



PENTAGON FRAUD ANALYSIS IN DETECTING FRAUDULENT FINANCIAL REPORTING USING F-SCORE MODEL

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ABSTRACT

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This study aims to examine the effect of pentagon fraud on fraudulent financial reporting. The sample used in this study was 144 annual reports on 40 banking companies that were reported on the Indonesia Stock Exchange (IDX) for the period 2015 - 2018. The data analysis method of this study used the method of multiple linear regression analysis. The results showed that the Pressure factor with the Financial Stability category and the Opportunity factor with the Effective Monitoring category had a significant effect on fraudulent financial reporting. Meanwhile, the Pressure factor in the Financial Target and External Pressure categories, Opportunity factor in the Nature of Industry category, Rationalization factor in the Change in Auditor category, Competence factor in the Change In Director category,

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INTRODUCTION

Financial reports are the main product in accounting because they provide the information needed by users of financial statements as management responsibility for company performance and to assess the company's future earning power. Therefore, financial reports must be presented accurately and relevant, so that the information in the financial statements can be used for decision making by interested parties. However, the encouragement and motivation of company management to present financial reports to make them look good by various parties resulted in managers manipulating financial information inappropriately and detrimental to users of financial statements.

Based on the research results of the Association of Certified Fraud Examiners (ACFE) Global, it shows that every year an average of 5% of the organization's income becomes a victim of fraud. According to ACFE in 2016, the total losses caused by fraud reached USD 6.3 billion with an average loss per case of more than USD 2.7 million. The most common fraud that occurs is misuse of assets, followed by fraud in the form of corruption. Furthermore, the case that occurred at least was fraudulent financial statements, which amounted to less than 10% of all fraud cases. However, the impact of the losses incurred is very large compared to other

types of fraud. because the information contained in the financial statements is invalid and misleading users of financial statements in making decisions.

Based on a survey conducted by the Association of Certified Fraud Examiners ACFE in 2014, it shows the fact that the banking sector is the sector that has the most cases of fraud compared to other sectors. The phenomena of fraud cases in banking companies that occurred in Indonesia, including the Century Bank case that occurred in 2008 which was caused by a failed clearing on 19 November 2008 and resulted in the suspension of trading by the IDX. The next case, in 2012, there was a breach of premium customers at Citibank that involved Malinda Dee, then another case occurred in 2018 Bank Bukopin allegedly manipulated credit card data by revising financial statements for the last three years (2015, 2016, 2017).

The fraud risk factor assessment refers to the fraud risk factor theory developed by (Cressey, 1953), namely pressure, opportunity, and rationalization, which is often referred to as the Fraud Triangle. According to (Wolfe, et al., 2004), the fraud triangle can be increased to detect and prevent fraud by considering the capability factor and is known as Fraud Diamond. The development of the latest fraud model was discovered by Jonathan Marks (2011), which is called The Crowe's

Fraud Pentagon adding competence and arrogance factors. The competence factor has a similar meaning to the capability previously described in the fraud diamond theory by Wolfe and Hermanson.

This study refers to research (Kurnia, et al., 2017) which is intended to analyze and find empirical evidence regarding the influence of fraud risk factors according to the fraud pentagon, namely pressure, opportunity, rationalization, competence, and arrogance on fraudulent financial reporting. The difference in this study is that the independent variable for arrogance factors with the category of political relations at the CEO is replaced by the dual category of positions at the CEO and the research focus on banking companies in the 2015-2018 period Based on previous research that there are still many problems related to factors that indicate fraudulent financial reporting practices, further studies are needed to analyze the factors that have the potential to lead to fraudulent financial reporting practices.

LITERATURE REVIEW

Agency Theory (Jensen, et al., 1976) defines an agency relationship as a contract between two parties that contains the delegation of work and authority by the first party (principal / leader) to the second party (agent / subordinate) so that the

parties the second is willing to do the work for the benefit of the first party. The interests of the first party as shareholders and stakeholders are generally in conflict with the second party, because the first party as the user of information obtains asymmetric information from the second party as the information provider which creates uncertainty (Deegan, 2007). This causes agents who are directly related to business transactions to tend to perform disfunctional behavior.



