Analysis of Fraudulent Financial Reporting Through the Fraud Pentagon Theory

Sulvia Maulidiana, Triandi Triandi*
Accountancy Department
Institut Bisnis dan Informatika Kesatuan
Bogor, Indonesia
*triandi.kesatuan@gmail.com

Abstract—**This research was carried out because there were several cases of financial statement manipulation that were only detected after the fraud resulted in considerable losses. Fraud pentagon theory which has five elements of fraud is considered to influence the occurrence of fraudulent financial reporting. This study aims to examine how effect of each element of fraud on the pentagon fraud theory is partially and simultaneously on the occurrence of fraudulent financial reporting in mining sector companies listed on the Indonesian Stock Exchange during 2013 to 2017. The samples used were 24 mining sector publicly listed companies that listed on the Indonesian Stock Exchange during 2013-2017, with 120 observations. The data used are secondary data in the form of financial statements and company annual reports which are used as research samples. Data test equipment uses SPSS software version 22. The results of the study indicate that all independent variables (opportunity, pressure, rationalization, competence, and arrogance) simultaneously have a significant effect on fraudulent financial reporting. The results of the study also show that partially, the pressure variable proxied by external pressure and the rationalization variable proxied by the total accrual ratio proved to have a significant effect on fraudulent financial reporting.**

Keywords: fraudulent financial reporting, fraud pentagon, pressure, rationalization

I. INTRODUCTION

Every company going public in Indonesia is required to publish its financial statements to provide information about the company's performance in a period to all investors on the Indonesia Stock Exchange (IDX) [1].

At present there are more and more fraud cases which can cause quite a number of losses such as in the 2016 Global Fraud Study that the number of losses resulting from fraud such as fraudulent financial statements in 2012 and 2014 is around $ 1,000,000 and in 2016 around $ 975,000, compared to other types of fraud, financial statement fraud results in a greater loss [2]. Seeing the significant difference in the number of losses is reminiscent of the Enron case that occurred in 2002 involving a well-known public accounting firm, Arthur Andersen's Public Accounting Firm [3]. There are also cases of fraud (fraudulent types of financial reporting) that have occurred in companies going public in Indonesia, namely the case of PT Kimia Farma, Tbk (KAEF) that has been listed on the Stock Exchange which manipulates the value of its inventory and sales. The case was rumored to occur because of the problem of slowing down the growth of the pharmaceutical industry into a challenge so that the company tried to apply various efforts to keep going concern. The business that was sometimes and rife was done by cheating as did the management of PT Kimia Farma, Tbk [4].

Based on the case, it is possible that companies going public still have the opportunity to manipulate financial statements, then there are reasons such as pressure on the company that triggers financial reporting fraud. Likewise in the mining sector in Indonesia, the coal sector has experienced a crisis since 2011 based on a World Bank study, coal prices fell by 60% starting from early 2011 and the World Bank in its projections estimates coal prices will drop by 13% in 2016 [5].

Based on this, the mining sector is experiencing pressure which will make the sector continue to strive to keep going, and generate profits for the company. This pressure was experienced by PT Kimia Farma, Tbk when in 2002 which finally made management take action in manipulating financial statements, so the pressure that occurred in the mining sector according to the consideration of researchers tends to have the potential for companies to commit fraud.

Many fraud cases occur, but on average these cases are always handled after they occur, so the losses incurred cannot be prevented. Like fraud cases in the mining sector there are 27 cases with an average loss of around $ 208,000 then the energy sector recorded 94 cases occurred, a loss of around $ 300,000 [6]. Until now, cheating in general has not been prevented because it cannot be detected early. Therefore, there are some researchers who put forward theories to facilitate auditors and the general public to detect fraud such as the Fraud Triangle Theory proposed by Cressey in 1953, then developed into the Diamond Theory Fraud proposed by Wolfe and Hermanson [7] and finally the Pentra Theory Fraud proposed by Crowe Horwarth in 2011, known as the Crowe's Fraud Pentagon Theory. In the Crowe's Fraud Pentagon theory there are 5 (five) elements to detect fraud in the financial statements, namely opportunity, pressure, rationalization, competence, and arrogance. This study aims to determine the effect of

opportunity, pressure, rationalization, competence, and arrogance on financial statement fraud, and the effect of opportunity, pressure, rationalization, competence, and arrogance simultaneously on financial statement fraud.

