 23.259 and an extreme range between -89.841 and 91.142 (Table 3), indicating an abnormal pattern in receivables management in a number of regional development banks (BPDs). Herbenita et al. (2022) explain that fraud opportunities can arise due to weak internal controls, minimal managerial oversight, and abuse of position and authority, which in the banking context are particularly vulnerable to occur in the management of receivables and credit distribution. Aviantara (2021), who examined the Fraud Hexagon in the context of government financial reporting, also found that opportunities stemming from weaknesses in the control system are a consistent factor influencing fraud. Sawaka K. & Ramantha (2020) further

emphasized that fraud opportunities increase when formal oversight is ineffective, allowing individuals to exploit system weaknesses for personal gain.

This finding is also consistent with Latif & Sahla (2026) and Suryandari et al. (2023) who found RGW to have a positive and significant effect on the banking sector, arguing that the credit sector is the segment most vulnerable to manipulation because it involves managerial estimates in determining reserves, asset classification, and revenue recognition. Naldo & Widuri (2023) in ASEAN infrastructure companies and Narsa et al. (2023) in Indonesian manufacturing companies also found that anomalies in the nature of the industry create room for management to manipulate earnings, and Nugroho & Diyanty (2022) confirmed that opportunities stemming from industry characteristics influence financial statement fraud.

The insignificance of the IND indicates that the presence of independent commissioners quantitatively does not reduce the likelihood of fraud. According to Latif & Sahla (2026), a sufficient number of independent commissioners does not automatically reflect the effectiveness of the supervisory function if it is not supported by adequate competence and high monitoring intensity. In line with these findings, Siahaan et al. (2024) stated that internal organizational factors, including the quality of oversight mechanisms, play a greater role in detecting and preventing fraud than the mere existence of a formal board structure. This finding indicates that substantive independence is more important than simply fulfilling formal requirements for the presence of independent commissioners.

The Effect of Rationalization on Fraudulent Financial Reporting (H3a)

The variable AUD (change in auditor) as a proxy for rationalization shows a positive coefficient of 0.057 but is not significant in Model 1. Thus, H3a is not supported.

The insignificance of the rationalization variable in this study indicates that the AUD variable has no effect on the likelihood of fraudulent financial reporting in regional banks (BPD). This condition is explained by the highly regulated nature of the banking industry, where auditor changes are more influenced by compliance with regulatory requirements and mandatory rotation mechanisms than by attempts to conceal fraud (Latif & Sahla, 2026). Similar findings were presented by Suryandari et al. (2023) in the rural bank sector in Indonesia, who stated that auditor changes in a strictly supervised banking environment tend to follow transparent, formal procedures and are therefore not always associated with fraudulent practices.

Furthermore, Sahla & Ardianto (2023) explain that rationalization is a psychological and ethical construct that is difficult to measure through external behavioral proxies, such as auditor switching. This dimension is more related to ethical values, moral perceptions, and the justification process carried out by individual perpetrators of fraud. This view is supported by Awang (2019) and Awang & Ismail (2018), who

emphasize that rationalization operates at the level of attitudes, subjective norms, and ethical compliance, making it difficult to detect solely through secondary data sourced from financial reports. Although 33.7% of companies in the sample changed auditors, as shown in Table 3, Vousinas (2019) emphasizes that rationalization essentially lies within the realm of the perpetrator's perceptions and moral values, so the auditor switching proxy may not adequately represent the rationalization dimension in the context of regional development banks (BPD).

The Effect of Capability on Fraudulent Financial Reporting (H4a)

The BOD (change of director) variable as a proxy for capability shows a positive coefficient of 0.084 but is not significant in Model 1. Thus, H4a is not supported.

