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# Financial Statement Fraud: The Predictive Relevance of Fraud Hexagon Theory

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## Financial Statement Fraud: The Predictive Relevance of Fraud Hexagon Theory

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### Abstract

The pandemic situation has suppressed various businesses in Indonesia and has provided opportunities for business actors to practice window dressing for presenting good company performance. The practice of window dressing is an example of financial statement fraud. Therefore, to anticipate this fraud, it is very important to examine the factors that cause companies to commit financial statement fraud. This study aims to analyze the fraud hexagon theory and its relationship with financial statement fraud. The research was conducted on state-owned companies listed on the Indonesia Stock Exchange (IDX) for the last 5 years (2016-2020). The method used to test the hypothesis is log-regression analysis. The results of the study prove that external pressure as a proxy for stimuli, CEO duality as a proxy for collusion, and nature of the industry as the proxied opportunity have predictive relevance to financial statement fraud. Even though from ten hypotheses only three hypotheses are proved, this result implied that when companies face a difficult situation and cannot achieve their financial target and they have the opportunity to change their financial records, it is very probable that they will conduct a financial statements fraud. Thus, the government needs to monitor and make policies to prevent this conduct for state-owned companies and other companies listed in IDX.

**Keywords:** Fraud hexagon theory, Pressure, Capability, Opportunity, Rationalization, Arrogance, Collusion, Financial statement fraud.

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## INTRODUCTION

Window dressing is done because the company is experiencing financial difficulties. Many of these financial difficulties occurred during the COVID-19 period. The COVID-19 pandemic virus was first reported in December 2019 and entered Indonesia around March 2020. The pandemic virus has caused many companies to experience financial difficulties (Wang et al., 2020). To survive in a pandemic situation, companies can do window dressing to beautify financial reports. Therefore, research to understand the causes of fraud in financial statements needs to be carried out to anticipate the occurrence of fraud. The window dressing phenomenon has become a public issue since the PT Asuransi Jiwasraya case (Sandi, 2020). Minister of State-Owned Enterprises (SOEs) Erick Thohir assessed that many state-owned companies dare to beautify their financial statements, known as window dressing, which are prohibited because they are categorized as fraud. Window dressing has two meanings, the first is a condition that occurs at the end of the year when stock prices rise. Second, the strategy used by issuers, companies, or investment managers to polish their financial statements or portfolios to attract the hearts of investors. The effort to make the company's financial statements look better than the existing reality makes window dressing often have a negative connotation because there is the potential to manipulate the numbers, data, and information presented in the financial statements .

In Indonesia, there have been many studies on financial statement fraud, especially on the fraud hexagon theory (Sari & Nugroho, 2020; Widharma & Susilowati, 2020; Riantika, 2021; Sagala & Siagian, 2021; Kusumosari & Solikhah, 2021; Mukaromah & Budiwitjaksono, 2021). Of the much research on fraud hexagon theory, to the author's knowledge, no one has used the CEO duality factor as a variable that affects financial statement fraud. In general, CEO duality is investigated in terms of firm value (Setyawan & Deviesa, 2017), corporate performance (Costa & Martins, 2019; Krause et al., 2014; Mubeen et al., 2021), corporate risk (Novianty & Setijaningsih, 2020), and board independence (Bansal & Thenmozhi, 2021). In this study, we add CEO duality as one of the elements of fraud hexagon theory that indicates collusion to make a financial statement fraud.

The Fraud Hexagon theory was first introduced by Vouisinas (2019) by explaining Donald's R. Cressey (1953) theory. Three conditions always cause fraud in financial statements. These conditions are pressure, opportunity, and rationalization called the fraud triangle theory (Cressey, 1953; Pradipta & Bernawati, 2019). This theory later became a fraud diamond by adding capability (Wolfe & Hermanson, 2004). Then this theory was developed into a fraud pentagon (Howarth, 2010) or also called SCORE by Vouisinas (Stimuli, Capability, Opportunity, Rationalization, Ego) with one new element, namely arrogance or ego. The latest fraud theory is the fraud hexagon theory, which develops SCORE into SCCORE by adding a sixth element, namely collusion. Collusion is added because it is one of the keys to the most detrimental fraud in large numbers (Vouisinas, 2019).

The first element of the fraud hexagon is stimulus. It exists because there is encouragement or pressure on **management to commit fraud in the financial statements**. This pressure occurs when company managers are asked to show the best performance in achieving the planned targets. One



Measurement of management performance is the effectiveness and efficiency of the company in generating profits by utilizing the assets it has. Return on Assets (ROA) is a measure used to show management performance in generating overall profits (Skousen et al., 2008).

ROA has a positive and significant effect on the occurrence of fraud in financial statements. That is, the higher the ROA target in a company, the higher the potential for fraud in the financial statements that are carried out due to the management's desire to achieve these targets. Because when the company is not able to achieve the ROA target, the management may manipulate the financial statements to achieve it (Rengganis et al., 2019).

This is in line with agency theory (Jensen & Meckling, 1976). The existence of a financial target can be one of the stimulus factors for fraud in financial statements. Fraud by managers is also part of the difference in interests between owners and management. Where the owner wants management to give high rewards for his ownership, while managers have an interest in getting high bonuses for their work by showing their best performance. This is following agency theory. So, the first hypothesis is:

**H1: Financial targets can detect financial statement fraud.**

The stability of financial conditions is one of the factors that make management perform fraudulent financial reporting (Vousinas, 2019). Financial stability is one of the benchmarks for the company's performance by looking at the stability of its growth from the financial side. One way to determine the level of financial stability of a company is to look at the value of its asset growth (Skousen et al., 2008). Therefore, when the value of asset growth in a company is below the average, this can encourage management to manipulate to show that its financial performance is still in a stable condition.

