



Fraud Diamond Analysis in Detecting Fraudulent Financial Reporting (Study on Indonesian Capital Market)

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Abstract

This study aims to detect fraudulent financial reporting using diamond fraud analysis. Fraudulent financial reporting includes intentional errors, like the removal of an amount or disclosure in financial statements to influence the perceptions of users of financial statements. The fraud diamond theory developed by Wolfe and Hermanson in 2004 included pressure, opportunity, rationalization, and capability. This study uses secondary data. The population in this study were all non-financial companies listed on the Indonesia Stock Exchange in 2015-2017. The analysis technique used is factor analysis and multiple linear regression analysis. The test results prove that pressure, rationalization, and capability are able to predict fraudulent financial reporting. While the opportunity is not able to predict fraudulent financial reporting.

Keywords: Fraud diamond; fraudulent financial reporting; non-financial company.

1. Introduction

Financial reports become a media company to provide information to users and are free from material misstatements caused by errors or fraud so as not to mislead users of financial statements.

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According to the International Standard on Auditing 240, the factor that distinguishes fraud and error is whether the underlying action is in the form of intentional or accidental. Accounting errors such as miscalculations, incorrect measurements, false estimates and incorrect interpretations of accounting standards that are accidentally caused by miscalculations, incorrect measurements, false estimates and incorrect interpretations of accounting standards are referred to as errors. While accounting errors that are done intentionally with the purpose of being misleading are called fraud. The fraud cases occur from year to year. Cases of fraud also occur in Indonesia. According to data from the Association of Certified Fraud Examiners (ACFE) in the Asia Pacific in 2016, Indonesia got the second rank in the highest number of fraud cases. From 2012 to 2014, from 398 companies registered consecutively in the non-financial sector at IDX as many as 38 companies or 9.5% reported violating Bapepam-LK regulations. Fraud of financial statements is a type of fraud that is detrimental to many parties, namely the shareholders, investors, and companies. The shareholders are disadvantaged because they think management has worked according to their expectations. Investors suffer losses because financial information misleads investors in investment decision making. Losses experienced by the company are public inspection, reputation damage, market capital losses, financial penalties and loss of investor trust [9]. More information held by managers can lead to actions in accordance with the wishes and interests of maximizing their utility (information asymmetry). Information asymmetry is a condition where there is an imbalance in information acquisition between management as an information preparer with the shareholders and stakeholders in general as users of information users [12]. The asymmetry of information arises because of the agency relationship between principal and agents [12]. The assumption of agency theory is based on three basic human assumptions, namely: (1) humans are self-interest, (2) humans have limited thinking about future perceptions (bounded rationality), and (3) humans always avoid risk (risk-averse) [5]. Based on the assumption of basic human nature that causes that information produced by humans for other human beings is always questionable in reliability and can be trusted whether or not the information delivered [9]. Some experts have found studies on fraud detection. The Fraud Triangle theory was proposed by Cressey in 1953. Fraud can occur due to pressure, opportunity, and rationalization [3]. Then in 2004 Wolfe and Hermanson developed diamond fraud which was a refinement of the fraud triangle discovered by Cressey in 1953 taking into account the fourth element, capability [28]. The condition of the company is now growing and complex compared to the past, and fraudsters are now smarter and can access various company information. Deception can occur if someone has pressure. Pressure can occur because the company's financial stability is influenced by economic conditions, industry or operating conditions of the company [23]. The Fraud Triangle theory explains that management as an agent can experience pressure when operating growth is not as good as competitor's performance or industry average. Companies that have large enough assets are considered capable of providing maximum returns to investors. Management will experience pressure when total assets decline. For this condition, management conducts fraudulent financial reporting. The percentage change in total assets shows fraudulent financial reporting, because of the high percentage change in total assets as a way of showing stronger corporate earnings and financial positions [11]. The study of Loebbecke and his colleagues [14] and Bell and colleagues [2] found that when companies experiencing below-average industrial growth, management might be able to conduct fraudulent financial reporting to improve company prospects [22]. Pressure can occur due to external pressure to meet the expectations of third parties where companies need debt financing so that companies remain competitive [23]. The Fraud Triangle theory states that excessive pressure from outsiders on management can