Picture1

Crowe's Fraud Pentagon Theory

The fraud pentagon theory is an extension of the fraud triangle theory previously put forward by Cressey, which concluded that the factors that trigger fraud are pressure, opportunity, and rationalization. This theory adds two other fraud factors, namely competence and arrogance, thus forming a new theory called Crowe's Fraud Pentagon Theory. Competence / capability is the ability of employees to ignore internal controls, develop concealment strategies, and control social situations for their personal gain

(Crowe Horwarth, 2012). According to Crowe, arrogance is an attitude of superiority over rights and feels that internal controls or company policies do not apply to him. Individuals who have good personal integrity and are not under heavy situational pressure and limited opportunities and competence to commit fraud will tend to be honest. On the other hand, if an individual has low integrity and is under heavy situational pressure, as well as the opportunity and competence to commit fraud, that individual is likely to commit fraud.

(Kurnia & Anis, 2017) conducted research to test the factors of the fraud pentagon against fraudulent financial reporting with a sample of 271 manufacturing companies. The results showed that the variables financial stability, nature of industry and political connection had a significant effect on fraudulent financial reporting, while other variables were contradictory. with the proposed hypothesis, which means that these variables have no effect on fraudulent financial reporting.

Hypothesis Development

Companies that experience growth below the industry average will encourage management to manipulate financial reports to improve company performance. The higher the total assets owned by the company, the greater the wealth it has. This

shows that asset growth has a positive and significant effect on the tendency for financial statement fraud to occur (Skousen, Wright, & Kevin, 2009). Based on the description above, the proposed hypothesis is:

H1: Financial Stability has a positive effect on Fraudulent Financial Reporting

The risk is caused by excessive pressure on management to achieve the financial targets set by the directors to attract investors, but is limited by the inability to cause someone to commit fraud (Puspitadewi & Sormin, 2017). Based on the description above, the proposed hypothesis is:

H2: Financial Target has a positive effect on Fraudulent Financial Reporting

High credit risk raises concerns that companies are unable to repay loans. Therefore, companies try to save themselves by manipulating so that they are considered capable of repaying their debts (Skousen, Wright, & Kevin, 2009). Based on the description above, the proposed hypothesis is:

H3: External Pressure has a positive effect on Fraudulent Financial Reporting

The high accounts receivable in sales indicates that accounts receivable are assets that have a higher risk of manipulation, making them prone to fraud in financial reports through accounts receivable (Dalnial, 2014). Based on the

description above, the proposed hypothesis is:

H4: Nature of Industry has a positive effect on Fraudulent Financial Reporting

Companies that commit fraud tend to have fewer boards of commissioners. Therefore, the smaller the ratio of the board of commissioners, the less effective the supervision will be in monitoring company performance, so the higher the tendency for fraud to occur in financial reports (Skousen, Wright, & Kevin, 2009). Based on this description, the following research hypothesis is proposed:

H5: Ineffective Monitoring has a positive effect on Fraudulent Financial Reporting

The relationship between management and auditors is management's rationalization so that the change in auditors in the company is an indication of fraud. Audit failure to detect fraudulent financial statements increased shortly after the change of auditors (Skousen, Wright, & Kevin, 2009). Based on this description, the following research hypothesis is proposed:

H6: Change in Auditor has a positive effect on Fraudulent Financial Reporting

A person's position in the organization can provide an opportunity to commit fraud. Changes in the board of directors are generally related to political content and the interests of certain parties because there are too big targets given by

the company or there is a large compensation bonus agreement that triggers a conflict of interest (Wolfe & Hermanson, 2004). Based on this description, the following research hypothesis is proposed:

H7: Change In Director has a positive effect on Fraudulent Financial Reporting

The number of photos the CEO has on display in a company's annual report can represent the level of arrogance the CEO has. A high level of arrogance can lead to an indication of fraud because it makes the CEO feel that any internal control will not apply to him because of his status and position, so there is a possibility that the CEO will take any means to maintain his current position and position (Crowe Horwarth , 2012). Based on this description, the following research hypothesis is proposed:

H8: Frequent Number of CEO's Picture has a positive effect on Fraudulent Financial Reporting

