

Analysis of Determinants That Influence Financial Statement Fraud

Empirical Study on Mining Companies Listed in Indonesia Stock Exchange (BEI)

A THESIS

Presented as a Partial Fulfilment of the Requirements to Obtain Bachelor Degree
in Accounting Department



by:

MUHAMMAD AFIEF WIDIYATMOKO

Student Number: 16312143

**DEPARTMENT OF ACCOUNTING
INTERNATIONAL PROGRAM
FACULTY OF BUSINESS AND ECONOMICS
UNIVERSITAS ISLAM INDONESIA
YOGYAKARTA**

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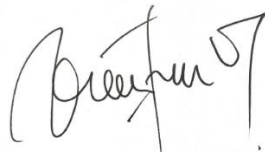
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Supervisor,

A handwritten signature in black ink, appearing to read 'Sigit Handoyo', with a stylized flourish at the end.

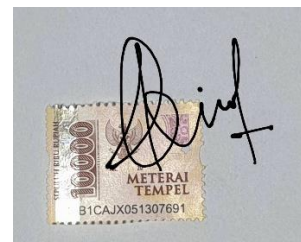
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DECLARATION OF AUTHENTICITY

Hereby I declare the originality of this thesis. There is no other work from other individuals that I use to obtain my degree in this university, nor other individual's statements and ideas without acknowledgement. Every quotation is listed and cited on the thesis reference.

If the statement is proven to be false in the future, I am willing to accept any sanctions which applied.

Yogyakarta, March 3, 2021

A handwritten signature in black ink is written over a yellow revenue stamp. The stamp features the number '10000' in a large font, the words 'METERAI TEMPEL' below it, and the alphanumeric code 'B1CAJX051307691' at the bottom. The signature is a cursive script that appears to read 'Afief'.

Muhammad Afief Widiyatmoko

MOTTO

"O you who believe, make patient and prayer as your helper, verily Allah be with those who are patient"

(Al-Baqarah: 153)

"If you are grateful then I (Allah) will add (favour) to you. And if you deny it, then truly the punishment of Allah is very painful "

(Ibrahim: 7)



ABSTRACT

The objective of this research is to analyse the determinants using fraud pentagon elements that influence financial statement fraud. The fraud pentagon is represented into six variables consist of two variables of pressure element (financial target and financial stability), one variable of opportunity element (ineffective monitoring), one variable of rationalization element (change in auditor), one variable of capability element (change in director), and one variable of arrogance element (dual position) in analysing determinants that affect financial statement fraud. F-Score is used to determine the financial statement fraud. This research's data analysed mining companies' financial statements during 2017 until 2019 period. This research selected 32 companies using purposive sampling method and analysed the data using robust regression method with EViews software. The result of this research shows that only financial target variable has significantly and positive effect on financial statement fraud. While for the variable financial stability, ineffective monitoring, change in auditor, change in director, and dual position does not significantly affect the financial statement fraud.

Keyword: Financial Statement Fraud, Fraud Pentagon, Robust Regression, and E-Views.



ABSTRAK

Tujuan dari penelitian ini adalah untuk menganalisis determinan yang menggunakan unsur fraud pentagon yang memengaruhi kecurangan laporan keuangan. Fraud pentagon diproksikan menjadi enam variabel yang terdiri dari dua variabel yaitu elemen tekanan (target keuangan dan stabilitas keuangan), satu variabel elemen peluang (pemantauan tidak efektif), satu variabel elemen rasionalisasi (pergantian auditor), satu variabel elemen kapabilitas (pergantian direktur), dan satu variabel elemen arogansi (rangkap jabatan) dalam menganalisis determinan yang memengaruhi kecurangan laporan keuangan. F-Score digunakan untuk menentukan kecurangan laporan keuangan. Data penelitian ini menganalisis laporan keuangan perusahaan pertambangan selama periode 2017 hingga 2019. Penelitian ini memilih 32 perusahaan dengan menggunakan metode *purposive sampling* dan menganalisis datanya menggunakan metode regresi robust dengan *software* EViews. Hasil penelitian menunjukkan bahwa hanya variabel target keuangan yang berpengaruh positif dan signifikan terhadap kecurangan laporan keuangan. Sedangkan untuk variabel stabilitas keuangan, pemantauan yang tidak efektif, pergantian auditor, pergantian direktur, dan rangkap jabatan tidak berpengaruh signifikan terhadap kecurangan laporan keuangan.

Kata Kunci: Kecurangan Laporan Keuangan, Fraud Pentagon, Regresi Robust, dan E-Views.



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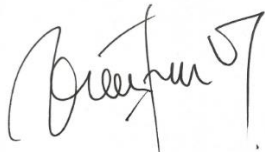
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A BACHELOR DEGREE THESIS

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Dean,

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Economic conditions have had a lot of influences on companies. One of the most obvious influences is economic conditions that affect company performance. The company's performance is reflected in the company's financial statements, this is of course the concern of investors in deciding to put investment in the company. The short-term goal of company is to maximize profits, by increasing revenue or reducing costs / liabilities. It is on this basis that the company wants to appear to be performing well. Financial reports are a measure of the efficiency and effectiveness of a company's performance and it is expected that financial reports can function optimally in providing information needed by interested parties.

The tendency to commit financial reporting fraud inside of company is usually demand based to continuously make improvements and increase operation with the intention of increasing the company's value which will later be presented in the financial statements. On this basis, companies often carry out an illegal earnings management in various ways to beautify their financial statements in order to win the hearts of investors. In line with the Statement of Financial Accounting Concept (SFAC) No. 1 statement, it has been described that the main element in the measurement of results or management responsibility is the details on earnings, such that in their

attempts to have good earnings information, they often contribute to earnings management behaviour.

Those reasons that have been mentioned will cause the desire of the company to present the best possible information with a predetermined time to meet the needs or desires of its users, which in turn can create a large risk of fraud. According to the Association of Certified Fraud Examiners (2016), fraud is somewhat intentional or deliberate action to deprive other's property or money by guile, deception or other unfair means and fraud is a general specific principle, however auditors cannot undertake legal decisions as to whether fraud has occurred. Rather, the concern of the auditor applies explicitly to actions that end in a substantial misstatement of the financial statements. The underlying action that results in the misstatement of the financial statements is intentional or unintentional is the primary factor that distinguishes fraud from error. The Association of Certified Fraud Examiners defines fraud in financial statements as intentional, misrepresentation or omission of material facts, or accounting data that can be misleading and when used for consideration with all existing information, will cause users of financial statements to change their judgments or decision (Zhou & Kapoor, 2011). In practice, fraud in financial statements consists of manipulation of financial records, intentionally to omit events, transactions, accounts or other significant information or misapplication of accounting principles, policies or procedures used to measure, record, report and disclose transactions.

There have been several financial statement fraud cases. One of the cases of fraudulent financial reporting that occurred in the mining sector that had been exposed was Chairman of the Tin Employees Association (IKT), Ali Samsuri revealed PT Timah Plc allegedly provided a fictitious financial report in the first semester of 2015. This fictitious financial reporting activity was carried out in order to cover PT Timah's continued worrying financial performance. The inability of the Directors of PT Timah to escape from the loss trap has resulted in the handover of 80% of the mining area belonging to PT Timah to business partners. Referring to the real conditions that occurred at PT Timah, Ali believes that PT Timah Plc's first semester financial statements are fictitious. Because according to him, in the first semester of 2015, PT Timah's operating profit had suffered a loss of Rp. 59 billion. Thus, the financial report which states that PT Timah has succeeded in carrying out efficiency activities and the right strategy and resulted in positive performance is a big lie (tambang.co.id, 2016). In addition, Indonesia Corruption Watch (ICW) also reported the alleged manipulation of reporting on the sale of three coal mining companies belonging to the Bakrie Group to the Directorate General of Taxes. ICW suspects that PT Bumi Resources Plc and its subsidiaries had fictitious reports from 2003-2008. The results of ICW calculations using various primary data including audited financial reports, show that Bumi's sales report during 2003-2008 was US \$ 1.06 billion lower than it actually was. As a result, it is also estimated that the state's loss from the shortage of Coal Production Funds

revenue (royalty) will reach US \$ 143.18 million. The state loss from underpayment of taxes reached US \$ 477.29 million. Some of these phenomena prove that fraud in profits is still common (tempo.co, 2010). According to Schipper (1989), Subramanyam & Wild (2010), they state that management can use policies in financial reports to reduce and increase earnings according to their interests by not violating accounting principles. In addition, this phenomenon indicates that mining sector companies listed on the Indonesian stock exchange will tend to use accounting methods to increase their profits, so that they can compete more with other sectors to attract investors.

In general, fraud will always occur in the absence of previous prevention and detection. Therefore, the triangle of fraud, the diamond of fraud, and the pentagon of fraud would be several ways that can be used to detect fraud. Cressey (1953) in Skousen et al. (2008) present three conditions in the form of a framework for identifying factors that influence fraud, namely pressure, opportunity, and rationalization, which is called the fraud triangle. Furthermore, Wolfe and Hermanson (2004) as founded by Cressey (1953) added several conditions at total of 3 in Skousen et al. (2008) which called fraud diamonds with the element of capability. The theory of fraud that examines the factors that trigger fraud is the fraud pentagon theory (Crowe's fraud pentagon theory). This theory was put forward by Howarth (2011). The factors that trigger fraud consist of pressure, opportunity, rationalization, ability, and arrogance. The growing and complex condition

of the company caused the fraudsters to act smarter and were able to access all information held by the company. This causes the need for additional arrogance factors because the most common and dangerous fraud is committed by internal companies themselves because of the easy access they have to commit fraud.

Research related to financial statement fraudulent using fraud pentagon has been conducted by several researchers and the example is research conducted by Zelin (2018) with research proxy which classified the fraud pentagon factors into several elements consisting of financial target, financial stability, external pressure, ineffective monitoring, nature of industry, change in auditor, change in board of director, frequent number of CEO's picture, political connection, and dualism position to detect financial reporting fraudulent. This study shows that financial target and financial stability on fraudulent financial reporting has positive and significant effect. On the other hand, the effect on financial statement fraudulent was insignificant for external pressure, ineffective monitoring, nature of industry, change in auditor, change in directors, frequent number of CEO's pictures, political connection, and dualism position. Another research is conducted by Novitasari and Chairi (2019) with their study's aim of obtaining the elements of fraud in fraud pentagon theory against indications of financial statement fraud on nonfinancial sector companies in Indonesia at 2009-2014 as empirical and testing evidence. Their research's independent variables were financial stability, financial target, external

pressure, nature of industry, ineffective monitoring, change in auditor, change of director, and frequent number of CEO's pictures, while the dependent variable was financial statement fraud. Their research's result indicates that there are two variables which were significantly positive in influencing the financial statement fraud, including and the change in auditor and frequent number of CEO's pictures. These variables represent the two elements in a pentagon fraud Crowe's theory, namely rationalization and arrogance.