cause the risk of fraudulent financial reporting [3]. External pressure can be proxied by the leverage ratio. Companies that have a high leverage ratio mean that the company has a large amount of debt and high credit risk. The higher the credit risk, the greater the level of attention of creditors to provide loans to companies. Therefore, this is one of the things that has become a concern for the company and allows it to be one of the causes of the emergence of fraudulent financial reporting [7]. Pressure can occur because personal financial needs are threatened by company performance which can be caused by management compensation such as bonuses or stock options [23]. Agency relationships cause personal interest assumptions which are human nature to prioritize self-interest [5]. The Fraud Triangle theory states that pressure can occur because of the need for executives to act like company owners [3]. The more ownership by the company depends on the personal financial needs of the company's wealth, the greater the level of fraudulent financial reporting practices. Fraud is carried out by management with a dual role as executor and owner by making the performance of certain companies to get high dividends and stock returns [27]. The Fraud Triangle theory states that pressure can occur due to unrealistic targeting of income and profits from the principal [3]. There is excessive pressure on management to meet predetermined financial targets including sales incentives or profitability targets [23]. Return on Asset is often used to measure the manager's performance and in determining bonuses, and wage increases [22]. Management always tries to present the best performance of the company because it does not want to be considered inadequate in managing the company, so management does fraudulent financial reporting so that it is considered capable of achieving the set financial targets. Pressure arises when the financial target cannot be reached. Low ROA causes management to do fraudulent financial reporting.

H1: Pressure can predict fraudulent financial reporting.

Fraud can occur because weak controls provide an opportunity for someone to commit fraud. Opportunities for fraud can be in the form of industrial traits that provide opportunities to commit fraud in terms of complexity and accounting estimates involving subjective considerations [23]. The Fraud triangle theory explains the opportunities for fraudulent financial reporting that can be caused by the complexity of accounting rules and the unreliability of information systems [3]. The risk of misstatement can occur on trade accounts receivable. Subjective assessment is done to determine the number of accounts that cannot be billed. Managers have the authority to list bad credit values [24]. This provides an opportunity for managers to commit fraud. A good company will suppress and minimize the number of corporate receivables and increase the company's cash flow income [10]. The high value of receivables to sales in the company shows that accounts receivable are assets that have a higher risk of manipulation [4]. Companies that have a high ratio of accounts receivable and sales can be a sign that managers do fraudulent financial reporting so that the receivables appear smaller. Weak internal controls and ineffective oversight can be opportunities for fraudulent financial reporting [23]. Fraud Triangle Theory explained that opportunities can occur because of weak internal control and supervision [3]. The proportion of independent audit committees has a negative impact on fraudulent financial reporting. Effective supervision will reduce fraudulent financial reporting [22]. Audit committees that work effectively can reduce fraud that occurs in the company [1]. A large number of audit committees will reduce fraud cases. The larger size of the audit committee will be able to improve the audit committee's oversight function. A large audit committee will provide access to greater resources and managerial talent, thus providing more effective supervision. The size of the audit committee can reduce earnings management actions carried out by managers

in the company [13]. The Fraud Triangle theory explains that opportunities can occur because of the ease of accessing illegal information and the complexity of organizational structures [3]. Opportunities derived from the organizational structure are related to the complexity and instability of the company in controlling the interests of the company [23]. Multi-position directors provide opportunities to compare management policies and practices, provide new insights on how companies use other approaches in their business [8]. The organizational structure of the company with directors who have complex positions in other companies will minimize the occurrence of fraudulent financial reporting. The trust obtained by the director to hold a position in another company makes him more competent in managing the company, especially eradicating fraud [27].

H2: Opportunity can predict fraudulent financial reporting.