A CEO who has domination of power and reduces the independence of the board of directors. Multiple positions can lead to arrogance because they feel they have more than one position, thus encouraging someone to take actions that can lead to cheating. Multiple positions can also result in work being disrupted due to busyness and lack of focus on being an

effective observer (Simon, AH, & Mohamed, 2015). Based on this description, the following research hypothesis is proposed:

H9: Duality of CEO has a positive effect on Fraudulent Financial Reporting

RESEARCH METHODS

Types of research

This study uses quantitative methods to analyze the relationship between the independent variables that are factors in the fraud pentagon and fraudulent financial reporting. The consideration of using quantitative methods in this research is because this study uses numbers as indicators of research variables to answer the problems to be studied.

Data and Samples

The data used in this research is in the form of company annual report data obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id) and annual reports from the company's official website for the period 2015-2018.

The research objects used as samples in this study are companies in the banking sector that are listed consecutively on the Indonesia Stock Exchange during the 2015 - 2018 period. These banking companies have published annual financial reports on the IDX website or the official website of the company and disclosed

related data. with research variables and available in full.

The sample selection method uses purposive sampling method, namely the selection of samples based on research objectives with special considerations. In this study, the total population was 57 companies with an observation period of 4 years with a total of 228 annual reports. However, those who met the criteria for use as a sample were 40 companies with 160 annual reports.

Operational Definition of Variables

Financial Stability (Pressure)

Financial stability (X1) is a condition that describes the company's financial condition in stable condition. If the company's financial condition is in an unstable condition, then the risk of financial statement fraud will decrease. Financial stability is proxied by change in total assets for the two years priors (ACHANGE) (Skousen, et al., 2009)

$$ACHANGE = \frac{Total\ Aset_t - Total\ Aset_{t-1}}{Total\ Aset_{t-1}}$$

Financial Target (Pressure)

Financial target (X4) is the risk of excessive pressure on management to achieve the financial targets set by the board of directors or management, including the goal of receiving incentives from sales or profits. Financial targets are

proxied by Return on Assets (ROA) (Skousen, et al., 2009)

$$ROA = \frac{Laba\ setelah\ pajak_{t-1}}{Total\ Aset_{t-1}}$$

External Pressure (Pressure)

External pressure(X3) represents excessive pressure on management to meet the requirements or expectations of third parties. External pressure is proxied by the leverage ratio (LEV).

$$LEV = \frac{Total\ Kewajiban}{Total\ Aset}$$

Nature of Industry (Opportunity)

Nature of industry(X4) is the ideal state of a company. According to Sweeney and Summer in Skousen, et. al, (2009) valuation of estimates on obsolete inventory and bad debts allows management to manipulate. Nature of industry proxied RECEIVABLE (Skousen, et al., 2009)

$$RECEIVABLE = \frac{Piutang_t}{Penjualan_t} - \frac{Piutang_{t-1}}{Penjualan_{t-1}}$$

Ineffective Monitoring (Opportunity)

Ineffective monitoring (X5) is a condition that describes the weakness or absence of effective supervision in monitoring company performance. Ineffective monitoring is proxied by BDOU with the ratio of commissioners from outside the company to all members of the board of commissioners.

$$BDOU = \frac{Total\ komisaris\ independen}{Total\ dewan\ komisaris}$$

Change in Auditor (Rationalization)

Change in Auditor (X6) is management's rationalization, so that the change of auditors in the company is an indication of fraud. Rationalization is proxied by change in auditor (CPA) which is measured by using dummy variables. If the company changes auditors, it is assigned number 1 and if the company does not change its auditors during the research period, it will be coded 0.

Change in Director (Competence)

Change in Director (X7) is the capacity and how much power of a person to commit fraud within the company environment. Competence is proxied by the change of company directors (DCHANGE) which is measured by a dummy variable. If there is a change in the company's board of directors during the 2015-2018 period, it will be coded 1, otherwise if there is no change in the company's directors during the 2015-2018 period, it will be coded 0.

Frequent Number of CEO's Picture (Arrogance)

Frequent number of CEO's picture (X8) is the number of photos of the CEO emblazoned on the company's annual report. The number of CEO photos displayed in a company's annual report can represent the level of arrogance or superiority that the CEO has. Frequent Member of CEO Picture is measured by the total CEO photos displayed in an annual report.