In this research, researcher used the fraud pentagon theory elements as a basis for research in detecting fraud in financial reports. Using the fraud pentagon theory because this theory is a refinement on theory of fraud triangle and diamond and there is a new element that was still limitedly applied by previous researchers in detecting fraud in financial reports, namely the element of arrogance. In addition, in the results of the ACFE survey, fraud was mostly carried out by Owner / Executives from the company itself because it was caused by arrogance in them, they thought that the rules and internal controls applied in the company would not affect their power. Until now, there are still a limited number of studies that use this theory to analyse fraud that occurs in a company. The difference between this research with the previous research is the sample used by researcher which is list of Indonesia Stock Exchange in period of 2017-2019 mining companies. This research object uses mining sector since according to Schipper (1989), Subramanyam & Wild (2010) believes that management

will use policies in financial statements to decrease and increase revenue on the basis of their desires by not breaching accounting standards. In addition, this tendency assumes that companies listed in Indonesian stock exchange from mining sector will appear to be using accounting methods to enhance their earnings so that they can compete further with other sectors to attract investors.

1.2 Research Problem

Research problems occurred based on previous discussion on research background, whether fraud pentagon and audit delay effect on financial statement fraud, such as:

1. Does Financial Target influence financial statement fraud?
2. Does Financial Instability influence financial statement fraud?
3. Does Ineffective Monitoring influence financial statement fraud?
4. Does Change in Auditor influence financial statement fraud?
5. Does Change in Director influence financial statement fraud?
6. Does Dualism Position influence financial statement fraud?

1.3 Research Objectives

Based on problems that occurred, this research come up on the objectives, such as:

1. to analyse the effect of Financial Target,
2. to analyse the effect of Financial Instability,
3. to analyse the effect of Ineffective Monitoring,
4. to analyse the effect of Change in Auditor,

5. to analyse the effect of Change in Director, and
6. to analyse the effect of Dualism Position.

1.4 Research Contributions

After this research is finish, it is expected can contribute or even benefits interested users of this research, such as:

- 1) Academics

For researchers after, this research can be a reference and be a source of additional information in conducting further research

- 2) Practice

- a) For mining companies, this research can be used as consideration or reference therefore errors in making decisions can be reduced by managers who's in charge of providing problem solutions information is expected to know more about the factors that possibly increase the effect and causing fraud on fraudulence financial statements.

- b) This research can be a tool for investor to reduce the risk and consideration tool that the investment made is in good hands by assessing and analysing their investment in a company more carefully and so investors can detect the possibility of fraud of the company in financial statements.

1.5 Writing Systematic

1.5.1. Chapter 1

This chapter elaborates the general explanation of research background, problem formulation, contributions, and writing systematics.

1.5.2. Chapter 2

This chapter explains research's theoretical review, previous study, hypothesis formulation, and model.

1.5.3. Chapter 3

This chapter explains research's type, population and sample, data collection method, variables, and data analysis method.

1.5.4. Chapter 4

This chapter explains research's result from data collection, statistical analysis description, robust regression analysis, and parameter significant analysis.

1.5.5. Chapter 5

This chapter explains research's conclusion and suggestions.



CHAPTER 2

LITERATURE RIVIEW

2.1 Theoretical Review

2.1.1.Stakeholders Theory

Theory of stakeholder assumes that companies that tend to make their stakeholders better off are companies that are able to maintain their support and participation and will continue to grow over time. Freeman et al (2010). The theory states that stakeholders are all parties, internal and external, who can influence or be influenced by the company either directly or indirectly. Companies are not entities that only operate for their own interests but provide benefits for stakeholders (shareholders, investors, creditors, consumers, suppliers, government, society, company analysts, and other parties). Stakeholders can find out the impact of the company's activities through the responsibilities given by the company, namely: financial disclosure of both the results of production and investment for the development of the company. The company will try to satisfy stakeholders in order to survive, namely by disclosing the information needed. Stakeholders according to Freeman and McVea (2001) are any groups or individuals who can influence or be influenced by the achievement of organizational goals. Stakeholder theory explains how the company meets or manages stakeholder expectations. Stakeholder theory is a theory that describes which parties the company is responsible for. Stakeholders are the main consideration for a company whether or not to disclose information in

the financial statements. This disclosure is carried out to fulfil the information needs of stakeholders and to get support from stakeholders for the survival of a company (Lindawati, 2015).

Daud and Abrar (2008) argue that this group is the most important consideration for companies to disclose their information. According to stakeholder theory, a company is an entity that operates not only for the benefit of the company itself but also has to provide benefits to its stakeholders. In order for the organization to be able to achieve its own strategic goals, it is important that it can retain its stakeholders. A basic condition for stakeholder to remain with the organization is that the organization meets their requirements. By voluntarily satisfying the needs of the most important stakeholders, the organization can gain competitive advantages over other organizations. Therefore, support from stakeholders greatly affects the existence of a company. Jensen (2001) states that management decisions must pay attention to its stakeholders to increase firm value. Stakeholders also have the right to actions taken by company management, as well as shareholders (Waryanti, 2009).

2.1.2. Agency Theory

Jensen and Meckling (1976) stated that theory of agency is the basis key reference for corporate practice in businesses. In essence, according to this principle, the shareholders (principal) and managers (agents) relationship is difficult to be established due to a potential of interest conflicts. Jensen and Meckling (1976) also stated that The Agency's

arrangement occurs as a result of an arrangement between the Principal and the Agent by delegating any decision-making authority to the Agent. It should be presumed, in compliance with the arrangement, that certain decisions would assign authority to the agent. In practice, company managers act as agents with the responsibility of increasing the profits of the owners (principal), but managers also have an interest in maximizing their welfare (Ujiyantho & Pramuka, 2007). If the manager has an interest in optimizing his or her benefit, he or she may encourage the agent not to behave in the interests of the principal. In this basis, the information generated by management makes it possible to confuse users of the financial statements. The differential of interest may result in a conflict of interest between the agent and the principal that causes the costs of the agency.

This situation is referred to as information asymmetry (management has information that is not known to shareholders). The management who is employed by the shareholders is given partial decision-making authorities in principal best interest. In practice, agency theory states that it will be difficult to believe that management (agents) will always act based on the interests of shareholders (principal). This is where a conflict of interest will arise, where management will act for personal interests and not maximize shareholder interests. From this conflict of interest, selfishness will emerge in management. Management will act in its own interest without considering the interests of the principal. This will provoke the emergence of several characteristics that can lead to fraud. It is well known that fraud occurs due

to the existence of several factors (the fraud triangle) which has now developed into the fraud pentagon. Agency theory is a factor in the formation of the characteristics described in detail in the fraud model. Eisenhardt, (1989) divides human nature into three types which explain further about theory of agency, namely that in general humans are self-interested, have limited thinking power about future perceptions (bounded rationality), and always avoid risk (risk averse).

To see the relationship between agency theory and the elements in the fraud model, it will be briefly described below: Pressure: a condition that causes the perpetrator to commit fraud. There is motivation within management to commit fraud, for example a lack of income, a sufficiently large need for life, this triggers management to act on its own behalf. Opportunity: the creation of an opportunity to commit fraud. In this case, this situation will be used by company management to commit fraud secretly so that it is not known by the public (risk averse). Cheating will not be created if there are only opportunities without being followed by weak management self-control. Rationalization: is a justification that appears in the mind of the perpetrator when fraud has occurred. This thought will arise because the perpetrator of fraud does not want his actions to be known so that the perpetrator justifies the manipulation that has been done. This justification arises because there is a desire within the perpetrator to remain safe and free from punishment (there is an element of risk averse to be free from the risk of being caught by punishment). Competence / capability: is

the ability of a person to commit fraud. The connection with agency theory is the ability possessed by company management arises from the management's self-interest to get many benefits for itself, so that management does not act in the interests of its principals anymore. Arrogance: is the arrogant or arrogant attitude of a person who considers himself capable of committing fraud. This trait arises due to the presence of selfishness (great self-interest) in management which makes arrogance bigger, this trait will trigger the belief that he will not get caught if fraud has occurred and the existing sanctions cannot befall him (Aprilia, 2017).

2.1.3. Financial Statement Fraud

Fraud is an action that is general in nature and includes a variety of meanings, which are clever ways a person is designed to benefit from the wrong presentation and fraud consists of several important elements namely a presentation about material points which are not true and believed what is done upon for the loss of its victim. Material misstatement in the financial statements due to intentional act is fraud of financial statement (Albrecht et al., 2011). Meanwhile, Sihombing and Rahardjo (2014) Fraudulent financial statements are intentional or negligent in the financial statements presented not in accordance with generally accepted accounting principles. This negligence or intent is material in nature so that it can influence decisions to be taken by interested parties. According to the Australian Audit Standard (AUS) in Brennan and McGrath (2007), fraud of financial reporting is an

intentional misstatement including omission of amounts or disclosures in financial statements to deceive users of financial statements.

2.1.3.1. Fraud Triangle Theory

Cressey (1953) in Skousen et al. (2008) introduced the fraud triangle as reference tool to detect the causes of fraudulence. There are three elements that cause fraud, namely:

A. Pressure

Shelton (2014) states that pressure is a person's motivation in committing fraud, for example is financial burdens. Pressure may also be defined as the intention or urge of a person who's had to commit a crime. Pressure emerges because there is a reduction or instability in the financial condition of an entity that is triggered by economic conditions, market, or an entity's activities which create individual's opportunity to conduct financial statement fraud. (Hery, 2016: 200).

B. Opportunity

Opportunity is an enabling condition for a crime to be committed. Among other elements of fraud, opportunity is the most likely element to be minimized through the application of processes, procedures and controls, as well as efforts to detect fraud early. Establish useful processes, procedures and controls and place employees in certain positions is a must for companies to prevent employee to commit fraud and are effective in detecting fraud as stated in SAS No.99.

C. Rationalization

Rationalization is the third element of the fraud triangle and the most difficult to measure (Skousen et al., 2008). Rationalization is an attitude that allows someone to commit cheating, and considers his actions not wrong. Those who are involved in financial statement fraud are able to rationalize fraudulent acts consistently with their code of conduct (Suyanto, 2009).

