



## Detecting signs of financial statement fraud: An analysis using the fraud hexagon theory

Daden Saepul Hambali, Etna Nur Afri Yuyetta\*, Aditya Septiani

Department of Accounting, Faculty of Economics and Business, Diponegoro University, Indonesia

Corresponding Author: Etna Nur Afri Yuyetta

### Abstract

The practice of fraudulent financial reporting is a prevalent form of fraud that causes substantial losses for companies, both financially and non-financially. The financial impact manifests as significant monetary losses, while the non-financial impact involves damage to the company's reputation. Such reputational damage often results in a loss of trust from various stakeholders, potentially jeopardizing the company's future viability and even leading to bankruptcy.

This study aims to test and analyze the detection of fraudulent financial statement indicators using elements from the fraud hexagon theory. The research employs quantitative methods and utilizes secondary data in the form of company financial reports. The population for this study consists of manufacturing companies that received special notation from the Indonesia Stock Exchange (IDX) during the 2020-2023 period. The sample, selected using purposive sampling, comprises 19 companies observed over four years. Logistic regression analysis is used as the primary data analysis technique.

The results indicate that financial stability, changes in directors, and the ratio of total accruals to total assets significantly influence financial statement fraud. However, other variables such as external pressures, government projects, audit fees, CEO education, ineffective monitoring, industry nature, auditor changes, CEO duality, and political connections do not show significant effects on financial statement fraud. Nevertheless, all variables collectively demonstrate a significant impact on financial statement fraud.

**Keywords:** Financial statement fraud, fraud hexagon theory, manufacturing companies, special notation

### Introduction

Financial reports are crucial documents that present a company's performance and financial position over a specific period to both internal and external stakeholders. According to the Statement of Financial Accounting Standards (PSAK) No. 1, these reports aim to provide information about an entity's financial position, performance, and cash flows, serving as a basis for economic decision-making and demonstrating management's accountability for entrusted resources.

To be reliable for decision-making, financial reports must meet fundamental qualitative characteristics. The Financial Reporting Conceptual Framework (KKPK), issued by the Financial Accounting Standards Board of the Indonesian Institute of Accountants, states that quality accounting information should be relevant, predictive, reliable, material, neutral, and free from error.

Published financial reports are key indicators of a company's performance and value. Poor performance reflected in these reports can lead to negative assessments by stakeholders, particularly potential investors and shareholders, potentially threatening the company's competitiveness and existence. This underscores the critical role financial reports play in a company's sustainability, sometimes motivating management to manipulate reports to maintain a positive image, which can indicate fraud.

The Association of Certified Fraud Examiners (ACFE) Global Fraud Survey (2024) identifies three main categories of fraud: asset misuse, corruption, and fraudulent financial statements. While financial statement fraud has the lowest frequency (5%) compared to asset misuse (89%) and corruption (48%), it results in the highest average loss at \$766,000 per case. The manufacturing industry is reported

as having the second-highest rate of fraud cases globally, with 175 incidents.

Fraudulent financial reporting can have severe financial and non-financial consequences for companies, including substantial monetary losses and reputational damage. This loss of trust from stakeholders like creditors, investors, and government bodies emphasizes the importance of fraud detection to prevent such losses.

The fraud hexagon theory, proposed by Vouisnas (2019) <sup>[23]</sup>, offers a framework for explaining financial report manipulation. This theory, an evolution of previous fraud theories, comprises six elements known as SCORE (Stimulus, Capability, Collusion, Opportunity, Rationalization, and Ego). Each element requires specific proxies for analysis.

Previous studies have explored financial statement fraud and the fraud hexagon theory, such as Achmad *et al.* (2022) <sup>[2]</sup> investigating fraudulent financial reports in State-Owned Enterprises (BUMN), and Aviantara (2021) <sup>[5]</sup> examining various factors influencing fraudulent financial reporting. This study aims to contribute to the existing research by focusing on companies that have received special notation from the Indonesia Stock Exchange (IDX) and employing two proxies for each element of the fraud hexagon theory. This approach seeks to reduce bias, overcome data limitations, provide diverse perspectives on each proxy, and enhance the validity of factors influencing financial statement fraud. The focus on specially notated companies aims to detect manipulation or errors in financial reporting that have already been flagged through these notations. This novel approach makes this research particularly significant in the field of financial fraud detection and prevention.

**Theoretical framework and hypothesis development**

Agency Theory Jensen and Meckling (1976) [11] describe agency relationships as arising from contracts where shareholders (principals) employ and delegate decision-making authority to management (agents). Management is obligated to report their performance to shareholders, ensuring they act in the shareholders' best interests. Agency theory highlights the separation of management and ownership functions between agents and principals, who often have divergent goals. While management (agents) should prioritize improving shareholder welfare, they tend to focus on maximizing their own benefits. Conversely, company owners (principals) aim to maximize returns on their investments. This misalignment of interests can lead to conflicts between the two parties.

These conflicts of interest may push principals to demand that management maintain optimal company performance and meet agreed-upon targets. Such pressure can potentially drive management to engage in fraudulent activities to present a favorable company image, even when actual targets are not met. One common form of fraud committed by management is the manipulation and misrepresentation of financial reports.