Humans who have the nature of bounded rationality mean the limitations of rationality [5]. The Fraud Triangle theory explains rationalization can occur because the perpetrator seeks justification for his actions [3]. Rationalization is an attitude that justifies fraudulent behavior. Rationalization by those responsible for governance, management, and employees, allows them to engage or justify fraudulent financial reporting that cannot be observed by auditors [23]. The factors that led to the existence of fake financial statements originating from rationalization relate to the existence of an unfavorable relationship between management and auditors, as well as management failure in managing company finances, as well as earnings management behavior that exists within the company. When a public accounting firm in a company makes changes, it can be used as a measure of the existence of rationalization [22]. Auditor turnover is done in an effort to eliminate the fraudulent traces found by previous auditors. This causes companies to tend to replace their auditors to cover fraud in the company.

H3: Rationalization can predict fraudulent financial reporting

Fraud Diamond's theory explains that fraud can occur due to the ability of individuals who are able to carry out fraud [27]. Competence is the ability of employees to ignore internal controls, develop concealment strategies and control social situations for their personal interests [9]. The changes to the directors are indicated to be able to describe the ability to carry out a high-stress tolerance [7]. Wolfe and Hermanson (2004) state that the position or function of a person in an organization can provide the opportunity to exploit or exploit fraud opportunities. Capacity as one of the fraud risk factors underlying the occurrence of fraud. The director's changes may indicate fraud [27]. Therefore, the manager's changes are used as proxies for features that may involve the occurrence of fraudulent financial reports [21].

H4 : Capability can predict fraudulent financial reporting.

2. Methodology

This research was conducted at non-financial industrial companies listed on the Indonesia Stock Exchange which provided audited financial statement data by accessing and downloading the official Indonesia Stock Exchange website through the website www.idx.co.id. The observation period of this study is from 2015 to 2017. The sampling technique used is the saturated sampling method. The data analysis used in this study is

factor analysis and multiple regression analysis. The multiple regression model used in this study is shown in the equation as follows.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Description:

Y = Fraudulent Financial Reporting

$\beta_1, \beta_2, \beta_3, \beta_4$ = Regression Coefficient of X_1, X_2, X_3, X_4

X_1 = *Pressure*

X_2 = *Opportunity*

X_3 = *Rationalization*

X_4 = *Capability*

ε = Error

The dependent variable in this study is fraudulent financial reporting which is measured using F-score. This F-score model is the sum of the accrual quality variables with financial performance. The independent variables in this study are pressure, opportunity, rationalization, and capability. The four sub-variables used to examine pressure are financial stability, external pressure, personal financial needs, and financial targets. The three sub-variables used to examine opportunity are the nature of the industry, ineffective monitoring, and organizational structure. Financial stability is measured using asset growth [22]. External pressure use leverage as its measurement [15]. Personal financial need uses insider ownership as a measurement [22]. Financial targets use return on assets as its measurement [22]. Nature of industry use changes in accounts receivable as its measurement [22]. Effective monitoring uses the percentage of independent audit committees as its measurement [22]. Organizational structures use multiple-position percentages as its measurement [8]. The auditor switching use dummy variable as measurement. Number 1 shows the company makes voluntary auditor changes and 0 if it does not [15]. The change of director uses a dummy variable as measurement. Number 1 is given if there is a change of company directors and 0 if there is no change of company directors [7].

3. Research Result

3.1 Overview of Research

This research was conducted at public companies listed on the Indonesia Stock Exchange (IDX). Data collection is done by using the website www.web.idx.id and the official website of each company to collect audited company's annual financial report data. The population in this study are non-financial companies listed on the Stock Exchange during the period 2015-2017. Based on the availability of data on the IDX, the samples obtained were 276 companies with 797 observations during the observation period.

3.2 Descriptive Statistics

Descriptive statistics provide general variables in the study that are intended in mean, standard deviation, maximum, and minimum. Descriptive statistical test results are shown in Table 1 as follows.

