

Conference Paper

Detecting Fraudulent Financial Statement Using Fraud Triangle: Capability as Moderating Variable

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Abstract

Fraud diamond model which was raised by Wolfe and Hermanson (2004) has been one of models widely used to explain the motives and reasons of the perpetrators in committing fraud. The model consists of pressure, opportunity, rationalization, and the fourth component added, which is capability. The capability component has become one big question mark for most of researchers regarding to its existence in fraud diamond model. Sridhar Ramamoorti, III, Koletar, and Rope (2013) stated that it remains unclear whether adding more factors is really helpful in assessing fraud risk, meanwhile Carcello and Hermanson (2008) stated a question whether the capability has an interaction with others components in fraud diamond. This research aimed to examine and get the empirical evidence regarding the effect of pressure, opportunity, and rationalization toward fraudulent financial reporting with capability as its moderating variable. Pressure was measured by ROA (Return on Assets), opportunity by change of CEO or CFO, rationalization by turn of auditor, capability by educational background of CEO or CFO, and fraudulent financial reporting by Beneish Model. This study uses 255 data of manufacturing company listed on Indonesia Stock Exchange in 2012-2016. The data analysis technique used in this study is logistic regression analysis. The result showed that pressure and opportunity have significant and positive effect toward fraudulent financial reporting, while rationalization does not have significant effect. This study also showed that capability was proved in moderating the effect of pressure and rationalization toward fraudulent financial reporting, while it was not proved in moderating the effect of opportunity toward fraudulent financial reporting.

Keywords: fraudulent financial reporting, fraud diamond, fraud triangle, capability

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1. Introduction

The fraudulent financial reporting continues to increase and causes large losses. With the percentage of occurrence only 10%, this fraud caused a loss of \$975,000. ACFE (2016) stated that in the distribution of losses due to fraud, a nominal value of \$1,000,000 or more increased from 20.6% in 2012, 21.9% in 2014, and 23.2% in 2016.

Ruankaew (2013) stated that prior to reduce fraud and managing the risk of fraud, the company must first identify the factors which are triggering the fraud. Various theories have been stated to explain the phenomenon of fraud, such as fraud triangle and fraud diamond. Skousen et al. (2008) stated that there are three conditions faced by a fraudster. First, an individual financial need or financial pressure. Second, fraudsters have the opportunity to commit fraud. Third, the individuals involved in fraud will rationalize that the act of committing fraud is still in line with their ethical code. Fraud diamond developed by Wolfe and Hermanson (2004) is the development of fraud triangle, in which there is addition of component capability to complement the component in fraud triangle.

Some literatures reveal that the existence of capability as an element of fraud diamond is questionable. Sridhar Ramamoorti, III, Koletar, and Rope (2013) stated that it remains a big question as the addition of factors in the fraud model can help a person to assess the risk of fraud. Schuchter and Levi (2013) also recommend that the element of capability is not something new, but only a supporting element to explain the existing Fraud Triangle model. Carcello and Hermanson (2008) also presented some research questions related to capability, one of which is related whether the capability interacts with other components in fraud diamond.

This study aims to examine the effect of pressure, opportunity, and rationalization on fraudulent financial reporting with the capability as a moderating variable. Sharma et al. (1981) suggested that a moderating variable could not be a significant predictor of variables, but moderating variables may interact with other predictor variables. Some studies have reported that capability as an independent variable has no effect on fraudulent financial reporting (Aprilia, 2017, Zaki, 2017), thus it indicates that capability could be a moderating variable.

2. Theoretical Framework and Hypotheses

2.1. Agency theory

Jensen and Meckling (1976) explained that the company is a contractual relationship between shareholders and the party who operates the firm (management). The agency relationship occurs because of an agreement between the two parties in which the principal authorizes the agent to make the decision-making process for the achievement of the principal's interests and objectives. According to Eisenhardt (1989), agency issues will arise when: 1) there is a conflict or difference of desire between the principal and the agent; and 2) the existence of a difficulty or a high cost for the principal to verify what the agent actually does.

2.2. Fraud

ACFE defines fraud as an act of fraud or mistake made by a person who knows that such mistakes may harm others. Fraud can be classified into two types, namely fraudulent financial reporting and asset misappropriation. Fraudulent financial reporting is a misstatement or abolition of the amount or disclosure deliberately done to deceive its users. Fraudulent financial reporting usually involves management because management is a party that can override the internal control and have control to direct employees in the act of fraud (Suyanto, 2009). Asset misappropriation is a fraud that involves the theft of an entity's property. It usually happens at the lower organizational hierarchy level, although it is possible for top management to get involved.