Financial stability as a proxy for total assets has a positive and significant effect on fraudulent financial reporting. That is, when financial stability is threatened, it will trigger fraud in financial statements. So, the higher the ratio of changes in a company's assets, the higher the potential for fraud (Bawakes et al., 2018; Sihombing & Rahardjo, 2014). This is following the fraud hexagon theory and agency theory. Financial stability is one indicator that stimulates fraud (Vousinas, 2019). In addition, the agency theory also explains that the owner expects to obtain a satisfactory return under any circumstances. Thus, the second hypothesis is:

**H2: Financial stability can detect financial statement fraud.**

External pressure comes from third parties outside the company. This pressure can be one of the triggers for fraud in financial statements. This is because third parties have high expectations of obtaining additional funds when the company can remain competitive in the market. External pressure can come from the company's inability to pay debts or meet debt requirements (Skousen et al., 2008). When a company has debt or wants to get support from funding sources, fraud by manipulating financial statements is considered a solution to convince creditors that the company can pay its obligations.

External pressure is proxied by the leverage ratio (LEV). When the company has a high leverage ratio, it means that the company has a large debt and great pressure. This is because the company has a higher risk of default (Skousen et al., 2008). External pressure has been shown to have a positive effect on fraud in financial statements (Sihombing & Rahardjo, 2014). That is, the higher the leverage ratio, the higher the potential for fraud committed by management. One of them is by increasing the value of equity to offset the number of liabilities. In the fraud hexagon theory, external pressure can be an indicator that stimulates fraud. In addition, from agency theory, external pressure can encourage management to commit fraud to obtain funding sources to support company activities. The third hypothesis is:

**H3: External pressure can detect financial statement fraud.**

The capability element can encourage someone to commit fraud in financial statements. With the competencies possessed, it is easier for perpetrators to take advantage of conditions as opportunities to commit fraud (Wolfe & Hermanson, 2004). The change of directors can be a trigger for fraud, due to the stress period. In addition, the change of directors is carried out by appointing new directors who are considered more competent.

The capability proxied by a change in directors has a negative effect on fraud in financial statements (Sasongko & Wijyantika, 2019). This is because the change of directors is done to improve performance. So that when there is no change of directors, the possibility of fraud in the financial statements increases. However, the results of this study will be different if the change of directors is carried out to cover up the fraud that has been committed by the previous directors (Sihombing & Rahardjo, 2014). This is under the fraud hexagon theory, where fraud can occur and is increasingly detrimental in large numbers if it is carried out by the right people so that they can take advantage of existing opportunities. In addition, based on agency theory, management will have more information than the owner, so the opportunity to take advantage of this to commit fraud will certainly be greater. The fourth hypothesis is:

**H4: Change in directors can detect financial statement fraud.**

The element of collusion is one of the activities that can indicate fraud. As an additional element in SCCORE, collusion is one of the central elements in a very complex fraud mode. In the fraud hexagon theory, collusion is closely related to organizational culture (Vousinas, 2017). Collusion involving many parties will cause great losses. This is also under the results of a survey conducted by ACFE Global that the greater the number of actors involved, the losses incurred tend to be much higher (ACFE, 2018).

The use of COSO's internal control system can detect opportunities for collusion. Taken together, these controls provide reasonable assurance that the organization is operating ethically, transparently, and according to established industry standards. By using this, the internal control in the company will emphasize more ethical governance, so that ethics and integrity that are the cause of collusion can be identified (Hartman & Desjardins, 2011). Internal control can be used to detect fraudulent behavior. One of them is the Committee of Sponsoring Organizations (COSO) internal control framework. The internal control system is the key to detecting fraud in financial

statements (Albrecht et al., 2016). One of the focuses of COSO's internal control is the control environment, one of which emphasizes integrity and ethics (Zhang, 2016; Zamzami, 2018). This is also in line with the relationship of opportunity and integrity with the risk of fraud stated (Marks & NACD, 2019).

In the fraud hexagon theory, collusion actors tend to have low integrity. In addition, according to agency theory when management has an interest in getting bonuses for their work, fraudulent acts may be pursued. Therefore, when the company does not implement the COSO internal control system, fraud with a collusion mode can occur. Commitment to implementing the COSO internal control system can be seen in the disclosures in the annual financial statements. The fifth hypothesis is:

**H5: The absence of the COSO Internal Control System can detect financial statement fraud.**

Fama & Jensen (1983) argue that CEO duality signifies a lack of separation of control in decision making and management of decisions. The board becomes an ineffective tool for limiting the discretion of top managers. As a body that oversees the performance of the board of directors, the Board of Commissioners should have independence from the board of directors. The stewardship theory states that to improve company performance, the independency of the role of the board of commissioners from the role of directors. The strategic vision of the board of directors can determine the company's goals with less interference from the board of commissioners (Budidjaja & Lestari, 2021).

Empirical research in corporate governance has also provided strong evidence that the separation between the role of the CEO and the board of commissioners is preferred because it can increase the effectiveness of monitoring the company's operations. Kamarudin et al. (2012) implied that when a CEO has excessive control over the decisions of the board of directors by holding the chair position, the independent audit committee monitoring function to ensure high-quality earnings in the financial statements becomes ineffective, this indicates that the monitoring of the CEO by an impartial or independent commissioner signifies stronger governance and internal control. Role duality has been shown to have a positive effect on earning management or decrease earning quality (Alves, 2021). Therefore, CEO duality can have a negative impact on the quality of internal control that in the end, it will affect the decision to commit FS fraud (Khlif et al., 2020).

**H6: The CEO duality can detect financial statement fraud.**

The opportunity element can be a driving force for fraud. Opportunities make it easier for perpetrators to carry out their actions. Opportunities can be seen from the supervisory unit of an organization. The existence of a supervisory unit is one of the determinants of fraud because the supervisory unit is the first unit that provides prevention of fraud. In a company, the board of commissioners is an accomplice of the shareholders to supervise the management directly. There are two types of boards of commissioners, namely delegated commissioners affiliated with the



shareholders or directors of the company, and independent commissioners who are not affiliated. When the company has fewer independent board members, the greater the chance for fraud to occur (Skousen et al., 2008).

