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Research Article   Open Access

Analysis of Fraud Triangle, Fraud Diamond and Fraud Pentagon Theory to Detecting Corporate Fraud in Indonesia

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Abstract: The purpose of this study is to analyze empirically by using secondary data on the possibility of corporate fraud by using various fraud theory approach. The research model in this study was tested using the ordinary least square (OLS) analysis method. A total of 310 company data were collected which consisted of financial data and other supporting data published by companies listed on the Indonesia Stock Exchange in the range of 2012 to 2017. This study provides empirical evidence that all the variant of fraud theory (fraud triangle theory, fraud diamond theory and fraud pentagon theory) can be investigated for its significant effect on corporate fraud by only using secondary data that are available and freely accessed by the public. The empirically tested research model in this study can provide a comprehensive understanding of practitioners, academics, government agencies and the general public in analyzing the topic of corporate fraud.

Key words: Corporate fraud, fraud theory, fraud triangle, fraud diamond and fraud pentagon.

I. INTRODUCTION

In principle, every company, especially a company that conducts its share transactions in the capital market, requires capital in carrying out its activities. The company can raise capital both from internal parties (through shares) and from external parties (through banks and bonds). For this capital collection, companies are required to periodically report on company performance. Through this reporting, the capital providers can measure and analyze the performance of the related company.

Information about the company will also greatly affect other parties other than capital providers, such as consumers, suppliers, government and company employees. "Good" information will increase the appreciation of these parties to the company so that it can bring profit. "Bad" information will definitely cause doubts about the prospects/survival of the company.

On this basis, it is very likely that the management of the company to "regulate" the information that will be submitted to the company's external parties. In general, the management of the company will publish the company's annual report that provides information on both the company's financial and non-financial conditions. Published information will tend to be "regulated" to have a beneficial impact on the company itself. This causes the information produced is often not in accordance with applicable regulations. This practices which is usually more commonly known as corporate fraud.

The impact of a case of corporate fraud is very large and will harm all parties who have made wrong decisions. According to Karpoff, Lee and Vendrzyk (1999), news about the association of a company with cases of corporate fraud will indirectly reduce the company's stock price in a relatively short period of time. The average loss borne by 1 (one) of 10 (ten) companies that were victims of corporate fraud cases amounted to US $ 5,000,000,000.00 (Pricewaterhousecoopers, 2011). The annual global report on fraud cases compiled by PricewaterhouseCoopers in 2016 showed that 36% of companies reported being victims of economic crimes during the year 2016 (Pricewaterhousecoopers, 2016).

This study tries to compare several theories about corporate fraud that have been put forward by experts over the past few decades. The theory of fraud triangle, fraud diamond and fraud pentagon will be used to detect cases of corporate fraud in companies in Indonesia.

II.   LITERATURE REVIEWS AND HYPOTHESIS DEVELOPMENT

According to the American Institute of Certified Public Accountants/ACPAI (2019), corporate fraud is a fraudulent behavior that causes errors in reporting material financial reports that are the subject of the audit. Fraud can be divided into fraud that occurs due to falsification of financial report reporting and fraud that occurs due to misuse of company assets. The definition of corporate fraud according to the Chartered Institute of Management Accountants/CIMA (2009a, 2009b) is an activity that includes the use of deception to obtain personal benefits dishonestly and/or cause harm to other parties. Activities included in the definition of corporate fraud usually include theft, corruption, conspiracy, embezzlement, money laundering, bribery and extortion.

According to Karpoff *et al*. (1999), fraud that occurs in companies can be divided into stakeholder fraud, government fraud, financial reporting fraud and regulatory violation. Abdullahi, Mansor, and Nuhu (2015) found that companies operating in a dynamic and often changing environment were more likely to commit corporate fraud compared to companies operating in a more stable environment. This is due to the frequent changes in regulations that have created a gap for companies that commit corporate fraud. The study also concluded that in developing countries whose political systems and economies are not stable, they tend to have a high level of corporate fraud.

Research on corporate fraud has been carried out by researchers abroad. Research on corporate fraud was initially carried out in the 1980s which examined profit manipulation carried out by executive officials to achieve targets set by the company. The motive of executive officials to manipulate profits is to get bonuses with achieving company targets.

Subsequent research developed with the addition of more independent variables such as corporate corporate governance factors and financial ratios. The scope of research on corporate fraud has also undergone changes in the last few decades. Initially, the scope of the research only focused on the analysis of fraudulent financial reporting. However, in the late 1900s, the scope of the study became larger by including not only financial fraud but also including stakeholder fraud, regulatory violation and government fraud.