2.3. Fraud model

A fraud triangle model proposed by Donald R. Cressey (1953) was used to explain the factors that cause a person to commit acts fraud. There are three components in the fraud triangle, namely incentives/pressure, opportunities, and rationalization. Wolfe and Hermanson (2004) developed the model into fraud diamond, where Wolfe and Hermanson added an additional qualitative component, which is capability.

2.4. Research model

Based on the theory and previous studies related to this research, here is proposed a conceptual framework to describe the relationship of independent variables with the dependent variable in this study. Independent variables used are pressure, opportunity,

and rationalization, while the dependent variable used is fraudulent financial reporting. The relationship between variables will be moderated by the capability. Here is the conceptual framework compiled in this study:

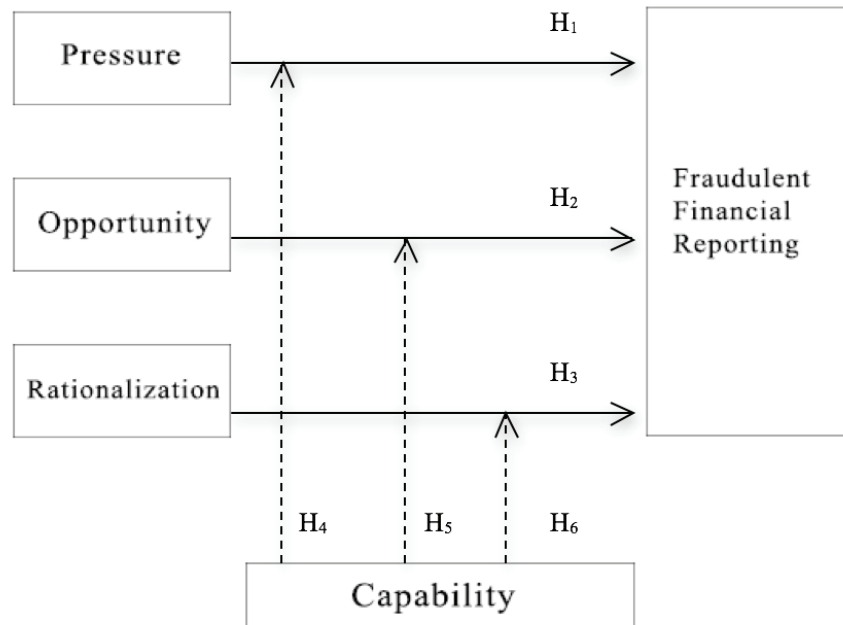


Figure 1: Research Model.

2.5. Hypotheses Development

2.5.1. Pressure toward fraudulent financial reporting

The pressures experienced by individuals or corporations will encourage them to take any action to minimize the intensity of the pressure. ROA is a measurement that can be used to measure operational performance and see how efficiently a company can use its assets to generate profits (Skousen et al., 2008). This ROA can be used to assess management performance and the basis for determining the amount of bonuses and salary increases that management will accept. Not achieving the target of ROA that has been set will encourage management to commit fraud by changing the numbers in the financial statements so that financial ratios can be turned into an ideal ratio as expected by the creditors.

H₁: Pressure positively affects the fraudulent financial reporting.

2.5.2. Opportunity toward fraudulent financial reporting

The unstable condition of the company can be determined from the high turnover of senior management and members of the board of directors. The higher the rotation of the directors, the weaker the existing supervision is related to the operational decision making of the company. Shidar Ramamoorti (2008) explains that fraud is usually a form of "teamwork" and often involves collusion between several parties. Boyle, Carpenter, and Hermanson (2012) explain that fraud cases in financial statements often involve executives, where 89% of cases involve the CEO or CFO of the company. Opportunity can be determined from the presence or absence of a change of CEO or CFO in a company. The higher the turnover of CEO or CFO, the weaker the existing supervision related to corporate decision making.

H₂: Opportunity positively affects the fraudulent financial reporting.

2.5.3. Rationalization toward fraudulent financial reporting

Skousen et al. (2008) stated that cases of audit failure increased after the change of auditors. Some companies change the auditor because with the change of auditors, the fraud committed by the management will not be detected by the new auditor. Companies who change the auditor will reduce the possibility of detection of fraud in the financial statements made by the company.

H₃: Rationalization positively affects the fraudulent financial reporting.