Duality of CEO (Arrogance)

Duality of CEO (Chief Executive Officer) (X9) is the dominance of a person who holds the position of CEO as well as chairman of the board. Duality of CEO is measured by dummy variables, code 1 is for companies that have multiple CEO positions, and code 0 is for companies that do not have dual positions held by directors.

F Score (Fraudulent Financial Reporting)

The dependent variable in this study is fraudulent financial reporting which is proxied by one of the fraud score models, namely the F-Score. The measurement of the F-Score Models consists of two components, namely, accrual quality as proxied by RSST and the second component of financial performance which is proxied by changes in accounts receivable, changes in inventory accounts, changes in cash sales accounts and changes in income before interest and taxes (Dechow, Patricia, Ge, Larson, & Sloan, 2010).

F Score = Accrual Quality

+ Financial Performance

Accrual quality calculated using RSST accruals, namely all non-cash and non-equity changes in a company's balance sheet as accruals and differentiating the characteristics of the reliability of working capital (WC), non-current operating (NCO)

and financial accruals (FIN) and the components of assets and liabilities in accrual type. The calculation model is as follows:

$$RSST \text{ Akrua}l = \frac{\Delta WC + \Delta NCO + \Delta FIN}{Average \text{ Total Aset}}$$

According to (Skousen, et al., 2009) financial performance which can be seen from the company's financial statements is considered capable of providing predictions or predictions for the occurrence of financial statement fraud. The financial performance calculation model is as follows:

Financial Performance

$$\begin{aligned} &= \text{Change in receivable} \\ &+ \text{Change in inventories} \\ &+ \text{Change in cash sales} \\ &+ \text{Change in earnings} \end{aligned}$$

Data analysis technique

The analysis technique used in this research is multiple linear regression to predict the relationship between the independent variable and the dependent variable. Tests are carried out so that decision making approaches the actual state consisting of descriptive statistics, classical assumption tests, multiple linear regression, determination coefficient test, partial test and simultaneous test.

RESEARCH RESULTS AND DISCUSSION

The sample that fits the criteria is obtained as many as 160 annual reports owned by the company, however, in the tests carried out there are data problems in the regression model so that the number of samples used is 144 annual reports after data transformation and outlier disposal. The following is the sampling obtained after selecting according to predetermined criteria.

Table1
Sampling
with Puposive Sampling

No.	Sample Criteria	amount
1	A banking company listed on the IDX	228
2	The company does not publish an annual report	(8)
3	Companies with incomplete data.	(60)
4	Delisting / IPO companies	(0)
	Initial sample size	160
	Outlier removal	(16)
	The sample used	144

Descriptive statistics

Descriptive statistics in this study are used to provide information about the characteristics of the variables in the study, including minimum, maximum, average, and standard deviation. The following

tables contain descriptive statistics of each independent variable used in this study.

Table2
Descriptive Statistics Results

	N	Min	Max	Mean	Std. Dev
ACHANGE	144	-0.293	5,608	0.148	0.474
ROA	144	0.008	0.927	0.650	0.335
Ln_LEV	144	-6,989	-0.006	-3,017	2,200
RECEIVABLE	144	-8,250	4,078	-0.396	1,878
BDOUT	144	0.333	0800	0.573	0.093
Ln_PICTCEO	144	0.000	4,304	1,303	1,375
Valid N (listwise)	144				

The financial stability variable (ACHANGE) had the lowest value of -0.29263 at Bank of India Indonesia (2016) and the highest value of 5.60846 at Bank Pundi Indonesia / BPD Banten (2015), while the average value was 0.14829 and standard deviation 0.47422

The financial target variable (ROA) has the lowest value of 0.00773 at Bank Ina Perdana (2017) and the highest value of 0.92687 at Bank Pundi Indonesia / BPD Banten (2018), while the average value is -0.65033 and standard deviation 0.33483

The external pressure variable (Ln_LEV) has the lowest value of -6.98917 at Bank MNC Int'l (2015) and the highest value of -0.00629 at Bank Pundi Indonesia / BPD Banten (2015), while the average value is -3,01657 and a standard deviation of 2.20065

