

Analysis of Financial Statement Fraud using the Fraud Hexagon in IDX Basic Materials Firms

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Abstract: *This study aims to analyze the effect of fraud hexagon theory on financial statement fraud among companies in the basic materials sector on the Indonesia Stock Exchange during the 2020-2023 period. Financial statement fraud is a type of occupational fraud that results in significant losses, underscoring the importance of identifying its underlying causes, particularly in capital-intensive industries such as the basic materials sector. Using a quantitative approach and logistic regression analysis on 308 firm-year observations, this study applies the Beneish M-Score to detect potential financial statement fraud. The independent variables represent six dimensions of the Fraud Hexagon: financial target (pressure), ineffective monitoring (opportunity), change in auditor (rationalization), no change in director (capability), political connection (arrogance), and related party transactions (collusion). The results of this study indicate that financial targets are positively associated with financial statement fraud. Meanwhile, ineffective monitoring, change in auditor, no change in director, political connection, and related party transactions have no effect on financial statement fraud. The study's findings have practical implications, suggesting that financial pressure indicators should be closely monitored to strengthen corporate fraud prevention strategies.*

Keywords: *Fraud; Fraud Hexagon Theory; Financial Statement Fraud; Beneish M-Score; Basic Materials*

Abstrak: *Penelitian ini bertujuan untuk menganalisis pengaruh teori Fraud Hexagon terhadap kecurangan laporan keuangan pada perusahaan sektor basic materials yang terdaftar di Bursa Efek Indonesia selama periode 2020-2023. Kecurangan laporan keuangan merupakan jenis kecurangan yang menimbulkan kerugian signifikan, sehingga penting untuk mengidentifikasi penyebabnya, terutama pada industri yang padat modal seperti basic materials. Penelitian ini menggunakan pendekatan kuantitatif dengan analisis regresi logistik pada 308 observasi tahun perusahaan. Beneish M-Score digunakan untuk mendeteksi potensi kecurangan laporan keuangan. Variabel independen mewakili enam dimensi dari Fraud Hexagon: target finansial (tekanan), pengawasan tidak efektif (kesempatan), perubahan auditor (rasionalisasi), tidak ada pergantian dewan direksi (kapabilitas), koneksi politik (arogansi), dan transaksi pihak berelasi (kolusi). Hasil penelitian menunjukkan bahwa target finansial berpengaruh positif terhadap kecurangan laporan keuangan, sedangkan pengawasan tidak efektif, perubahan auditor, tidak adanya pergantian dewan direksi, koneksi politik, dan transaksi pihak berelasi tidak berpengaruh signifikan terhadap kecurangan laporan keuangan. Temuan ini memberikan implikasi praktis bahwa indikator tekanan finansial perlu lebih diperhatikan untuk memperkuat strategi pencegahan kecurangan perusahaan.*

Kata Kunci: *kecurangan; fraud hexagon; kecurangan laporan keuangan; beneish m-score;*

Citation:

Jelita, L. P., Pratama, Y. M. (2026). Analysis of Financial Statement Fraud using the Fraud Hexagon in IDX Basic Materials Firms. *Iqtishoduna*, 22(1), 1-19. <https://doi.org//10.18860/iq.v22i1.35979>

INTRODUCTION

Financial statements are important documents that present information regarding the financial condition and performance of an entity over a specific period. These statements are used by stakeholders such as company management, investors, creditors, and regulators to support decision-making processes (PSAK No. 1, 2019). However, the preparation of financial statements relies on data generated by a company's internal parties, which introduces a high risk of manipulation and renders financial statements particularly vulnerable to fraudulent practices. Fraud refers to intentional acts committed by one or more individuals within management, employees, or third parties, involving deception and legal violations aimed at obtaining personal or organizational gain (PSAK No. 1, 2019). Fraudulent practices are generally classified into three categories which are asset misappropriation, corruption, and financial statement fraud (ACFE, 2024).

According to the Occupational Fraud 2024: Report to the Nations, published by the Association of Certified Fraud Examiners (ACFE), financial statement fraud is identified as the most severe form of occupational fraud in terms of financial impact. This category recorded an average loss of \$766.000 per case, reflecting a 29% increase compared to 2022. Among the sectors affected, the banking and financial services sector reported the highest number of cases, totaling 305 incidents, with cumulative losses reaching \$120.000. Conversely, although the mining sector reported only 24 cases, it experienced the most substantial financial losses, which were \$550.000. Fraud cases have occurred across countries over time, including in Indonesia, which ranked third among Asia-Pacific countries and first in Southeast Asia, with a total of 25 reported cases (ACFE, 2024).

One of the cases of mining companies in Indonesia that harmed the country was in the basic materials sector, namely PT Timah Tbk, which committed fraud from 2015 to 2022, through the falsification of financial documents, the recording of fictitious transactions, and the overstatement of purchases of goods and services. PT Timah Tbk also conducted illegal mining outside the official mining business license to increase production, but the products are sold through schemes that are not reported in the company's official financial statements. The Head of Accounting Division of PT Timah in 2017-2019, testified that the company had rented smelters for a total of Rp1.9 trillion and sold them for Rp266 million per ton. From these activities, the company earned a profit of around Rp233 billion, which was deliberately not recorded in the company's financial statements (Yuantisya, 2024). The Financial and Development Supervisory Agency found irregularities in the financial statements in 2019, when the company achieved the highest sales between 2017 and 2020, but was followed by high losses. It was revealed that PT Timah Tbk and several private smelter companies had manipulated production and cost data. As a result, the reported cost of goods sold did not accurately reflect the actual production costs. This fraudulent activity led to a

significant financial loss to the country, estimated at Rp271 trillion (Ni'am and Ardito, 2024).