II. LITERATURE REVIEW

A. Fraud

According to Statement of Audit Standards (SAS) Number 99 in Arens et al. there are two types of misstatements in the financial statements, namely errors (errors) and fraud (fraud). Error (error) is a misstatement in financial statements that are accidental in nature [8]. Examples such as miscalculating the sale price to a customer due to incorrect calculation of the quantity sold. While fraud is a misstatement in the financial statements that are intentional in nature.

According to Marks, there are three elements in cheating, namely: conversion, concealment, theft. Misappropriation of assets according to Tuanakotta in 2016 is an illegal 'taking' of assets (carried out illegally or against the law) by someone authorized to manage or supervise these assets [9].

According to the National Commission on Financial Statement Reporting (Treadway Commission) in the Accounting Information Systems Book, defines financial statement reporting (financial statement reporting) as intentional or careless behaviour, whether by taking an action or negligence, which can produce financial statements that are materially misleading [10].

B. Fraud Pentagon Theory

Pentagon fraud theory was first put forward by Crowe Horwarth in 2011, this theory is the latest theory of fraud triangle theory proposed by Cressey in 1953. This theory also includes the development of the diamond fraud theory proposed by Wolfe and Hermanson in 2004. Theory fraud triangle and diamond fraud theory are still inadequate for detecting fraud. Then Abayomi revealed that pentagon fraud theory will undoubtedly contribute by providing elements or elements believed to be helpful in detecting fraud [11].

In this theory there are 5 (five) elements or elements namely opportunity, pressure, rationalization, competence, arrogance as shown in Figure 1 and conceptual framework can see Figure 2.

Source : Yusof [12].

Fig. 1. Fraud pentagon theory.
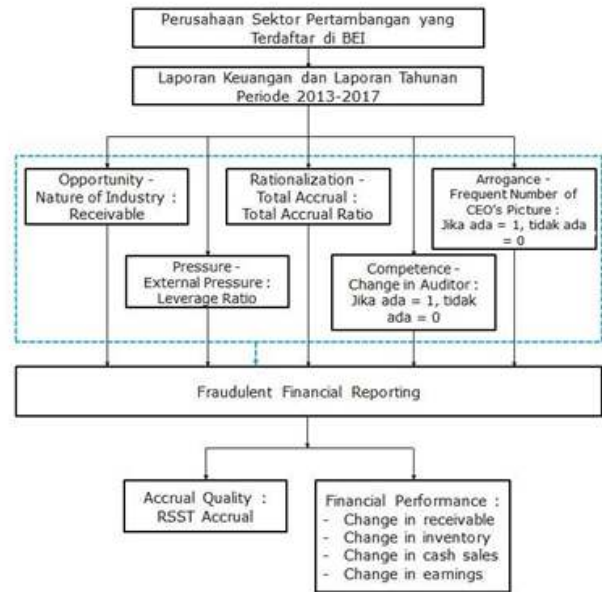
C. Conceptual Thinking Framework

Fig. 2. Conceptual framework.

III. METHODOLOGY

This study uses quantitative research methods. Population this research is all companies going public in the mining sector which are listed on the Indonesia Stock Exchange (IDX). Sample selection uses purposive sampling method. Positive sampling is a way of selecting samples based on certain considerations [13].

The data source of this research is secondary data, namely financial statements and annual reports. Types of data used are quantitative data such as numerical data, facts that can be measured systematically. Data collection procedures are performed using library studies, documentation methods and searching from the internet. The data is done by using SPSS software version 22. Variables used in this study are financial reporting fraud as the dependent variable and several independent variables, namely opportunities that are proxied by the nature of the industry, pressures that are proxied by external pressures, rationalization which is proxied by total accruals, competencies that are proxied by with change of auditors, and arrogance as proxied by frequent numbers of CEO's picture (see table 1).