Ineffective monitoring as a proxy opportunity was proven to detect fraud in financial statements (Rengganis et al., 2019; Yunia & Nawawi, 2019). This means that the small number of independent commissioners affects the supervisory system, which in turn will increase the chances of fraud in the financial statements. An ineffective monitoring system will encourage fraudulent acts on financial statements because the perpetrators feel that the existing internal controls and supervision are not so strict. This is under the fraud hexagon theory. When the monitoring system is weak, the opportunities for fraud to occur are even greater. Information asymmetry in agency theory is higher and more dangerous with weak supervision. The sixth hypothesis is:

**H7: Ineffective monitoring can detect financial statement fraud.**

The nature of the industry is an ideal reflection of a company in an industry. The economic and regulatory environment in which a company operates can be one of the openings for fraudulent practices in financial statements. This includes accounts receivable. The subjective assessment of bad debts opens up opportunities for management to use these accounts in manipulating financial statements (Skousen et al., 2008). The collection of receivables related to uncollectible accounts can be an opportunity for fraud.

The nature of the industry as a proxy for changes in receivable ratio has proven to affect fraud in financial statements (Sihombing & Rahardjo, 2014). The increase in the number of receivables from the previous year is an indication that the company's cash turnover is not good. The number of accounts receivable also indicates limited cash. Party transactions with changes in the ratio of trade receivables to sales showed negative results (Yunia & Nawawi, 2019). This means that companies that carry out transactions that contain detrimental conflicts of interest tend to manipulate, one of which is by minimizing receivables.

This is aligned with the fraud hexagon theory that the opportunity for fraud to occur is the presence of power and ability. When a person has both, the opportunity for fraud in financial statements will increase. The information gap due to different interests in agency theory is also getting higher. The seventh hypothesis is:

**H8: The nature of the industry can detect financial statement fraud.**

The element of rationalization can trigger fraudulent financial reporting. This is because the perpetrators of fraud feel that what they are doing is normal and right. With the change in auditor, it can affect the rationalization of fraud. Because when there is a change of auditors there will be a transition period, so management can rationalize fraud and make efforts to eliminate audit trails.

Companies that commit fraud tend to replace their independent auditors to eliminate audit trails found by previous auditors (Bawakes et al., 2018; Sasongko & Wijyantika, 2019). Change in Auditor has a significant effect on fraudulent financial reporting. This is because when there is a change of auditor there is an asymmetry of information between the auditor and the client.



This is aligned with the fraud hexagon theory that rationalization is carried out by fraud perpetrators as a form of justification for their actions. In agency theory, it is also explained that there are differences in interests between management and owners. When management as an agent feels that they have done a lot at work and have not gotten what they want, they will rationalize their actions. The change of auditor is one of the momentums that can be utilized by the actors. The eighth hypothesis is:

**H9: Change in auditor can detect financial statement fraud.**

The greater number of CEO photos or pictures displayed in a report can indicate a high level of arrogance and superiority within the company. A high level of arrogance can lead to fraud. This is because the CEO assumes that any kind of internal control will not apply to his auditors (Bawakes et al., 2018; Sasongko & Wijyantika, 2019). CEO who wants to show status and the position he has in a company shows that he doesn't want to lose that position.

The ego proxied by the frequent Number of CEO images affects fraudulent financial reporting (Bawakes et al., 2018). That is, with a high level of arrogance, arrogant directors feel they have superiority because of their status and position so that they can facilitate fraudulent actions. This is in accordance with the fraud hexagon theory. A fraud perpetrator tends to be selfish, wanting to get success at all costs, selfish, confident, and narcissistic. So that CEOs whose photos appear in annual reports tend to be narcissistic and arrogant. In addition, there is a possibility that in maintaining that position and position, the CEO will do whatever it takes. This is under agency theory, that agents tend to take advantage of positions for their interests. The ninth hypothesis is:

**H10: Frequent number of CEO's pictures can detect financial statement fraud.**

## RESEARCH METHOD

Researchers conducted research using a quantitative approach. Quantitative research often referred to as positivism research emphasizes testing certain populations or samples through measuring research variables and analyzing data with statistics (Gujarati, 2015). This study uses the fraud hexagon theory to detect fraud in financial statements. While the object of this study is fraud in the financial statements of SOEs listed on the Indonesia Stock Exchange for the 2016-2020 period.

The independent variables in this study are financial target (X1), financial stability (X2), and external pressure (X3) as a measure of stimulus (pressure). Then there is the change in auditor variable (X4) as a measure of the capability. COSO internal control system (X5) and CEO duality (X6) as a measure of collusion. Ineffective monitoring (X7) and nature of the industry (X8) as a measure of opportunity. Change in auditor (X9) as a measure of the rationalization. The frequent number of CEO's pictures (X10) is a measure of the ego (arrogance).

Fraud in financial statements is an act of presenting financial statements that are used to describe the company's financial performance in a certain period to deceive users of that information. This fraud can be in the form of intentional misstatements or omissions or disclosures in the financial statements. Financial statement fraud is measured using a dummy variable; 1 for positive FS fraud and 0 for negative FS fraud. The measurement of the F-Score model has two variable components, namely accrual quality and financial performance (Damayani et al., 2019).

$$FS\ Fraud = Accrual\ Quality + Financial\ Performance \dots\dots\dots (1)$$

Accrual quality is calculated using RSST Accrual. The calculation model is as follows (Dechow et al., 2011):

$$RSST\ Accrual = \frac{\Delta WC + \Delta NCO + \Delta FIN}{Average\ Total\ Assets} \dots\dots\dots (2)$$