Research with independent variables in the form of financial ratios was further examined by several other researchers such as Brazel, Jones, and Zimbelman (2009), Dechow, Ge, Larson, and Sloan (2011), Nelson (2012a, 2012b), Schrand and Zechman (2012) and Shih, Cheng, and Wang (2011). This research on earnings manipulation later developed into research on earnings management, income smoothing and corporate fraud.

Fraud theory is a theory that tries to explain why corporate fraud can occur within a company. This theory has undergone evolution over the past few decades. The literature on fraud theory originally began with the theory of fraud triangle proposed by Cressey (1953) with 3 (three) main components, which are: pressure, opportunity and rationalization. The theory of fraud triangle was later developed into the theory of diamond fraud by Wolfe and Hermanson (2004) by adding 1 (one) new component, which is capability. The final evolution of fraud theory is the pentagon fraud theory completed by Marks (2012). Marks (2012) added 1 new component to the fraud theory, which is arrogance, to perfect the diamond fraud theory into the pentagon fraud theory.

2.1   The Relationship between Fraud Triangle and Corporate Fraud

The fraud triangle theory is an idea of the cause of fraud which was put forward by Cressey (1953) called triangle fraud. The fraud triangle explains three factors that are present in each fraud situation, which are pressure, opportunity and rationalization. According to ACPAI (2019) in the Statement of Auditing Standards (SAS) No. 99 there are four types of conditions that commonly occur at pressure which can lead to fraud, namely financial stability, external pressure, personal financial need, and financial targets. The other component is opportunity which consists of three types of conditions, including the nature of industry, ineffective monitoring, and organizational structure. The last component that causes fraud is rationalization. Rationalization causes fraud perpetrators to justify their actions.
H1: Fraud triangle has a significant effect on the occurrence of corporate fraud.

2.2   The Relationship between Fraud Diamond and Corporate Fraud

Wolfe and Hermanson (2004) state that overall diamond fraud is a perfection of the fraud triangle theory that was proposed by Cressey (1953). The elements of included diamond fraud theory were pressure, opportunity, rationalization and capability. Wolfe and Hermanson (2004) stated that there was a perfection of fraud triangle to increase the ability to detect and prevent corporate fraud by adding a new fourth element, which is capability. Many

corporate frauds that are generally large in number are not possible if there is no particular person with a specific capability in the company. Opportunity opens opportunities or entry points for fraud, pressure and rationalization that encourage someone to commit fraud.

Three things that can be used to observed in predicting fraud are: 1). official position and/or function within the organization; 2). capacity to understand a_/or utilize the accounting systems and weaknesses in the organizations's internal controls; 3). the belief that he/she will not be detected or if caught he/she will come out easily; 4) the ability to deal with great stress that arises in a good environment when he/she does bad deeds (Kassem & Higson, 2012).

According to Wolfe and Hermanson (2004), corporate fraud is not possible without people who have the abilities to commit fraud. These abilities are the nature of individuals to commit fraud, which encourages and push them to seek opportunities and use them. A fraudster must have good abilities to recognize these opportunities so that he/she can carry out fraud tactics appropriately.

H2: Fraud diamond has a significant effect on the occurrence of corporate fraud.

2.3 The Relationship between Fraud Pentagon and Corporate Fraud

Marks (2012) developed the Pentagon fraud theory by developing the theory of fraud triangle proposed by Cressey (1953) by adding 2 (two) new components, which are capability and arrogance. The basis of the Marks (2012) argument in perfecting the theory of fraud triangle into the theory of pentagon fraud is that there have been changes in the environment and business practices of the 1950s compared to the conditions in the 2000s. The company has grown from the beginning only to have an operational scope on a local/regional scale, has few suppliers, a simple organizational structure and a self-managed business owner has developed into a company with global operational scale characteristics, vendors with global networking, matrix-shaped organizational structure and the absence of owners in business management that have been delegated to managers/directors (Marks, 2012).