TABLE I. OPERASIONALISASI VARIABEL

Research variable	Sub Variable	Source	Indicator	Scale
Fraudulent Financial Reporting	Accrual Quality	[14]	RSSTAccrual	Ratio
	Financial Performance	[15]	Change in receivable	Ratio
			Change in inventory	Ratio
			Change in cash sales	Ratio
			Change in earnings	Ratio
Opportunity	Nature of Industry	[16,17]	Receivable Ratio	Ratio
Pressure	External Pressure	[17]	Leverage Ratio	Ratio
Rationalization	Total Accrual	[17]	Total Accrual Ratio	Ratio
Competence	Change of Auditors	[3,17]	Change of Auditors = 1 Otherwise = 0	Nominal
Arrogance	Frequent Number of CEO's Picture	[12]	There is a CEO photo = 1 Otherwise = 0	Nominal

A. Analysis Method

In this study, researchers used descriptive statistics, classic assumption test, multiple linear regression analysis, adjusted determination coefficient, statistical test f, and statistical test t.

Descriptive statistics used with the aim of describing the data of the dependent variable in the form of fraudulent financial reporting, and the independent variable is the opportunity proxied by the nature of industry, pressure that is proxied by external pressure, rationalization that is proxied by total accruals, competence proxied by change of auditors, and arrogance proxied by frequent numbers of CEO's picture. The researcher uses the adjusted R2 value to evaluate the regression model. Because the adjusted R2 value can go up or down if an independent variable is added to the model [18].

IV. RESULTS AND DISCUSSION

The object of research is the mining sector publicly listed company listed on the Indonesia Stock Exchange (IDX) for the 2013-2017 period. The data collection method uses positive sampling method with 5 (five) predetermined criteria. Based on the criteria, of the 46 companies that met the criteria and could be sampled for the study were 24 companies, the year of observation used was 5 years from 2013 to 2017, thus the amount of data studied was 120 data for each variable.

A. Descriptive Statistical Analysis

TABLE II. DESCRIPTIVE STATISTICS OF RATIO SCALE VARIABLES

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
F-Score	120	-18,37885	18,07117	,2040781	5,65622633
Receivable	120	-1,32855	1,85056	,0031359	,24061306
LEV	120	,09779	1,98553	,5520026	,32794087
TAc	120	-,56641	1,19937	-,0562040	,16986949
Valid N (listwise)	120				

TABLE III. DESCRIPTIVE STATISTICS OF NOMINAL VARIABLES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	There is no change in auditors	95	79,2	79,2	79,2
	There is a change of auditors	25	20,8	20,8	100,0
	Total	120	100,0	100,0	
Valid	There is no picture of the CEO	58	48,3	48,3	48,3
	There is a picture of the CEO	62	51,7	51,7	100,0
	Total	120	100,0	100,0	

Descriptive statistical results for the F-Score which is shown in table 2 are: there are 120 data and no missing value, the minimum (smallest) F-Score value is -18,379 owned by PT Apexindo Pratama Duta, Tbk. (APEX) in the period 2017. The maximum (largest) F-Score is 18,071 owned by PT Energi Mega Persada, Tbk. (ENRG) in the 2017 period. The mean or average value of the F-Score data is 0.204 with a standard deviation of 5.656.

The results in table 3 explain that the variable change of auditors (CoAud) and frequent number of CEO's picture (CEOPic). The descriptive statistical results for the change of auditors are: out of the total 120 data studied, 79.2% or 95 annual periods some mining sector companies change their external auditors, then 20.8% or 25 annual periods some mining sector companies do not changing external auditors.

Descriptive statistical results for frequent numbers of CEO's picture are: from a total of 120 data studied, 48.3% or 58 annual periods of several mining sector companies contained pictures or photos of CEOs in the company's annual report, and amounted to 51.7 % or as many as 62 annual periods of several mining sector companies do not have a picture or photo of the CEO in the company's annual report.

B. Classic Assumption Test Results

1) Normality test

TABLE IV.   NORMALITY TEST RESULTS

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		120
Normal Parameters[a,b]	*Mean*	,0000000
	Std. Deviation	4,69606513
Most Extreme Differences	*Absolute*	,077
	Positive	,077
	Negative	-,072
Test Statistic		,077
Asymp. Sig. (2-tailed)		,074[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