2.1.3.2. Fraud Diamond Theory

Wolfe and Hermanson (2004) add an element of capability on three conditions found by Cressey (1953, in Skousen et al., 2008) as factors that influence a person to commit fraud. As argued by Wolfe and Hermanson (2004) that fraud will not occur without the right people with the right abilities to carry out every detail of the fraud, competence / capability indicates the capacity of fraudsters to bypass internal controls within their organization, establish advanced misappropriation tactics and be able to manipulate social conditions that can help them by convincing others to comply with them. (Marks, 2012).

2.1.3.3. Fraud Pentagon

Crowe Howart in 2011 put forward this theory as an extension of the theory of fraud triangle which Cressey put forward in 1953 and the theory of fraud diamond which Wolfe and Hermanson put forward in 2004. Added fraud element in this theory namely arrogance (Herviana, 2017). The reason for developing the previous theory is that today's fraud is more equipped with more information and access to company assets compared to Cressey's era (Kurnia and Anis, 2017). Crowe (2011) explains

that arrogance is a superiority of rights and perceives that internal control and company policies do not apply to him.

2.2 Previous Study

The research that has been conducted by previous researchers is summarized in the following table:

Table 2.2

Previous Research Conducted That Support This Study

No	Researcher; Title; and Year	Variable Used	Result
1.	Mafiana Annisya, Lindrianasari, Yuztitya Asmaranti; <i>PENDETEKSIAN KECURANG LAPORAN KEUANGAN MENGUNAKAN FRAUD DIAMOND; 2016</i>	<u>Dependent:</u> Financial Statements Fraudulent <u>Independent:</u> Fraud Diamond 1. Pressure: • Financial Stability • External Pressure • Financial Targets 2. Opportunity • Nature of Industry 3. Rationalization • Audit Opinion 4. Capability • The Capability to Replace Any Directors	The results showed that the variables of financial stability as measured by the ratio of the change in total assets showed a positive influence on fraudulent financial statements. This study did not find a variable external pressure as measured by the leverage ratio, financial targets as measured by return on assets, nature of industry as measured by the ratio of inventory changes, the audit opinion as measured by obtaining an unqualified opinion with clarifying language, and capability measured with the change of directors' influence on fraudulent financial statements.

2.	<p>Ade Rizky Novitasari, Anis Charir; <i>ANALISIS FAKTOR-FAKTOR YANG MEMENGARUHI FINANCIAL STATEMENT FRAUD DALAM PERSPEKTIF FRAUD PENTAGON</i>; 2018</p>	<p><u>Dependent:</u> Financial Statements Fraud <u>Independent:</u> Fraud Pentagon 1. Pressure • Financial Stability • Financial Target • External Pressure 2. Opportunity • Nature of Industry • Ineffective Monitoring 3. Rationalization • Change in Auditor 4. Capability • Change of Directors 5. Arrogance • Frequent number of CEO's Picture</p>	<p>The results of this study indicate that there are two variables which were significantly positive in influencing the financial statement fraud, including and the change in auditor and frequent number of CEO's pictures. These variables represent the two elements in a pentagon fraud Crowe's theory; rationalization and arrogance.</p>
3.	<p>Cintia Zelin; <i>ANALISIS FRAUD PENTAGON DALAM MENDETEKSI KECURANGAN LAPORAN KEUANGAN DENGAN MENGGUNAKAN FRAUD SCORE MODEL</i>; 2018</p>	<p><u>Dependent:</u> Fraudulent Financial Reporting <u>Independent:</u> Fraud Pentagon 1. Pressure • Financial Target • Financial Stability</p>	<p>The results of this research show that financial target and financial stability significantly has a positive effect towards fraudulent financial reporting. While external pressure, ineffective monitoring, nature of industry, change in auditor, change in directors, frequent number of CEO's</p>

		<ul style="list-style-type: none"> • External Pressure <p>2. Opportunity</p> <ul style="list-style-type: none"> • Ineffective Monitoring • Nature of Industry <p>3. Rationalization</p> <ul style="list-style-type: none"> • Change in Auditor <p>4. Capability</p> <ul style="list-style-type: none"> • Change in Director <p>5. Arrogance</p> <ul style="list-style-type: none"> • Frequent Number of CEO's pictures • Political Connection • Dualism Position 	<p>pictures, political connection, and dualism position does not significantly affect the fraudulent financial reporting</p>
4.	<p>I Made Laut Mertha Jaya, Ajeng Ayu Ambarwati Poerwono; <i>Pengujian Teori Fraud Pentagon Terhadap Kecurangan Laporan Keuangan Pada Perusahaan Pertambangan di Indonesia</i>; 2019</p>	<p><u>Dependent:</u> Fraudulent Financial Statements</p> <p><u>Independent:</u> Fraud Pentagon</p> <p>1. Pressure</p> <ul style="list-style-type: none"> • Financial Target • Financial Stability • External Pressure <p>2. Opportunity</p> <ul style="list-style-type: none"> • Ineffective Monitoring • Nature of Industry 	<p>The results of the study found that the target Financial and Nature of industry had an effect on fraudulent financial statements. Meanwhile, Financial stability, External pressure, and Ineffective monitoring, Change in auditors, Rationalization, and Change of directors, and CEO's picture, have no effect on fraudulent financial statements</p>

		<p>3. Rationalization</p> <ul style="list-style-type: none"> • Change in Auditor • Rationalization <p>4. Capability</p> <ul style="list-style-type: none"> • Change of Directors <p>5. Arrogance</p> <ul style="list-style-type: none"> • CEO's Picture 	
5.	<p>Martdian Ratnasari, M. Akhsanur Rofi; <i>FAKTOR-FAKTOR YANG MEMOTIVASI KECURANGAN LAPORAN KEUANGAN</i>; 2020</p>	<p><u>Dependent:</u> Financial statement fraud</p> <p><u>Independent:</u> Fraud Diamond</p> <p>1. Pressure:</p> <ul style="list-style-type: none"> • Financial Target • Financial Stability • External Pressure <p>2. Opportunity</p> <ul style="list-style-type: none"> • Nature of Industry • Ineffective Monitoring <p>3. Rationalization</p> <ul style="list-style-type: none"> • Change in Auditor • Total Accrual <p>4. Capability</p> <ul style="list-style-type: none"> • Change in Director 	<p>The results of this study indicate that the financial target variable which is proxied by return on assets is proven to have a positive effect in detecting financial statement fraud. The external pressure variable which is proxy by leverage ratio is proven to have a negative effect in detecting fraudulent financial statements. This study does not prove that financial stability, ineffective monitoring, nature of the industry, total accruals, change in auditors and capability have an influence in detecting financial statement fraud.</p>

2.3 Hypothesis Formulation

2.3.1. The Effect of Financial Target on Financial Statement Fraud.

The higher the ROA, the better the management performance, which means that the company's overall operations have been effective. In the form of earnings management, performance increasement from targeting higher ROA is possible to commit fraudulent financial reports for manager. The manager tries to improve their performance thus company goals can be achieve, for example is financial targets. Skousen et al. (2008) said Return on total assets (ROA) is a measure of operational performance widely used to show how efficiently assets have been used. This is supported by Kasmir (2013: 202) which states that ROA is a ratio that shows the return on the amount used by the company. Therefore, ROA is used as a proxy for the financial target's variable.

This statement is in line with the results of research conducted by Sihombing & Raharjo (2014), Widarti (2015), and Aprilia (2017) which show that the Financial Target with the Return on Assets proxy shows significant and positive effect on fraudulent financial statements. Based on this description, the hypotheses formulated are: Based on the description above, the hypotheses that can be formulated is:

H1: Financial Target has a positive effect on fraudulent financial statements.

2.3.2. The Effect of Financial Instability on Financial Statement Fraud.

Pressure is faced by managers to commit fraud and financial statements manipulation as soon as their company's financial stability and profitability are threatened, for example by economic, industrial, and other situations as explained according to SAS No. 99 (in Skousen et al., 2008). Loebbecke and Bell in Skousen et al. (2008) indicated companies that experienced growth below the industry average, consenting management to manipulate financial statements to improve the company's prospects.

Skousen et al. (2008) shows research's result which proved rapid asset growth positively affects the possibility of fraud. Research by Sihombing and Rahardjo (2014) shows that financial stability, which is proxied by changes in total assets (ACHANGE), is proven to have an effect on financial statement fraud. Based on the description above, the hypotheses that can be formulated is:

H2: Financial instability has a positive effect on fraudulent financial statements.

2.3.3. The Effect of Ineffective Monitoring on Financial Statement Fraud.

Ineffective monitoring is a weak supervision that creates opportunities for managers to commit fraud and deviant behaviour. SAS No. 99 states that ineffective supervision by the party responsible for managing financial reporting and internal control can lead to fraud. This occurs ineffective monitoring of directors and independent commissioners over the financial reporting process and similar internal controls due to the

supremacy of management by one person or small group, without compensation control (Skousen et. Al., 2009). The lack of control on the part of the company has become a manipulation of financial statement data's opportunity for some parties.

Research by Putriasih, Herawati, and Wahyuni (2016) supported this statement that ineffective monitoring has an effect or can be used to detect financial statement fraud. Skousen et. al. (2009) research result also shows that ineffective monitoring can predict the occurrence of financial statement fraud. Based on the description above, the hypotheses that can be formulated is:

H3: Ineffective monitoring has a positive effect on fraudulent financial statements

2.3.4. The Effect of Change in Auditor on Financial Statement Fraud.

Rationalization is an attitude of justifying a person to himself for the crime he has committed (Shelton, 2014). Rationalization is an impressive reason to justify fraud and perceive it as something that is reasonable to do. St Pierre and Anderson (1984) and Stice (1991) explain that Rationalization can be measured by a change in auditors due to attempt of removing audit trail about the discovery of fraud in the previous audit. Another supporting research is Loebbecke et. al (1989) who found that the fraud found in the study sample was carried out in the initial two years of the auditor's tenure. Rationalization can be measured by using proxies of turnover or change in public accounting firms (Skousen et al, 2009).