Where:

$$WC = (Current\ Assets - Cash\ and\ Short\ Term\ Investment) - (Current\ Liabilites - Debt\ in\ Current\ Liabilities)$$

$$NCO = (Total\ Assets - Current\ Assets - Investment\ and\ Advances) - (Total\ Liabilities - Current\ Liabilites - Long\ Term\ Debt)$$

$$FIN = (Short\ term\ Investment + Long\ term\ Investment) - (Long\ term\ Debt + Debt\ in\ Current\ Liabilities + Preferred\ Stock)$$

$$Average\ Total\ Assets = \frac{(Beginning\ Total\ Assets + Ending\ Total\ Assets)}{2}$$

The company's financial performance, which can be seen from its financial statements, is considered capable of predicting the occurrence of fraud in the financial statements. Research Misstatements seem to be made to cover a slowdown in financial performance. Financial performance calculations can be done by adding changes in accounts receivable, inventory, cash sales, and changes in earnings. The formula is as follows (Damayani et al., 2019):

$$Financial\ Performance = Change\ in\ Receivable + Change\ in\ Inventories + Change\ in\ Cash\ sales + Change\ in\ Earning \dots\dots\dots (3)$$

Where:

$$Change\ in\ Receivable = \frac{\Delta\ Account\ Receivable}{Average\ Total\ Assets}$$

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

$$Change\ in\ Cash\ Sales = \left( \frac{\Delta\ Sales}{Sales\ (t)} \right) - \left( \frac{\Delta\ Receivables}{Receivables\ (t)} \right)$$

$$Change\ in\ Earnings = \left( \frac{Earnings\ (t)}{Average\ Total\ Assets\ (t)} \right) - \left( \frac{Earning\ (t-1)}{Average\ Total\ Assets\ (t-1)} \right)$$

The measurement for independent variables is in Table 1.

**Table 1. Independent Variables Measurement**

No.	Variables	Measurement	Scale	Description
1	ROA (X1)	$ROA = \frac{\text{Earnings after Interest and Tax}}{\text{Total Assets}}$ Return on Assets (Skousen et al., 2008)	Ratio	Financial Target (stimuli)
2	ACHANGE (X2)	$ACHANGE = \frac{\text{Total Assets } (t) - \text{Total Assets } (t - 1)}{\text{Total Assets } (t - 1)}$ Change in total assets (Skousen et al., 2008)	Ratio	Financial stability (pressure)
3	LEV (X3)	$LEV = \frac{\text{Total Debt}}{\text{Total Assets}}$ Leverage (Skousen et al., 2008)	Ratio	External Pressure (pressure)
4	DCHANGE (X4)	$DCHANGE = 1 = \text{change in director}$ Change or no change in Directors (Wolfe & Hermanson, 2004)	Dummy	Change in director (capability)
5	COSO (X5)	$COSO = 1 = \text{Internal Control in FS}$ Internal Control or no internal control in FS (Albrecht et al., 2016)	Dummy	Internal Control (collusion)
6	DUAL (X6)	$DUAL = 1 = \text{CEO as director and board member}$ (Alves, 2021)	Dummy	CEO Duality (collusion)
7	BDOOUT (X7)	$BDOOUT = \frac{\text{Independent Board of Directors}}{\text{Total Board of Directors}}$ Independent board of Directors (Skousen et al., 2008)	Ratio	Ineffective Monitoring (opportunity)
8	NR (X8)	$NR = \left( \frac{\text{Receivable } (t)}{\text{Sales } (t)} \right) - \left( \frac{\text{Receivable } (t-1)}{\text{Sales } (t-1)} \right)$ Change in Receivable (Skousen et al., 2008)	Ratio	Nature of Industry (opportunity)
9	AUDCHANGE (X9)	$AUDCHANGE = 1 = \text{Change in Auditor}$ Change or no change in Auditor (Skousen et al., 2008)	Dummy	Auditor Change (rationalization)
10	FCEO (X10)	$FCEO = \text{Frequent number of CEO Pictures}$ CEO pictures in annual reporting (Bawakes et al., 2018)	Ratio	Ego (arrogance)

This study uses a log-regression analysis data processing program using IBM SPSS (Statistical Package for the Social Sciences) statistics version 26 to test the proposed hypothesis. The relationship between variables in this study will be analyzed using Log-regression (SPSS 26 software).

The logit regression technique was used to assess the effect of the fraud hexagon variable on Financial Statement fraud. Logistic regression is used because the dependent variable is a binary categorical variable, and the independent variables can be metric or non-metric. In addition, log regression describes how the likelihood of an event varies with the predictor (Hosmer et al. 2013).

## RESULTS AND DISCUSSION

### Result

#### *Descriptive Statistic Analysis*

From table 2 the independent variable ROA, as the stimuli of fraud hexagon, has an average value of 0.030738 with a standard deviation of 0.0378. This figure shows that the company's average profit is 3%.

**Table 2. Descriptive Statistics**

	N	Min	Max	Mean	Std. Dev
ROA (X1)	80	-.056703	.164754	.03073800	.037852729
ACHANGE (X2)	80	.798596	2.026883	1.15013156	.196307594
LEV (X3)	80	.128293	.874152	.44856425	.243541807
DCHANGE (X4)	80	.00	1.00	.6000	.49299
COSO (X5)	80	.00	1.00	.3750	.48718
DUAL (X6)	80	.00	1.00	.1125	.31797
BDOOUT (X7)	80	.000000	.625000	.39845238	.115397643
NR (X8)	80	-1.596901	1.337030	.04705300	.362673951
AUDCHANGE (X9)	80	.00	1.00	.3750	.48718
FCEO (X10)	80	1.00	22.00	8.2500	3.94423
F-SCORE (Y)	80	.00	1.00	.04000	.20200

Source: Data Processed (2022)

Changes in total assets (ACHANGE) financial stability, as a proxy for pressure, has an average of 1.150 with a standard deviation of 0.196. This figure shows that there are about 11-12 of the total assets of state-owned companies experienced changes in assets from the previous year. External pressure proxied by Leverage (LEV) has an average value of 0.449 with a standard deviation of 0.244. This shows that the sampled SOEs have an average debt level of 44.9%. Ineffective monitoring proxied by comparison of the number of independent commissioners (BDOOUT) has an average of 0.398 with a standard deviation of 0.115. This figure shows that on average the sampled SOEs have a BDOOUT of 39.8%. The opportunity of fraud hexagon that is proxied by the nature of industry of receivable (NR) has an average of 0.047 with a standard deviation of 0.363. This figure shows that on average the SOEs have a receivable ratio of 4.7%. Arrogance (ego) which is proxied by the number of frequency CEO's pictures (FCEO) has an average of 8.250 with a standard deviation of 3.944. This figure shows that SOEs that display a photo of their CEO in their financial statements are eight photos.

