

## PROBING THE PREDICTORS OF FRAUD USING THE FRAUD PENTAGON THEORY

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**Abstract:** This study aims to investigate how the elements of the fraud pentagon influence the prediction of financial statement fraud. The research identifies six independent variables: financial target, ineffective monitoring, auditor changes, director changes, the number of CEO photos, and personal financial need, while the dependent variable is financial statement fraud. The sample for this research includes companies from the energy, cyclical, and non-cyclical sectors listed on the Indonesia Stock Exchange, selected based on specific criteria, resulting in 168 samples from 56 companies for the period from 2020 to 2022. This study employed a purposive sampling method and performed data analysis using multiple regression. The F-score model was utilized in this research to estimate the likelihood of financial statement fraud. The findings confirm that the independent variable of auditor changes has a positive effect on financial statement fraud, while the independent variable of the number of CEO photos exhibits a negative effect on financial statement fraud. Conversely, the independent variables of financial target, ineffective monitoring, director changes, and personal financial need do not appear to impact financial statement fraud.

**Keywords:** Change in Auditor, Change in Director, Financial Statement Fraud, Financial Targets, Ineffective Monitoring, Number of CEO Photo, Personal Financial Need

### INTRODUCTION

Based on [Financial Services Authority Regulation Number 14 \(2022\)](#) Every issuer company listed on the Indonesia Stock Exchange (IDX) must prepare periodic financial reports and must submit periodic financial reports to the Financial Services Authority and announce periodic financial reports to the public. In order to present high-quality and comprehensive financial reports, companies need to present financial reports that contain relevant information and represent accurate information. Financial reports must also be comparable, verifiable, timely, and understandable. [\(FASB 2022\)](#).

[Hadi et al. \(2021\)](#) assert that financial reports serve as a crucial tool for organizations, as they provide insights into the company's performance over a specific timeframe, which is essential for informed management decision-making. Consequently, company management is motivated to maximize profits to ensure that positive performance is accurately represented. Nonetheless, these financial reports can also be exploited by fraudsters to engage in deceptive practices [\(Nadziliyah and Primasari 2022\)](#). Fraud is an activity of misusing company assets or resources that is carried out intentionally with the aim of enriching oneself. [\(Wells 2014, 8\)](#). Fraud is categorized into three main forms,

which consist of asset misappropriations, corruption, and financial reporting fraud ([Wells 2017, 1](#)).

Fraudulent financial statements involve intentional misrepresentation of financial report information by fraudsters, aimed at misleading users, particularly investors and creditors ([Wells 2014, 305](#)). As noted by [Octaviana \(2022\)](#), fraudulent financial statement occurs when company management intentionally alters financial data to create misleading reports for investors and creditors.

Based on a survey conducted by [Association of Certified Fraud Examiners Indonesia \(2019, 9\)](#). There were 239 fraud cases with a total loss of Rp. 873,430,000,000, where this loss was divided into three, namely corruption fraud cases with a total of 167 cases with an average loss of Rp. 2,237,425,150, asset misuse fraud cases as many as 50 cases with an average loss of Rp. 5,150,400,000, and financial report fraud cases as many as 22 cases with an average loss of Rp. 11,011,818,182. Meanwhile, based on a survey conducted by [Association of Certified Fraud Examiners \(2019, 86\)](#). There are 2,661 fraud cases from 133 countries that have caused an average loss of Rp 814,980,000,000. Where this loss is divided into three, namely through fraud asset misappropriation with a total of 1,605 cases with an average loss of Rp. 18,045,000,000, fraud corruption with a total of 906 cases with an average loss of Rp. 39,705,000,000, and fraud financial statements with a total of 150 cases causing an average loss of Rp. 757,230,000,000.

The results of a survey conducted by ACFE in Indonesia and ACFE internationally show that financial reporting fraud is the type of fraud that causes the greatest financial losses with fewer cases when compared to corruption and asset misappropriation. ([ACFE 2024](#)). The results of a survey conducted by ACFE and several previous studies that examined the factors that can influence the occurrence of financial statement fraud practices have motivated researchers to further research

financial statement fraud and several factors that can influence the occurrence of financial statement fraud. This study is a development of previous research by [Haqq and Budiwitjaksono \(2020\)](#) and several other researchers to obtain empirical evidence regarding the influence of the variables financial target, ineffective monitoring, change in auditor, change in director, number of CEO photos, and personal financial need on financial statement fraud in energy, cyclical, and non-cyclical sector companies during the period 2020 to 2022.