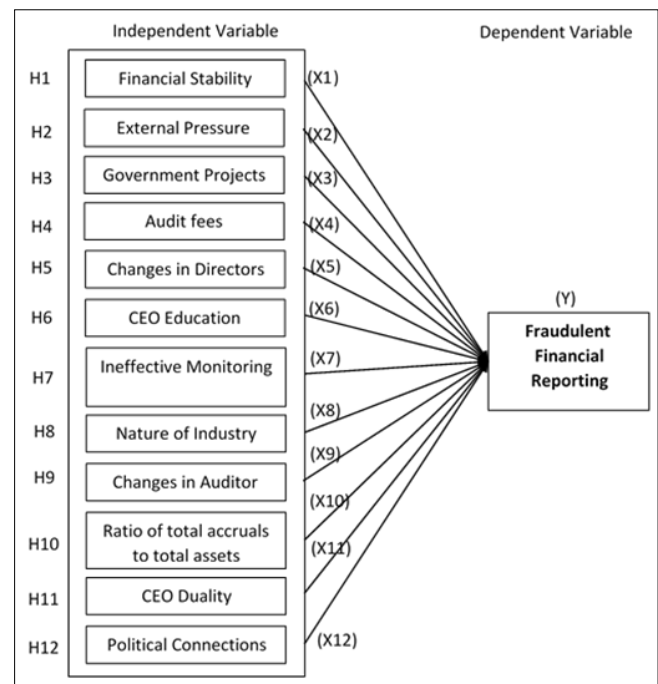
Financial Statement Fraud According to ACFE (2024), financial statement fraud occurs when an employee intentionally causes misstatements or omits material information in financial reports. In essence, it involves presenting financial figures that do not accurately reflect actual data. Christian *et al* [6]. (2022) note that common forms of financial statement fraud include inflating revenues or profits (overstatement) and understating liabilities or expenses (understatement). Such fraudulent reporting undermines the credibility of financial information, thereby impacting decision-making processes. One approach to detecting financial statement fraud is to analyze the influence of factors that contribute to fraud using fraud models. The most recent and comprehensive of these models is the fraud hexagon theory.

Fraud Hexagon Theory The concept of fraud theory was initially introduced by Cressey (1953) [7] in his study "Other People's Money: A Study in the Social Psychology of Embezzlement." His fraud triangle theory proposed that fraudulent acts stem from three conditions: pressure, opportunity, and rationalization. These elements form the foundation of the fraud risk factor framework. The latest iteration in fraud theory is the fraud hexagon theory, proposed by Vousinas (2019) [23] in his research "Advancing theory of fraud: The SCORE Model." This theory expands on previous models (fraud triangle, diamond, and pentagon) by adding a sixth element: collusion. The six elements are collectively known as SCORE (Stimulus, Capability, Collusion, Opportunity, Rationalization, and Ego).

Special Notation on the Indonesian Stock Exchange In December 2018, the Indonesian Stock Exchange introduced special notations as markers or symbols to inform investors about issuers' conditions. These notations are designed to help investors and analysts quickly access information about specific issuers. The special notation attached to an issuer's share code is not permanent; it evolves with the issuer's conditions, and the Indonesian Stock Exchange may remove or modify these symbols as circumstances change. Each special notation describes specific issues or conditions faced by the company. Investors can view these special notations on the official IDX website in the dedicated special notation column.

**Theoretical framework**

The theoretical framework provides a schematic representation of the relationships between research variables. In this study, we employ both dependent and independent variables to construct our model. This framework serves as a visual roadmap, illustrating how the various elements of our research interact and influence one another. By clearly delineating these relationships, we aim to provide a comprehensive overview of the study's structure and hypotheses, facilitating a deeper understanding of the complex interplay between the factors under investigation.



Source: Author's own elaboration (2024)

Fig 1: Theoretical Framework

**Hypothesis development**

**The impact of financial stability on fraudulent financial reporting**

Financial stability refers to a company's ability to withstand various economic challenges. This concept is closely tied to agency theory, which posits that management must deliver optimal performance to satisfy the principal's desire for high returns, partly by maintaining financial stability. Skousen *et al* [21]. (2008) suggest that a company's financial stability can be gauged by comparing its current asset value to that of the previous year, with an increase or positive change indicating stability. However, this pursuit of financial stability could potentially incentivize the manipulation of financial reports.

Ahmad *et al.* (2022) further elaborate that financial report manipulation often stems from unstable financial conditions caused by poor business performance, which puts pressure on management to engage in fraudulent reporting practices. This perspective is corroborated by several studies, including those conducted by Aviantara (2021) [5], Intikhani & Sukirman (2021) [10], and Jihan Octani *et al.* (2022) [12], all of which conclude that financial stability has a positive correlation with financial statement fraud.

Based on these insights, we can formulate the following hypothesis:

**H1:** Financial stability has a significant impact on fraudulent financial reporting.

### **The impact of t of external pressure on fraudulent financial reporting**

External pressure is closely linked to agency theory, where management faces intense pressure to meet targets or expectations set by third parties. In the course of company operations, funding challenges often arise that can impede growth and development. This situation places significant pressure on management to secure funding from external sources.

External stakeholders, particularly potential lenders, assess a company's performance and financial ratios to determine its creditworthiness. If a company's performance is deemed strong and it appears capable of repaying debts, creditors are more likely to extend loans. Consequently, as Agusputri & Sofie (2019) <sup>[3]</sup> suggest, companies may be motivated to manipulate financial reports to present a more favorable image to creditors and other external parties in order to obtain necessary funding.

This perspective is supported by research conducted by Achmad *et al* <sup>[2]</sup>. (2022) and Imtikhani & Sukirman (2021) <sup>[10]</sup>, who concur that external pressure has a positive correlation with financial statement fraud.

Based on these insights, we propose the following hypothesis:

**H2:** External pressure has a significant impact on fraudulent financial reporting.

### **The impact of t of external pressure on fraudulent financial reporting**

External pressure is closely linked to agency theory, where management faces intense pressure to meet targets or expectations set by third parties. In the course of company operations, funding challenges often arise that can impede growth and development. This situation places significant pressure on management to secure funding from external sources.

External stakeholders, particularly potential lenders, assess a company's performance and financial ratios to determine its creditworthiness. If a company's performance is deemed strong and it appears capable of repaying debts, creditors are more likely to extend loans. Consequently, as Agusputri & Sofie (2019) <sup>[3]</sup> suggest, companies may be motivated to manipulate financial reports to present a more favorable image to creditors and other external parties in order to obtain necessary funding.