The normality test (table 4) using Kolmogorov-Smirnov (K-S) shows the results of Asymp. Sig. (2-tailed) of 0.074 is greater than 0.05 (0.074> 0.05), so in this study the data is normally distributed. Then the results of the histogram and normal probability plots graphs produce the following results (Figure 3):
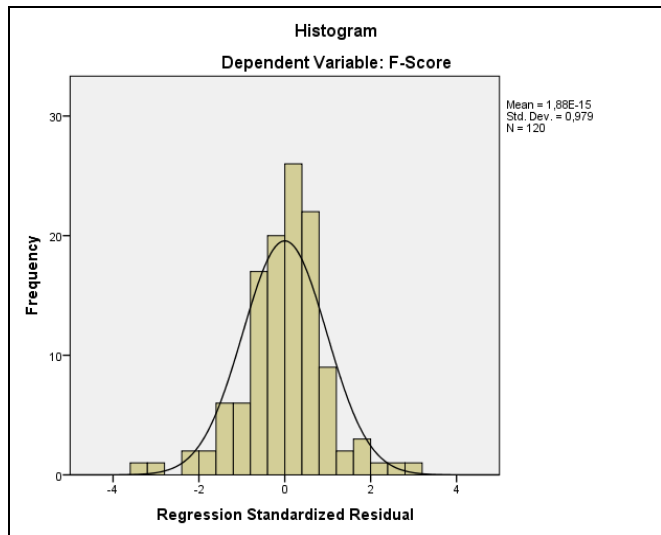

Fig. 3.   Histogram of normality test.

The histogram shows that the symmetrical graph is not right or left, so the data in this study are normally distributed. Then in the normal probability plots graph, there are points that follow the diagonal line, so based on the graph the data is normally distributed.
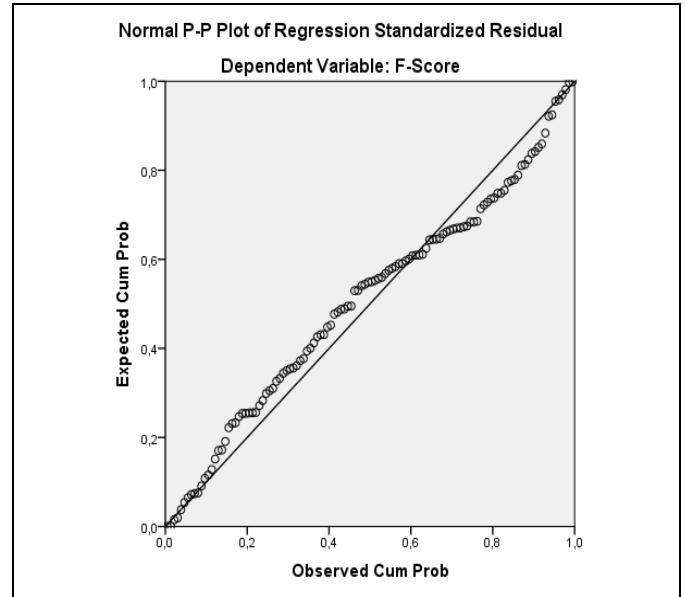

Fig. 4.   Chart of normal probability plots.

In Figure 4 shows the histogram that the symmetrical graph is not right or left, so the data in this study are normally distributed. Then in the normal probability plots graph, there are points that follow the diagonal line, then based on the graph the data is normally distributed.

C. Results of Multiple Linear Regression Analysis

TABLE V.   RESULTS OF MULTIPLE LINEAR REGRESSION ANALYSIS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients
		B	*Std. Error*	*Beta*
1	(Constant)	-37,176	10,430	
	Receivable	-,877	1,881	-,037
	LEV	3,685	1,376	,214
	TAc	18,034	2,646	,542
	CoAud	-,364	1,094	-,026
	CEOPic	-,492	,894	-,044

a. Dependent Variable: F-Score

The constant value (see table 5) is negative at 37.176 meaning that without the independent variables (receivable, LEV, TAc, CoAud, and CEOPic), the F-Score (Fraud Score) which proxies fraudulent financial reporting is obtained by -37,176 or it can be said that there is no fraudulent financial reporting.

Regression coefficient for frequent number of CEO's picture (CEOPic) variables which propose arrogance has a negative value of 0.492 meaning that the frequent number of CEO's picture has a negative effect on F-Score which proceeds fraudulent financial reporting. If other independent variables are considered permanent then the presence of pictures or photos of the company's CEO in the company's annual report (value 1) can reduce the F-Score by 0.492 and have the possibility of no indication of fraudulent financial reporting. And if there are no pictures or photos of the company's CEO in the company's annual report (value 0), still a company has the possibility of no indication of fraudulent financial reporting.