### Agency Theory

According to [Jensen and Meckling \(1976\)](#) in [Godfrey et al. \(2010, 362\)](#), the agency relationship occurs when a contract is made and the parties in the contract are divided into two parties, namely the principal (company owner) and the agent (company management) and in the contract the principal has the authority as a decision maker and gives responsibility to the agent to run the company well, while the agent is responsible for all company activities to the principal. However, the relationship between shareholders and management often conflicts due to differences in interests between the two which are referred to as agency conflicts.

Conforming to [Imtikhani and Sukirman \(2021\)](#) the agent is given the power to regulate and make the best decisions for the principal's interests. Where the principal's interest is to get a large return from the results of his investment in the company, while the agent's interest is to want a large bonus from the principal. However, the management as the company manager will have more important information about the condition of the company, while the principal as the company's investor who is an outside party has limited access to information. Thus, it will give rise to information asymmetry between the principal and the agent which will trigger the emergence of financial statement fraud practices. ([Imtikhani and Sukirman 2021](#)).

### Financial Statement Fraud

[Haqq and Budiwitjaksono \(2020\)](#) stated financial statement fraud is the presentation of financial reports that are made incorrectly without regard to their validity, with the intention of influencing users in making decisions and resulting in losses for users. Financial statement fraud is an act of deliberate misrepresentation of financial statements with the aim of enriching oneself, financial statement fraud can involve the following schemes ([Wells 2014, 305](#)): Falsification or manipulation of material financial records, supporting documents, or business transactions; Intentional omission or misrepresentation of events, account transactions, or other important information that is the basis for the preparation of financial statements; Intentional misapplication of accounting principles, accounting policies and accounting procedures used to measure, recognize, report, disclose economic events and business transactions; Inadequate disclosure of accounting principles and policies.

### The Fraud Pentagon Theory

The fraud pentagon theory builds upon the earlier fraud triangle theory introduced by Cressey in 1953 and the fraud diamond theory proposed by Wolfe and Hermanson in 2004. This theory adds a crucial element to the understanding of fraud: arrogance. Pressure refers to the incentives or need to commit fraud, often due to financial or personal issues. Opportunity is the situation that allows fraud to occur, which can be minimized through processes and procedures. Rationalization is the perpetrator's justification for their actions, often related to management integrity. Capability is the individual's ability to recognize and seize opportunities to commit fraud. Arrogance is the perpetrator's belief that they are superior and not subject to the same rules as others. ([Kusumawati et al. 2021](#)).

### Financial Target and Financial Statement Fraud

According to [Hadi et al. \(2021\)](#) If the influence of financial targets on financial statement fraud is associated with agency theory, then investors as principals expect company management as agents to be able to manage the company well so that the targets determined in the previous period can be achieved. However, when the company fails to achieve the target, there will be great pressure on the company's management and management will commit fraud in the form of financial statement manipulation to maintain the company's performance so that it continues to look good. According to [Nadziliyah and Primasari \(2022\)](#) financial targets are given to management, then the target can be used as a reference for the company owner in assessing work performance and used as a guideline for management in providing bonuses to employees, but this can be used by management to manipulate the company's performance results.

**H<sub>1</sub>: Financial targets have an effect on financial statement fraud.**

### Ineffective Monitoring and Financial Statement Fraud

As noted by [Octaviana \(2022\)](#), it is imperative to supervise the operational functions and financial reporting of a company. Without adequate oversight, there exists a heightened risk of fraudulent activities by employees. Therefore, it is important to appoint a board of commissioners from an external organization to ensure proper supervision of the company's business processes and financial statements. According to [Haqq and Budiwitjaksono \(2020\)](#) a company monitoring system that is not running effectively can lead to fraud, because management thinks that the controls or regulations in the company are not that strict and they think it is good to take advantage of it.