The statement above is in line with the research result conducted by Putriasih et. al. (2016) which states that changes in auditors have an effect on fraud of financial statements. Based on the description above, the hypotheses that can be formulated is:

H4: Change in auditor has a positive effect on financial statement fraud

2.3.5. The Effect of Change in Director on Financial Statement Fraud.

From three conditions found by Cressey (1953) in Skousen et al. (2008) Wolfe and Hermanson (2004) add factors as another condition that influence someone to commit fraud with an element of capability. Right people with the right abilities to carry out every detail of the fraud will not occur fraud as argued by Wolfe and Hermanson (2004). Capability means in order to achieve certain goals, someone eagerly to commit fraud. Wolfe and Hermanson (2004) described these characteristics of capability into: position / function brains, confidence / ego, coercion skills, effective lying and immunity to stress as the element of skill in the actions of fraudsters. The positions of CEOs, directors, and heads of other divisions are most suitable for these characteristics based on the characteristics put forward by Wolfe and Hermanson (2004). Determining factor for the occurrence of fraud can be conducted by those positions by influencing other people in order to expedite their fraudulent actions as advantage of position they have.

Changes in the board of directors are the delegation of authority from the prior directors to the new directors with the aim of improving the performance of the previous management. However, changes in the board

of directors can create a stressful period of time, which results in more opportunities for fraud (Brennan and McGrath (2007). Sihombing and Rahardjo (2014) use changes in directors as a proxy for capability to determine indications of financial statement fraud. Changes in the board of directors can lead to less-than-optimal initial performance because it takes time to adapt (Sihombing and Rahardjo, 2014). It means that the company will be satisfied with the performance of the board of directors and there will be no problems from shareholders pushing to replace the previous board of directors. Meanwhile, if there is a change of directors, it is expected that they will be more competent and have innovations that can improve the company's performance, it still takes time to correct previous mistakes.

Putriasih et. al. (2016) supported this statement by the research results of shows that capability, which is proxied by changes in directors, has an influence on financial statement fraud. Pardosi's research (2015) also proves the ability have significant and positive effect on fraud on financial statements. Based on the description above, the hypotheses that can be formulated is:

H5: The change of directors has a positive effect on fraudulent financial statement fraud

2.3.6. The Effect of Dualism Position on Financial Statement Fraud.

Dualism position is a condition in which a director has another position both inside and outside the company. Good company performance should not be correlated to multiple positions of directors since it allows for

negative effects. For example, some of these multiple positions allow individuals to engage in fraud and even neglect the shareholders interest. In addition, members of the Board of Directors can be interrupted because they are so distracted and unfocused.

Oktavia (2017) supported the statement above by the results of research which shows that dual positions CEOs have a significant effect on fraudulent financial statement. Likewise, Rachmawati (2014) research result that shows board of directors dual position factor has a significant effect on fraud of financial statement. Based on the description above, the hypotheses that can be formulated is:

H6: Position dualism has a positive effect on fraudulent financial statements

2.4 Research Framework

Based on previous explanations and several conducted research by previous researchers, this research conducted testing on dependent variable with financial statement fraud and fraud pentagon as the independent variable. The research framework in this study can be described in the following figure:

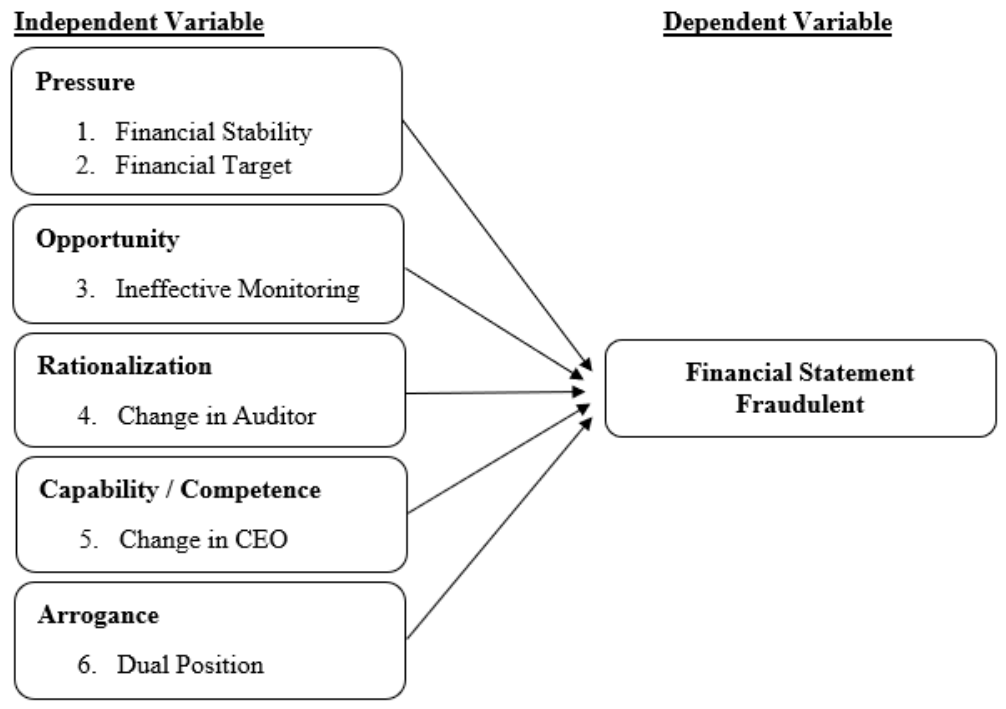


Figure 2.4

Research Framework of Study



CHAPTER 3

RESEARCH METHOD

3.1 Research Type

Based on the characteristics of the problems examined, this research was classified as a causal-comparative study. A causal comparative design is a research design that seeks to find relationships between independent and dependent variables after an action or event has already occurred (Salkind, 2010). This research used a quantitative approach by collecting secondary data of mining companies which listed in Indonesia Stock Exchange on the period of 2017-2019.

3.2 Population and Sample

3.2.1 Population

The population used are mining companies which are listed in Indonesia Stock Exchange and period used is 2017-2019 which has fulfilled every criteria of this research.

3.2.2 Sample

The sample is part of the population to be studied. Sampling was carried out based on a non-random or purposive sampling method, which is a technique for determining samples with consideration and based on certain criteria. The criteria to select samples used are as follow:

- Mining companies listed in Indonesia Stock Exchange during 2017-2019 period.

- Publish annual financial reports on the company's website or the Indonesia Stock Exchange for the period 2017-2019.
- Disclose related to research variables data and are available in full publications during the 2017-2019 period.
- Not delisted from the Indonesia Stock Exchange during the 2017-2019 period.

3.3 Data Collection Method

3.3.1 Data Types

The data collected in this research is secondary data. Secondary data sources are sources of research data obtained by researchers indirectly through intermediary media, which can be in the form of evidence, notes, or historical reports that have been compiled in archives, both published and unpublished.

3.3.2 Data Collection

This research is using secondary data source in the form of financial reports from the Indonesia Stock Exchange during 2017-2019 period. This research used the documentation study as data processing method. It is done by collecting data from various literatures by reading the contents of the company's financial statements and profiles to obtain the information needed in the research variables published by the Indonesia Stock Exchange. Data collection was carried out by importing data from the annual corporate review showed on the corporate website or issued by the Indonesian Stock Exchange (IDX) at www.idx.co.id.

3.4 Research Variable

This study uses two variables, namely the dependent and independent variables. This research dependent variable is financial statement fraud. This research developed from the five fraud pentagon components as independent variable, which consist of pressure, opportunity, rationalization, capability, and arrogance. The research variables are explained as follows:

3.4.1 Dependent Variable

The dependent variable is a variable that is influenced by an independent variable. The dependent variable used in this research is a fraudulent financial statement. This research measures financial statement fraud using the fraud score model or generally referred to as the F-score model developed by (Dechow et. Al., 2007). The F-Score model is the sum of the two variable components in the fraud score model, namely accrual quality and financial performance (Skousen, 2009), which can be described in the following equation:

$$\mathbf{F-Score} = \text{Accrual Quality} + \text{Financial Performance}$$

Accrual quality is proxied by accrual RSST (Richardson, Sloan, Soliman and Tuna, 2005) and financial performance as proxied by changes in accounts receivable, changes in cash sales accounts and changes in income before interest and taxes.

$$\mathbf{RSST\ Accrual} = \frac{(\Delta WC + \Delta NCO + \Delta FIN)}{\text{Average Total Assets}}$$

Explanation:

WC (Working Capital) = (Current Assets – Current Liability)

NCO (Non-Current Operating Accrual) = (Total Assets – Current Assets – Investment and Advances) – (Total Liabilities – Current Liabilities – Long Term Debt)

FIN (Financial Accrual) = Total Investment – Total Liabilities

ATS (Average Total Assets) = $\frac{\text{Beginning Total Assets} + \text{End Total Assets}}{2}$

Financial Performance = change in receivable + change in inventories + change in cash sales + change in earnings

Explanation:

Change in receivable = $\frac{\Delta \text{Receivable}}{\text{Average Total Assets}}$

Changes in Inventory = $\frac{\Delta \text{Inventory}}{\text{Average Total Assets}}$

Changes in cash sales = $\frac{\Delta \text{Sales}}{\text{Sales (t)}} - \frac{\Delta \text{Receivable}}{\text{Receivable (t)}}$

$$\text{Changes in earnings} = \frac{\text{Earnings (t)}}{\text{Average Total Assets (t)}} - \frac{\text{Earnings}}{\text{Average Total Assets (t-1)}}$$

A company can be predicted to commit financial statement fraud if the fraud score model is more than 1, whereas if the fraud score model value is less than 1, the company cannot be predicted to commit fraud on the financial statements.

3.4.2 Independent Variable

The independent variable is a variable which describes the dependent variable. In this research, independent variables were derived from the five components of the pentagon of fraud. The five fraud pentagon components, namely pressure, opportunity, rationalization, capability and arrogance, cannot be analysed explicitly, and thus is required for those variables that are then formulated with such proxies to measure them.

3.4.2.1. Pressure

Pressure is a condition when management as an agent must work to the maximum extent possible for the principle, namely shareholders in the form of profits that increase every year even though in conditions of financial difficulties they are still required to have good performance, this creates pressure for management and this condition made the management attempt to manipulate the report which can motivate someone to commit fraud, usually because of financial burdens (Shelton, 2014). Someone commits fraud and embezzlement of company money because of the

pressure that presses it, the pressure can be in the form of urgent needs that must be resolved (financial pressure) (Tuanakota, 2012).