2.5.4. Pressure toward fraudulent financial reporting with capability as moderating variable

People with pressures will tend to make an effort to overcome the pressure in various ways. The expectation of investors will cause pressure for the management when the performance of the company is considered still far from the target set. Not achieving the targets set will encourage management to commit fraud by changing the numbers in the financial statements so that the financial ratios can also turn into an ideal ratio as expected by the creditors.

Capability is a condition in which the fraudster is aware of the opportunity and has the ability to transform it into reality (Abdullahi & Mansor, 2015). With the capability, management has an understanding of which areas can be manipulated and which

parts of internal controls are relatively weak. Capabilities will facilitate management in manipulating financial statements because management has access to change financial statements in accordance with what they want. Not only that, management can change the numbers in the financial statements to display the prime financial ratios so as to indicate that the company has reached the expected target.

H₄: Capabilities increase the effect of pressure toward fraudulent financial reporting.

2.5.5. Opportunity toward fraudulent financial reporting with capability as moderating variable

The unstable condition of the company can be determined from the high turnover of senior management and members of the board of directors. The high turnover of the directors will represent how big the CEO power is, which will describe how much opportunity management has for committing fraud because the new directors will not know the things that have been done by the rest of management. The opportunity to commit fraud will be strengthened when a person has capabilities. With great capability, individuals or management can dominate operational decisions so that decisions will benefit the individual or the interests of certain group. Capability also facilitates the individual to understand the weakness of company's internal control so they can prepare their fraud action.

H₅: Capabilities increase the effect of opportunity toward fraudulent financial reporting.

2.5.6. Rationalization toward fraudulent financial reporting with capability as moderating variable

Individuals who already have a justification on their mind, will be more triggered to commit fraud with the capabilities they have. When the individual feels that he is entitled to something more than what he has received, the individual with the capability will be more convinced that committing fraud is worth doing. With the capability, the individual is convinced by the justification that he deserves for things he will get by doing fraud. Capability will support the fraudsters' mind that fraud is indeed worth doing because in fact, they have the capability and ability to commit acts of fraud.

H₆: Capabilities increase the effect of rationalization toward fraudulent financial reporting.

3. Research Methodology

3.1. Population and samples

The population used in this study is manufacturing companies listed on the Indonesia Stock Exchange in 2012-2016. The sampling technique used is purposive sampling, where the sample determination is done on the basis of conformity of certain characteristics and criteria. The criteria determined for this study:

1. Companies listed on the Indonesia Stock Exchange during 2012-2016;
2. Have a positive pre-tax profit value on 1 (one) year prior to the fraud;
3. Have complete data related to the variables used in the research.

3.2. Operational definition and variables measurement

3.2.1. Pressure

Pressure was defined as a condition when a person commit fraud because he/she has an urgent need, which could not be told to others. This study uses Return on Total Assets (ROA), in which ROA is a measurement of operational performance that used to indicate the efficiency of management in using all available assets. ROA is often used to assess management performance and determine the amount of bonuses and salary increases that management will accept. ROA will be calculated by comparing earnings before tax in the year prior to the fraud with total assets. Management uses pre-tax profit in the previous year as a benchmark and also as a target that the ROA shall not be declined in a current year. Pressure will arise when there is an indication of declining ROA because management is expected to be able to maintain or improve its performance. ROA used in this study is a positive ROA, because the positive value of ROA is an indication of pressure for the management since they have to maintain it positive.

$$ROA = \text{Pre-tax profit}_{t-1} / \text{Total assets}_t$$

3.2.2. Opportunity

Opportunity was defined as condition that provides an opportunity for management or employees to mislead financial statements (Elder et al., 2011). Opportunity can be

seen from the presence or absence of a change of CEO or CFO in a company. In the accounting decision-making process, CFO will be strongly influenced by the CEO as the leader who is responsible for all aspects of the company. With the change of CEO, the CFO will have more opportunity in making accounting decisions because there is a transition from the previous CEO to the new CEO which is causing less effective supervision over the actions of the CFO. On contrary, with CFO changes, the CEO has a greater opportunity to engage in fraudulent financial reporting because there is a change from CFO who understands the financial history of the company into a new CFO who has lack of financial information of the company.

TOTALTURN = Dummy variabel for change of directors, 1 = presence of change of CEO or CFO in 2 (two) years prior to fraud, and 0 = absence of change of CEO or CFO in 2 (two) years prior to fraud.