**H<sub>2</sub>: Ineffective monitoring has an effect on financial statement fraud.**

### Change In Auditor and Financial Statement Fraud

As noted by [Octaviana \(2022\)](#), a company's sudden switch in auditors can be interpreted as a strategy to erase the evidence of fraud uncovered by the prior auditor. [Hadi et al. \(2021\)](#) support this view, asserting that the auditor change is a deliberate move by management, representing the agency, to hide the previous auditor's discoveries from the principal, the company owner. This strategy relies on the belief that the newly appointed auditor will take time to fully comprehend the company's existing business processes and financial reporting.

**H<sub>3</sub>: Change in auditor has an effect on financial statement fraud.**

### Change in Director and Financial Statement Fraud

[Hadi et al. \(2021\)](#) observed that a transition in a company's board of directors can lead to a period of stress for its employees. When viewed through the lens of agency theory, this shift from the previous board to a new one may arise from conflicts of interest within the old board, which are perceived as misaligned with the company's objectives. Consequently, management may interpret this situation as a potential avenue for fraudulent activities. According to [Hagq and Budiwitjaksono \(2020\)](#) explains that changing the board of directors is one of the factors that can cause fraud, this is because a director has very important information and this information can only be accessed and changed by the company director.

**H<sub>4</sub>: Change in director has an effect on financial statement fraud.**

### Number of CEO Photo and Financial Statement Fraud

[Hagq and Budiwitjaksono \(2020\)](#) indicate that a significant number of CEO photographs featured in the annual report may reflect an elevated sense of arrogance and superiority from the CEO. This level of arrogance

can potentially lead to fraudulent activities, as it may result in the perception that the company's regulatory measures do not extend to the CEO because of their prominent position. According to [Octaviana \(2022\)](#) The attitude of arrogance or superiority possessed by a CEO can make him feel that all forms of supervision and rules from the company will not affect him, because the CEO has a very high and important position in the company.

**H<sub>5</sub>: Change in CEO Photo has an effect on financial statement fraud.**

### Personal Financial Need and Financial Statement Fraud

Personal financial needs refer to the ownership of shares owned by the board of commissioners and board of directors of the company (company executives), the greater the proportion of shares owned by company executives, the greater their power to influence financial statement policies. When company executives ask company management to manipulate financial statements in order to gain profit from the dividends distributed by the company, then management must carry out the order. The more often management fulfills the interests of company executives, the greater the occurrence of financial statement fraud ([Fathmaningrum et al. 2021](#)).

**H<sub>6</sub>: Personal financial need has an effect on financial statement fraud.**

### RESEARCH METHODS

The research used in this study is causal research with quantitative methods. The research objects used in this study are energy sector, consumer cyclicals, and consumer non-cyclicals companies, listed on the Indonesia Stock Exchange (IDX) during the research period from 2020 to 2022. The sample in this study was selected using the purposive sampling method. The total sample selected was 168 from 56 companies, after going through the criteria process, as follows:

**Table 1 Sample Selection Results**

No	Sample Selection Information	Total Company	Total Data
1.	Energy sector companies, cyclicals, non-cyclicals during the period 2020-2022	327	981
2.	Energy, cyclicals, non-cyclicals sector companies that are not listed on the Indonesia Stock Exchange (IDX) for the 2020-2022 period	(96)	(288)
3.	Energy, cyclicals, non-cyclicals sector companies that do not use the rupiah currency during the 2020-2022 period	(77)	(231)
4.	Energy, cyclicals, and non-cyclicals sector companies that did not record profits during the 2020-2022 period	(98)	(294)
<b>Total Research Sample</b>		<b>56</b>	<b>168</b>

Source: Data Processing Results

### Financial Statement Fraud

Financial statement fraud is a financial report that is made incorrectly with the aim of influencing users of financial reports that are made incorrectly with the aim of influencing users of financial reports that cause losses (Haqq and Budiwitjaksono 2020). According to Dechow et al. (2011) If a company has an f-score value greater than 1, the company is categorized as committing fraud. If the f-score value is less than 1, the company is categorized as not committing fraud. The f-score proxy is as follows (Haqq and Budiwitjaksono 2020):

$F\text{-score} = \text{Accrual quality} + \text{Financial Performance}$

The first step is to calculate the accrual quality value using rsst accrual, with the formula:

$$\text{Rsst accrual} = \frac{\Delta \text{WC} + \text{NCO} + \Delta \text{FIN}}{\text{Average Total Assets}}$$

Information:

$\text{WC} = (\text{current assets} - \text{cash} - \text{short term investment}) - (\text{current liabilities} - \text{short term debt})$ .