3.4.2.1.1. Financial Target

The target is one of the goals of the organization in terms of financial results, such as the return on investment to be reached in the company. The profit target set by the company is called the financial target. In this condition the manager has a high risk of the financial targets that have been determined by the board of directors and management, so that their performance must always be improved so that these targets can be achieved. In this research financial targets are represented by Return on Assets (ROA), which is part of the profitability ratio in financial statement analysis or performance measurement of company (Skousen et. Al., 2008). ROA is used to measure the effectiveness of a company in generating profits by utilizing existing assets in the company. In addition, because in this study the companies used for the sample are mining companies that have a dominant relationship with assets in their company's operations. Calculation of ROA is measured using the following formula:

$$\text{ROA} = \frac{\text{Earnings After Interest and Tax}}{\text{Total Assets}}$$

3.4.2.1.2. Financial Stability

financial stability is a condition that describes a company's financial condition in stable condition. When a company is in an unstable condition, it will create pressure for management because its performance seems to

decline, thus hampering the flow of investment funds in the coming year. Therefore, management will take various measures so that the company's financial stability is in good condition. This certainly increases the occurrence of manipulation of financial reports by managers. The company's assets can be used to see the company's financial condition. Especially in mining companies which operations are predominantly related to assets. One form of financial statement manipulation carried out by management is related to the growth of company assets (Skousen et. Al., 2009). In this research, financial stability is represented by ACHANGE which is changes in assets ratio. To calculate the ratio of changes in assets, it can be calculated using the following formula:

$$\text{ACHANGE} = \frac{\text{Total Assets (t)} - \text{Total Assets (t-1)}}{\text{Total Assets (t-1)}}$$

3.4.2.2. Opportunity

Opportunity is a condition that makes it possible to commit a crime (Annisya, 2016). Often occurs due to lack of supervision, abuse of authority, and weak internal controls. The proxy used for the opportunity in this study is the ineffectiveness of monitoring.

3.4.2.2.1. Ineffective Monitoring

Ineffective monitoring is a company situation where there is no good internal control. The distribution of accounting fraud and unethical behaviour is one of the ineffective and unsuccessful impact of the monitoring of the Board of Directors and the Audit Committee on the

company's financial statements and internal control, which has created an opportunity for an individual to behave in his or her own interest. Therefore, this study proxies effective monitoring of the ratio of the number of independent commissioners (IND) (Skousen et. Al., 2009).

$$\text{IND} = \frac{\text{Member Amount of Independent Board of Commissioners}}{\text{Total Amount Board of Commissioners}}$$

3.4.2.3. Rationalization

Rationalization is an attitude of justifying an act of fraud. Fraud perpetrators believe or feel that the action they have committed is not a fraud but something that is their right, even the perpetrator sometimes feels that he has done a lot for the company (Ulfah, Nuraina, and Wijaya, 2017). In this study, rationalization is measured by a change in auditor.

3.4.2.3.1. Change in Auditor

Change of auditors in a company can be seen as an attempt to remove the signs of manipulation (fraud trails) detected by previous auditors, hence motivating the company to replace its independent auditors in order to cover up fraud in the company (Sihombing and Rahardjo, 2014). In this study, rationalization is proxied by a change in the public accounting firm (ΔCPA) which is measured by a dummy variable where if there is a change in the Public Accounting Firm during the 2017-2019 period it is given code 1, otherwise if there is no change in the public accounting firm during that period, it will be coded 0.

3.4.2.4. Capability

Capability is a capability that a person has. Opportunities open doors for fraud, pressure and rationalization can attract people to commit fraud. However, people who commit fraud must have the ability to look for opportunities as opportunities to take advantage. This research proxy's capability with change in directors.

3.4.2.4.1. Change in Director

Changes in directors suggests that a modification in the CEO or board of directors can cause a stress period that has an impact on opening up opportunities for fraud, changes in CEO or board of directors can indicate fraud (Wolfe and Hermanson, 2004). In this study, capability / competence is proxied by a change in company directors as measured by dummy variable where it is given code 1 if there is a change in the company's directors and otherwise it is coded 0 if there is no change in the company's directors every year during the 2017-2019 period (Ulfah et al., 2017).

3.4.2.5. Arrogance

Arrogance is rights and impressions superiority of company's internal control and policies cannot apply him (Crowe, 2011). Arrogance is usually more aimed at someone who has a high position in a company. In this research arrogance is proxied by dualism of position.

3.4.2.5.1. Dual Position

Dualism position is director's multi-position. The existence of these multiple positions can result in their work being disrupted due to their

business and lack of focus on being effective monitors. In this study, position dualism is measured by looking at the company's CEO or president who has dualism position as an indicator variable with a dummy value of 1 if there is one and 0 if it does not exist.

3.5 Data Analysis Method

3.5.1. Descriptive Statistic

Descriptive statistics to provide an overview or description of the research variables. Descriptive statistics relate to methods of grouping, summarizing, and presenting data in a more informative way (Santoso, 2005). As a decision making, the data must be well summarized and organized. In this research, descriptive analysis is intended to provide an overview or data description of the dependent variable, namely financial statement fraud, as well as the independent variables in the form of components of the fraud pentagon, namely, pressure, opportunity, rationalization, capability, and arrogance. Descriptive statistics provide an overview or description of data seen from the mean, standard deviation, variance, maximum, minimum, sum, range, kurtosis and skewness or slope of distribution (Ghozali, 2013). From the results of this descriptive statistical analysis, it can provide an overview of the conclusions of the data analysis.

3.5.2. Robust Regression

Robust regression is a method of regression used with the unusual residual distribution. Abnormal residual distributions generally occur due to contaminated data by outliers. This method is an important tool for

analysing data that is affected by outliers so that a robust or resistant model is produced. A resistant estimate means that this estimate is relatively unaffected by large changes in a small part of the data or small changes in a large part of the data (Sugi, 2002).

Robust procedures are shown to accommodate data oddities, while at the same time eliminating the identity of outlier data and also being automatic in dealing with outliers' data. This robust regression analysis does not normalize the residual model but the model produced by this method has higher accuracy than the model generated by the MKT model. When using analytical tools, in general the first step is to try to remove outliers and then the good data using the least squares method, but robust analysis matches the regression model with some of the data and then overcomes the outliers points to obtain robust parameter estimates. So, this robust regression does not discard part of the data but instead finds a suitable model from part of the data (Soemartini, 2007).

The regression model in this study, namely:

$$\text{F-SCORE} = \beta_0 + \beta_1\text{ROA} + \beta_2\text{ACHANGE} + \beta_3\text{IND} + \beta_4 \Delta\text{CPA} + \beta_5\text{DIR_CHANGE} + \beta_6\text{DUALISM} + \varepsilon$$

Explanation:

F-Score	= Financial Statement Fraud
β_0	= Constanta
ROA	= Return on Assets
ACHANGE	= Change in Total Asset Ratio

IND	= Independent Board of Commissioners Ratio
Δ CPA	= Change in Independent Auditor
DIR_CHANGE	= Changes in Board of Directors in the Company
DUALISM	= CEOs and presidents who own dual positions

3.5.3. Hypothesis Test

Hypothesis testing in this study uses a regression analysis method. The test of hypothesis is used to obtain analysis results of valid data and to support the research hypothesis. The stages for carrying out the hypothesis test are as follows (Sihombing and Raharjo, 2014):

- Determine which financial reports for research object.
- Calculating the proxies of each variables according to the measurement method described.
- Perform robust regression tests on the model with the stages described above.

3.5.4. Adjusted R²

Adjusted R² in essence measures how far the model's ability to explain the variants of the independent variable. The adjusted R² value is zero or one. The small value of R² means that the ability of the independent variables to explain the dependent variable is very limited. A value close to one means that the independent variables provide almost all the information needed to predict the variation of the independent variable (Ghozali, 2013). If there is a negative adjusted R² value, then adjusted R² is considered zero.

3.5.5. Parameter Significance Testing

3.5.5.1. Simultaneous Parameter Test (F Test)

The F test is carried out to test whether the model used in the regression is fit. It is used to test the model significance. The F test can be done by looking at the significant value of F in the regression output with a 0.05 level of significance ($\alpha = 5\%$) where the regression model is not fit if the probability value is greater than alpha. On the other hand, the regression value is fit if the probability value is smaller than alpha (Ghozali, 2013).

3.5.5.2. Partial Parameter Test (T test)

The T significance test is to find out how each independent variable influence the dependent variable on the regression model. In conducting this hypothesis test, the important thing in the research hypothesis that uses sample data using the t test is the problem of choosing whether to use two sides or one side. Two-sided hypothesis testing is chosen if there is no a strong conjecture or a strong theoretical basis in research, on the contrary if one side hypothesis testing is chosen if the researcher has a strong theoretical basis or conjecture (Widarti, 2015). The decision to reject or accept H_0 is as follows:

- The probability value $< \alpha$, then H_0 is accepted, H_1 is rejected.
- The probability value $> \alpha$, then H_0 is rejected, H_1 is accepted.

CHAPTER 4

FINDINGS AND DISCUSSION

4.1 Data Collection Result

Population used in this research is mining companies in Indonesia.

Sample of the companies is chosen using a purposive sampling method.

Table 4.1
Sample Selection Result based on Purposive Sampling Method

No	Sampling Selection Criteria	Total
1	Mining companies listed in Indonesia Stock Exchange for the period 2017-2019	50
2	Did not published annual financial reports on the company's website or the Indonesia Stock Exchange website for the period 2017-2019	12
3	Did not disclose related research variables data and are available in full in publications during the 2017-2019 period	3
4	Not delisted from the Indonesia Stock Exchange during the 2017-2019 period	3
Total of companies which fulfil criteria		32
Total data during three years observation (32x3)		96
Sample used		96

4.2 Data Analysis

4.2.1 Description Statistic Analysis

Descriptive analysis is intended to provide an overview or data description of the dependent variable, namely financial statement fraud, as well as the independent variables in the form of the fraud pentagon components, namely pressure, opportunity, rationalization, capability, and

arrogance. Descriptive statistics provide an overview or description of data seen from the mean, standard deviation, variance, maximum, minimum, sum, range, kurtosis and skewness or slope of distribution. The result of description statistical analysis is:

Table 4.2.1

Descriptive Statistical Analysis Result

Variable	N	Minimum	Maximum	Sum	Mean
F_SCORE	96	-231.0638	1.721884	-520.6732	-5.423679
ROA	96	-1.538286	0.455579	3.444228	0.035877
ACHANGE	96	-0.614449	0.995083	8.720475	0.090838
IND	96	0.000000	0.500000	18.66389	0.194416
CPA	96	(Dummy)	(Dummy)	5.000000	0.052083
DIR_CHANGE	96	(Dummy)	(Dummy)	49.00000	0.510417
DUALISM	96	(Dummy)	(Dummy)	72.00000	0.750000
Variable	N	Standard Deviation	Kurtosis	Skewness	
F_SCORE	96	28.28221	49.70473	-6.717422	
ROA	96	0.210091	34.88671	-4.491710	
ACHANGE	96	0.212091	7.946581	0.824073	
IND	96	0.132449	2.523969	0.072757	
CPA	96	0.223361	17.25495	4.031742	
DIR_CHANGE	96	0.502516	1.001737	-0.041676	
DUALISM	96	0.435286	2.333333	-1.154701	

Source: EViews Data Processing

Based on the result of descriptive analysis above, the conclusion that can be taken are as follows:

Statistical descriptive result for dependent variable which is a fraudulent financial statement which measured by F Score shows the mean value of -5.4236. It shows that the mean value of mining companies during 2017 until 2019 period has -542.3% level of fraudulent financial statements. In Skousen and Twedt's (2009) research, it is stated that if the resulting average value is low, but the standard deviation value is high, the potential for fraud is also higher. The standard deviation of this study is 28.28221. This indicates that the fraud risk level in the mining sectors is high. Based on table 4.2.1, the descriptive statistical analysis results of for the F-Score show -231.0638 as the lowest value while the highest value is 1.721884.