The findings of this research are different from the results of research by Latif & Sahla (2026) which shows that the BOD variable has a positive and significant effect on fraudulent financial reporting at BPD. They explain that changing directors can create a transition period characterized by weakened internal controls and increased opportunities to cover up previous management errors. In line with these findings, Naldo & Widuri (2023) on infrastructure companies in the ASEAN region found that capability as proxied through changes in directors has a significant effect on fraudulent financial reporting because individuals who occupy strategic positions and have a deep understanding of accounting systems tend to have greater ability to exploit internal control weaknesses.

The differences between the results of this study and those of the two previous studies are likely due to differences in the observation period and sample characteristics. In the context of Regional Development Banks (BPD), although approximately 58.9% of sample companies experienced changes in their board of directors, as shown in Table 3, these changes were generally administrative rotations determined by the local government and were not always related to financial condition or indications of fraud. Ratmono & Frendy (2022), who also studied BPD, concluded that the effectiveness of external governance mechanisms, including board oversight, is strongly influenced by the ethical culture of the organization surrounding them. This condition may explain why board turnover in BPDs does not directly correlate with an increased risk of fraud. Furthermore, Wijayanti et al. (2024) showed that fraudulent intentions are more influenced by personality factors and the organizational environment than simply structural changes in company leadership.

The Effect of Arrogance on Fraudulent Financial Reporting (H5a)

The PIC variable measured by the number of CEO photos in the annual report as a proxy for arrogance shows a positive and significant influence on financial reporting fraud, with a coefficient of 0.106 at a significance level of 5% ($p < 0.05$) in Model 1.

Thus, hypothesis H5a is supported.

These results indicate that the higher the CEO's power-flaunting behavior through the frequency of photos appearing in annual reports, the greater the potential for financial reporting fraud. The average PIC score of 2.756, with a maximum score of 7 (Table 3), indicates a significant variation in the level of arrogance among BPD executives. This finding is consistent with research by Latif & Sahla (2026) and Achmad et al. (2022), which found that the CEO (PIC) had a positive and significant effect on fraudulent financial reporting. Both studies explained that the dominance of the CEO figure tends to create an organizational culture centered on a single individual, narrowing the space for dissent, and weakening the effectiveness of internal oversight mechanisms. Similar findings were also obtained by Bader et al. (2024) in industrial companies in Jordan, which showed that arrogance is an important predictor of fraud because individuals with high levels of arrogance tend to feel privileged and place themselves above applicable rules and control systems.

Furthermore, Achmad et al. (2023) and Alfarago et al. (2023) confirm that the number of CEO photos in annual reports is a relevant proxy for measuring arrogance in the Indonesian context. Meanwhile, Sahla & Ardianto (2023) show that attitudes of superiority and high ego, which are the main characteristics of arrogance, have a significant effect on the perception and tendency to commit fraud in professional circles. The findings of this study also support the theoretical views put forward by Dorminey et al. (2010) and Vousinas (2019), who state that individuals with high levels of arrogance tend to feel immune to rules and supervisory mechanisms, making them more susceptible to manipulating financial reports. This condition seems relevant in the context of BPD, where organizational leadership is often dominated by top executive figures who have great influence in the decision-making process and formulation of company policies.

The Effect of Collusion on Financial Reporting Fraud (H6a)

The BOC variable measured by the number of commissioners holding concurrent positions as a proxy for collusion shows a positive coefficient of 0.045, but is not significant in Model 1. Thus, hypothesis H6a is not supported.

These results indicate that the practice of holding dual commissioner positions has not been proven to increase the risk of financial reporting fraud in BPDs. The relatively low average BOC value of 0.852 (Table 3) indicates that the practice of dual commissioner positions in BPDs is still at a limited level. This finding is in line with research by Latif & Sahla (2026) which also found that BOC did not have a significant effect on fraudulent financial reporting. The research explains that commissioners who hold concurrent positions in BPD generally come from local government circles or are professionals who have additional networks and experience that can provide benefits to the company. As long as the practice of

holding multiple positions still complies with regulatory provisions, especially OJK regulations, this condition does not automatically increase the risk of fraud.