3.2.3. Rationalization

Rationalization is the presence of an attitude, character, or set of ethical values that enable management or employees to engage in dishonest acts, or a condition when they justify themselves to commit such dishonest acts (Elder et al., 2011). This study uses auditor turnover to measure the rationalization performed by management. This is based on the findings of some researchers that audit failure and litigation cases increased after the change of auditors.

AUDCHANGE = Dummy variabel for change of auditor, 1 = presence of change of auditor in 2 (two) years prior to fraud, and 0 = absence of change of auditor in 2 (two) years prior to fraud.

3.2.4. Fraudulent financial reporting

Fraudulent financial reporting is a misstatement or deletion of the amount or disclosure that is deliberately done to deceive its users. This study will use dummy variables through the Beneish Model, which 1 will be used to represents the firms with M-score above -2.22 and 0 for firms with M-scores lower than -2.22. The M-score above -2.22 would indicate fraudulent financial reporting (Abbas, 2017). Beneish Model has two versions, in which the first version uses eight ratios, while the second version uses only five ratios. Some studies show that only five ratios give significant results on the

model, so this study uses five ratios in Beneish model. Here is the M-score equation of Beneish Model used in this research:

$$M = -6,065 + 0,823DSRI + 0,906GMI + 0,593AQI + 0,717SGI + 0,107DEP$$

3.2.5. Capability

Capability is an employee's ability to penetrate existing internal controls, develop sophisticated embezzlement strategies, and to control situation by influencing others to cooperate with him (Aprilia, 2017). This study uses the educational background proxy as stated by Wolfe and Hermanson (2004), that a fraudster is an intelligent person to understand and exploit the weaknesses of the company's internal controls and take advantage of its position and authorization.

CAPABILITY = Dummy variabel for capability, 1 = presence of CEO or CFO with finance educational background, and 0 = absence of CEO or CFO with finance educational background.

4. The Empirical Result

The coefficient of determination measures the ability of independent variables in explaining the dependent variable. The coefficient of determination (Nagelkerke R Square) shows the result of 0.308 or 30.8%. This indicates that the contribution of pressure, opportunity, and rationalization to the fraudulent financial reporting are 30.8%, while the 69.2% was the contribution of other variables that are not used in this study.

Goodness of fit model is used to knowing the compatibility of the model with the observation data, that explains whether the regression model is able or feasible to be used to predict the relationship between independent variables and dependent variable. The test result shows statistical Chi-square test of 10.214 with a probability of 0.250. This shows that the statistical value (0.250) is greater than the level of significance ($\alpha = 0.05$), so it can be stated that the model is compatible with the observation data, which is capable or feasible to predict the relationship between independent variables and dependent variable.

The result shows that the pressure has Wald statistical test value of 23.756 with probability of 0.000. The result shows a smaller probability (0,000) than level of significance (= 0.05), so it can be concluded that there is a significant effect on pressure

TABLE 1: Test result of partial significance.

Variable	B	Wald	Sig.	Odd Ratio
Pressure	11,710	23,756	0,000	121.835,454
Opportunity	3,836	8,426	0,004	46,356
Rationalization	-0,584	0,833	0,361	0,558
Constant	-6,654	17,472	0,000	0,001

toward fraudulent financial reporting. The higher the positive value ROA owned by the company, the higher the tendency of management to commit fraud in the financial statements. From the investor side, investors expect a stable and increasing performance from year to year. While investors are given a positive ROA ratio, investors will expect management to maintain good performance in the years to come. In terms of management itself, the value of a positive ROA ratio will have an impact on the determination of salaries and bonuses that will be received. These two points of view will put pressure on management, where management will strive to maintain investor expectations and meet its own incentives for bonuses and salary increases.

The partial significance test of the opportunity toward fraudulent financial reporting shows a Wald test value of 8.426 with probability of 0.000. The result shows a smaller probability (0,000) than level of significance ($= 0.05$), so it can be concluded that there is a significant effect over the opportunity toward fraudulent financial reporting. With a change of CEO or CFO in a company, the opportunity will be opened to those who would like to commit fraud in the financial statements. With the change of CFO, the CEO has a greater opportunity to engage in fraud because there is no longer a CFO who understand the financial history of the company. Likewise, if there is a change of CEO, CFO will have more opportunity in making accounting decision because there is a transition period from previous CEO to new CEO which is causing less supervision of action made by CFO.