This perspective is supported by research conducted by Achmad *et al* <sup>[2]</sup>. (2022) and Imtikhani & Sukirman (2021) <sup>[10]</sup>, who concur that external pressure has a positive correlation with financial statement fraud.

Based on these insights, we propose the following hypothesis:

**H3:** External pressure has a significant impact on fraudulent financial reporting.

### **The impact of audit fees on fraudulent financial reporting**

Audit fees represent the compensation auditors receive for their services (Ulfasari & Marsono, 2014) <sup>[22]</sup>. This concept intersects with agency theory, as management is pressured to meet principal expectations by securing financial reports

deemed fair by auditors. Such pressure may incentivize collusion between management and auditors, potentially leading to the suppression of audit findings in exchange for higher fees.

As audit fees increase, so do the economic ties between auditors and companies, potentially compromising auditor independence in providing fair opinions on financial statements (Sinaga & Rachmawati, 2018) <sup>[20]</sup>. The Enron and Arthur Andersen scandal exemplifies such collusion, where inflated audit fees facilitated the manipulation of financial reports to appear fair (Aviantara, 2021) <sup>[5]</sup>. This aligns with Aviantara's (2021) <sup>[5]</sup> research, which found a positive correlation between audit fees and financial statement fraud.

Based on these insights, we propose the following hypothesis:

**H4:** Audit fees significantly influence the likelihood of fraudulent financial reporting.

### **The impact of changes in directors on fraudulent financial reporting**

Changes in directors involve leadership transitions within a company. Agency theory suggests that such changes aim to align interests between directors (agents) and company owners (principals). These transitions may replace management with conflicting interests or those aware of fraudulent activities (Sapulette & Limba, 2021) <sup>[17]</sup>.

While changes in directors often aim to improve performance, they can also create stress periods where internal controls may be less effective, potentially creating opportunities for fraud (Septriani & Handayani, 2018; <sup>[19]</sup> Septiningrum & Mutmainah, 2022) <sup>[18]</sup>. Research by Aviantara (2021) and Larum *et al* <sup>[5, 13]</sup>. (2021) indicates that frequent changes in directors correlate with higher instances of financial reporting fraud.

Therefore, we hypothesize:

**H5:** Changes in directors have a significant impact on fraudulent financial reporting.

**Effect of CEO Education on Fraudulent Financial Reporting**  
CEO education refers to the highest level of formal education attained by a chief executive officer. This educational background reflects the competencies and skills a CEO brings to company leadership. The concept relates to agency theory, as CEOs (agents) may prioritize personal interests over those of the principals.

Highly educated CEOs possess extensive knowledge and decision-making competence, which could potentially be misused to prioritize personal interests through financial report fraud. ACFE research (2024) reveals that 15% of fraud perpetrators hold master's degrees, with associated frauds resulting in maximum losses of \$250,000, surpassing those committed by individuals with lower educational attainment. This suggests that CEOs with higher education may be more adept at identifying system weaknesses and manipulating them. Ying & Mei's (2014) <sup>[17]</sup> research supports this, indicating a significant positive relationship between CEO education and the likelihood of financial statement fraud.

Given these findings, we propose the following hypothesis:

**H6:** CEO education level significantly influences the occurrence of fraudulent financial reporting.

### **The impact of ineffective monitoring on fraudulent financial reporting**

The ineffective monitoring is related to agency theory, where management as an agent has more information regarding the company compared to the principal. These conditions provide opportunities for management to commit financial report fraud (Mukaromah & Budiwitjaksono, 2021) <sup>[15]</sup>. Therefore, a form of independent supervision is needed which is demonstrated by the existence of an independent board of commissioners in the company. The independent board of commissioners is the company's external supervisory board which has no relationship with the main shareholders, members of the board of directors and other supervisory boards. The existence of an independent board of commissioners can increase the effectiveness of monitoring in a company (Aprilia, 2017) <sup>[4]</sup>. Monitoring conditions become ineffective if the number of independent commissioners in the company is very low, thereby providing opportunities for management to commit financial report fraud. This is supported by research conducted by Hartadi (2022) <sup>[9]</sup> which explains that fraudulent financial reports can occur due to ineffective monitoring or control as seen from the low level of the board of commissioners in the company. From the description above, the following hypothesis can be drawn:

**H7:** Ineffective Monitoring affect on fraudulent financial reporting

### **The nature of industry and its impact on fraudulent financial reporting**

The nature of an industry can create ideal conditions for companies that, unfortunately, may also provide opportunities for fraud. This concept ties into agency theory, where information asymmetry between management (the agent) and stakeholders (the principal) can lead to fraudulent activities.

One prime example is the management of accounts receivable. The subjective nature of estimating bad debt reserves gives management wiggle room to manipulate financial reports. Research by Lionardi & Suhartono (2022) <sup>[14]</sup> supports this, showing a significant positive correlation between industry nature and the likelihood of financial statement fraud.

**H8:** The nature of an industry influences the occurrence of fraudulent financial reporting.

### **Auditor changes and their role in financial fraud**

The act of changing external auditors can serve as a potential indicator of fraudulent activity within an organization. This phenomenon can be elucidated through the lens of agency theory, which posits that such changes may exacerbate the inherent conflict of interest and information asymmetry that exists between management (the agent) and stakeholders (the principal). The decision to switch auditors may be motivated by management's desire to circumvent the detection of fraudulent practices that have been identified or suspected by the incumbent auditor. This strategic maneuver potentially allows the organization to obfuscate or conceal financial irregularities from stakeholders and regulatory bodies (Mukaromah & Budiwitjaksono, 2021) <sup>[15]</sup>. The implications of such actions underscore the importance of scrutinizing auditor changes as a potential risk factor in the assessment of financial statement integrity. Studies by Aviantara (2021) <sup>[5]</sup> and

Hartadi (2022) <sup>[9]</sup> indicate that frequent auditor changes correlate with a higher likelihood of financial statement fraud.