#### *Model Fit*

The overall model test is carried out to prove whether the model fits the data. We compare the initial value (Block Number = 0) -2 Log-Likelihood (-2LL) against the final value (Block Number = 1) -2 Log-Likelihood (-2LL) (Gujarati, 2015). The next step is to reduce the initial value of -2LogL with a final value of -2LogL (see Table 3). All estimating variables, namely financial



stability, external pressure, change in director, internal control, CEO duality, ineffective monitoring, nature of the industry, auditor change, and ego, are included in the -2LL model. Based on the test results, it was found that the value of block 1 (L1) was  $81.725 < 102.298$  (L0), or the value of -2LL decreased by 56.899 (see Table 3).

**Table 3. Overall Model Fit Test**

Block number = 0	Block number = 1
-2 Likelihood	-2 Likelihood
102.298	81.725

Source: Data Processed (2022)

The decrease in the value of -2LL means that adding independent variables to the test model can improve model fit and show the regression model better. Therefore, the hypothetical model fits the data.

**Table 4. The Goodness of Fit Test**

		FSFRAUD = Fraud		FSFRAUD = No Fraud		Total
		Observed	Expected	Observed	Expected	
Step1	1	7	7.212	1	.788	8
	2	6	4.168	2	3.832	8
	3	3	3.622	5	4.378	8
	4	4	2.928	4	5.072	8
	5	1	2.404	7	5.596	8
	6	2	2.172	6	5.828	8
	7	0	1.690	8	6.310	8
	8	2	1.311	6	6.689	8
	9	1	.932	7	7.068	8
	10	1	.560	7	7.440	8
Chi-square						6.701 (.569)

Source: Data Processed (2022)

*The goodness of Fit Model Test Results*

We use the Hosmer and Lemeshow test by looking at the Chi-Square value to test the goodness of fit. The level of significance is at ( $\alpha$ ) of 5 percent. Based on the Hosmer and Lemeshow test results, the Chi-Square value is 6.701 with a significant probability of 0,569 (see Table 4). This significance value exceeds the level value of = 5% (0.05), so the goodness of fit is accepted. This means that the model can predict the value of the observations. Therefore, the regression model is feasible to implement.

Based on table 4, shows that the Chi-Square value is 6.701. This means that the observed value generated and estimated parameter in the structural model is 6.701. This value is more than zero, so it can be concluded that the model has a good predictive relevance.

#### Classification Matrix

The classification matrix is used to explain the predictive power of the regression model on the probability of financial statement fraud. The classification matrix table informs the prediction that SOEs have a positive financial statement fraud are 27, while the SOEs that have a negative financial statement fraud is 53. This means the accuracy of the estimation model is 77.5% (see Table 5).

**Table 5. Classification Matrix**

Observed	Predicted		Correct (%)
	Fraud	No-Fraud	
Fraud	12	15	44.4
No-Fraud	3	50	94.3
Overall			77.5

Source: Data Processed (2022)

**Table 6. Nagelkerke R Square and Hypotheses Testing**

	Description	Coefficient	Wald	p-value	Results
H1	Financial Target (X1) – Stimuli	11.374	1.953	.162	H1 rejected
H2	Financial Stability (X2) – Stimuli	1.246	.378	.539	H2 rejected
H3	External Pressure (X3) – Stimuli	3.574	4.342	<b>.037</b>	<b>H3 accepted</b>
H4	Change in Directors (X4) – Capability	.039	.002	.965	H4 rejected
H5	Internal Control COSO (X5) – Collusion	.537	.238	.626	H5 rejected
H6	CEO Duality (X6) – Collusion	-3.741	5.010	<b>.025</b>	<b>H6 accepted</b>
H7	Ineffective monitoring (X6) - an opportunity	-2.130	.439	.507	H7 rejected
H8	Structure of Industry (X7) - opportunity	-2.207	5.468	<b>.019</b>	<b>H8 accepted</b>
H9	Change in Auditor (X8) – rationalization	.231	.133	.716	H9 rejected
H10	Frequent Number of CEO's Picture (X9) – Ego	.056	.425	.514	H10 rejected
Constanta		-2.011	.438	.508	

**Nagelkerke R Square**

**0.314**

a. Variable(s) entered in step 1: ROA, **ACHANGE, LEV, DCHANGE**, COSO, DUALITY, BDOUT, NR, AUDCHANGE, FCEO.

Source: Data Processed (2022)

### *Determination Coefficient Test (Nagelkerke R Square) and Hypotheses Testing*

The coefficient of determination (Nagelkerke R Square value) is used to show the degree of ability of the independent variables in explaining the estimated variable. The value of the coefficient of determination test (Nagelkerke R Square) is 0.314. This means that the ability of the variability of the independent variables in explaining the dependent variable is 31.4%, and 68.6% is another explanatory variable that is not tested in this model. The hypothesis testing was carried out using a 5% alpha significance level. The hypothesis is accepted if the P-value < 0.05 (see Table 6). Table 6 shows that not all ten hypotheses are accepted, only hypotheses H3, H6, and H8 are accepted with a p-value < 0,05.