The result shows that the rationalization variable has a Wald statistical test value of 0.833 with a probability of 0.361. The result shows the probability value of 0,361 which is bigger than level of significance ($= 0,05$), so it can be concluded that there is no significant effect on rationalization toward fraudulent financial reporting. The insignificant result between rationalization and fraudulent financial reporting can be caused by a lack of precise proxy rationalization used. Skousen *et al.* (2008) stated that they have not found yet a proper proxy which can describe the character of rationalization. Rationalization is closely related to the internal characteristics possessed by an individual, so it is quite difficult to measure the rationalization through a quantitative data.

This study uses the capability variable as a moderating variable to examine the role of capability in the effect of pressure, opportunity, and rationalization toward fraudulent financial reporting. Here are the results of moderation testing:

TABLE 2: Result of Moderation Testing.

Variable	Wald Test		Probability		Result
	M ₀	M ₁	M ₀	M ₁	
Pressure	1,064	19,358	0,302	0,000	Moderating
Opportunity	0,397	0,000	0,529	0,998	Not Moderating
Rationalization	0,000	6,387	0,999	0,011	Moderating

The result of Wald test of capability with M = 0 (CEO or CFO with non-finance educational background) is 1.064 with probability of 0.302, while for the capability with M = 1 (CEO or CFO with finance educational background) is 19,358 with probability of 0.000. It can be concluded that the variable capability is a moderating the effect of pressure toward fraudulent financial reporting, especially on the CEO or CFO with the finance educational background. With the capability, management has an understanding of which areas can be manipulated and which parts of internal controls are relatively weak. The educational background in finance will help the CEO or CFO to identify which part that can be manipulated because the CEO or CFO has been passed an education in finance.

The result of Wald test of capability with M = 0 (CEO or CFO with non-finance educational background) is 0,397 with probability 0,529, while for capability with M = 1 (CEO or CFO with finance educational background) is 0.000 with probability of 0.998. It can be concluded that the capability is not a moderating the effect of opportunity toward fraudulent financial reporting, either CEO or CFO with an educational background in finance or those with non-finance educational background. This can be caused by the tenure of a person who holds the position and also his/her working experience in similar field. Although a person does not have an educational background in finance, it is still possible that a person can have ability in finance field. The ability and understanding of finance can be supported by the number of working experience in a similar field which can make someone expert in finance.

The result of the Wald test of capability with M = 0 (CEO or CFO with with non-finance educational background) is 0.000 with probability of 0.999, while for the capability with M = 1 (CEO or CFO with finance educational background) is 6,387 with probability of 0.011. However, this study shows that rationalization as an independent variable has no effect toward fraudulent financial reporting, so capability could not be a moderating variable between rationalization and fraudulent financial reporting.

5. Conclusion

Based on the results of research, these are following conclusions from this study:

- 1) The test results indicate that the pressure has significantly positive effect toward fraudulent financial reporting. The positive and significant relationship between pressure and fraudulent financial reporting shows that the higher the positive value ROA the company has, the higher the tendency of management to commit fraud in the financial statements. Fraudulent financial reporting will be committed when management is under pressure to maintain investor expectations and meet its own incentives for bonuses and salary increases;
- 2) Test results indicate that the opportunity has significantly positive effect toward fraudulent financial reporting. This indicates that a company with a change of CEO or CFO in 2 years prior to fraud will be more likely to increase the probability of fraudulent financial reporting. CEO and CFO are critical to the company's accounting decisions, so a change of CEO or CFO will open up opportunities for fraud in the financial statements;
- 3) Test results show that rationalization does not significantly affect the fraudulent financial reporting. This may be due to the lack of a rationalization proxy used, for example: the change of auditors. Rationalization is closely related to the internal characteristics possessed by an individual, so it is difficult to measure the rationalization through the change of auditors;
- 4) The test results show that capability is moderating the effect of pressure toward fraudulent financial reporting, especially on the CEO or CFO with the educational background in finance. Under stressful condition by investors' expectations and personal incentives, management with a finance educational background will be motivated to commit fraud because they have sufficient capability to ensure that their fraud is undetectable;
- 5) The test results show that capability is not moderating the effect of opportunity toward fraudulent financial reporting, either on CEO or CFO with an educational background in finance or non-finance. This can be caused by the length of tenure of person who holds the position and his/her working experience in similar field. Someone without finance educational background could be an expert by doing things in a long period which is measured by their working experience;
- 6) The test results indicate that capability is moderating the effect of rationalization toward fraudulent financial reporting. However, this study shows that rationalization has no significant effect toward fraudulent financial reporting, so capability could not be a moderating variable between rationalization and fraudulent financial reporting.