**H9:** Changes in auditors influence the occurrence of fraudulent financial reporting.

### **Total accruals to total assets ratio: A potential indicator of fraud**

The Total Accruals to Total Assets (TATA) ratio helps estimate the extent to which cash serves as the basis for income reporting. This ratio links to agency theory through the information asymmetry it can reveal. Management's subjective actions often reflect in the company's accrual value (Skousen *et al.*, 2008) <sup>[21]</sup>.

The accrual concept allows for recording income when a transaction occurs, even without actual cash movement. This flexibility can tempt management to manipulate financial reports to present a more favorable financial performance. Research by Situngkir and Triyanto (2020) and Yulistiyawati *et al.* (2019) supports the TATA ratio as a factor in financial statement fraud.

**H10:** The ratio of total accruals to total assets influences fraudulent financial reporting.

### **CEO duality: A dichotomous governance mechanism with implications for financial reporting integrity**

CEO duality occurs when a CEO holds multiple positions within a company. This situation, viewed through the lens of agency theory, can amplify conflicts of interest. The increased authority and dominance from multiple roles may lead CEOs to prioritize personal interests over company welfare.

This power concentration can weaken internal oversight, potentially creating an environment conducive to fraud. Kusumosari & Solikhah's (2021) research suggests that CEO duality can indeed reduce financial reporting quality and increase fraud likelihood.

**H11:** CEO duality influences fraudulent financial reporting.

### **Political connections: A blessing or a curse?**

Political connections refer to a company's relationships with political entities, such as politicians, government officials, or military personnel. While these connections can benefit a company, they also relate to agency theory in potentially negative ways. Resources gained through political connections might be misused by agents for fraudulent purposes, exacerbating information asymmetry with principals.

Companies might leverage political connections for preferential treatment, including easier access to loans. However, this can lead to increased debt and potential financial distress, possibly motivating management to manipulate financial reports to maintain a positive image. Matangkin *et al.* (2018) found that stronger political connections correlate with higher levels of financial report fraud.

**H12:** Political connections influence fraudulent financial reporting.

### **Research method**

The study employs a qualitative research method using secondary data. Our focus is on manufacturing companies that received special notation from the Indonesia Stock Exchange (IDX) during the 2020-2023 period. We collected

data from company annual reports, which are accessible through the official IDX website (www.idx.co.id) and the respective companies' official websites. The sampling method used in this study is purposive sampling. For data analysis, we utilized logistic regression, which is represented by the following equation:

$$Y = \alpha + \beta_1 X1_{FIN} + \beta_2 X2_{LEV} + \beta_3 X3_{GOP} + \beta_4 X4_{AUF} + \beta_5 X5_{DCH} + \beta_6 X6_{EDU} + \beta_7 X7_{IMO} + \beta_8 X8_{NAT} + \beta_9 X9_{ACH} + \beta_{10} X10_{RAT} + \beta_{11} X11_{CDU} + \beta_{12} X12_{POL} + e$$

**Table 1:** Variables and Operational Definitions

Variables	Definitions	Measurement and Source
Fraudulent Financial Reporting	Acts of deliberate manipulation of financial statements	Using the Fraud Score Model and transformed into a dummy variable, it is given a score of 1 if it has an F- score > 1 because it indicates financial statement fraud and it is given a score of 0 if it has an F-score < 1 because it does not indicate financial statement fraud. Source: (Dechow <i>et al.</i> , 2011)
Financial Stability	Conditions that describe the financial stability of a company which can be seen from asset growth.	(Total Assets of the current year- Total Assets of the previous year)/Total Assets of the previous year Source: (Skousen <i>et al.</i> , 2009) <sup>[21]</sup>
External Pressure	Pressure from third parties on management regarding company credit	Total Liabilities/Total Assets Source: (Skousen <i>et al.</i> , 2009) <sup>[21]</sup>
Government Projects	There is cooperation between companies and the government in a particular project.	Dummy variable, if the company collaborates with government projects = 1. If the company does not collaborate with government projects = 0 Source: (Vousinas, 2019) <sup>[23]</sup>
Audit Fees	Fees charged by the auditor to the audited company for the audit services that have been carried out	Natural logarithm (Ln) Source: (Lee & Ha, 2021)
Changes in Directors	Change of directors carried out by the company	Dummy variable, if there is a change in company directors = 1. If there is no change in directors = 0 Source: (Wolfe & Hermanson, 2004) <sup>[24]</sup>
CEO Education	The level of formal education that a CEO has taken	Dummy variable, if the CEO has a formal Master's (S2) education or above = 1. If the CEO has a formal Bachelor's (S1) education = 0 Source: (Troy, 2023)
Ineffective Monitoring	Refers to the ineffective supervision of a company as seen from the small number of independent commissioners in the company	Number of Independent Commissioners/Total number of commissioners Source: (Skousen <i>et al.</i> , 2009) <sup>[19]</sup>
Nature of Industry	The nature of company operations provides opportunities for management to commit fraud.	(Current year's receivables-previous year's receivables/Current year's sales-previous year's sales) Source: (Skousen <i>et al.</i> , 2009) <sup>[21]</sup>
Changes in Auditors	Change of auditor or KAP that audits the company.	Dummy variable, if the company changes auditor = 1. If the company does not change auditor = 0 Source: (Skousen <i>et al.</i> , 2009) <sup>[21]</sup>
Ratio of Total Accruals to Total Assets	The ratio is measured by the percentage comparison between total accruals and total company assets in a certain period.	Total Accruals/Total Assets Source: (Crowe, 2011)
Duality CEO	CEO who has multiple positions in a company.	Dummy variable, if there is CEO Duality in the company = 1. If there is no CEO Duality in the company = 0 Source: (Crowe, 2011)
Political Connections	There are company commissioners who are affiliated with political interests such as politicians, the government or the military.	Dummy variable, if the company has a president commissioner and/or independent commissioner who has political connections = 1. If the company has a president commissioner and/or independent commissioner who has no political connections = 0 Source: (Fan <i>et al.</i> , 2007) <sup>[8]</sup>

This research used several criteria in determining the sample, resulting in a sample of 19 companies with an observation period of 4 years from 2020-2023. From the 4 year observation period, 76 sample data were obtained. The criteria and determination of sample size are presented in Table 2.