The nature of industry variable (RECEIVABLE) has the lowest value of -8.25021 at Bank Agris (2015) and the highest value of 4.07810 at BTN (2018), while the average value is -0.39648 and a standard deviation of 1.87768

The ineffective monitoring variable (BDOUT) produces an average value of 0.57333, meaning that 57.333% there is an independent board of commissioners in the company and a standard deviation value of 0.09332. The lowest BDOUT value is 0.3333 at Bank Mutiara (2016) and the highest value is 0.8 at BPD West Java and Banten (2016).

The variable number of CEO's Picture (PICTCEO) produces an average value of 1.30297 and has a standard deviation of 1.37495. The lowest PICTCEO score of 0.0000 and the highest value of 4.30407 are owned by Bank CIMB Niaga (2018).

Table3
Descriptive Statistics Results
for Dummy Variable = 1

	N	Frequency	%	Std. Dev.
CPA	144	33	22.92%	0.422
DCHANGE	144	92	63.89%	0.482
DCEO	144	15	10.42%	0.773
Valid N (listwise)	144			

The descriptive statistical measurement for dummy variables with code 1 indicates that the variable *change in auditor* (CPA), there are 33 samples with a

percentage of 22.92% of the total sample who change auditors during the observation period, and have a standard deviation value of 0.42176

Change in director variable (DCHANGE) there are 92 samples with a percentage of 63.89% of the sample changing directors with a standard deviation value of 0.48200

Duality variable of CEO (DCEO) there are 15 samples with a percentage of 10.42% of the sample who dominate power in the company by holding the position as CEO as well as chairman of the board and have a standard deviation value of 0.77296

Analysis of Research Results

The regression results in table 4 can be seen that the adjusted R2 value is 0.646 or 64.6%. This means that 64.6% of the variation in fraudulent financial reporting can be explained by the variables of financial stability, financial targets, external pressure, nature of industry, effective monitoring, change in auditors, change in directors, frequent number of CEO's Pictures, and duality of CEOs. The remaining 35.4% is explained by other factors not included in this research variable.

Based on table 4, the significant value is 0.000 and by determining the error rate of 5% the degrees of freedom $df1 = 9$ and $df2 = 134$ are obtained from table Ftable = 1.95. By

because $F_{count} > F_{table}$ and the significance value is smaller than the significance level of 0.05. So it can be concluded that the independent variables, namely financial stability, financial targets, external pressure, nature of industry,

effective monitoring, change in auditors, change in directors, frequent number of CEO's Pictures, and duality of CEO simultaneously or together have a significant effect on the dependent variable fraudulent financial reporting.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-0,748	0.066		-11,294	0.000
ACHANGE)	0.318	0.020	0.802	15,743	0.000
ROA	-0.055	0.043	-0.098	-1,278	0.203
Ln_LEV	-0.006	0.006	-0.073	-0,965	0.336
RECEIVABLE	0.009	0.005	0.087	1,694	0.093
BDOUT	0.210	0.104	0.105	2,032	0.044
CPA	0.003	0.023	0.006	0.125	0.901
DCHANGE	0.033	0.020	0.086	1,660	0.099
Ln_PICTCEO	0.009	0.007	0.063	1,237	0.218
DCEO	-0.002	0.012	-0.010	-0.193	0.848
F hit		30,018			
Sig F		0.000a			
R Square		0.668			
Adjusted R Square		0.646			

a. Dependent Variable: F SCORE

Table4
Regression Results

Hypothesis test results show that the significance value (0.000) $< \alpha(5\%)$ and $t_{count} (15,743) > t_{table} (1,978)$, meaning that financial stability (ACHANGE) has a positive and significant effect on financial statement fraud. So, the first hypothesis (H1) is accepted.

Hypothesis test results show that the significance value (0.203) $> \alpha(5\%)$ and $t_{count} (-1.278) < t_{table} (1.978)$, meaning that the financial target (ROA) does not

have a significant effect on fraudulent financial reporting. So, the second hypothesis (H2) is rejected.