D. Simultaneous Significance Test Results (Statistical Test F)

TABLE VI. SIMULTANEOUS SIGNIFICANCE TEST RESULTS (STATISTICAL TEST F)

ANOVA^a

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1182,844	5	236,569	10,277	,000^b
	Residual	2624,310	114	23,020		
	Total	3807,155	119			

a. Dependent Variable: F-Score

b. Predictors: (Constant), CEOPic, Receivable, CoAud, TAc, LEV

The results of the F statistical test (see table 6), produce a significance value (Sig.) of 0,000, the results of the significance value is smaller than 0.05 (0,000 <0.05). Then the calculated F value is 10.277, then the calculated F value is greater than the F table (10.277> 2.29). So it can be concluded that in this study the independent variables consisting of opportunity (X1 - receivable), pressure (X2 - LEV), rationalization (X3 - TAc), competence (X4 - CoAud), and arrogance (X5 - CEOPic) together- the same or simultaneous has a significant effect on the dependent variable, namely financial reporting fraud (Y - F-Score), because the significance value is 0,000 <0.05 and the

calculated F value is 10.277> F table 2.29. Then hypothesis H06 is rejected and hypothesis H6 (alternative hypothesis) is accepted which states that 'Opportunity, Pressure, Rationalization, Competence, and Arrogance simultaneously have a significant effect on Fraudulent Financial Reporting'.

E. Individual Parameter Test Results (Statistical Test t)

TABLE VII. INDIVIDUAL PARAMETER TEST RESULTS (STATISTICAL TEST T)

Coefficients^a

	Model	T	Sig.
1	(Constant)	-3,565	,001
	Receivable	-,466	,642
	LEV	2,679	,008
	TAc	6,817	,000
	CoAud	-,333	,740
	CEOPic	-,550	,583

a. Dependent Variable: F-Score

Based on t table (see table 7), the value of t table in this study is 1.98099, which means that if the value of t arithmetic is between negative values of 1.98099 and positive 1.98099 then the value of t arithmetic is in an area that has no significant effect. Then the results of the individual parameter tests that have been carried out can be explained as follows:

Then it can be concluded that the independent variable (X1) Opportunity (Receivable) partially does not significantly influence the dependent variable (Y) Financial Title Reporting (F-Score), which means H1 (alternative hypothesis) is rejected and H01 is accepted. And then It can be concluded that the independent variable (X2) Pressure (LEV) partially has a significant positive effect on the dependent variable (Y) Fraudulent Financial Reporting (F-Score), when the pressure (LEV) increases, the greater the indication of fraudulent financial reporting. Which means that H02 is rejected and H2 (alternative hypothesis) is accepted (see table 8).

TABLE VIII. HYPOTHESIS TEST RESULTS

Zero Hypothesis	Alternative Hypothesis	Hypothesis Statement Accepted
H$_{01}$: accepted	H$_1$: rejected	Opportunity which is proxied by the nature of industry does not significantly influence the fraudulent financial reporting
H$_{02}$: rejected	H$_2$: accepted	Pressure which is proxied by external pressure has a significant effect on fraudulent financial reporting
H$_{03}$: rejected	H$_3$: accepted	Rationalization which is proxied by total accruals has a significant effect on fraudulent financial reporting.
H$_{04}$: accepted	H$_4$: rejected	Competence proxied by change of auditors has no significant effect on fraudulent financial reporting.
H$_{05}$: accepted	H$_5$: rejected	Arrogance which is proxied by frequent number of CEO's picture has no significant effect on fraudulent financial reporting.
H$_{06}$: rejected	H$_6$: accepted	Opportunity, Pressure, Rationalization, Competence, and Arrogance simultaneously have a significant effect on Fraudulent Financial Reporting.

In this study it can be conclude that conducted on 24 mining sector companies listed on the Indonesia Stock Exchange, stated that the pressure and rationalization variables partially had a significant effect on fraudulent financial reporting. Then the opportunity, competence, and arrogance variables partially do not have a significant effect on fraudulent

financial reporting. However, simultaneously all variables included in the fraud element of pentagon theory have a significant effect on fraudulent financial reporting.

V. Conclusion

In this study conducted on 24 mining sector companies listed on the Indonesia Stock Exchange, stated that the pressure and rationalization variables partially had a significant effect on fraudulent financial reporting. Then partial opportunity, competence, and arrogance do not have a significant effect on fraudulent financial reporting. However, simultaneously all variables included in the pentagon theory fraud element have a significant effect on fraudulent financial reporting.