According to Marks (2012), 89% of fraud cases are carried out by personnel at the top-level management level, namely by the Chief Executive Director (CEO) and Chief Financial Director (CFO). 70% of profiles of perpetrators of fraud are caused by arrogance/greed and individual pressure faced (Marks, 2012). Marks (2012) concluded that the level of arrogance of a company leader has the following characteristics:

1.   A personality that has a high ego and has a mindset of "CEO is celebrity".
2.   Having the idea that the application of internal control cannot prevent fraud activities that they do.
3.   Having behavior that tends to often intimidate subordinates and/or coworkers.
4.   Having an autocratic management style.
5.   Having fears losing position and/or status that has been achieved.

H3: Fraud pentagon has a significant effect on the occurrence of corporate fraud.

III.   RESEARCH FRAMEWORK

Figure 1 below is the model of the research framework in this study. This conceptual framework illustrates the effect of independent variables on the dependent variable with a sample of companies listed on the Indonesia Stock Exchange.
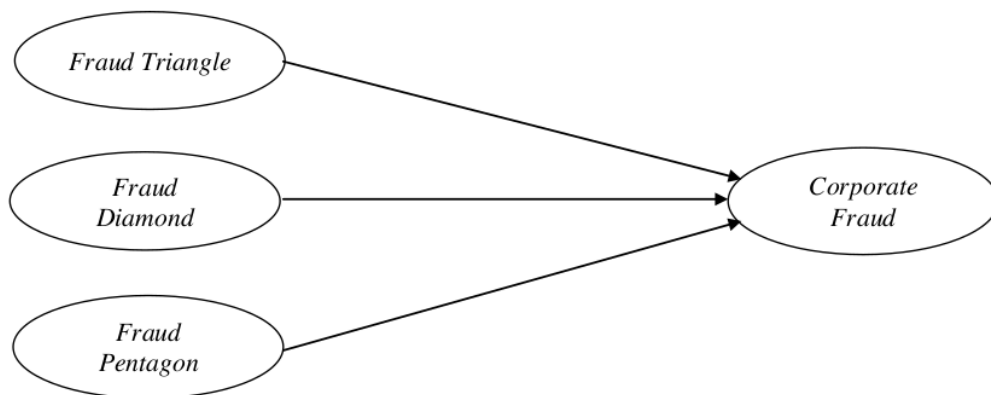

Figure 1.
Research Framework

IV.   RESEARCH METHODOLOGY

This study is classified as a basic research that uses a deductive approach which uses hypotheses as guidelines and directions to determine the research methods used in fact testing (Schindler, 2018). This study was a causal comparative study and using cross sectional panel data (Schindler, 2018). The populations in this research are companies listed on the Indonesia Stock Exchange and the sampling method uses purposive sampling method. The sample used in this study is the samples have met the criteria that have been determined. The criteria for company samples to be examined are as follows:

1. Registered on the Indonesia Stock Exchange from the period 2011 to 2017.
2. Not engaged in the financial, property, real estate industry and/or construction industry.
3. Has published financial statement consisting of statement of financial position, statement of profit or loss and other comprehensive income and statement of cash flow by using the Rupiah (Rp) as reporting currency from 2011 to 2017.
4. Has published annual report consisting of a list of CEO profiles, board of director profiles, company committee profiles, disclosure of the company's shareholding structure, a list of board of director's meetings from 2011 to 2017.

The final data collected will be analyse through the statistic description test, outlier test, classic assumption test (autocorrelation test, multicollinearity test, heteroscedasticity test and normality test), and hypothesis test (F value test, t value test, coeffision determination test) using SPSS *(Statistical Package for The Social Sciences)* 24.0. The operational definition of variable and its indicator used in this research were as follow:

Tabel 1. Operational Definition of Variable

No	Variable	Indikator	References
1	Pressure	Financial Stability	Lokanan & Sharma (2018); Skousen *et al.* (2009)
		External Pressure	Lokanan & Sharma (2018); Skousen *et al.* (2009)
		Personal Financial Needs	Lokanan & Sharma (2018); Skousen *et al.* (2009)
		Financial Target	Lokanan & Sharma (2018); Skousen *et al.* (2009)
2	Opportunity	Ineffective Monitoring	Hasnan *et al.* (2013); Lokanan & Sharma (2018)
		Nature of Industry	Skousen *et al.* (2009); Wang *et al.* (2017)
		BOD Turnover	Abdullahi *et al.* (2015); Jia *et al.* (2009)
		Multiple Directorship	Hasnan *et al.* (2013)
3	Rationalization	Auditor Switch	Lokanan & Sharma (2018); Skousen *et al.* (2009)
		Audit Opinion	Lokanan & Sharma (2018); Skousen *et al.* (2009)
		Related Party Transaction	Abdullahi *et al.* (2015); Hasnan *et al.* (2013)
		Founder's on Board	Hasnan *et al.* (2013)
4	Capability	CEO Tenure	Abdullahi *et al.* (2015); Wang *et al.* (2017)
		CEO Age	Abdullahi *et al.* (2015)
		CEO Educations	Abdullahi *et al.* (2015); Lokanan & Sharma (2018)
5	Arrogance	CEO Narcissism	Abdullahi *et al.* (2015); Puspitha & Yasa (2018)
		Political Connections	Hasnan *et al.* (2013); Wu, Johan, & Rui (2014)
6	Corporate Fraud	Beneish M-Score	Beneish (1999); Warshavsky (2012); Zaki (2017)
		F-Score	Dechow *et al.* (2011); Hung, Ha, & Binh (2017)
		Tax Avoidance	Chen, Huang, Liu, & Wang (2019)