Hypothesis test results show that the significance value (0.336) $> \alpha(5\%)$ and the value of $t_{count} (-0.965) < t_{table} (1.978)$, meaning that external pressure (LEV) does not significantly affect fraudulent financial reporting. Then the third hypothesis (H3) is rejected.

Hypothesis test results show that the significance value (0.093) $> \alpha(5\%)$ and the

value of t_{count} (1.694) $< t_{table}$ (1.978), meaning the nature of industry ($\Delta RECEIVABLE$) does not significantly affect fraudulent financial reporting. So, the fourth hypothesis (H4) is rejected.

Hypothesis test results show that the significance value (0.044) $< \alpha(5\%)$ and t_{count} (2.032) $> t_{table}$ (1.978), meaning that effective monitoring (BDOUT) has a positive and significant effect on financial statement fraud. So, the fifth hypothesis (H5) is accepted.

Hypothesis test results show that the significance value (0.901) $> \alpha(5\%)$ and t_{count} (0.125) $< t_{table}$ (1.978), meaning that change in auditor (CPA) does not have a significant effect on fraudulent financial reporting. So, the sixth hypothesis (H6) is rejected.

Hypothesis test results show that the significance value (0.099) $> \alpha(5\%)$ and the value of t_{count} (1.660) $< t_{table}$ (1.978), meaning that change in director (DCHANGE) has no significant effect on fraudulent financial reporting. So, the seventh hypothesis (H7) is rejected.

Hypothesis test results show that the significance value (0.218) $> \alpha(5\%)$ and t_{count} (1.237) $< t_{table}$ (1.978), meaning that the frequent number of CEO's pictures (PICTCEO) has no significant effect on fraudulent financial reporting. So, the eighth hypothesis (H8) is rejected.

Hypothesis test results show that the significance value (0.848) $> \alpha(5\%)$ and t_{count} (-0.193) $< t_{table}$ (1.978), duality of CEO (DCEO) did not significantly influence fraudulent financial reporting. So, the ninth hypothesis (H9) is rejected.

CONCLUSIONS AND SUGGESTIONS

Conclusion

This research aims to analyze and find empirical evidence on factors that indicate fraudulent financial reporting practices using the Pentagon's fraud perspective. Based on the results of hypothesis testing, the following conclusions can be obtained:

- 1) The Pressure factor with the Financial Stability category (ACHANGE) and the Opportunity factor with the Ineffective Monitoring (BDOUT) category have a significant effect on fraudulent financial reporting in companies in the banking sector listed on the Indonesia Stock Exchange for the period 2015-2018. This means that the higher the stability finance and the more ineffective supervision within the company, the more potential for fraudulent financial reporting practices.
- 2) Pressure factor with category Financial Target (ROA) and External Pressure (LEV) does not have a significant effect on fraudulent financial reporting in companies in the banking sector.

- 3) The Opportunity factor in the Nature of Industry (RECEIVABLE) category and the Rationalization factor in the Change in Auditor (CPA) category did not have a significant effect on fraudulent financial reporting in companies in the banking sector.
- 4) The Competence factor with the Change In Director (DCHANGE) category, as well as the Arrogance factor with the Frequent Number of CEO's Picture (PICTCEO) and Duality of CEO (DCEO) categories did not have a significant effect on fraudulent financial reporting in companies in the banking sector.

Suggestion

Based on the description of the discussion and the conclusions obtained, the following are suggestions that can be used for further research:

1. Further research related to fraudulent financial reporting can use qualitative methods or by combining qualitative methods with quantitative methods. Weaknesses or biases that occur as a result of the use of quantitative methods, because there are variables that cannot be specifically explained by quantitative method analysis tools, for example the variables rationalization and competence.
2. Future studies can use independent variables with different categories, such

as personal financial need, Total Accrual to Total Asset, auditor opinion, political connection, and others.

Implications

The results of this study have implications for the company in order to provide views regarding its responsibility in protecting the interests of the principal and providing information or tools to shareholders, investors, creditors and other parties. Meanwhile, investors / shareholders can be more careful in making investment choices and can detect the possibility of fraud in the company's financial statements so that it will reduce risk and can consider that their investment is in the right hands.

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