**Research results and discussion**

**Descriptive statistical analysis**

The descriptive statistics of this research, shown in Table 3. The dependent variable (Y1), namely fraudulent financial reporting, has a standard deviation value for this variable of 0.271448 and a mean value of 0.078947. This shows that the data is spread unevenly or heterogeneous. The variable (X1), namely financial stability, has a standard deviation

value for this variable of 0.140358 and a mean value of 0.006858. This shows that the standard deviation value is greater than the mean value, which means the data is spread unevenly or heterogeneous. The variable (X2), namely external pressure, has a standard deviation value for this variable of 0.326386 and a mean value of 0.549690. This shows that the standard deviation value is smaller than the mean value, which means the data is spread evenly or homogeneously. Variable (X3), namely government projects, has a standard deviation value for this variable of 0.472953 and a mean value of 0.328947. This shows that the standard deviation value is greater than the mean value, which means the data is spread unevenly or heterogeneous. The variable (X4), namely audit fees, has a standard deviation value for this variable of 1,057,075 and a mean

value of 1,958,783. This shows that the standard deviation value is smaller than the *mean value*, which means the data is spread evenly or homogeneously. The variable (X5), namely changes in directors, has a standard deviation value for this variable of 0.456532 and a *mean value* of 0.289474. This shows that the standard deviation value is greater than the *mean value*, which means the data is spread unevenly or heterogeneous. Variable (X6), namely CEO Education, has a standard deviation value for this variable of 0.492042 and a *mean value* of 0.394737. This shows that the standard deviation value is greater than the *mean value*, which means the data is spread unevenly or heterogeneous.

**Source:** Data processed with Eviews 13, 2024

Variable (X7), namely ineffective monitoring, has a standard deviation value for this variable of 0.101064 and a *mean value* of 0.391776. This shows that the standard deviation value is smaller than the *mean value*, which means the data is spread evenly or homogeneously. The variable (X8), namely nature of industry, has a standard deviation value for this variable of 1.465966 and a *mean value* of 0.155192. This shows that the standard deviation value is greater than the *mean value*, which means the data is spread unevenly or heterogeneous. The variable (X9), namely changes in auditor, has a standard deviation value for this variable of 0.443273 and a *mean value* of 0.263158. This shows that the standard deviation value is greater. The variable (X10), namely the ratio of total accruals to total assets, has a standard deviation value for this variable of 0.100768 and a *mean value* of - 0.050159. This shows that the standard deviation value is greater than the *mean value*, which means the data is spread unevenly or heterogeneous. The variable (X11), namely CEO duality, has a standard deviation value for this variable of 0.419482 and a *mean value* of 0.223684. This shows that the standard deviation value is greater than the *mean value*, which means the data is spread unevenly or heterogeneous. The variable (X12), namely political connections, has a standard deviation value for this variable of 0.419482 and a *mean value* of 0.223684. This shows that the standard deviation value is greater than the *mean value*, which means the data is spread unevenly or heterogeneous.

#### Research model test

The *McFadden R-squared* has a value of 0.753623 or 75.36%, this means that all independent variables can explain the dependent variable by 75.36% and the remaining 24.64% have other influences outside the independent variables studied.

the *chi square* probability value is 0.9991, which indicates that this value is more than 0.05. the *expectation prediction* value is 96.05%. This shows that the use of variables and research models used in this research is very good and accurate.

#### Multicollinearity test

the test results did not reveal any symptoms of multicollinearity. This is because the correlation between all variables has a value below 0.90, so it can be concluded that the data used in this research are not correlated with each other or are free from symptoms of multicollinearity.

#### Hypothesis testing results

Referring to the logistic regression results in Table 8, it is determined that the regression equation used in this study is:

$$Y = 30.98509 - 15.53997X1\_FIN - 0.517254X2\_LEV + 0.507408X3\_GOP - 1.833194X4\_AUF + 2.485710X5\_DCH - 0.925651X6\_EDU + 1.024818X7\_IMO - 0.340069X8\_NAT - 2.953898X9\_ACH - 14.52233X10\_RAT - 0.406711X11\_CDU - 0.016809X12\_POL + e$$

**Hypothesis 1:** Financial Stability Financial stability significantly affects fraudulent financial reporting, with a coefficient of -15.53997 and an odds ratio of 1.77E-07. Assuming all other variables remain constant, each unit increase in financial stability (X1) reduces the likelihood of financial statement fraud by a factor of 1.77E-07. With a significant probability value of 0.0553, H1 is accepted.

**Hypothesis 2:** External Pressure External pressure does not significantly impact fraudulent financial reporting. It has a coefficient of -0.517254 and an odds ratio of 0.595961. A unit increase in external pressure (X2) would theoretically reduce the odds of financial statement fraud by a factor of 0.595961, all else being equal. However, with a non-significant probability value of 0.7557, H2 is rejected.