Financial statement fraud has a significant impact on the company and external parties. Such fraud is often difficult to detect and typically revealed only after substantial losses have occurred. Its dynamic nature enables perpetrators to continually develop new methods of manipulating and concealing fraudulent activities. Vousinas (2019) developed the Fraud Hexagon model as a framework for detecting financial statement fraud. This model builds upon theoretical frameworks, including the fraud triangle, fraud diamond, and fraud pentagon. According to the Fraud Hexagon theory, fraud occurs due to the interaction of six factors: pressure, opportunity, rationalization, capability, ego, and collusion (Vousinas, 2019). This study employs financial targets, ineffective monitoring, change in auditor, no change in director, political connection, and related party transactions as proxies for each of these six factors.

Previous studies have examined the effect of Fraud Hexagon theory on financial statement fraud using similar proxies; however, the findings remain inconsistent. Research by Hioda and Urumsah (2025); Barezki, et al. (2023); Ainiyah and Effendi (2021) reported a positive effect between financial targets and financial statement fraud. In contrast, studies by Jannah and Praptoyo (2023); Fathmaningrum and Maharani (2024) showed that financial targets have no effect on financial statement fraud.

Regarding the ineffective monitoring, research conducted by Putra and Lestanti (2023); Jannah and Praptoyo (2023); Ainiyah and Effendi (2021) indicated a positive effect on financial statement fraud. Conversely, research from Fathmaningrum and Maharani (2024); Barezki et al., (2023) showed that ineffective monitoring has no effect on financial statement fraud. In the context of a change in auditor, the research conducted by Fathmaningrum and Maharani (2024); Isu and Sofie (2025); Rizkiawan and Subagio (2022) indicates that a change in auditor has a positive effect on financial statement fraud. On the other hand, the research conducted by Hioda and Urumsah (2025); Naldo and Widuri (2023); Putra and Lestanti (2023); Jannah and Praptoyo (2023); Ainiyah and Effendi (2021) showed that a change in auditor has no effect on financial statement fraud.

The study by Naldo and Widuri (2023); Rizkiawan and Subagio (2022); Sari and Khoiriah (2021) found that no change in the director has a positive effect on financial statement fraud. In contrast, research by Putra and Lestanti (2023); Jannah and Praptoyo (2023); Ainiyah and Effendi (2021) concluded that no change in the director has no effect on financial statement fraud. Regarding political connections, the research conducted by Hioda and Urumsah (2025); Sabrina and Effendi (2024); Ainiyah and Effendi (2021) showed that political connection has a positive effect on financial statement fraud; however, Rizkiawan and Subagio (2022) found that the political connection has no effect on financial statement fraud. Further evidence from Rizkiawan and Subagio (2022); Daresta and Suryani (2022) indicated that related party transactions have a positive effect on financial statement fraud. In contrast, findings from Alfarago *et al.* (2023) suggested that related party transactions have no effect on financial statement fraud.

The high incidence of fraud and the substantial losses experienced by mining companies, particularly in relation to financial reporting, have motivated this study to examine the effect of the Fraud Hexagon theory on financial statement fraud in the

mining sector. Inconsistencies in prior studies' findings regarding the influence of various proxies also provide a strong rationale for further investigation. This study focuses on companies in the basic materials sector listed on the Indonesia Stock Exchange, as this sector includes firms engaged in the extraction and processing of natural resources, including mining. The dynamics of companies in the basic materials sector reflect the conditions and characteristics of the mining industry, such as global commodity price fluctuations. Currently, limited research has applied the Fraud Hexagon theory to companies in the basic materials sector, particularly in the mining industry. While previous research has explored financial statement fraud using various proxies, few studies have applied the Fraud Hexagon theory specifically to the Indonesian basic materials sector, particularly considering sector-specific dynamics. This study addresses this gap by analyzing the six dimensions of the Fraud Hexagon theory to gain a deeper understanding of financial statement fraud in Indonesian companies within the basic materials sector, providing valuable insights for fraud detection in this context.

LITERATURE REVIEW

Agency Theory

Rankin *et al.*, (2017) explain that agency theory describes a contractual relationship in which one or more individuals (principals) engage and authorize another party (agent) to act on behalf of the principals. The theory focuses on ways to ensure that agents act in alignment with the principals' interests. In practice, agents often act in their own interests, even though they are expected to act on behalf of their principals, particularly when a conflict arises between the two parties. Divergent interests and objectives between agents and principals can lead to conflicts, as both parties seek to maximize their individual benefits. In this study, agents refer to the management responsible for running the company, while principals refer to the company's shareholders or investors.

Management and shareholders hold differing perspectives, interests, and performance targets, leading to a conflict of interest. One of the primary causes of such conflict is information asymmetry, which results in divergent interpretations of the company's condition. Management is responsible for reporting the company's overall performance to shareholders, primarily through financial statements. Shareholders expect financial reports to accurately reflect the actual condition of the company in order to evaluate the return on investment. However, management may also pursue personal objectives, such as receiving compensation and bonuses based on reported performance. Performance is often assessed through predetermined financial targets, prompting management to manipulate financial statements to meet them. Such manipulation becomes feasible through privileged access to internal information and the ability to exploit internal control weaknesses or loopholes within the organization.

Financial Statement Fraud

According to Auditing Standard No 240 (2021) about the auditor's responsibilities relating to fraud in an audit of financial statements. Financial statement fraud is defined as the act of manipulating, falsifying, or altering accounting records and supporting documentation. Auditing Standard No 240 (2021) further clarifies that the key distinction between error and fraud lies in the underlying intent behind the misstatement, specifically, whether the act was intentional or

unintentional. If the misstatement is intentional, it is classified as financial statement fraud.