Table 1: Result of Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Pressure	797	0.00	8.31	0.54	0.58
Opportunity	797	-40.99	39.23	-0.05	2.89
Rationalization	797	0.00	1.00	0.35	0.48
Capability	797	0.00	1.00	0.33	0.47

Based on Table 1, it can be explained as follows: Pressure has an average value of 0.54. Observation of company leverage values shows that more companies have a fairly low leverage ratio because the average value approaches the minimum value of 0.00. The standard deviation of the pressure of 0.58 is greater than the average value indicating that the distribution of data is not evenly distributed and also shows the difference in data from each other is still relatively high. The opportunity has an average value of -0.05. Observation of the value of the change in accounts receivable shows that more companies have a high ratio of changes in accounts receivable because the average value approaches the maximum value. The opportunity standard deviation of 2.89 is greater than the average value indicating that the distribution of data is not evenly distributed and also shows that the data differences from each other are still relatively high. Rationalization has an average value of 0.35. Observation of auditor switching values shows that more companies do not do auditor switching than companies that do auditor switching because the average value is close to the minimum value of 0.00. The deviation of the Rationalization standard of 0.48 is greater than the average value indicating that the distribution of data is not evenly distributed and also shows the difference in data from each other is still relatively high. The capability has an average value of 0.33. Observation of the value of change of directors shows that more companies do not make changes to directors than companies that make changes to directors because the average value approaches the minimum value of 0.00. The deviation of the Rationalization standard of 0.47 is greater than the average value indicating that the distribution of data is not evenly distributed and also shows the difference in data from each other is still relatively high.

3.3 Confirmatory Factor Analysis

1. Kaiser Meyer Olkin (KMO)

The Kaiser Meyer Olkin test was used to determine the adequacy of the sample.

Table 2: Kaiser Mayer Olkin

Variable	KMO	Sig.
Pressure	0.500	0,252
Opportunity	0,502	0,041

The test results shown in Table 2 show the Pressure and Opportunity variables having KMO more than and equal to 0.5. This concludes that each indicator in the Pressure and Opportunity variable has a sufficient sample for factor analysis.

2. Measures of Sampling Adequacy (MSA)

The feasibility of the factor test model for each variable can be seen from the value of Measures of Sampling Adequacy (MSA).

Table 3: Measure of Sampling Adequacy

Variable	Indicator	MSA
Pressure	Financial Stability (X1.1)	0,500
	External Pressure (X1.2)	0,534
	Personal Financial Needs (X1.3)	0,479
	Financial Target (X1.4)	0,500
Opportunity	Nature of Industry (X2.1)	0,538
	Ineffective Monitoring (X2.2)	0,501
	Organizational Structure (X2.3)	0,501

The MSA value in the pressure variable which has the highest factor loading value is the External Pressure indicator with a value of 0.500. While the MSA value in the Opportunity variable which has the highest factor loading value is the Nature of Industry indicator with a value of 0.538. This means that the External Pressure indicator is used in factor analysis to represent the pressure variable and the Nature of Industry is used in factor analysis to represent the Opportunity variable.

3.4 Multicollinearity Test

This test uses a correlation matrix between independent variables to see the magnitude of the correlation between independent variables. Multicollinearity Test Results can be seen in Table 4.

Table 4: Measure of Multicollinearity Test

Variable	Tolerance	VIF
Pressure (X ₁)	0,919	1,088
Opportunity (X ₂)	0,984	1,017
Rationalization (X ₃)	0,807	1,240
Capability (X ₄)	0,759	1,317

Based on Table 4 it can be seen that the tolerance value and VIF of all these variables indicate that the tolerance value for each variable is greater than 10% and the VIF value is smaller than 10 which means the regression equation model is free from multicollinearity.

3.5 Autocorrelation Test

The autocorrelation test is conducted to track the data correlation from year t to year t-1 (before). The autocorrelation test is done through a Durbin-Watson test, where the regression model is said to be free from autocorrelation if it matches the criteria of $du < DW < 4-du$.

Table 5: Autocorrelation Test

dl	Du	4-du	DW
1,839	1,920	2,080	1,959

Table 5 shows that the value of Durbin Watson is 1,959. Because the value of $du < dw < (4-du)$ ($1,920 < 1,959 < 2,080$), it can be concluded that there is no autocorrelation between residuals.

3.6 Heteroscedasticity test

This heteroscedasticity test aims to find out whether in the regression model there is an inequality of variance from the residual one observation to another observation conducted by the Glejser test. In Table 6 it can be seen that the significance values of the Pressure, Opportunity, Rationalization and Capability variables are 0.845; 0,860; 0.347; and 0.087. This value is greater than 0.05, which means there is no influence between the independent variable on the absolute residual. Thus, the model made does not contain symptoms of heteroscedasticity.