**Hypothesis 3:** Government Projects Government projects do not significantly influence fraudulent financial reporting. The coefficient is 0.507408 with an odds ratio of 1.661513. While a unit increase in government projects (X3) would theoretically increase the odds of fraudulent financial reporting by 1.661513 times, the probability value of 0.7530 is not significant. Thus, H3 is rejected.

**Hypothesis 4:** Audit Fees Audit fees do not significantly affect fraudulent financial reporting. The coefficient is -1.833194 with an odds ratio of 0.159717. A unit increase in audit fees (X4) would theoretically reduce the odds of financial statement fraud by a factor of 0.159717, but the probability value of 0.2133 is not significant. H4 is therefore rejected.

**Hypothesis 5:** Changes in Directors Changes in directors significantly impact fraudulent financial reporting, with a coefficient of 2.485710 and an odds ratio of 12.02852. Each unit increase in this variable (X5) increases the odds of financial statement fraud by 12.02852 times, assuming all other variables remain constant. With a significant probability value of 0.0749, H5 is accepted.

**Hypothesis 6:** CEO Education CEO education does not significantly influence fraudulent financial reporting. It has a coefficient of -0.925651 and an odds ratio of 0.396042. A unit increase in CEO education (X6) would theoretically reduce the odds of financial statement fraud by a factor of 0.396042, but the probability value of 0.5694 is not significant. H6 is rejected.

**Hypothesis 7:** Ineffective Monitoring Ineffective monitoring shows a positive relationship with fraudulent financial reporting, with a coefficient of 1.024818 and an odds ratio of 2.788393. Assuming all other variables remain constant, each unit increase in ineffective monitoring (X7) increases the likelihood of fraudulent financial reporting by 2.788393 times. However, with a non-significant probability value of 0.8058, H7 is rejected.

**Hypothesis 8:** Nature of Industry The nature of industry demonstrates a negative association with fraudulent financial reporting, having a coefficient of -0.340069 and an odds ratio of 0.711568. All else being equal, each unit increase in this variable (X8) reduces the probability of financial statement fraud by a factor of 0.711568. Nevertheless, due to an insignificant probability value of 0.5029, H8 is rejected.

**Hypothesis 9:** Changes in Auditor Changes in auditor exhibit a negative relationship with fraudulent financial reporting, with a coefficient of -2.953898 and an odds ratio of 0.052039. Holding all other variables constant, each unit increase in auditor changes (X9) decreases the likelihood of financial statement fraud by a factor of 0.052039. However, with a non-significant probability value of 0.1295, H9 is rejected.

**Hypothesis 10:** Ratio of Total Accruals to Total Assets The ratio of total accruals to total assets shows a negative association with fraudulent financial reporting, having a coefficient of -14.52233 and an odds ratio of 4.89E-07. Assuming all other variables remain constant, each unit increase in this ratio (X10) reduces the probability of financial statement fraud by a factor of 4.89E-07. Despite this, the hypothesis is rejected due to an insignificant probability value of 0.1039.

**Hypothesis 11:** CEO Duality CEO duality demonstrates a negative relationship with fraudulent financial reporting, with a coefficient of -0.406711 and an odds ratio of 0.665665. All else being equal, each unit increase in CEO duality (X11) decreases the likelihood of financial statement fraud by a factor of 0.665665. However, with a non-significant probability value of 0.6421, H11 is rejected.

**Hypothesis 12:** Political Connections Political connections show a slight positive association with fraudulent financial reporting, having a coefficient of 0.016809 and an odds ratio of 1.016962. Holding all other variables constant, each unit increase in political connections (X12) increases the probability of financial statement fraud by a factor of 1.016962. Despite a significant probability value of 0.9834, H12 is rejected, likely due to the minimal effect size.

## Discussion

Our analysis reveals a significant relationship between financial stability and fraudulent financial reporting in manufacturing companies specially noted by the Indonesia Stock Exchange (IDX) from 2020 to 2023. This supports our first hypothesis (H1). We found that lower financial stability correlates with a higher probability of fraudulent financial statements. This finding echoes Octani *et al.* (2022) <sup>[12]</sup>, who suggested that financial instability might drive management to manipulate financial reports to mask the company's precarious financial position.

External Pressure and Fraudulent Financial Reporting Surprisingly, our study found no significant link between external pressure and fraudulent financial reporting in our sample, leading us to reject H2. Our data indicates that leverage ratios, regardless of their level, don't substantially impact the likelihood of fraudulent financial statements. This aligns with Octani <sup>[12]</sup>, Dwiharyadi, & Djefris (2022) <sup>[12]</sup>, who posited that companies with assets outweighing

liabilities can manage their debts without resorting to financial manipulation.

Government Projects and Fraudulent Financial Reporting Our research suggests that involvement in government projects doesn't significantly affect fraudulent financial reporting, resulting in the rejection of H3. This outcome supports Octani *et al.* (2022) <sup>[12]</sup>, indicating that participation in government projects likely serves as a performance enhancement strategy rather than a vehicle for collusion. The potential for blacklisting due to fraudulent activities in government projects may also act as a powerful deterrent.

Audit Fees and Fraudulent Financial Reporting Our findings show no significant relationship between audit fees and fraudulent financial reporting, leading to the rejection of H4. This result aligns with Indriana & Anshori (2022), who argued that while low audit fees might compromise audit quality, higher fees tend to enhance audit quality, mitigate audit risks, and produce more objective audit opinions. Changes in Directors and Fraudulent Financial Reporting Our analysis supports H5, demonstrating that changes in directors significantly influence fraudulent financial reporting. This finding resonates with Primastiwi *et al.* (2021), suggesting that director changes might signal financial reporting fraud committed by previous leadership. CEO Education and Fraudulent Financial Reporting Contrary to our expectations, CEO education shows no significant impact on fraudulent financial reporting, leading to the rejection of H6. This finding aligns with Aviantara (2021) <sup>[5]</sup>, who proposed that CEOs with higher education levels tend to be more attuned to corporate ethics and manage companies more prudently, thus reducing the likelihood of engaging in financial fraud.