Financial statement fraud can be predicted or detected using a quantitative model. In this study, fraud is measured using the Beneish M-Score model, which specifically focuses on the detection of earnings manipulation. According to Beneish (1999), earnings manipulation typically involves accelerating revenue recognition, increasing deferred expenses, inflating accruals, and reducing depreciation expenses. The basic materials sector is characterized by fluctuations in commodity prices, which directly affect profit margin volatility. Companies in this sector often experience unstable sales growth due to commodity price volatility. Therefore, *Sales Growth Index* (SGI) in the Beneish M-Score model serves as a relevant indicator for identifying high-growth firms potentially under pressure to meet performance expectations and thus more likely to engage in earnings manipulation. Additionally, mining companies in the basic materials sector often hold assets that are optimistically valued. The Asset Quality Index (AQI) in the Beneish M-Score model is used to assess whether firms have obscure asset quality through aggressive accounting practices and unrealistic asset valuation.

Fraud Hexagon

Fraud theory explains the factors that influence the occurrence of fraudulent behavior. This theory was first introduced by Donald Ray Cressey in 1953. Cressey (1953) proposed that three key elements drive individuals to commit fraud: pressure, opportunity, and rationalization. Over time, the theory evolved as new elements were added to the original model. The most recent development is the fraud hexagon model introduced by Vousinas (2019), which identifies six factors contributing to fraudulent behavior: pressure or stimulus, opportunity, rationalization, capability, ego or arrogance, and collusion.

Pressure refers to the external or internal factors that drive individuals to engage in fraudulent behavior. An opportunity arises when an individual believes that committing fraud can be done without detection. Rationalization is the cognitive process by which an individual justifies unethical actions. Capability pertains to the necessary skills, position, or authority an individual possesses to carry out fraudulent activities. Arrogance is characterized by a sense of entitlement or superiority that may influence an individual's actions. Collusion takes place when multiple individuals cooperate to commit fraud (Achmad et al., 2024). Fraud hexagon can be illustrated as shown in the following figure.

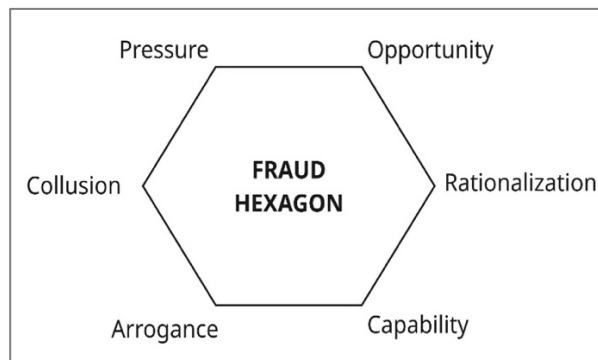


Figure 1. Fraud Hexagon (Vousinas, 2019)

The Effect of Financial Targets on Financial Statement Fraud

Pressure refers to the compulsion to commit fraud arising from financial or non-financial needs (Cressey, 1953). According to Ghaisani & Supatmi (2023), pressure can be proxied by financial targets. A financial target is a goal or expectation that management must achieve, typically driven by shareholder interests. These targets create pressure on management to meet predetermined figures, potentially leading to unethical actions in the preparation of financial statements.

Excessive pressure from aggressive financial targets often compromises the transparency and reliability of corporate financial reporting. Financial targets may take the form of profit benchmarks that must be reached within a specified timeframe (Hioda and Urumsah, 2025). Skousen *et al.* (2008) argue that investors assess company performance based on profitability, prompting management to manipulate earnings to meet expectations. This behavior aligns with agency theory, which posits that management is accountable for company performance in relation to such targets. Therefore, this study employs Return on Assets (ROA) as a measure of management performance in utilizing corporate resources to achieve maximum profit targets.

Return on Assets (ROA) serves as an indicator of management performance in utilizing company resources to achieve maximum profit targets. A significant increase in ROA from the previous year may signal management's potential earnings manipulation to meet predetermined performance targets. The higher Return on Assets may indicate more ambitious financial targets, thereby increasing the likelihood of financial statement manipulation. Prior studies that adopted Return on Assets as a proxy have shown consistent findings. Research by Hioda and Urumsah (2025); Barezki, et al. (2023); Ainiyah and Effendi (2021) found that financial targets have a positive effect on financial statement fraud. Based on the theoretical framework and prior empirical evidence, the following hypothesis is proposed:

H₁ = Financial Targets have a positive effect on Financial Statement Fraud

The Effect of Ineffective Monitoring on Financial Statement Fraud

Opportunity refers to the perceived ability to commit fraud without being detected (Cressey, 1953). According to Biduri & Tjahjadi (2024), opportunity can be proxied by ineffective monitoring. Ineffective monitoring is measured by the proportion of independent commissioners to the total number of commissioners within a company (Skousen *et al.*, 2008). Ineffective monitoring serves as a proxy for opportunity, as weak and ineffective oversight mechanisms increase the likelihood of financial statement fraud (Putra and Lestanti, 2023). The ratio of independent commissioners is used to assess the effectiveness of the monitoring system (Skousen *et al.*, 2008). Based on The Law of Republic of Indonesia No. 40 of 2007, the board of commissioners is responsible for supervising all company policies and management activities. Independent commissioners must not hold shares in the company and must not be affiliated with major shareholders, members of the board of directors, or other commissioners. This independence allows for more objective and effective oversight than that of non-independent commissioners.