$\text{NCO} = (\text{total assets} - \text{current assets} - \text{investment}) - (\text{total liabilities} - \text{current liabilities} - \text{long term debt})$ .

$\text{FIN} = (\text{short-term investment} + \text{long-term investment}) - (\text{long-term debt} + \text{short-term debt})$ .

$\text{ATS} = (\text{beginning assets} + \text{ending total assets})/2$ .

The next step is to calculate financial performance using the following formula:

$\text{Financial performance} = \text{change in receivables} + \text{change in inventory} + \text{change in cash sales} + \text{change in earnings}$ .

Information:

$\text{Change in receivables} = \frac{\Delta \text{Receivables}}{\text{Average Total Assets}}$

$\text{Change in inventory} = \frac{\Delta \text{Inventory}}{\text{Average Total Assets}}$

$\text{Change in cash sales} = \left( \frac{\Delta \text{Sales}}{\text{Sales}_t} \right) - \left( \frac{\Delta \text{Receivables}}{\text{Receivables}_t} \right)$

$\text{Change in earnings} = \left( \frac{\text{Profit}_t}{\text{Average total assets}_t} \right) - \left( \frac{\text{Profit}_{(t-1)}}{\text{Average total assets}_{(t-1)}} \right)$

### Financial Target

Financial target is a description of the financial target set by a company by comparing the total profit after tax with the total assets owned by the company. The level of financial target is measured using Return on Asset (ROA),



where when ROA is high in a period it will reflect the profit generated by the company is also quite high, so that in the coming period the company will set a higher profit target ([Hadi et al. 2021](#)). According to [Haqq and Budiwitjaksono \(2020\)](#) the financial target variable approach with the fraud pentagon is part of the pressure. The proxies that will be used in calculating financial targets are ([Haqq and Budiwitjaksono,2020](#)):

$$ROA = \frac{\text{Earnings After Tax}}{\text{Total Aset}}$$

### Ineffective Monitoring

Ineffective monitoring is a description of a company's internal monitoring system that is not running well and is not effective by comparing the number of independent commissioners with the total number of commissioners owned by the company. ([Putra 2022](#)). According to [Haqq and Budiwitjaksono \(2020\)](#) the ineffective monitoring variable approach with the fraud pentagon is part of the opportunity and the proxies used in calculating ineffective monitoring are:

$$IM = \frac{\text{Number of Independent Board Commissioners}}{\text{Number of Board Commissioners}}$$

### Change in Auditor

A change in auditor signifies the company's decision to switch from its previous Public Accounting Firm (KAP) to a new one ([Haqq and Budiwitjaksono 2020](#)). [Haqq and Budiwitjaksono \(2020\)](#) indicate that this change will be assessed through a dummy variable, where a value of 1 indicates a change in the Public Accounting Firm (KAP), while a value of 0 indicates no change.

### Change in Director

Change in director is the process of replacing the old board of directors with a new board of directors, the replacement of the board of directors will cause a period of stress for employees ([Putra 2022](#)). According to [Haqq and Budiwitjaksono \(2020\)](#) proxy the measurement of the change in director variable is measured using

a dummy variable, where the value is 1 if there is a change of director in the company, and the value is 0 if there is no change of director.

### Number of CEO Photos

[Putra \(2022\)](#) defines the number of CEO photos as the total count of images featuring the CEO, board of directors, and board of commissioners in a company's annual report. This count can reflect the perceived arrogance or superiority of the company's leadership. [Haqq and Budiwitjaksono \(2020\)](#) suggest that the variable of CEO photo count, when analyzed in relation to pentagon fraud, is indicative of arrogance. They also note that the measurement for this variable is based on the number of CEO photos included in the annual report.