The Impact of Ineffective Monitoring on Fraudulent Financial Reporting

The hypothesis test results indicate that ineffective monitoring does not significantly affect the likelihood of fraudulent financial reporting in manufacturing companies flagged with special notations by the Indonesia Stock Exchange (BEI) during the 2020-2023 period, leading to the rejection of H7 in this study. This finding aligns with the research by Achmad *et al.* (2022) <sup>[2]</sup>, which also concluded that ineffective supervision does not influence financial statement fraud. This outcome may be attributed to the fact that the presence of independent commissioners does not necessarily guarantee better or more objective oversight within a company. Furthermore, similar research by Mukaromah & Budiwitjaksono (2021) <sup>[15]</sup> suggests that the appointment of independent commissioners is often merely a formality to meet regulatory requirements without actually enhancing monitoring. As a result, ineffective supervision does not seem to impact the occurrence of fraudulent financial reporting.

The Impact of Industry Characteristics on Fraudulent Financial Reporting

The hypothesis test results suggest that the nature of the industry does not significantly influence fraudulent financial reporting in manufacturing companies flagged by the Indonesia Stock Exchange (BEI) during the 2020-2023 period, resulting in the rejection of H8 in this study. This finding is consistent with the research of Octani *et al.* (2022) <sup>[12]</sup> and Haqq & Budiwitjaksono (2020) <sup>[15]</sup>, which both found that industry characteristics do not affect financial statement fraud. This is likely because the changes in trade receivables, a common industry characteristic, do not

provide sufficient incentive for management to manipulate financial statements.

#### The Impact of Auditor Changes on Fraudulent Financial Reporting

The hypothesis test results indicate that changes in auditors do not significantly affect the likelihood of fraudulent financial reporting in manufacturing companies flagged by the Indonesia Stock Exchange (BEI) during the 2020-2023 period, leading to the rejection of H9 in this study. This result is consistent with the research of Octani *et al.* (2022)<sup>[12]</sup> and Haqq & Budiwitjaksono (2020)<sup>[15]</sup>, both of which found that industry characteristics do not influence financial statement fraud. This is because the ratio of changes in trade receivables does not motivate management to engage in financial statement manipulation.

#### The Impact of the Ratio of Total Accruals to Total Assets on Fraudulent Financial Reporting

The hypothesis test results show that the ratio of total accruals to total assets does not significantly impact fraudulent financial reporting in manufacturing companies flagged by the Indonesia Stock Exchange (BEI) during the 2020-2023 period, resulting in the rejection of H10 in this study. This finding aligns with the research of Andhika *et al.* (2024), which also found that the ratio of total accruals to total assets does not affect financial statement fraud. This is because management adheres to the accrual principle in accordance with accounting standards, avoiding the use of rationalization in financial reporting. Therefore, the ratio of total accruals to total assets is not a reliable indicator of financial statement manipulation.

#### The Impact of CEO Duality on Fraudulent Financial Reporting

The hypothesis test results suggest that CEO duality does not significantly influence fraudulent financial reporting in manufacturing companies flagged by the Indonesia Stock Exchange (BEI) during the 2020-2023 period, leading to the rejection of H11 in this study. This finding is consistent with the research by Imtikhani & Sukirman (2021)<sup>[10]</sup>, which concluded that CEO duality does not affect financial statement fraud. CEOs holding multiple positions tend to focus on improving company performance and maintaining their status rather than engaging in fraudulent activities.

#### The Impact of Political Connections on Fraudulent Financial Reporting

The hypothesis test results indicate that political connections do not significantly affect the likelihood of fraudulent financial reporting in manufacturing companies flagged by the Indonesia Stock Exchange (BEI) during the 2020-2023 period, resulting in the rejection of H11 in this study. This finding is consistent with the research by Imtikhani & Sukirman (2021)<sup>[10]</sup>, which also concluded that political connections do not influence financial statement fraud. Management with political connections does not necessarily exploit these connections for personal or group gain, leading to a lack of impact on fraudulent financial reporting.

### Conclusion

This study aimed to examine the influence of the six elements in the fraud hexagon theory on indicators of fraudulent financial reporting. Our findings reveal that financial stability, changes in directors, and the ratio of total accruals to total assets have a significant impact on financial statement fraud. However, other variables—including external pressure, government projects, audit fees, CEO

education, ineffective monitoring, nature of industry, auditor changes, CEO duality, and political connections—do not significantly affect financial statement fraud. Notably, when considered collectively, all variables demonstrate a significant effect on financial statement fraud.

### Limitations

#### Our research encountered several limitations

1. The sample size was restricted to 19 manufacturing companies that received special notation from the Indonesian Stock Exchange (IDX).
2. While a total of 51 companies received special notation from the IDX, 39 of these were excluded from our sample due to insufficient data or failure to report financial statements during the 2020-2023 period.

These limitations suggest opportunities for future research to expand the sample size and potentially include a broader range of industries to enhance the generalizability of the findings.