### **Discussion**

#### *Predictive Relevance of Financial Target (X1) on Financial Statements Fraud (Y)*

The results of testing the first hypothesis prove that the financial target variable measured using ROA has no significant effect on the possibility of fraud in the financial statements with a significance level of 0.162 with a positive relationship direction. This study shows that the high size of ROA determined by the company can't trigger management to commit fraudulent actions in financial statements. The result of the study rejects the hypothesis that the financial target proxied using ROA can detect fraud in the financial statements. This is because ROA is one measure of the level of profit earned by the company for the business it expends. Therefore, ROA shows the company's opportunities to grow and develop. The higher the ROA means the company has the ability to increase its growth.

Based on the fraud hexagon theory, the existence of this target then stimulates management to commit fraud in the financial statements, to show that the company has achieved the specified profit target. Viewed from agency theory, this is also a result of there being a difference of interest between the agent and the principal. The principal always wants high business growth by setting targets, while the agent expects compensation for his work. The results of this study support research conducted by Damayani et al. (2019), Sasongko & Wijyantika (2019), and Mukaromah & Budiwitjaksono (2021). Achieving profit targets also means increasing the confidence of investors and potential investors to invest so that when the company cannot achieve the target, it will encourage management to manipulate financial statements. So that ROA can be used to detect the possibility of fraud in the financial statements. However, it does not support the research conducted by Rengganis et al. (2019).

#### *Predictive Relevance of Financial Stability (X2) on Financial Statements Fraud (Y)*

The results of testing the second hypothesis prove that the financial stability variable measured using ACHANGE has no significant effect on the possibility of fraud in the financial statements with a significance level of 0.539. This means that financial stability cannot be used to detect the possibility of fraud in financial statements. This is because these changes depend on the company's expertise in managing its assets. This study rejects the hypothesis that financial stability proxied

using ACHANGE can detect fraud in financial statements. High or low percentage growth in total assets does not indicate that the company is committing fraud in the financial statements. Any changes in company assets can occur not because of the existence of fraud in the financial statements but as the result of a strategy carried out by management to manage its assets.

Based on the fraud hexagon theory, the stimulus that encourages fraud in financial statements tends to occur when companies face a crisis. This shows that changes in total assets are not caused by the crisis, so it does not show the effect of financial stability. Asset changes are carried out by management in the context of business strategy. Management will try to optimize the assets owned. Adding or reducing assets is proportional to efforts to encourage the achievement of company goals. The results of this study support research conducted by (Damayani et al., 2019; Rengganis et al., 2019) that companies do not commit fraud by utilizing the ACHANGE value. This is also due to the stable condition of the company and the attention of users of financial statements. However, this study does not support the research conducted by Bawakes et al. (2018) and Sihombing & Rahardjo (2014).

#### <sup>1</sup> Predictive Relevance of External Pressure (X3) on Financial Statements Fraud (Y)

The results of testing the third hypothesis prove that the external pressure variable measured using LEV has a significant effect on the possibility of fraud in the financial statements with a significance level of 0.037. This means that external pressure can be used to detect the possibility of fraud in financial statements. Because most companies finance assets using debt. The result of this study rejects the hypothesis that external pressure proxied by LEV can detect fraud in financial statements. The company is considered capable of paying its obligations. This is supported by the average leverage value in table 2, which is 0.4486. This value indicates that the total assets owned by the company are greater than the total debt. In addition, creditors use the amount of leverage as the main consideration in providing loans.

Based on the fraud hexagon theory, the stimulus that encourages fraud in financial statements is when companies face financial pressure. This study shows that pressure from third parties, namely creditors, does not become a stimulus for management to commit fraud to obtain loans. This is because management does not feel burdened by debt. After all, the company does not finance most of its asset from debt. In addition, the company is also considered capable of paying its obligations. The results of this study support research conducted by Sihombing & Rahardjo (2014), that external pressure affects fraud in financial statements. This is because changes that occur in LEV have no effect on management decisions on the amount of income to be reported. The results of this study do not support the research conducted by Bawakes et al. (2018), Sasongko & Wijayantika (2019), and Damayani et al. (2019).

#### <sup>1</sup> Predictive Relevance of Capability (X4) on Financial Statements Fraud <sup>12</sup>

The results of testing the fourth hypothesis prove that the change in directors, as a proxy of capability, measured using the dummy variable has no significant effect on the possibility of fraud in the financial statements with a significance level of 0.965. This means that change in directors cannot be used to detect the possibility of fraud in the financial statements. This is because the



change of directors is carried out to comply with regulations and improve company performance. This study rejects the hypothesis that change in directors can detect fraud in financial statements. Because there is a possibility that the change of directors may be due to the expiration of the term of office, the acquisition of another position so that they have to resign, and other reasons. The rules regarding the term of office of directors are contained in the Financial Services Authority Regulation Number 33/POJK.04/2014 concerning the directors and boards of commissioners of issuers or public companies. Among other things, article 3 paragraph (3) explains that one term of office for members of the board of directors is a maximum of five years or until the closing of the Annual General Meeting of Shareholders (GMS) at the end of the intended term of office (OJK, 2014).

Based on the fraud hexagon theory, without someone who has the right abilities, fraud will not occur. This study shows that the ability of the board of directors is not used to commit fraud in the financial statements. The change of directors also does not cause a period of stress, because the changes are carried out to improve the performance of the previous directors. The new Directors are expected to be able to contribute to the company and meet the expectations of shareholders. This is influenced by the integrity and internal control of a company (Priantara, 2013). The results of this study support research conducted by Damayani et al. (2019), Rengganis et al. (2019), and Sihombing & Rahardjo (2014) that the change in the director's variable does not affect fraud in financial statements. This is because the change of directors is something that is crucial and is directly related to efforts to achieve organizational goals effectively and efficiently. The results of this study do not support research (Sasongko & Wijyantika, 2019).