### Personal Financial Need

Personal financial need is a financial requirement required by company executives (board of commissioners and board of directors) who want to receive dividends from the shares of the company they lead. ([Nugraheni and Triatmoko 2016](#)). According to [Fathmaningrum and Anggarani \(2021\)](#) The proxies used in measuring the personal financial need variable are:

$$PFN = \frac{\Delta \text{Total share ownership of executives}}{\text{Total Outstanding Share}}$$

### Research result

Descriptive statistics is a description or depiction of data seen from the average value, standard deviation, variance, maximum, minimum, sum, range, kurtosis and skewness ([Ghozali 2018](#)). This study uses standard deviation, variance, maximum, minimum to describe the data of independent variables, namely financial target, ineffective monitoring, change in auditor, change in director, number of CEO photos and personal financial need. and the dependent variable is financial statement fraud.

There are dummy variables in this study, namely change in auditor and change in director, the results of which are explained in the

descriptive statistical test through the following table:

According to the findings presented in Table 2, this research analyzes data from 56 companies over a span of three years, resulting in a total of 168 data points. The minimum recorded value for the financial statement fraud (FSF) variable is -2.0315, observed in the 2020 data for Selamat Sempurna Tbk. Conversely, the maximum value of 1.1907 for the FSF variable is noted in the 2021 data for Integra Indocabinet Tbk. Additionally, the average and standard deviation for the FSF variable are calculated to be 0.0347 and 0.3922, respectively.

Based on the results of table 2, the financial target (FT) variable has a minimum value of 0.0001 in 2022 at the company Buyung Poetra Sembada Tbk. Then the maximum value of the financial target (FT) variable of 0.3489 is in 2020 at the company Unilever Indonesia Tbk. Furthermore, the average value and standard deviation of the financial target (FT) variable are 0.0810 and 0.0647.

The data illustrated in Table 2 indicates that the ineffective monitoring (IM) variable had a

minimum value of 0.333 in 2020 at Bukit Asam Tbk. In contrast, the maximum value for the ineffective monitoring (IM) variable was 0.833 in 2020 at Unilever Indonesia Tbk. Moreover, the average and standard deviation of the ineffective monitoring (IM) variable are recorded as 0.4233 and 0.1113.

As shown in table 2, the personal financial needs (PFN) variable had a minimum value of 0 in 2020 for Elnusa Tbk. The maximum value of 0.5416 for the PFN variable was noted in 2022 at Ultra Jaya Milk Industry & Trading Company Tbk. Furthermore, the average and standard deviation of the PFN variable are reported as 0.0316 and 0.1009, respectively.

The data in Table 2 indicates that the number of CEO photos (NOCP) had a minimum value of 0 in 2020 at Bintang Oto Global Tbk, while the maximum value reached 36 in 2022 at Indofood Sukses Makmur Tbk. The average value and standard deviation for the NOCP variable are reported as 12.702 and 5.7394, respectively.

**Table 2 Descriptive Statistics**

Variables	N	Minimum	Maximum	Mean	Standard Deviation
FSF	168	-2.0315	1.1907	0.0347	0.3922
FT	168	0.0001	0.3489	0.0810	0.0647
IM	168	0.333	0.833	0.4233	0.1113
CIA	168	0	1	0.0476	0.2136
CID	168	0	1	0.2321	0.4235
NOCP	168	0	36	12,702	5.7394
PFN	168	0	0.5416	0.0316	0.1009

Source: SPSS 25 Data Processing Results

**Table 3 Change in Auditor**

	Frequency	Percentage
No Change of KAP Occurred	160	95.2
There was a change of KAP	8	4.8
Total	168	100

Source: SPSS 25 Data Processing Results

**Table 4 Change in Director**

	Frequency	Percentage
No Change of Directors Occurred	129	76.8
There was a change in the Board of Directors	39	23.2
Total	168	100

Source: SPSS 25 Data Processing Results

**Table 5 t-Test Results**

Variables	B	Sig	Conclusion
(Constant)	0.032	0.809	
FT	1,314	0.007	H1 accepted
IM	-0.261	0.359	H2 rejected
CIA	0.215	0.129	H3 rejected
CID	0.048	0.518	H4 rejected
NOCP	-0.002	0.753	H5 rejected
PFN	0.224	0.458	H6 rejected

Source: SPSS 25 Data Processing Results

Furthermore, Table 3 reveals that 95.2% of companies in the energy, cyclical, and non-cyclical sectors did not change their KAP, whereas 4.8% did experience a change. Based on the results of table 4, it is explained that as many as 76.8% of companies in the energy, cyclical, and non-cyclical sectors did not experience a change in directors, while 23.2% experienced a change in directors.