A pressure independent variable is divided into two proxies to be measured. The first proxy of pressure is financial target which is measured by return on assets (ROA). The result of statistical descriptive for financial target shows minimum value of -1.5382, which is PT Mitra Investindo Plc (MITI). It means that this company has the potential to gain the lowest profit among other samples. While for the highest value is Bayan Resource (BYAN) with the value of 0.4555. Research results for financial target variable shows among 96 samples that have been processed have mean value of 0.0358. That value can be interpreted that the company ability level of generating profit is 3.58%. The standard deviation value is 0.21 which shows data variance level of the financial target variable.

The second proxy of pressure independent variables is financial stability which is measured by ACHANGE. Statistical descriptive analysis

result for financial stability shows the lowest value is -0.6144 which is PT Mitra Investindo Plc (MITI). While the highest value is gained by PT Indika Energy Plc (INDY) with 0.995 which means that this company has the highest change in assets ratio among other companies. Based on 96 samples during 2017 until the 2019 period resulting in 0.0903 average value with 0.21209 standard deviation value and with the ACHANGE mean value of 0.0903, it can be interpreted that the value of the company managing their assets level is 9.03%.

The next variable is opportunity which proxy into ineffective monitoring and measured by calculating the independent commissioner's ratio on the total board of commissioners. Statistical descriptive results on ineffective monitoring shows that the lowest ratio value is 0 and it is not only classified on a single company because there are several companies that do not have independent commissioners in the company structure. The highest ratio is owned with the value of 0.5 or 50% ratio by Perdana Karya Perkasa Plc (PKPK). The mean ratio of independent commissioners is 0.1944. This means the average of mining companies in the 2017-2019 period has ineffective monitoring of 19.44%.

For a rationalization variable is proxy into change in auditor and measured with a dummy variable. Research result during 2017-2019 period with 96 samples shows a mean value of 0.0520 which means about 5.20% samples of company occurred change of accounting firm (scored 1) while the other sample about 94.79% company samples did not change of

accounting firm (scored 0). On this variable, the value of standard deviation is 0.2233.

Capability variable is proxy into change in director and measured by DIR_CHANGE which researches whether there is a director change in company or not. Based on research toward 96 samples during 2017 until 2019 period resulting in a mean value of 0.5104 or 51.04% company samples occurred a change in director (scored 1) and the other 48.95% companies did not occur of change in director (scored 0). The standard deviation value of change in director is 0.5025.

The last variable is arrogance which proxy into dual position. Descriptive analysis results on 96 samples of mining companies during 2017-2019 period has mean value of 0.7500 which means 75% of companies have CEO members or board of directors have dualism positions (scored 1) while 25% do not have dualism positions (scored 0).

4.2.2 Robust Regression

Andrews (1972) established robust regression and is a regression approach use in error distribution is not normal and/or there are multiple outliers that influence the model. According to Chen (2002), robust regression is an important method for analyzing data contaminated by outliers. This approach is an important technique for evaluating data that is affected by outlier in order to create a stable or resistant model. A robust estimation is largely unaffected by massive changes in small portions of data or small changes in large portions of data. Momeni, et al (2010) apply robust

regression to financial data analysis. This illustrates that robust regression can be applied in various fields, such as economics, agriculture and others. The regression analysis used in this sample is a robust regression analysis to assess the effect of the independent variable on the dependent variable.

TABLE 4.2.2

Robust Regression Analysis

Variable	Coefficient	Std. Error	Z-Statistic	Prob.
C	0.031983	0.176395	0.181316	0.8561
ROA	1.321539	0.410483	3.219472	0.0013
ACHANGE	-0.668306	0.386578	-1.728777	0.0838
IND	-0.074534	0.542952	-0.137276	0.8908
CPA	-0.142618	0.312526	-0.456340	0.6481
DIR_CHANGE	0.078364	0.147839	0.530062	0.5961
DUALISM	0.072481	0.162926	0.444868	0.6564
Rw-squared (R ²)			0.199034	
Rn-squared stat. (F Test)			0.029721	

Source: EViews Data Processing

Based on the regression test result above, then this research regression equation is as follows:

$$\begin{aligned}
 \mathbf{F\ SCORE} = & 0.031983 + 1.321539 \text{ (ROA)} - 0.668306 \text{ (ACHANGE)} - \\
 & 0.074534 \text{ (IND)} - 0.142618 \text{ (CPA)} + 0.078364 \\
 & \text{(DIR_CHANGE)} + 0.072481 \text{ (DUALISM)}
 \end{aligned}$$

Based on the equation above, the regression coefficient value from financial targets (ROA) has positive and significant value which means this

variable has positive effect with the risk occurrence of fraudulent financial statements. On the other hand, for the variables of financial stability (ACHANGE), ineffective monitoring (IND), change in auditor (CPA), change in director (DIR_CHANGE), and dual position (DUALISM) have negative value. These data show those variables negatively affecting the occurrence risk of fraudulent financial statements.

In this research, regression analysis results show that only financial target variables (ROA) that have significant relation with dependent variables with the value of 0.0013. (Sig. < 0.05). While the other variables show insignificant relation with dependent variables. Each variable has the significant value of -0.0838 (ACHANGE); -0.8908 (IND); 0.6481 (CPA); 0.5961 (DIR_CHANGE); and 0.6564 (DUALISM). Those variables have significant probability > 0.05.

From the robust regression equation above, the following conclusions can be obtained:

1. The pressure component is a proxy for financial target and financial stability. From those two proxies, only financial target variables which show positive significant result in accordance with the hypothesis since the value of positive regression coefficient with sig. $t < 0.005$. If there is an increase in the regression value on the financial target variable, the fraudulent financial statements will increase. The results of the second proxy of financial stability does no effect on financial statements fraud and do not support the hypothesis because the regression coefficient is

negative and the sig. value $t > 0.05$. It can be concluded that the effect of financial stability on fraudulent financial statements is not significant.

2. The second component of the fraud pentagon is opportunity which is a proxy for ineffective monitoring variables. This variable resulting from ineffective monitoring has no effect on fraudulent financial statements and does not support the hypothesis because the regression coefficient is negative and the sig. value $t > 0.05$. It can be concluded that the effect of ineffective monitoring on fraudulent financial statements is not significant.
3. The third component of the fraud pentagon is rationalization which proxy with change in auditor. This research shows that changes in auditor variables do not support the hypothesis. Regression coefficient value shows negative value with sig. $t > 0.05$. then it can be concluded that change in auditor is not significantly affecting fraudulent financial statements. It means no matter how big or small the level of change in the auditor will not affect the potential fraudulent financial statement.
4. The fourth component of the fraud pentagon is capability which proxy into change in director. This research variable is not supporting the hypothesis because it shows a positive regression coefficient value and sig. t value > 0.05 which resulting change in director is not affecting a fraudulent financial statement. It means, the level value of change in director will not affect the financial statement fraud.

5. The last component is a proxy for dual position. This variable supports the hypothesis because of the sig. $t > 0.05$. This means that this variable has no effect on fraudulent financial statements.

4.2.2.1. Adjusted R²

R-squared coefficient of determination is to determine the percentage effect of the independent variable on changes in the dependent variable. The value of determination is determined by the adjusted R square value. Test findings would demonstrate the potential of the independent variable to describe the dependent variable. R-squared in robust regression is recommended to use Rw-Square with the value result of 0.199034 Contribution from the variables ROA, ACHANGE, IND, CPA, DIR_CHANGE, and DUALISM towards the variable F SCORE or equal to 19.9034%.

4.2.2.2. Model Feasibility Test

In this study, to determine whether the regression model used is feasible or fit is by comparing the significance or probability value of the EViews calculation greater or less than the standard statistical value, which value is 0.05. The F test (in robust regression using the output Rn-squared stat) taken together with the variables of ROA, ACHANGE, IND, CPA, DIR_CHANGE, and DUALISM have a significant effect on the variable on F SCORE variable because the value of Prob (Rn-squared stat.) is 0.029721 or the value is less than 0.05.

4.3 Hypothesis Test

Hypothesis testing in this study is conducted using the significance test or T test on fraudulent financial statements or which are detected as F score.

4.3.1 Hypothesis Testing 1

The first hypothesis in this research stated that financial targets have positive and significant effects on financial statement fraud or which are detected as F-score. Based on the robust regression analysis, the financial targets (ROA) variable shows a positive and significant effect on F SCORE because the sig. value is 0.0013 or less than 0.05. This result shows that the first hypothesis is accepted, which is that financial stability is affecting positively and significantly fraudulent financial statements. The higher the financial targets, then the higher the potential occurrence of fraudulent financial statements.

4.3.2 Hypothesis Testing 2

The second hypothesis in this research stated that financial stability of the company regarding financial performance has a negative effect on fraudulent financial statements. Based on the robust regression analysis, the ACHANGE variable on F SCORE does not have a significant effect because the sig. value is 0.0838 or greater than 0.05. It shows that the second hypothesis is rejected, which is that financial targets are negatively affecting fraudulent financial statements. It means the financial stability value doesn't affect the potential occurrence of financial statement fraud.

4.3.3 Hypothesis Testing 3

The third hypothesis in this research stated that ineffective monitoring of company's internal control has a negative effect on fraudulent financial statement. Based on the robust regression analysis the IND variable does not have a significant effect on F SCORE because the prob value. = 0.8908 or greater than 0.05. This result shows that the third hypothesis has positive effect on fraudulent financial statement is rejected and ineffective monitoring is affecting negatively on fraudulent financial statement. It can be concluded that level of ineffective monitoring will not affect the potential occurrence of fraudulent financial statement.