Ineffective monitoring within a company creates opportunities for management to exercise unchecked discretion, which can be exploited to engage in fraudulent behavior (Jannah and Praptoyo, 2023). The absence of an adequate oversight mechanism reduces constraints on managerial actions, thereby increasing the risk of financial misconduct. Strengthening the monitoring system, such as by

increasing the proportion of independent commissioners, has been shown to enhance oversight effectiveness and mitigate fraud (Putra and Lestanti, 2023). A lower proportion of independent commissioners indicates weak monitoring structures. As the effectiveness of monitoring declines, the opportunity to commit financial statement fraud correspondingly increases. This proportion is supported by empirical evidence from studies by Putra and Lestanti (2023), Jannah and Praptoyo (2023), and Ainiyah and Effendi (2021), all of which found a positive association between ineffective monitoring and financial statement fraud. Drawing on fraud theory and prior empirical findings, the following hypothesis is formulated:

H₂ = Ineffective Monitoring has a positive effect on Financial Statement Fraud

The Effect of Change in Auditor on Financial Statement Fraud

Rationalization is defined as the justification that is perceived by perpetrators when committing fraudulent acts (Cressey, 1953). Such justification often arises when individuals believe significant contributions have been made to the company over time and therefore feel entitled to certain benefits. Rationalization is commonly proxied by a change in auditor (Skousen *et al.*, 2008). A change in auditor refers to the replacement of an external auditor by a company, often intended to conceal financial manipulation and prevent its detection (Ainiyah and Effendi, 2021). Skousen *et al.*, (2008) found that the likelihood of financial statement fraud tends to increase following an auditor change, particularly when the change is associated with audit failure. According to Cressey (1953), perpetrators commit fraud with full awareness, but often seek justification to rationalize the unethical behavior. In this context, management may use auditor replacement as a rationalization mechanism to legitimize fraudulent conduct. Management may claim that the previous auditor lacked a sufficient understanding of the company's operations, thereby providing a rationale for appointing a new auditor (Fathmaningrum and Maharani, 2024). Newly appointed auditors typically have limited familiarity with specific risks and processes within the company, which increases the possibility that fraudulent practices remain undetected (Naldo and Widuri, 2023).

External auditors serve a vital function in assessing the fairness and accuracy of financial statement presentations prepared by corporate management (Rizkiawan and Subagio, 2022). A high frequency of auditor changes may signal potential efforts to obscure fraudulent activities within the organization (Fathmaningrum and Maharani, 2024). According to Isu and Sofie (2025), auditor replacement facilitates the removal of fraud trails, as newly appointed auditors may lack familiarity with previously existing irregularities. Empirical studies conducted by Fathmaningrum and Maharani (2024); Isu and Sofie (2025); Rizkiawan and Subagio (2022) found that a change in auditor has a positive effect on financial statement fraud. Drawing upon fraud theory and prior empirical evidence, the following hypothesis is formulated:

H₃ = Change in Auditor has a positive effect on Financial Statement Fraud

The Effect of No Change in Director on Financial Statement Fraud

Capability refers to the personal ability to manage situations that determine whether or not fraud occurs in the presence of pressure, opportunity, and rationalization (Wolfe and Hermanson, 2004). Capability can be proxied by no change in director (Rizkiawan and Subagio, 2022). No change in director is a condition where the company does not change the members of the board of directors for several years.

(Rizkiawan and Subagio, 2022). No change in director is used as a proxy for capability, as prolonged tenure is associated with increased familiarity with internal company information and greater ability to exercise positional authority (Rizkiawan and Subagio, 2022). Wolfe and Hermanson (2004) also noted that fraud is more likely to occur when individuals possess the capability to exploit internal organizational conditions. Extended tenure strengthens this capability, enabling fraudulent activities to be executed and concealed more effectively.

A longer tenure held by a director is associated with increased capacity to commit fraud. According to Naldo and Widuri (2023), companies often replace directors only after fraudulent behavior has been identified. Similarly, Sari and Khoiriah (2021), reported that executives are typically removed only after fraud has been proven, indicating that such actions occur too late to prevent the resulting financial losses. Empirical studies conducted by Naldo and Widuri (2023); Rizkiawan and Subagio (2022); Sari and Khoiriah (2021) demonstrate a positive relationship between no change in director and financial statement fraud. These findings suggest that the absence of director turnover increases the likelihood of fraudulent activities within financial reporting. Based on fraud theory and supporting empirical evidence, the following hypothesis is proposed:

H4: No Change in Director has a positive effect on Financial Statement Fraud

The Effect of Political Connection on Financial Statement Fraud

Arrogance refers to an attitude characterized by a sense of superiority, which fosters greed and drives behavior that disregards ethical considerations (Burlacu et al., 2025). According to Rizkiawan and Subagio (2022), arrogance can be proxied by political connection. Political connection refers to the relationship between individuals, companies, or organizations and government officials or political parties (Jannah and Praptoyo, 2023). In a corporate context, such connections are typically held by members of the board of commissioners or the board of directors.

Political connection is used as a proxy for arrogance, as such affiliations tend to instill a sense of superiority among members of the board of commissioners or board of directors. Arrogance is defined as an attitude marked by a perceived sense of superiority, which fosters greed and a tendency to engage in actions that violate ethical or moral considerations (Nanda et al., 2019). The link between political connection and perceived superiority can be explained through the psychological drive among board members to preserve a self-image of competent and successful leadership. This internal drive often leads to a desire to present the company as a flawless and stable entity. The pursuit of such an idealized image serves as a motivating factor behind fraudulent behavior.

Hioda and Urumsah (2025) explained that companies with politically connected boards are more likely to exhibit elevated levels of ego, with a strong desire to present favorable performance outcomes to political affiliates. Such expectations heighten the likelihood of manipulating financial statements to present an idealized corporate image. Empirical findings from Hioda and Urumsah (2025); Sabrina and Effendi (2024); Ainiyah and Effendi (2021) found a positive association between political connection and financial statement fraud. Based on the theoretical framework of fraud and previous empirical evidence, the following hypothesis is proposed:

H5 = Political Connection has a positive effect on Financial Statement Fraud

The Effect of Related Party Transactions on Financial Statement Fraud

According to Vousinas (2019), collusion refers to a fraudulent agreement or arrangement between two or more parties aimed at deceiving a third party. Collusion can be proxied by related-party transactions (Rizkiawan and Subagio, 2022). According to PSAK No. 7 (Generally Accepted Accounting Standards), related party transactions involve the transfer of resources, services, or obligations between the reporting entity and related parties. Related parties include individuals or entities with close affiliations, such as family members, affiliated companies, subsidiaries, parent companies, or shareholders with significant ownership in the reporting entity. According to PSAK No. 7, related party transactions carry a higher risk compared to arm's length transactions, as such parties may engage in arrangements that would not be possible under normal market conditions. Companies engaged in financial statement manipulation often utilize fictitious related party transactions due to the relative ease of managing terms and obscuring fraudulent activity. The extent of related party transactions can be measured by the ratio of sales to related parties relative to total company sales (Rizkiawan and Subagio, 2022).