The results of the t-test in this study are shown in the following table 5. The findings from the t-test presented in Table 5 indicate that the independent variable, financial target (FT), has a constant coefficient (B) of 1.314 and a significance value of 0.007, which is below the threshold of 0.05. Consequently, H<sub>1</sub> is accepted. This suggests that financial targets exert a positive effect on financial statement fraud. Therefore, this research aligns with agency theory, which posits that the divergence of interests between the agent and the principal can lead to fraudulent practices in financial reporting. The principal aims for high returns by imposing elevated financial targets on the agent, while the agent seeks bonuses for their efforts in meeting these targets (Hadi et al., 2021). When the agent

fails to achieve the principal's expectations, it creates pressure that may drive the agent to engage in financial statement fraud to secure the desired bonus (Hadi et al. 2021).

Based on the results of the t-test in table 5, the independent variable ineffective monitoring (IM) has a constant coefficient value (B) of -0.261 and the sig. value is 0.359 where the value is greater than 0.05 so that H<sub>2</sub> is rejected. This means that ineffective monitoring has no effect on financial statement fraud. When a company has good or bad control, it will not affect the occurrence of financial statement fraud practices.

The analysis from the t-test in table 5 reveals that the independent variable change in auditor (CIA) has a constant coefficient value (B) of 0.215, accompanied by a significance value of 0.129. Since this value is greater than 0.05, hypothesis H<sub>3</sub> is rejected, suggesting that changes in auditors do not have an impact on financial statement fraud. This indicates that whether an audit firm is changed voluntarily or in accordance with relevant regulations, it does not affect the occurrence of fraudulent financial reporting.



The t-test results in table 5 also show that the independent variable change in director (CID) has a constant coefficient value (B) of 0.048, with a significance value of 0.518. As this value exceeds 0.05, hypothesis H<sub>4</sub> is rejected as well. This means that changes in the board of directors do not influence financial statement fraud. Thus, when a company alters its board of directors due to conflicts of interest or for reorganization purposes, it does not affect the likelihood of financial statement fraud practices.

The t-test results in table 5 reveal that the independent variable, the number of CEO photos (NOCP), has a constant coefficient (B) of -0.002 and a significance level of 0.753. Since this value is greater than 0.05, we reject hypothesis H<sub>5</sub>. This implies that the number of CEO photos does not impact financial statement fraud. As a result, whether a company includes a CEO photo in its annual report or omits it does not affect the likelihood of financial statement fraud.

The findings from the t-test presented in Table 5 indicate that the independent variable, personal financial needs (PFN), has a constant coefficient (B) of 0.224, with a significance value of 0.458. Since this value exceeds the threshold of 0.05, the hypothesis H<sub>6</sub> is rejected. This suggests that personal financial needs do not impact financial statement fraud. Consequently, the extent of shares held by the company's insiders does not influence the occurrence of financial statement fraud.

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## CONCLUSION

The results of this study state that the independent variable financial target has a positive effect on financial statement fraud. While five independent variables, ineffective monitoring, change in director, change in auditor, number of CEO photos and personal financial need do not affect financial statement fraud.

In this research, there are still limitations in the research process, including:

1. The analysis reveals a low correlation coefficient and a determination coefficient of only 2.7%, indicating that the variations in the independent variables do not adequately account for the majority of the variations observed in the dependent variables.
2. This research period was only carried out for three periods, namely 2020 to 2022, so it is unable to describe the long-term influence.

Based on the limitations in this study, the following are recommendations from the researcher which are expected to help in further research on financial statement fraud:

1. Adding independent variables to research that are strongly suspected of having an influence on the dependent variable, such as financial stability, nature of industry, etc.
2. Increase the research period to 5 or 7 years to be able to describe the company's condition in accordance with the original and can represent the population

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