Furthermore, Aviantara (2021) stated that collusion in public organizations is a complex phenomenon and cannot always be identified through formal indicators, such as concurrent commissioner positions. Collusion is more often associated with hidden networks of interests, informal relationships, and exchanges of interests that are difficult to observe through secondary data. Similar findings were presented by Achmad et al. (2022), who showed that the collusive element in the Fraud Hexagon is not always significant because modern collusive practices tend to operate through more subtle mechanisms and are difficult to measure using proxies available in annual reports. Furthermore, Siahaan et al. (2024) emphasize that collusion detection requires a deeper understanding of internal organizational factors, such as organizational culture, relationships between parties, and decision-making patterns, which are not always reflected in the formal structure of the board of commissioners. This view is in line with the Fraud Hexagon theory put forward by Georgios L. Vousinas, which states that the most dangerous form of collusion occurs when it involves many parties and operates hiddenly outside the reach of the formal control system. Therefore, the use of multiple commissioner positions as a proxy for collusion may not fully capture the complexity of collusion practices in the context of BPD in Indonesia.

The Moderating Role of Audit Committee Effectiveness

Model 2 includes the moderating variable audit committee effectiveness (AUDCOM) and all its interaction variables. Of the nine interactions tested, only two showed a significant effect, namely $RGW \times AUDCOM$ (0.004**, $p < 0.05$) and $AUD \times AUDCOM$ (0.144**, $p < 0.05$). These results indicate that audit committee effectiveness is only able to moderate certain dimensions of the Fraud Hexagon and does not uniformly influence all determinants of fraudulent financial reporting.

The $RGW \times AUDCOM$ interaction variable has a positive and significant coefficient of 0.004 ($p < 0.05$). At the same time, the coefficient of RGW as the main variable changes to negative and significant (-0.012*, $p < 0.10$) in Model 2. This finding indicates that the existence of a larger audit committee does not necessarily increase the effectiveness of supervision in suppressing the opportunity for fraud originating from receivables anomalies. Instead, this condition may reflect the existence of overboarding, namely the number of members is too large, causing coordination problems, slowing the decision-making process, and reducing the effectiveness of substantive supervision.

This finding is in line with research by Sawaka & Ramantha (2020), which shows that good corporate governance as a moderating variable is not always able to eliminate the influence of opportunity on fraud because the effectiveness of

governance is largely determined by the quality of its implementation, not just the existence of a formal structure. The results of this research also support the argument of Nugroho & Diyanty (2022), which states that the role of the audit committee in reducing the opportunity for fraud to occur is not linear and is more influenced by the quality, competence and intensity of supervision rather than the number of members alone.

In addition, these findings are consistent with Latif & Sahla (2026), who found that formal governance mechanisms have limitations in controlling fraud opportunities that arise due to the operational complexity of the banking industry. In the BPD context, the complexity of transactions, regional ownership characteristics, and the involvement of various stakeholders can mean that the existence of a formal audit committee is not enough to reduce the opportunity for fraudulent financial reporting to occur if it is not supported by substantive supervisory effectiveness.

The interaction variable $AUD \times AUDCOM$ shows a positive and significant coefficient of 0.144 ($p < 0.05$). Meanwhile, the coefficient of the AUD variable in Model 2 changes to negative and significant (-0.461^* , $p < 0.10$). This finding indicates that audit committee effectiveness is not always able to strengthen the deterrent effect of auditor switching on the rationalization dimension of fraudulent financial reporting. These results can be explained because rationalization is essentially a psychological construct rooted in the perpetrator's internal justification process. Sahla & Ardianto (2023) showed that ethical values and external oversight mechanisms have limitations in changing perceptions and tendencies of fraud stemming from individual psychological factors. This condition explains why the existence of an audit committee is not always effective in moderating the relationship between rationalization and fraudulent financial reporting. Similar findings were presented by Wijayanti et al. (2024), who stated that formal oversight systems, such as the whistleblowing system and the characteristics of public accounting firms, have limited ability to mitigate fraudulent intentions driven by internal rationalization, unless supported by strong internalization of ethical values at the individual level.