Daresta and Suryani (2022) stated that sales transactions involving related parties carry a heightened risk of material misstatement due to the presence of conflicts of interest, thereby requiring greater scrutiny. The complexity inherent in related party relationships and transactions contributes to the risk of fraud, as such activities are more difficult to detect. This complexity increases the likelihood that management will manipulate financial figures through related-party transactions. A higher volume of sales involving related parties is associated with an increased tendency for financial statement fraud. This association is supported by empirical findings from Rizkiawan and Subagio (2022); Daresta and Suryani (2022), which demonstrates a positive relationship between related party transactions and fraudulent financial reporting. Based on fraud theory and supporting empirical evidence, the following hypothesis is proposed:

H6: Related Party Transactions have a positive effect on Financial Statement Fraud

Conceptual Framework

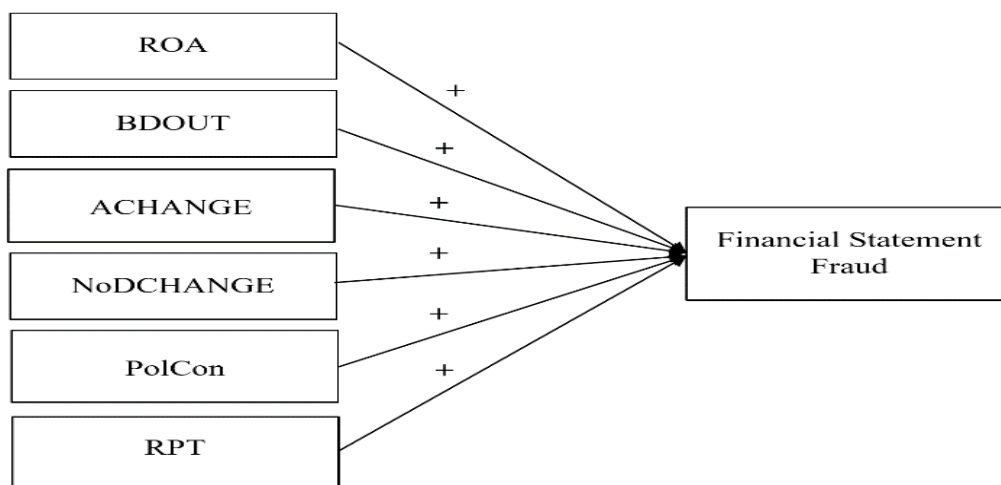


Figure 2. Conceptual Framework

Source: Authors Work, 2025

RESEARCH METHOD

This study employs quantitative research design using a cross-sectional, firm-year logistic regression approach. The population consists of all companies in the basic materials sector listed on the Indonesia Stock Exchange during the period 2020-2023. According to Hartono (2016), a sample is a representative subset of a population selected for analysis. An appropriate sample must meet two key criteria: accuracy and precision. This research employs a non-probability sampling method, specifically purposive sampling. Purposive sampling involves selecting samples from the population based on specific criteria (Hartono, 2016). Based on this method, the sampling criteria for the present study are as follows:

1. Basic materials sector companies listed on the Indonesia Stock Exchange during the period 2020-2023
2. Basic materials sector companies that were not delisted during the 2020-2023 period
3. Basic materials sector companies that published both financial statements and annual reports during the 2020-2023 period

Based on these criteria, the final sample consists of 308 firm-year observations from 77 companies. This study encompasses all companies listed on the Indonesia Stock Exchange in the basic materials sector from 2020 to 2023, including those with RPT = 0 (no related party transactions). The decision to include companies with RPT = 0 ensures a more representative sample, reflecting the full range of practices within the sector. The analytical model employed in this research is logistic regression. The regression equation used in this research is formulated as follows:

$$\text{MSCORE} = \alpha + \beta_1\text{ROA} + \beta_3\text{BDOUT} + \beta_2\text{ACHANGE} + \beta_4\text{NoDCHANGE} + \beta_5\text{POLCON} + \beta_6\text{RPT} + e$$

Where:

| | |
|-----------|-----------------------------|
| MSCORE | : Financial Statement Fraud |
| A | : Constant |
| ROA | : Financial target |
| BDOUT | : Ineffective monitoring |
| ACHANGE | : Change in auditor |
| NoDCHANGE | : No change in director |
| POLCON | : Political connection |
| RPT | : Related party transaction |
| E | : Error |

The dependent variable in this study is financial statement fraud (Y). Financial statement fraud is measured using a dummy variable based on the Beneish M-Score model (Beneish, 1999). The M-Score is calculated using the following formula:

$$\text{M-Score} = -4,84 + (0,92 \times \text{DSRI}) + (0,528 \times \text{GMI}) + (0,404 \times \text{AQI}) + (0,892 \times \text{SGI}) + (0,115 \times \text{DEPI}) - (0,172 \times \text{SGAI}) + (4,679 \times \text{TATA}) - (0,327 \times \text{LVGI})$$

| | |
|------|----------------------------------|
| DSRI | : Days sales in receivable index |
| GMI | : Gross margin index |

| | |
|------|--|
| AQI | : Asset quality index |
| SGI | : Sales growth index |
| DEPI | : Depreciation index |
| SGAI | : Sales, general, and administrative expense index |
| TATA | : Total accruals to total assets |
| LVGI | : Leverage index |

After calculating the M-Score value, the results are then classified as a dummy variable based on the following criteria. Companies with a Beneish M-Score > -2,22, will be coded 1. Companies with a Beneish M-Score <-2.22 will be coded 0.