Table 6: Heteroscedasticity test

Variable	Sig.
<i>Pressure</i>	0,845
<i>Opportunity</i>	0,860
<i>Rationalization</i>	0,347
<i>Capability</i>	0,087

3.7 Multiple Linear Regression

Based on the results of multiple linear regression analysis as presented in Table 7, the regression equation can be made as follows:

$$Y = 0,490 + 0,074 X1 + 0,027 X2 + 0,063 X3 + 0,185 X4$$

The regression coefficient value of the variable Pressure, Rationalization and Capability has a significance value of the t-test less than 0.05. This shows that all independent variables namely Pressure, Rationalization, and Capability have a significant influence on the financial reporting fraud variable (Y). Whereas Opportunity has a significance value of t-test more than 0.05. This shows that opportunity variables do not have a significant effect on fraudulent financial reporting variables (Y).

Table 7: Multiple Linear Regression

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	0,490	0,019		250,373	0,000
Pressure (X1)	0,074	0,024	0,108	30,068	0,002
Opportunity (X2)	0,027	0,018	0,051	10,514	0,130
Rationalization (X3)	0,063	0,021	0,116	30,090	0,002
Capability (X4)	0,185	0,024	0,299	70,723	0,000
Adjusted R Square					0,095
F Statistik					21,790
Signifikansi Uji F					0,000

4. Discussion

Pressure can predict fraudulent financial reporting. Excessive pressure from external parties to fulfill requirements and obligations will increase management motivation to commit fraud in financial statements. [15]. This study is in accordance with [6,25] and Maghfiroh and his colleagues [16], which state The risk of greater material misstatement due to fraud can be identified in companies experiencing external pressure and greater leverage will have a greater risk of violating credit agreements and lower ability to obtain credit loans. Rationalization can predict fraudulent financial reporting. Auditor switching as the proxy of rationalization. The higher the intensity of independent auditor turnover results in the easier the management rationalizes its fraudulent actions in order to deceive the auditor. Low management integrity will be easier to rationalize frauds including by arranging agreements with independent auditors and making auditor changes before the maximum engagement period determined by regulations. This research is in line with the research of [6,18,15,20] which state that auditor switching is based on fraudulent financial reporting. Auditor turnover can indicate the company is committing fraud. Dominant management behavior in dealing with auditors, especially those

involving businesses to influence the scope of the auditor's work, or the selection or sustainability of assigned or consulted personnel on audit engagements Capability can predict fraudulent financial reporting. The change of directors as the proxy of capability is indicated to be able to describe the ability to tolerate high-stress [7]. A person's position or function within the organization can provide the ability to make or take advantage of fraudulent opportunities [28]. Capability is one of the driving factors behind fraud risk factors underlying the occurrence of fraud [28]. This study is in accordance with [6] which state that changes in directors is a condition for the creation of risk factors of fraud in the company and someone who has authority also has a greater influence on certain situations. Opportunity cannot predict fraudulent financial reporting. There is an opportunity for management as a result of the implications of the conditions of the code law accounting system and accounting rules in Indonesia which provide the freedom to choose the accounting method. But management did not take advantage of the opportunity to commit fraud. This research is in accordance with conducted research by [19,6,25], which states that the nature of the industry has no effect on fraud. Limitations in this study is the study uses the ratio of changes in accounts receivable to measure the nature of industry. Research is only done on the Indonesia Stock Exchange, and only in the span of two years, 2015 to 2017.

5. Conclusion and Implication

The conclusions from this study are pressure, rationalization, and capability can predict fraudulent financial reporting. Meanwhile, opportunity cannot predict fraudulent financial reporting. This study was successful in proving that pressure, rationalization, and capability, able to predict fraudulent financial reporting. However, this study failed to prove that opportunity can predict fraudulent financial reporting. Future studies can use the inventory change ratio to measure the nature of the industry because, in addition to accounts receivable, inventory often uses estimates from company management. This ratio shows the change from the previous year to the previous year's inventory

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