The results of this research are also consistent with the findings of Nugroho & Diyanty (2022) and Puspa & Pamungkas (2026), which stated that audit committees face limitations in eliminating the psychological dimension of rationalization. Likewise, Latif & Sahla (2026) found that formal governance mechanisms are not always effective in weakening the influence of rationalization on fraudulent financial reporting.

The other insignificant interaction variables indicate that audit committee effectiveness, as proxied by membership size, has a relatively limited moderating role in the context of BPDs. Ratmono & Frendy (2022) found that formal oversight mechanisms are more effective when supported by a strong organizational ethical

culture. Therefore, the number of audit committee members alone is insufficient to increase oversight effectiveness without substantive governance quality. This finding is also supported by Siahaan et al. (2024), which shows that organizational factors that play a role in detecting fraud tend to be cultural and systemic, not just structural. Therefore, increasing the number of audit committee members does not necessarily increase the effectiveness of its moderation function. The average AUDCOM value of 3.667 with relatively small variations (Table 3) indicates that the size of the audit committee among BPD tends to be homogeneous so that it does not produce significant differences in moderation.

This condition strengthens the argument that the effectiveness of an audit committee is determined more by the quality of its supervision, such as the independence of members, expertise in finance and accounting, experience, and the intensity of meetings and supervision, rather than just the number of members it has (Abdullah & Said, 2019; Bawuah, 2024). Thus, the use of audit committee membership size as a proxy for audit committee effectiveness may not be fully able to capture the substantive supervisory role in moderating the relationship between the Fraud Hexagon and fraudulent financial reporting at BPD in Indonesia.

D. Conclusions

This study examined the influence of Fraud Hexagon elements on fraudulent financial reporting and the moderating role of audit committee effectiveness in Indonesian Regional Development Banks. The findings reveal selective rather than universal determinants within the Fraud Hexagon framework. Specifically, financial targets (ROA), opportunity reflected by receivable growth (RGW), and arrogance measured by CEO photo frequency (PIC) significantly increase the likelihood of fraudulent financial reporting. In contrast, financial stability, external pressure, capability, rationalization, and collusion do not significantly explain fraudulent financial reporting in this context. Audit committee effectiveness, proxied by committee size, plays a limited moderating role, significantly interacting only with opportunity and rationalization. This study contributes to Fraud Hexagon Theory by demonstrating that the relevance of each fraud dimension is highly context-dependent, particularly in government-owned banking institutions operating under unique governance structures. The findings extend agency theory by highlighting that governance mechanisms are effective only when supported by substantive oversight quality rather than formal compliance. The study also provides empirical evidence that the S.C.O.R.E. model (Vousinas, 2019) requires contextual adaptation when applied to state-owned banking institutions. The findings have several practical implications. First, regulators and bank management should prioritize strengthening audit committee competence, independence, and oversight effectiveness rather than focusing solely on committee size. Second, financial performance targets should be realistic and accompanied by strong monitoring mechanisms to reduce pressure-induced manipulation. Third, the significant role of

arrogance suggests the need for leadership development programs that emphasize ethical conduct and accountability. Fourth, the limited effectiveness of formal governance mechanisms suggests the need for stronger organizational ethical culture and whistleblowing systems. This study has several limitations. First, the Beneish M-Score identifies the likelihood of fraud rather than confirmed fraud cases. Second, audit committee effectiveness is represented only by committee size, which may not capture substantive oversight quality. Third, the study is limited to Indonesian BPDs, which may limit generalizability to other banking contexts or countries. Future research should employ broader governance quality indicators, including audit committee independence, financial expertise, meeting frequency, and member experience. Alternative fraud detection models such as the F-Score or machine-learning approaches could be employed. Expanding the research to commercial banks, state-owned enterprises, or cross-country settings would also improve generalizability.

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