The independent variables used in this study are as follows:

Table 1. Independent Variables Measurement

| Independent Variables | Measurement |
|-----------------------------------|--|
| Financial Target (ROA) | Return on Assets = Net Income / Total Assets (Skousen <i>et al.</i> , 2008) |
| Ineffective Monitoring (BDOUT) | BDOUT = Number of Independent Commissioners/Total Number of Commissioners (Skousen <i>et al.</i> , 2008) |
| Change in Auditor (ACHANGE) | Dummy Variable: Companies that changed the external auditor = 1, Companies that did not change the external auditor = 0 |
| No Change in Director (NoDCHANGE) | Dummy Variable: Companies that did not change the board of directors = 1, Companies that changed the board of directors = 0 |
| Political Connection (PolCon) | Companies with political connections in their board = 1 Companies without political connection in their board = 0 |
| Related-Party Transactions (RPT) | Sales to Related Parties/Total Sales (Rizkiawan and Subagio, 2022) |

Source: Authors Work, 2025

Based on Table 1 above, ROA is used as a proxy for pressure because it reflects a firm's financial performance expectations. When financial targets become too high, they may create pressure on management to maintain or exceed past performance. Board independence (BDOUT) represents the opportunity as independent commissioners enhance oversight and reduce management's ability to engage in fraudulent behavior. Limited board independence weakens this oversight and increases potential fraud opportunities. A change in auditor serves as a proxy for rationalization, since switching auditors can provide justification for modifying reporting practices or resetting audit scrutiny. No Change in Directors reflects capability, as stable leadership may equip individuals with the authority and internal knowledge needed to commit fraud. Political Connections capture the arrogance dimension, as politically connected firms may feel shielded from regulatory consequences, increasing their confidence in manipulating financial reports. Related-party transactions are an established proxy for collusion because they occur within close networks that can coordinate financial manipulation with limited external oversight.

RESULT AND DISCUSSION

Descriptive Statistics Result

Based on descriptive statistics of the data in this study, the results are presented in Table 2.

Table 2. Descriptive Statistics

| Descriptive Statistics | | | | | |
|------------------------|-----|---------|---------|----------|----------------|
| Variabel | N | Minimum | Maximum | Mean | Std. Deviation |
| ROA | 308 | -1,05 | 0,2656 | 0,016571 | 0,1058137 |
| BDOUT | 308 | 0,25 | 0,75 | 0,403726 | 0,1024873 |
| ACHANGE | 308 | 0 | 1 | 0,12 | 0,326 |
| NoDCHANGE | 308 | 0 | 1 | 0,71 | 0,454 |
| PolCon | 308 | 0 | 1 | 0,17 | 0,375 |
| RPT | 308 | 0,00 | 1,00 | 0,168806 | 0,2809658 |
| MScore | 308 | 0 | 1 | 0,38 | 0,487 |

Source: SPSS-based data analysis, 2025

Tabel 3. Goodness of Fit Test

| Hosmer and Lemeshow Test | | | |
|--------------------------|------------|----|-------|
| Step | Chi-Square | df | Sig |
| 1 | 5,995 | 8 | 0,648 |

Source: SPSS-based data analysis, 2025

The significance value obtained from Hosmer and Lemeshow's Goodness of Fit Test is 0.648, indicating that the regression model is considered feasible, as the value exceeds the predetermined alpha level of 0.05.

Overall Regression Model Feasibility Test Results

The overall goodness-of-fit of the regression model was assessed by comparing the initial -2 Log Likelihood value with the final -2 Log Likelihood Value (Ghozali, 2018). The results of the overall model feasibility test indicate that the initial -2 Log Likelihood (Block Number = 0) was 409.991, while the final -2 Log Likelihood (Block Number = 1) was 391.478. This suggests that the regression model is feasible, as the initial -2 Log Likelihood value is greater than the final value.

Table 4. Overall Regression Model Feasibility Test Results

| Block Number = 0 | Block Number = 1 |
|--------------------------|--------------------------|
| -2 Log <i>likelihood</i> | -2 Log <i>likelihood</i> |
| 409,991 | 391,478 |

Source: SPSS-based data analysis, 2025

Coefficient of Determination

The coefficient of determination (R^2) for the independent variables in this study is 7.9%. This indicates that the six independent variables collectively explain 7.9% of the variance in the dependent variable, while the remaining 92.1% is attributable to other factors not included in this study.

Tabel 5. Coefficient of Determination

| Model Summary | | | |
|---------------|-------------------|----------------------|---------------------|
| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
| 1 | 391,478 | 0,058 | 0,079 |

Source: SPSS-based data analysis, 2025

Hypothesis Testing

The hypothesis testing in this study employs logistic regression. An independent variable is considered to affect the dependent variable if the p-value is less than the predetermined alpha level of 0.05.