#### *Predictive Relevance of COSO Internal Control (X5) on Financial Statements Fraud (Y)*

The results of testing the fifth hypothesis prove that the COSO internal control system, as a proxy of collusion, measured using a dummy variable has no significant effect on fraud in financial statements with a significance level of 0.626. This is because the absence of mention of the use of the COSO internal control system does not necessarily indicate that the company is accruing fraud in financial statements involving collusion. This study shows that the company still pays attention to internal control that causes collusion by using an internal control system that is set based on company regulations and decisions. Internal control is the key to detecting fraud in financial statements (ACFE, 2018; Albrecht et al., 2016), so the company also uses internal control supports such as the implementation of good corporate governance, whistleblowing system, and others based on the policies of each company to prevent collusion.

Based on the fraud hexagon theory, collusion is closely related to organizational culture. This study shows that not mentioning the use of the COSO internal control system does not necessarily indicate that the company is not trying to control the occurrence of collusion. The company may consider the COSO internal control system mandatory. This is also supported by research data, where it is not always the company that does not mention the use of the COSO internal control system will always not mention it, either in the previous period or after. This study

rejects the hypothesis that the COSO internal control system can detect fraud in financial statements. This can be caused by the lack of a precise proxy to measure the collusion element. Previous research using these variables and proxies has never been done because the element of collusion has just been added to the fraud hexagon theory (Vousinas, 2019).

#### *Predictive Relevance of CEO Duality (X6) on Financial Statements Fraud (Y)*

The results of testing the third hypothesis prove that the external pressure variable measured using LEV has a significant effect on the possibility of fraud in the financial statements with a significance level of 0.025. This means that external pressure can be used to detect the possibility of fraud in financial statements. CEO duality is bad for the company because of dual functions that can weaken internal control. Judging from the perception of Agency Theory, CEO duality can hinder the board of directors in managing management and the board of commissioners in assessing and overseeing the performance of the board of directors (Coles et al., 2001).

In addition, management will not regardless of the element of conflict of interest it can influence the taking decisions for personal gain. This situation creates high agency costs resulting in less board work effectively. Lack of independence impacts performance reduction of the company as a whole (Fama & Jensen, 1983). The monitoring function of the board commissioners is also less effective because the concerned must supervise the board of directors which includes himself. Such supervision may arise a conflict of interest and operational risk higher level of business. While Khelif et al. (2020) show that better control improves corporate reporting policies. In addition, CEO duality moderates the relationship between internal control quality and voluntary disclosure. A company in which there is a duality role turns out to have a positive effect on earnings management which is an indication of the financial statement fraud practices.

#### *Predictive Relevance of Ineffective Monitoring (X7) on Financial Statements Fraud (Y)*

The results of testing the sixth hypothesis prove that the ineffective monitoring variable measured using BDOUT has no significant effect on the possibility of fraud in the financial statements with a significance level of 0.507. This study shows that the existence of an independent board of commissioners does not provide a full guarantee that the company's supervision will be more independent and objective and away from the intervention of certain parties. This study rejects the hypothesis that ineffective monitoring proxied using BDOUT can detect fraud on the financial statements. This is because the number of independent commissioners does not indicate the quality of their role. Independent commissioners can also be careless in carrying out their functions if they have several other jobs. In addition, the ability and understanding of the industry can also influence

Based on the fraud hexagon theory, the existence of opportunity is one of the keys to fraud in financial statements. This study shows that the existence of an independent board of commissioners does not contribute to the effectiveness of existing supervision within the company, which will affect the chances of fraud in the financial statements. Because the existence of the board of commissioners will not have a significant effect if the existence is not running as effectively as its function. The results of this study support research conducted by Damayani et al.

(2019); Mukaromah & Budiwitjaksono (2021), and Bawakes et al. (2018) that ineffective monitoring does not affect fraud in financial statements. This is also because the appointment of an independent board of commissioners has not been a concern and is only limited to complying with regulations from the IDX (OJK, 2017). The results of this study do not support the research conducted by Yunia & Nawawi (2019) and Rengganis et al. (2019).

#### *Predictive Relevance of Nature of Industry (X8) on Financial Statements Fraud (Y)*

The results of testing the seventh hypothesis prove that the nature of the industry variable measured using NR has a significant effect on the possibility of fraud in financial statements with a significance level of <0.001. However, the coefficient value in the study shows the results of the negative is -2.207. That is, the nature of the industry has a significant negative effect on fraud in financial statements. This study accepts the hypothesis that the nature of the industry can detect fraud in financial statements. As the ideal state of a company, the nature of the industry is often a concern. This is because the company will be categorized as good if it can reduce the number of receivables and increase the company's cash. This study shows that the more receivables, the company will reduce the amount of cash that can be used for operational activities. Limited cash then encourages fraudulent acts in financial statements, by manipulating the number of receivables at maturity or eliminating receivables with long collection periods. Therefore, the lower the NR value can increase the F-Score value and vice versa.

Based on the fraud hexagon theory, opportunities will be supported by two things, namely the position and authority of the perpetrators in the organization. This study shows that fraud perpetrators who have authority over receivables will manipulate in order to show that the company has a good nature of industry receivables. In terms of agency theory, this happens because there are differences in interests between the agent and the principal. This encourages agents to commit fraud for the sake of cash flow and company operations. The results of this study support research conducted by Damayani et al. (2019) and Yunia & Nawawi (2019) that transactions with adverse special parties involving accounts receivable tend to lead to fraud in financial statements. In addition, research from Tombing & Rahardjo (2014), was also stated to be influential but in a positive direction. The results of this study do not support the research conducted by Sasongko & Wijayantika (2019) and Mukaromah & Budiwitjaksono (2021).