### References

1. Association of Certified Fraud Examiners (ACFE). The Nations Occupational Fraud 2024: A Report to the Nations. Association of Certified Fraud Examiners, 2024, 1–106.
2. Achmad T, Ghozali I, Pamungkas ID. Hexagon Fraud: Detection of Fraudulent Financial Reporting in State-Owned Enterprises Indonesia. *Economies*, 2022;10(1):1–16. doi: 10.3390/economies10010013.
3. Agusputri H, Sofie S. Factors that Influence Fraudulent Financial Reporting Using Pentagon Fraud Analysis. *J Inf Taxation Account Public Finance*, 2019;14:105. doi: 10.25105/jipak.v14i2.5049.
4. Aprilia A. Analysis of the Influence of Pentagon Fraud on Financial Report Fraud Using the Beneish Model in Companies That Implement the Asean Corporate Governance Scorecard. *J ASET (Res Account)*, 2017;9(1):101. doi: 10.17509/jaset.v9i1.5259.
5. Aviantara R. The Association Between Fraud Hexagon and Government's Fraudulent Financial Report, 2021. doi: 10.21532/apfjournal.v6i1.192.
6. Christian N, Resnika R, Yukie H, Sitorus R, Angelina V, Sherly S, *et al.* Detecting Fraudulent Financial Reporting With Earnings Manipulation Financial Shenanigans: Case Study of Pt Envy Technologies Indonesia Tbk. *Sci J Account Bus*, 2022;7(1):14–50. doi: 10.38043/jiab.v7i1.3543.
7. Cressey DR. *Other people's money; a study of the social psychology of embezzlement.* Free Press; 1953.
8. Fan JPH, Wong TJ, Zhang T. Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms. *J Financ Econ*, 2007;84(2):330–57. doi: 10.1016/j.jfineco.2006.03.008.
9. Hartadi B. The Influence of Fraud Hexagon on Fraudulent Financial Statements in Indonesian State-Owned Enterprises Registered on BEI in 2018-2021. *Tambusai Educ J*, 2022;6(2):14883–96.
10. Imtikhani L, Sukirman S. Determinants of Fraudulent Financial Statements through the Perspective of Fraud Hexagon Theory in Mining Companies. *J Bus Account*, 2021;19(1):96. doi: 10.24167/jab.v19i1.3654.

11. Jensen M, Meckling W. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *The Economic Nature of the Firm: A Reader*. 3rd ed, 1976, 283–303. doi: 10.1017/CBO9780511817410.023.
12. Octani J, Dwiharyadi A, Djefris D. Analysis of the Influence of Fraud Hexagon on Fraudulent Financial Reporting in Financial Sector Companies Listed on the Indonesian Stock Exchange during 2017-2020. *Indones J Account Bus Econ*,2022;1(1):36–49. doi: 10.30630/jabei.v1i1.9.
13. Larum K, Zuhroh D, Subiyantoro E. Fraudulent Financial Reporting: Testing the Potential for Fraudulent Financial Reporting Using the Fraud Hexagon Theory. *AFRE (Account Financ Rev)*,2021;4(1):82–94. doi: 10.26905/afr.v4i1.5818.
14. Lionardi M, Suhartono S. Detection of the Possible Occurrence of Fraudulent Financial Statements using the Fraud Hexagon. *Monet J Account Finance*,2022;9(1):29–38. doi: 10.31294/moneter.v9i1.12496.
15. Mukaromah I, Budiwitjaksono GS. Fraud Hexagon Theory in Detecting Fraudulent Financial Reports in Banks Listed on the Indonesian Stock Exchange 2015-2019. *Sci J Comput Account*,2021;14(1):61–72.
16. Sagala SG, Siagian V. The Influence of the Fraud Hexagon Model on Fraudulence. *J Account*,2021;13(2):245–59. Available from: <http://journal.maranatha.edu>.
17. Sapulette SG, Limba FB. The Influence of Implementing Green Accounting and Environmental Performance on the Value of Manufacturing Companies listed on the IDX in 2018-2020. *Kupna Account: Collection of Accounting Articles*,2021;2(1):31–43. doi: 10.30598/kupna.v2.i1.p31-43.
18. Septiningrum KE, Mutmainah S. Analysis of Factors that Influence the Occurrence of Financial Statement Fraud: Fraud Hexagon Theory Perspective (Empirical Study of Banking Sector Companies Listed on the Indonesian Stock Exchange for the 2018–2020 Period). *Diponegoro J Account*,2022;11(3):1–. Available from: <http://ejournal-s1.undip.ac.id/index.php/accounting>.
19. Septriani Y, Handayani D. Detecting Fraudulent Financial Statements Using Pentagon Fraud Theory Analysis. *J Finance Account Res*,2018;11(1):70–81.
20. Sinaga EA, Rachmawati S. Amount of Audit Fee for Companies Listed on the Indonesian Stock Exchange. *Account Audit Inf Res Media*,2018;18(1):19–34. doi: 10.25105/mraai.v18i1.2577.
21. Skousen C, Smith K, Wright C. Detecting and Predicting Financial Statement Fraud: The Effectiveness of the Fraud Triangle and SAS No. 99. *Adv Financ Econ*,2009;13. doi: 10.2139/ssrn.1295494.
22. Ulfasari HK, Marsono. Determinants of External Audit Fees in IFRS Convergence. *Diponegoro J Account*,2014;3(1):1–11. Available from: <http://ejournal-s1.undip.ac.id/index.php/accounting>.
23. Vousinas GL. Advancing theory of fraud: the SCORE model. *J Financ Crime*,2019;26(1):372–81. doi: 10.1108/JFC-12-2017-0128.
24. Wolfe DT, Hermanson DR. The Fraud Diamond: Considering the Four Elements of Fraud. *CPA J*,2004;74(12):38–42.
25. Yanti LD, Riharjo IB. Detecting Financial Reporting Fraud Using Fraud Pentagon Theory. *J Account Sci Res*,2021;10(5):1–23.
26. Ying CH, Mei YC. CEO Education and Firm Performance: Evidence from Hong Kong. *Hong Kong Baptist University*,2014, 1–30.
27. Yanti LD, Riharjo IB. Detecting Financial Reporting Fraud Using Fraud Pentagon Theory. *J Account Sci Res*,2021;10(5):1–23.
28. Ying CH, Mei YC. CEO Education and Firm Performance: Evidence from Hong Kong. *Hong Kong Baptist University*,April 2014, 1–30.