Table 6. Hypothesis Testing

| Variabel in the Equation | | | | | | | |
|--------------------------|-----------|--------|-------|-------|----|-------|---------|
| | | B | S.E. | Wald | df | Sig. | Exp(B) |
| Step | ROA | 5,261 | 1,717 | 9,390 | 1 | 0,002 | 192,605 |
| 1 | BDOUT | -1,340 | 1,211 | 1,212 | 1 | 0,271 | 0,262 |
| | ACHANGE | 0,242 | 0,371 | 0,427 | 1 | 0,513 | 1,274 |
| | NoDCHANGE | -0,089 | 0,280 | 0,102 | 1 | 0,750 | 0,915 |
| | PolCon | -0,705 | 0,381 | 3,426 | 1 | 0,064 | 0,292 |
| | RPT | 0,658 | 0,482 | 1,862 | 1 | 0,172 | 1,931 |
| | Constants | -0,032 | 0,567 | 0,003 | 1 | 0,955 | 0,969 |

Source: SPSS-based data analysis, 2025

Based on the results of the hypothesis testing, it can be concluded that the financial target (ROA) has a significance value of $0.002 < 0.05$, and a beta coefficient of 5.261, indicating that the financial target has a positive effect on financial statement fraud, leading to the acceptance of H1. On the other hand, Ineffective Monitoring (BDOUT) has a significance value of $0.271 > 0.05$, indicating that Ineffective Monitoring does not affect financial statement fraud. As a result, H2 is not accepted. Change in Auditors (ACHANGE) has a significance value of $0.513 > 0.05$, indicating that the change in auditor does not affect financial statement fraud. Therefore, H3 is not accepted. Similarly, No Change In Director (NoDCHANGE) has a significance value of $0.750 > 0.05$, suggesting that no change in director does not affect financial statement fraud. Consequently, H4 is not accepted. Political Connection (PolCon) has a significance value of $0.064 > 0.05$, indicating that it does not affect Financial Statement Fraud. Therefore, H5 is not accepted. Lastly, Related Party Transactions (RPT) has a significance value of $0.172 > 0.05$, indicating that Related Party Transactions do not significantly affect Financial Statement Fraud. Therefore, H6 is not accepted. The regression model used in this study can be formulated as follows:

$$MSCORE = -0,032 + 5,261ROA - 1,340BDOUT + 0,242ACHANGE - 0,089NoDCHANGE - 0,705POLCON + 0,658RPT + e$$

Discussion

The Effect of Financial Targets on Financial Statement Fraud

Financial targets have a positive effect on financial statement fraud. This finding supports the research hypothesis (H1), which posits that financial targets have a positive effect on financial statement fraud, thereby confirming H1. These results are

consistent with previous studies conducted by Hioda and Urumsah (2025); Barezki, et al. (2023); and Ainiyah and Effendi (2021). According to Hioda and Urumsah (2025), management may experience pressure from the company's financial targets, which in turn may prompt them to manipulate financial reports to meet those targets. Accordingly, the higher the financial target, the stronger the motivation for management to engage in earnings manipulation. Such financial targets often take the form of profit benchmarks that the company must achieve within a specific period. A drastic increase in return on assets (ROA) from the previous year may indicate earnings manipulation by management, driven by pressure to meet profit targets. The higher the ROA and the greater the increase compared to the prior year, the more likely it is that the financial target has intensified, thereby increasing the likelihood of management committing financial statement fraud.

The Effect of Ineffective Monitoring on Financial Statement Fraud

Ineffective Monitoring proxy was not statistically significant, thereby leading to the rejection of Hypothesis 2 (H2), which proposed a positive effect of ineffective monitoring on fraudulent financial reporting. Although firms may meet regulatory requirements for the board of commissioners' independence, the proxy may not fully capture the actual effectiveness of monitoring, as independence does not necessarily reflect directors' expertise, engagement, or oversight quality. Thus, the non-significant result likely reflects a measurement limitation rather than the absence of opportunity-related effects. This finding is consistent with prior research conducted by Fathmaningrum & Maharani (2024); Setyono *et al.* (2023); Agli *et al.* (2024). These studies highlight that the presence of independent commissioners and related governance mechanisms may function merely as a formality to comply with regulatory requirements from Financial Services Authority Regulation No 33/POJK.04/2014, which is 30% of the total board of commissioners. In practice, although firms may formally meet this requirement, there is no guarantee that independent commissioners will effectively fulfill their supervisory roles. The nominal presence of independent commissioners alone does not necessarily reduce opportunities for fraudulent behavior (Setyono *et al.*, 2023). Therefore, the effectiveness of the monitoring mechanism should be evaluated not only by the number of independent commissioners but also by actual performance and engagement in the governance process. Setyono *et al.* (2023) further assert that the quality of internal control is more strongly influenced by the competence and performance of both independent commissioners and corporate management than by structural compliance alone. These findings underscore the need to shift attention from formal governance structures toward the substance of oversight and accountability mechanisms within the organization.

The Effect of Change in Auditor on Financial Statement Fraud

Change in Auditor (ACHANGE) proxy was not statistically significant. Therefore, H3, which proposed a positive effect of change in Auditor on fraudulent financial reporting, is rejected. The non-significance of the change in auditor may indicate that the proxy for audit changes does not fully reflect the rationalization process, as such changes often occur through routine procedures or administrative decisions rather than reflecting intentional manipulation of financial reporting. This finding is consistent with previous studies by Hioda and Urumsah (2025); Naldo and

Widuri (2023); Putra and Lestanti (2023); Jannah and Praptoyo (2023); and Ainiyah and Effendi (2021). These studies suggest that the decision to change external auditors is not necessarily driven by an attempt to conceal fraud previously uncovered by incumbent auditors. Rather, such changes often reflect a firm's strategic objective to improve the quality of its financial audits (Jannah and Praptoyo, 2023). Firms may replace auditors due to dissatisfaction with the performance of the previous auditor (Putra and Lestanti, 2023), or in pursuit of higher audit quality by switching from lesser-known firms to one of the Big Four Accounting Firms (Naldo and Widuri, 2023). The motivation for such changes may be to reduce agency costs and enhance the credibility of financial reports. Conversely, companies switching from Big Four auditors to less prominent audit firms may be responding to financial constraints that necessitate cost adjustments. Taken together, these findings suggest that auditor changes are not inherently.