Acknowledgment

References

[1] E.R. Anantha, I.D.M. Suartha, dan I.K. Westra, Kewajiban Keterbukaan Sebuah Perusahaan Sebagai Emiten Setelah Go Public. Bali: Fakultas Hukum Universitas Udayana, 2010.

[2] Association of Certified Fraud Examiners (ACFE), Report To The Nation on Occupational Fraud and Abuse: 2016 Global Fraud Study. United States of America: Association of Certified Fraud Examiners, Inc., 2016.

[3] G.C. Tessa and P. Harto, Fraudulent Financial Reporting: Pengujian Teori Fraud Pentagon Pada Sektor Keuangan dan Perbankan di Indonesia. Semarang: Fakultas Ekonomika dan Bisnis Universitas Diponegoro, 2016.

[4] K.L.S Devy, M.A. Wahyuni, dan N.L.G.E. Sulindawati, "Pengaruh Frequent Number of CEO's Picture, Pergantian Direksi Perusahaan dan External Pressure dalam Mendeteksi Fraudulent Financial Reporting (Studi Empiris pada Perusahaan Farmasi yang Listing di BEI Periode 2012-2016)," e-Journal S1 Ak Universitas Pendidikan Ganesha, vol. 8, no. 2, pp. 1-12, 2017.

[5] M.S. Handayani, "Puncak Kegalauan Industri Batu Bara," 2016. [Online]. Tersedia pada: https://amp.tirto.id/puncak-kegalauan-industri-batu-bara-piP [Diakses pada tanggal 21 Maret 2016].

[6] Association of Certified Fraud Examiners (ACFE), Report To The Nation: 2018 Global Fraud Study on Occupational Fraud and Abuse. United States of America: Association of Certified Fraud Examiners, Inc., 2018.

[7] D.T. Wolfe dan D.R. Hermanson, "The Fraud Diamond: Considering the Four Elements of Fraud," The CPA Journal, vol. 74, pp. 38-42, 2004.

[8] A.A. Arens, R.J. Elder, dan M.S. Beasley, Auditing & Jasa Assurance Pendektaran Terintegrasi, Edisi 15, Jilid 1. Jakarta: Penerbit Erlangga, 2015.

[9] J. Marks, The Mind Behind The Fraudsters Crime: Key Behavioral And Environmental Elements. Crowe Horwarth LLP (Presentation), 2012.

[10] M.B. Romney and P.J. Steinbart, Sistem Informasi Akuntansi. Jakarta: Salemba Empat, 2014.

[11] S.O. Abayomi, "Personal Ethics and Fraudster Motivators: The Missing Link in Fraud Triangle and Fraud Diamond Theories," International Journal of Academic Research in Business and Social Sciences, vol. 6, no. 2, 2016.

[12] K.M. Yusof, Fraudulent financial reporting: An application of fraud models to malaysian public listed companies. UK: Doctoral dissertation, University of Hull, 2016.

[13] A. Sanusi, Metodologi Penelitian Bisnis. Jakarta: Salemba Empat, 2011.

[14] S.A. Richardson, R.G. Sloan, M.T. Soliman, and I. Tuna, "Accrual reliability, earnings persistence and stock prices," Journal of accounting and economics, vol. 39, no. (3), pp. 437-485, 2005

[15] C.J. Skousen and B.J. Twedt, "Fraud score analysis in emerging markets," Cross Cultural Management, vol. 16, no. (3), p. 301, 2009.

[16] J.K. Loebbecke, M.M. Eining, and J.J. Willingham, :Auditors experience with material irregularities-frequency, nature, and detectability," Auditing-A Journal of Practice & Theory, vol. 9, no. (1), pp. 1-28, 1989.

[17] C.J. Skousen, K.R. Smith, and C.J. Wright, "Detecting and predicting financial statement fraud: The effectiveness of the fraud triangle and SAS No. 99," Advances in Financial Economics, vol. 13, no. (1), pp. 53-81, 2009.

[18] I. Ghozali, Aplikasi Analisis Multivariate dengan Program IBM SPSS 25, Edisi 9. Semarang: Badan Penerbit Universitas Diponegoro, 2018.