#### *Predictive Relevance of Rationalization (X9) on Financial Statements Fraud (Y)*

The results of testing the eighth hypothesis prove that the change in the auditor variable measured by the dummy variable does not affect the occurrence of fraud in the financial statements with a significance level of 0.408. This study shows that companies that change auditors are not due to reducing fraud detection in financial statements by the old auditors. But more on the company's desire to comply with regulations. This study rejects the hypothesis that change in auditors can detect fraud in financial statements. Because there is Financial Services Authority Regulation Number 13/POJK.03/2017 concerning the Use of Public Accountant Services and Public



Accounting Firms in financial service activities, article 16 paragraph (1) that there is a limitation on the use of audit services, namely one public accountant can only audit for a maximum of three consecutive reporting financial years (OJK, 2017). With this regulation, the change of public accountants cannot be associated with rationalization actions against fraud in financial statements.

Based on the fraud hexagon theory, fraud perpetrators tend to rationalize their actions. This study shows that the change in public auditor is not done to rationalize or eliminate evidence of the possibility of fraud in the financial statements. However, companies must comply with existing regulations. The results of this study support research conducted by Damayani et al. (2019) and Sihombing & Rahardjo (2014) that the change in auditor does not detect the possibility of fraud in the financial statements. This is also due to the company being dissatisfied with the previous independent auditor's performance. The results of this study do not support the research conducted by (Mukaromah & Budiwitjaksono, 2021).

#### *Predictive Relevance of Ego (X10) on Financial Statements Fraud (Y)*

The results of testing the ninth hypothesis prove that the frequent number of CEO's pictures, as the proxy of Ego, does not affect the possibility of fraud in the fraud report in the financial statements with a significance level of 0.053. That is, the CEO's photo contained in the annual report is not meant to show his arrogance. But only shows the good image of the company. This study rejects the hypothesis that the frequent number of CEO pictures can detect fraud in financial statements. There is a possibility that companies that have a frequent number of CEOs pictured below the average are CEOs who have just served in the middle of the financial reporting period. In addition, these photos are included in the financial statements when the CEO receives an award or attends an event. That is, the CEO's photo is deliberately displayed to show a good image and increase public trust.

Based on the fraud hexagon theory, fraud perpetrators tend to be selfish, wanting to get success at all costs, selfish, confident, and narcissistic. This research shows that many of the small numbers of CEO photos displayed in a report cannot indicate the level of arrogance of the CEO in maintaining his position and position in the company. This is due to the appointment or dismissal of the CEO based on the GMS procedure. The results of this study support research conducted by Damayani et al. (2019) and Sasongko & Wijyantika (2019) that the frequent number of CEO pictures has no effect on fraud in financial statements. However, the results of this study do not support the research conducted by Bawakes et al. (2018).

## CONCLUSIONS

Based on the results of the analysis and discussion that have been formulated and tested, three variables can detect fraud in financial statements, namely external pressure, CEO duality, and nature of the industry. External Pressure proxied by leverage can detect fraud in financial statements. This means that the amount of leverage can stimulate fraud in financial statements. This is because leverage shows management performance and the company's high ambition in



increasing its growth. Supported by Agency Theory, CEO duality can prevent the board of directors from managing the company from duties and responsibilities including assessing and overseeing management performance companies. This situation will create agency costs that result in less board work effective and reduce company performance overall. this can encourage management to commit FS fraud. The nature of the industry a the proxied of opportunity can detect fraud in financial statements. This means that the number of receivables owned by the company can be an opportunity for fraud in the financial statements. This is because receivables are accounts that are prone to fraud. This result implied that when companies face a difficult situation and cannot achieve their financial target and they have the opportunity to change their financial records, it is very probable that they will conduct a financial statements fraud. Thus, the government needs to monitor and make policies to prevent this conduct for companies listed in IDX.

On the other hand, seven hypotheses are not proved. Financial stability as proxied by assets change, external pressure proxied by leverage, capability as proxied by t<sup>24</sup> change in director, collusion as proxied by the COSO Internal Control System, opportunity as proxied by in<sup>20</sup> effective monitoring, rationalization as proxied by a change in auditor, and Ego as proxied by a frequent number of CEO's picture, cannot detect fraud in financial statements.

Financial stability in assets change does not stimulate fraud in the financial statements. This is because changes in assets are only related to the company's policy in managing its assets. High return does not stimulate fraud in financial statements, since the company is able to pay its obligations and does not finance asse<sup>1</sup> with debt. When there is a change of directors, there is minimal possibility of using its ability to commit fraud in the financial statements. This is because the changes were made to comply with the regulations and the results of the GMS. Most the company that is not mentioning COSO's internal control does not prove that the company ignores control over possible collusion in the financial statements. The company uses an internal control system that is set based on company regulations and decisions. A large number of independent commissioners does not guarantee to close the opportunities for fraud in the financial statements. This is because independent commissioners can be careless and do not necessarily have an understanding of the industry. The change in public accountants is not done to rationalize fraud in<sup>21</sup> financial statements so the change of public accountants is done to comply with regulations. The number of CEO pictures displayed in the annual report does not show ego or arrogance, because the appearance of the CEO's picture is related to the company's image in the public eye.

Of ten hypotheses that were tested in this study, only three are proved to be accepted. For future studies, it is suggested to make a comparative study between companies that have been proven to commit fraud in financial statements and those that do not, so that the research results are expected to be more valid. Since the fraud hexagon theory can only partially be proved to predict financial statements fraud, it is necessary to add other variables that can predict fraud. Future research may use qualitative methods or a combination of quantitative and qualitative

methods because several elements in the fraud hexagon theory are difficult to measure using quantitative methods.

### **Abbreviations**

CEO: Chief Executive Officer, OJK: Otoritas Jasa Keuangan (Financial Service Authority), GMS: General Meeting of Shareholders, IDX: Indonesia Stock Exchange, ROA: Return on Assets, COSO: Committee of Sponsoring Organizations.

### **Authors' Contribution**

MAS conceptualized and drafted the manuscript. AHK data curation analyzed and interpreted the data. AI performed a statistical analysis of the data and interpretation in the manuscript. PAC created, proofread, and reviewed the final manuscript.

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### **Conflicts Of Interest**

The authors declare no competing interests.

### **Availability Of Data And Materials**

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