4.3.4 Hypothesis Testing 4

The fourth hypothesis in this research stated that change in auditor has a negative effect on fraudulent financial statements. Based on the robust regression analysis, the CPA variable on F SCORE does not have a significant effect because the sig. value is 0.6481 or greater than 0.05. It shows that the fourth hypothesis which has a positive effect on financial statement fraud is rejected and change in auditor is affecting negatively on fraudulent financial statements. From that result, it means that intensity of change in the auditor will not affect fraudulent financial statements.

4.3.5 Hypothesis Testing 5

The fifth hypothesis in this research stated that change in director has a positive effect on financial statement fraud. Based on the robust regression analysis the DIR CHANGE variable on F SCORE does not have a significant effect because the sig. value is 0.5961 or greater than 0.05. This

result shows that the fifth hypothesis which has a positive effect on financial statement fraud is rejected and change in director is affecting negatively on fraudulent financial statements. This means the change in director will not affect fraudulent financial statements.

4.3.6 Hypothesis Testing 6

The sixth hypothesis in this research stated that dual position has a positive effect on financial statement fraud. Based on the robust regression analysis the DUALISM variable has no significant effect on F SCORE because the sig. value is 0.6564 or greater than 0.05. It shows that the sixth hypothesis which has a positive effect on financial statement fraud is rejected and dual position is negatively affecting financial statement fraud. From the research result it can be concluded that director position whether dual or more will not affect the potential occurrence of financial statement fraud.

4.4. Discussion

This research results support the Widarti (2015) and Putriasih et. al. (2016) research which concluded that the financial target represented through ROA has a positive and significant effect on fraudulent financial statements. ROA is a profitability ratio that is used to measure the effectiveness of a company in generating profits. In the results of this study, financial targets have a significant positive effect on financial statement fraud. The higher the ROA targeted by the company, the higher the company's potential level of profit manipulation. This is because the

financial targets that would be fulfilled by the company bring pressure on management to perform their success where they are often expected to maintain the financial targets that have been set by the company. From this pressure, it is likely for management to have the tendency for fraudulent financial statements by manipulating the finances of the company in compliance with predetermined goals. The findings of this analysis are consistent with the Agency's philosophy that the agent would be responsible for all his work against the principal. So that the company fails to meet profits from the company that are compatible with the goal, to draw the interest of company's investors. In order to achieve the target when the resulting profit is low, it will encourage management to manipulate, so it is likely that the financial statements are presented inappropriately.

The results of this study do not support the Sihombing and Raharjo (2014), Tiffani and Marfuah (2015), and Siddiq et. al. (2017) research which stated that financial stability significantly affects fraudulent financial statements. Since fraud committed by agents or persons authorized by the principal is based on ethics, morals and personality of the agent, does not depend on the number in the ROA ratio. Bad ethics and morals, for example, when someone in a company wants to increase his personal interest he will do everything he can like to do budgetary slack on purpose, so that the remaining budget can be used for personal gain. In addition, this person can steal insignificant amounts of company cash, so some of these actions are examples, that financial statement fraud is not affected by ROA. This result

is in accordance with agency theory, which states that agents who are opportunistic (bad morals) will have the intention of committing fraud when the opportunity arises, regardless of the level of ROA. However, this research supports the Sukirman and Sari (2013) and Henny and Nugraha (2015) research who say that financial stability is not significantly affecting the fraudulent financial statement. This result does not support the research of Skousen et. al. (2009) which proved that there is a relationship between the growth rate of company assets with the possibility of financial statement fraud and the growth rate of company assets is getting smaller or even negative, this indicates that the company's financial condition is unstable and is considered unable to operate properly. The results of this study do not support the Sihombing and Raharjo (2014), Tiffani and Marfuah (2015), and Siddiq et. al. (2017) research who stated that financial stability significantly affects fraudulent financial statements. However, this research supports the Sukirman and Sari (2013) and Henny and Nugraha (2015) research who say that financial stability is not significantly affecting the fraudulent financial statement. This result does not support the research of Skousen et. al. (2009) which proved that there is a relationship between the growth rate of company assets with the possibility of financial statement fraud and the growth rate of company assets is getting smaller or even negative, this indicates that the company's financial condition is unstable and is considered unable to operate properly.

The results of this study do not support the research conducted by Putriasih et. al. (2016), which states that effective monitoring is able to predict the occurrence of fraudulent financial statements. However, the results of this study support the results of research conducted by Sihombing and Raharja (2014), Tessa and Harto (2016), and Kurnia and Anis (2017) who concluded that ineffective monitoring has no effect on fraudulent financial statements. From the test results, it can be stated that many or at least the members of the independent commissioners cannot prevent fraud in financial statements. This may occur because the existence of independent commissioners in the company is only a regulatory requirement in fulfilling good corporate governance or formality, while in practice they can still be influenced or intervened by the company (Kurnia & Anis, 2017).

This result is not in line with the research results of Putriasih et. al. (2016) and Siddiq et. al. which states that the change in auditor has an effect on fraudulent financial statements. Since the turnover of public accountants is a difficult factor to measure to detect fraudulent financial reporting (Skousen et al, 2009). However, the results of this study support research conducted by Sihombing and Raharja (2014), Tessa and Harta (2016), and Kurnia and Anis (2017) who stated that change in auditors does not affect the financial statement fraud. This research results may occur as a result of the external auditors' poor performance and lack of transparency. Companies with positive motivation will use independent auditors who are truly independent and objective in conducting audits for the benefit of

improving company performance in the future (Sihombing & Rahardjo, 2014).

From the results of these studies, it can be concluded that the greater or the smaller the change of directors' value will not affect the potential for financial statement fraud. His research result does not support the Pardosi (2015) and Putriasih et. al. (2016) research results who stated that change in directors have an effect on fraudulent financial statements. This is because changes in the composition of the board of directors are generally carried out for clear reasons and are disclosed in the company's annual report. However, the results of this study are in line with research conducted by Tessa and Harto (2016), Kurnia and Anis (2017), and Ulfah et. al. (2017) who stated that change in directors has no effect on fraudulent financial reporting. This is possible because there are members of the board of directors in the company only as a regulatory requirement in meeting good corporate governance and lack of transparency. In addition, it is possible that the company is satisfied with the performance of the board of directors and there are no problems from shareholders who encourage them to replace the previous board of directors. Meanwhile, if there is a change of directors, it is expected that they will be more competent and have innovations that can improve company performance.

This study is not in line with Oktavia's (2017) research result who stated that if a company has a CEO who has a dual position, there will be a possibility of committing fraud. Likewise, research conducted by

Rachmawati (2014) shows that multiple positions on the board of directors have a significant effect. From this research result, it may occur because the CEO or directors who have multiple positions in the company do not include the dualism of their positions in the member profile data in the financial statements. In addition, it is possible that companies with members with their dual position use their positions to improve company performance and maintain their performance in order to stay in the company. Meanwhile, for companies whose members do not have dual positions, they are more focused on carrying out their work so that the company's performance still looks good.



CHAPTER 5

CONCLUSION

5.1 Conclusion

The aim of this research is to prove empirically the effect of Pressure (Financial Targets and Financial Stability), Opportunity (Ineffective Monitoring), Rationalization (Change of Auditors), Capability (Change of Directors), and Arrogance (Dual Position) on fraudulent financial statements in mining sector companies which listed on the Indonesia Stock Exchange 2017-2019, the following conclusions can be summarized:

1. The financial target variable has a significant positive effect on fraudulent financial statements. The result of this study accepts hypothesis 1 which states that financial targets have a positive and significant effect on fraudulent financial statements. This means that the greater the value of the financial target, the potential for fraudulent financial statements will also increase.
2. The financial stability has no effect on fraudulent financial statements. The result of this variable is negative and has no significant effect. Therefore, it rejects hypothesis 2 which states that financial stability has a positive effect on fraudulent financial statements. This means that the greater or smaller the value of a company's financial stability, it will not affect the potential for fraudulent financial statements.

3. The ineffective monitoring variable has no effect on fraudulent financial statements. The result of this variable has negative and not significant effects. Therefore, it rejects hypothesis 3 which states that ineffective monitoring has a positive effect on fraudulent financial statements. This means that no matter the greater or the smaller the value of the ineffectiveness of monitoring, it will not affect the potential for financial statement fraud.
4. The change in auditor variables has no effect on fraudulent financial statements. The result of this variable shows negative and not significant effect. Therefore, it rejects hypothesis 4 which states that change in auditor has a positive effect on fraudulent financial statements. This means that the greater or smaller the value of change in auditor, it will not affect the potential for fraudulent financial statements.
5. The change in director's variable has no effect on fraudulent financial statements. The result of this study rejects hypothesis 5 which states that the change of directors has a positive effect on fraudulent financial statements. This means that even the value of the change in the board of directors is greater or smaller, will not affect the potential for financial statement fraud.
6. The variable of dualism position has no effect on fraudulent financial statements. The results of this study reject hypothesis 6 which states that position dualism has a positive effect on fraudulent financial statements.

It means that the dualism in positions value of in a company will not affect the potential for financial statement fraud.

5.2 Suggestion

There are several limitations in conducting this research and suggestions for future research, namely:

1. In conducting the measurement of fraudulent financial statements using a fraud pentagon, robust regression used is robust least squares by eliminating the selected extreme residual values. It is expected for future research to expand the research into audit delay affecting fraudulent financial statements. Since the cause of the audit delay is not just the auditor who finished the audit process but also the management of the company who delayed the publication of the audit report from the auditor.
2. It is expected for the future researcher to use a more diverse proxy from a fraud pentagon, for example it can be added external pressure, accounting firm size, industry environment, and political connection so the research scope can be expanded more widely.