V.   RESULTS AND DISCUSSIONS

The total population of companies listed on the Indonesia Stock Exchange (IDX) as March 1, 2019 is 626 companies. There are 208 companies listed on the IDX after January 1, 2012 so that they do not meet the research criteria and are not further examined in this research. Of the remaining 418 companies listed on the IDX before January 1, 2012, there were 108 companies which were not examined further because they were engaged in the finance, property, real

estate and construction industries (64 moving companies in the financial industry and the remaining 44 companies are engaged in the property, real estate and construction industries). Thus the data of remaining 310 companies was collected from 2012 to 2017 resulting 1,550 data that will be further examined in this research.

All the of classic assumption test conducted showed that the data passed all the classic assumption test with Durbin Watson value (autocorrelation test) of 0.79 for financial distress and 1.30 for corporate fraud, VIF value (multicollinearity test) of 1.013 for pressure, 1.04 for opportunity, 1.62 for rationalization, 1.00 for capability, and 1.63 for arrogance. The result of scatterplot test (heteroscedasticity test) and normal P-P Plot test (normality test) also showed that the data do not have heteroscedasticity and normality problem.

Tabel 2. Result of Hypothesis Test (F value test)

No	Dependent Variable	Independent Variable	F	Sig.	Decision
H1	Corporate Fraud	Fraud Triangle	10,94000	0,00000b	Accepted
H2	Corporate Fraud	Fraud Diamond	9,23700	0,00000b	Accepted
H3	Corporate Fraud	Fraud Pentagon	8,00500	0,00000b	Accepted

Based on the results of hypothesis testing in Tabel 2 above, it can be concluded that all hypothesis one (H1), hypothesis two (H2) and hypothesis three (H3), are successfully accepted, so it can be concluded that pressure, opportunity, rationalization, capability and arrogance has a significant influence on corporate fraud. The results of this study are consistent with the results of previous studies conducted by Abdullahi *et al.* (2015), Aminian *et al.* (2016), Dechow *et al.* (2011), Hasnan *et al.* (2013), Jia *et al.* (2009), Lokanan and Sharma (2018), Maccarthy (2017), Puspitha and Yasa (2018), Skousen *et al.* (2009), Wang *et al.* (2017), Warshavsky (2012), Wu *et al.* (2014) and Zaki (2017).

VI.   CONCLUSIONS AND RECOMMENDATIONS

This study tries to empirically examine the factors that enable corporate fraud to occur using only secondary data available and freely accessible to the general public, so that the general public can analyze the possibility of corporate fraud in a company based on secondary data. Various fraud theories were used in this study to explain the variables that can cause corporate fraud. From the results of this study, it can be concluded that all relevant fraud theory, included fraud triangle theory fraud diamond theory and fraud pentagon theory can be effectively used to detect the possibility of corporate fraud, where the measurement of all variables examined in this study uses secondary data that can be accessed freely by the public. This facilitates the efforts of economic practitioners, academics, governments and even the public to detect the possibility of corporate fraud occurring in day to day economic activities.

Some recommendations and suggestions that can be developed in future research/studies are expand the scope of the analysis of corporate fraud by including an analysis of other types of corporate fraud such as misuse of company assets and fraudulent government, development of formulas/measurements so that they can be applied to detect corporate fraud in companies engaged in the finance, property, real estate and construction industries. Future researcher also can changing the method of collecting data from secondary data into primary data or combined data using questionnaire instruments or by direct interviews with the respondents involved in research so that research can be done with the availability of more complete and accurate data.

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