The Effect of No Change in Directors on Financial Statement Fraud

No Change in Director (NoDCHANGE) was not statistically significant. Consequently, H4, which proposed a positive effect between no change in directors and financial statement fraud, is not supported. The non-significant effect of No Change in Director suggests that director turnover may not be an accurate proxy for capability, as it does not account for factors such as managerial expertise or the specific skills needed to engage in financial manipulation. This finding is consistent with previous studies conducted by Putra and Lestanti (2023); Jannah and Praptoyo (2023); Ainiyah and Effendi (2021). The absence of turnover within the board of directors cannot be directly interpreted as an indication of potentially fraudulent activity. Directors with longer tenures typically possess in-depth knowledge of the company's internal operations and accumulate valuable managerial experience. Such expertise should not automatically be viewed as a risk factor for fraudulent behavior. On the contrary, managerial continuity may reflect effective corporate governance. The retention of directors may suggest satisfactory performance in fulfilling assigned duties, thereby eliminating the need for organizational restructuring. As emphasized by Jannah and Praptoyo (2023), the effectiveness of a board should be assessed based on its performance and decision-making, not solely on its composition or the frequency of leadership changes. These findings imply that the stability of the board of directors may contribute positively to consistent corporate management and should not be immediately regarded as a red flag for financial misconduct.

The Effect of Political Connection on Financial Statement Fraud

Political connection (PolCon) was not statistically significant. Therefore, H5, which proposed a positive effect of political connection on financial statement fraud, is rejected. The absence of significance for political connection could indicate that political connection alone does not adequately capture the arrogance dimension, as this psychological factor may not be fully presented by formal political ties. This result is consistent with the findings from Rizkiawan and Subagio (2022), who argue that a sense of superiority derived from political ties does not necessarily lead to fraudulent behavior. Firms with strong political connections may gain preferential access to strategic resources, reducing the pressure or perceived need to engage in fraud to maintain performance. Thus, political affiliation can serve to preserve the firm's public image without requiring the manipulation of financial information. Furthermore,

Rizkiawan and Subagio (2022), emphasize that political ties, whether in executive, legislative, or judicial branches, can enhance an individual's sense of responsibility toward the entrusted role. Engaging in fraudulent practices during a period of political service could damage the reputation built through political affiliation, thereby acting as a deterrent to financial misconduct. Accordingly, political connections should not be viewed as a direct motivator for financial statement fraud. Moreover, Wibowo & Putra (2023) found that political connections did not significantly affect fraudulent financial statements, suggesting that political affiliations may not directly influence financial misconduct. This aligns with the argument that political connections alone do not sufficiently capture the arrogance dimension of fraud, which could be more complex than what formal political ties can indicate.

The Effect of Related Party Transactions on Financial Statement Fraud

Related party transactions (RPT) have a significance value of 0.336, which is greater than 0.05. This indicates that the proxy for related party transactions was not statistically significant. Therefore, H6, which proposed a positive effect of related party transactions on financial statement fraud is rejected. Although related-party transactions were not significant, this may reflect that, because related-party transactions are often routine or operational, they may not always capture collusive behavior; some manipulative transactions might occur outside disclosed related-party dealings, making the proxy less sensitive to fraud risks.

This result is consistent with prior findings by Alfarago *et al.* (2023), who asserted that transactions with related parties do not necessarily indicate fraudulent behavior. In the Indonesian context, related party transactions are generally conducted in compliance with applicable accounting standards and are subject to disclosure, allowing external auditors to assess fairness and transparency (Alfarago *et al.*, 2023). According to PSAK No. 7 on Related Party Disclosures Companies are required to provide full and transparent information on transactions with related entities. This mandatory openness helps eliminate ambiguity or secrecy that could otherwise facilitate financial statement fraud. Therefore, these transactions should not be automatically assumed to have deceptive intent. Additionally, as highlighted by Ratmono *et al.* (2020), related party transactions do not have a significant effect on financial statement fraud. This result can be attributed to the regulatory requirements for comprehensive disclosure and external audits, which minimize opportunities for manipulation. Moreover, related party transactions are often undertaken not for manipulation purposes, but to enhance business efficiency. Engaging with affiliated entities provides greater assurance of product quality, supply stability, and more effective risk management than transactions with unaffiliated external parties. Strategic cooperation with related entities can thus offer operational advantages and promote controlled, accountable business practices.

CONCLUSION

This study investigates the influence of the Fraud Hexagon Theory on Financial Statement Fraud among basic materials companies listed on the Indonesian stock exchange during 2020-2023. The findings show that financial targets are positively associated with financial statement fraud. The higher the pressure management faces from profit targets, the greater the motivation to manipulate financial statements. In contrast, ineffective monitoring, change in auditor, no change in director, political

connection, and related party transactions have no significant effect on financial statement fraud.

This study identifies one independent variable that significantly influences financial statement fraud: the financial target. This implies that the greater the pressure on management from profit targets, the stronger the incentive to manipulate financial statements. In an attempt to achieve profit targets, management may be tempted to manipulate the company's assets. Therefore, this study may serve as a reference for companies to exercise caution in setting realistic financial targets. Unrealistically high targets may create excessive pressure on management. Under such pressure, management may perceive fraud as the only means to achieve predetermined targets, especially when failure to meet them is accompanied by sanctions. Practically, companies should monitor financial targets carefully and avoid setting unrealistic targets.

From a theoretical standpoint, the study contributes to the literature by contextualizing the Fraud Hexagon framework within the Indonesian Basic Materials sector and highlighting the dominant role of financial pressure over other dimensions. Future research is recommended to broaden the scope across different industries, use longitudinal approaches to capture fraud dynamics over time, and integrate qualitative insights or alternate proxies to enrich understanding. Such efforts will enhance theoretical development while simultaneously informing more effective fraud prevention strategies in practice.

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