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الجمهورية العربية السورية
الجامعة اللبنانية
الكلية الاقتصادية
البيروت

APPENDIXES

Appendix 1

List of Sample Companies

No	Company Code	Company Name
1.	ADRO	ADARO ENERGY Plc
2.	ANTM	ANEKA TAMBANG Plc
3.	APEX	APEXINDO PRATAMA DUTA Plc
4.	ARII	ATLAS RESOURCE Plc
5.	BIPI	BENAKAT INTEGRA Plc
6.	BRMS	BUMI RESOURCE MINERALS Plc
7.	BSSR	BARAMULTI SUKSESSARANA Plc
8.	BUMI	BUMI RESOURCE Plc
9.	BYAN	BAYAN RESOURCE Plc
10.	CITA	CITA MINERAL INVESTINDO Plc
11.	DEWA	DARMA HENWA Plc
12.	DKFT	CENTRAL OMEGA RESOURCE Plc
13.	DOID	DELTA DUNIA MAKMUR Plc
14.	DSSA	DIAN SWASTATIKA SENTOSA Plc
15.	ELSA	ELNUSA Plc
16.	FIRE	PT ALFA ENERGI INVESTAMA Plc
17.	GEMS	GOLDEN ENERGY MINES Plc
18.	HRUM	HARUM ENERGY Plc
19.	INDY	INDIKA ENERGY Plc

20.	KKGI	RESOURCE ALAM INDONESIA Plc
21.	MBAP	PT MITRABARA ADIPERDANA Plc
22.	MEDC	PT MEDCO ENERGY INTERNASIONAL Plc
23.	MITI	MITRA INVESTINDO Plc
24.	MYOH	SAMINDO RESOURCE Plc
25.	PKPK	PERDANA KARYA PERKASA Plc
26.	PTBA	BUKIT ASAM Plc
27.	PTRO	PETROSEA Plc
28.	RUIS	RADIANT UTAMA INTERINSCO Plc
29.	SMMT	GOLDEN EAGLE ENERGY Plc
30.	SMRU	SMR UTAMA Plc
31.	TOBA	TOBA BARA SEJAHTRA Plc
32.	ZINC	PT KAPUAS PRIMA COAL Plc

Appendix 2

Data Processing Result

Kode	Tahun	F_SC ORE	ROA	ACHA NGE	IND	CPA	DIR_CH ANGE	DUAL ISM
AD RO	2017	0,5255 651	0,07 872	0,04475 29	0,1428 571	0	0	0
AD RO	2018	0,5455 364	0,06 763	0,03619 06	0,1428 571	0	1	0
AD RO	2019	0,4065 082	0,06 027	0,02214 35	0,2	0	0	0
ANT M	2017	0,0970 523	0,00 455	0,00109 19	0	0	1	1
ANT M	2018	0,4774 721	0,02 625	0,10968 51	0	0	0	1
ANT M	2019	0,0842 526	0,00 642	- 0,06213 5	0	0	1	0

APE X	2017	- 0,5452 292	- 0,17 75	- 0,15349 3	0,25	0	0	0
APE X	2018	- 0,9916 964	- 0,20 17	- 0,10899 5	0,25	0	0	0
APE X	2019	0,1395 945	0,04 065	- 0,02710 3	0,25	0	0	0
ARII	2017	- 1,7576 375	- 0,05 11	- 0,00926 9	0,1666 667	0	1	0
ARII	2018	- 2,5551 57	- 0,08 07	0,07035 51	0,1666 667	0	0	0
ARII	2019	- 2,2756 081	- 0,01 52	0,03966 98	0,2	0	1	1
BIPI	2017	- 231,06 381	0,02 894	0,03075 09	0,25	0	1	1
BIPI	2018	- 48,829 371	0,01 775	- 0,08226	0,25	0	0	1
BIPI	2019	- 10,695 688	0,02 189	0,02939 44	0,25	0	1	1
BR MS	2017	1,7218 843	- 0,28 57	- 0,19428 7	0,1428 571	0	1	1
BR MS	2018	0,6726 571	- 0,14 97	- 0,20292 9	0,1666 667	0	1	1
BR MS	2019	0,6453 656	0,00 177	0,03220 83	0,2	0	1	1
BSS R	2017	0,7170 705	0,39 411	0,14216 37	0,1666 667	0	1	1
BSS R	2018	0,5859 28	0,28 178	0,16638 04	0,125	0	1	1
BSS R	2019	0,6582 723	0,12 154	0,02276 67	0,1428 571	0	1	1
BU MI	2017	- 0,7900 257	0,06 567	0,19157 57	0,1428 571	0	1	1

BU MI	2018	- 0,9663 913	0,04 05	0,05688 5	0,1428 571	0	1	1
BU MI	2019	- 0,7531 801	0,00 256	- 0,05220 9	0,1428 571	0	1	1
BY AN	2017	0,3053 312	0,38 03	0,07775 86	0,1111 111	0	1	1
BY AN	2018	0,3234 808	0,45 558	0,29483 22	0,1111 111	0	1	1
BY AN	2019	0,2123 743	0,18 326	0,11050 5	0	0	1	1
CIT A	2017	- 0,0405 977	0,01 773	- 0,01759 3	0,3333 333	0	0	1
CIT A	2018	- 0,0873 217	0,20 233	0,22041 48	0,3333 333	0	0	1
CIT A	2019	0,2797 809	0,17 034	0,18134 23	0	0	1	1
DE WA	2017	0,3706 884	0,00 689	0,05365 41	0,2	0	1	0
DE WA	2018	0,3870 333	0,00 618	0,03309 68	0,2	0	0	0
DE WA	2019	0,0021 263	0,00 687	0,32382 72	0,2	0	0	0
DKF T	2017	- 0,8981 624	- 0,01 97	0,20855 53	0	0	0	1
DKF T	2018	- 0,1281 564	- 0,03 52	0,17151 04	0	0	0	1
DKF T	2019	- 1,7699 48	- 0,03 8	- 0,00044 8	0	0	0	1
DOI D	2017	0,1483 091	0,04 944	0,07175 27	0,3333 333	0	1	1
DOI D	2018	0,1737 216	0,06 388	0,25223 98	0,3333 333	0	0	1
DOI D	2019	0,1933 381	0,01 733	- 0,00184 4	0,3333 333	0	0	1
DSS A	2017	- 0,0065 045	0,04 685	0,22597 27	0,1666 667	0	1	1

DSS A	2018	- 0,1061 892	0,03 565	0,23730 66	0,1666 667	0	1	1
DSS A	2019	0,1875 669	0,01 927	0,09808 17	0,2	0	1	1
ELS A	2017	0,5694 603	0,05 164	0,15853 5	0,2	0	1	1
ELS A	2018	0,5344 849	0,04 884	0,16516 93	0	0	1	1
ELS A	2019	0,5150 677	0,05 238	0,20287 14	0	0	1	1
FIR E	2017	- 1,0417 638	- 0,00 23	0,37265 03	0,3333 333	0	1	1
FIR E	2018	- 0,5816 781	- 0,00 51	0,25319 3	0,3333 333	0	0	1
FIR E	2019	- 17,664 807	0,01 94	- 0,05230 3	0,3333 333	0	0	1
GE MS	2017	- 0,1937 57	0,20 341	0,56345 32	0,1666 667	0	0	0
GE MS	2018	- 0,0283 034	0,14 343	0,18727 01	0,1666 667	0	1	0
GE MS	2019	0,1296 741	0,08 553	0,11354 39	0,1666 667	0	1	0
HR UM	2017	0,8017 409	0,12 134	0,11146 84	0,25	0	0	1
HR UM	2018	0,7898 393	0,08 591	0,01860 11	0,25	1	0	1
HR UM	2019	0,8250 63	0,04 502	- 0,04484 6	0,25	0	0	1
IND Y	2017	0,0918 114	0,08 847	0,99508 28	0,3333 333	0	0	1
IND Y	2018	0,1807 829	0,02 667	0,00941 97	0,3333 333	0	0	1
IND Y	2019	0,1465 144	0,00 138	- 0,01465 7	0,3333 333	0	0	1
KK GI	2017	0,6853 532	0,12 793	0,06427 85	0,1666 667	0	0	0

KK GI	2018	- 0,1812 368	0,00 406	0,11624 18	0,1666 667	0	0	0
KK GI	2019	- 0,0307 551	0,04 285	0,07751 08	0,1666 667	0	0	0
MB AP	2017	0,7629 707	0,36 47	0,38155 03	0,25	1	0	1
MB AP	2018	0,7603 056	0,28 996	0,07917 89	0,25	0	1	0
MB AP	2019	0,7854 226	0,18 329	0,10960 81	0	0	1	0
ME DC	2017	- 1,9691 25	0,02 554	0,43469 52	0,2	0	0	1
ME DC	2018	- 0,3416 156	- 0,00 54	0,01775 08	0,2	0	0	1
ME DC	2019	- 0,6787 208	- 0,00 23	0,14358 11	0,2	0	0	1
MIT I	2017	- 0,2504 945	- 0,09 99	0,01864 47	0,5	0	1	1
MIT I	2018	- 0,2483 886	0,05 047	- 0,36564 6	0,3333 333	0	1	1
MIT I	2019	- 1,0174 993	- 1,53 83	- 0,61444 9	0,3333 333	0	0	1
MY OH	2017	0,6476 203	0,09 044	- 0,07596 6	0,25	0	1	0
MY OH	2018	0,8094 235	0,20 438	0,11213 6	0,25	0	1	1
MY OH	2019	0,9078 564	0,16 293	0,05852 03	0,25	0	1	1
PKP K	2017	0,3757 612	- 0,07 6	- 0,12897 3	0,5	0	0	1
PKP K	2018	0,3719 684	- 0,02 99	- 0,06893 2	0,5	0	0	1

PKP K	2019	- 0,3542 714	- 0,57 9	- 0,43972 9	0,5	0	0	1
PTB A	2017	0,7381 979	0,20 681	0,18360 07	0	0	1	1
PTB A	2018	0,6620 698	0,21 185	0,09939 52	0	0	1	1
PTB A	2019	0,5817 877	0,15 482	0,07963 94	0	1	1	1
PTR O	2017	0,3794 178	0,01 903	0,11036 16	0,3333 333	0	1	1
PTR O	2018	0,3543 306	0,04 17	0,22322 72	0,3333 333	0	0	1
PTR O	2019	0,3151 982	0,05 684	- 0,00818 4	0,3333 333	0	0	1
RUI S	2017	0,1652 884	0,02 181	- 0,02020 6	0	0	0	1
RUI S	2018	0,2736 443	0,02 732	0,03233 92	0	0	0	1
RUI S	2019	0,1907 674	0,02 644	0,26352 22	0	0	0	1
SM MT	2017	- 1,0953 323	0,05 523	0,13965 08	0,3333 333	1	0	1
SM MT	2018	- 0,8475 56	0,10 167	0,14648 93	0,3333 333	0	1	1
SM MT	2019	- 1,1539 836	0,00 715	- 0,03226 1	0,3333 333	1	0	1
SM RU	2017	- 0,5864 947	0,01 607	- 0,16921 2	0	0	1	0
SM RU	2018	- 0,6837 537	- 0,03 65	- 0,06026 9	0	0	0	0
SM RU	2019	0,0478 101	- 0,11 18	- 0,12199 6	0	0	0	0
TOB A	2017	- 3,5280 557	0,11 876	0,33162 77	0,1666 667	0	1	1

TOB A	2018	- 16,731 625	0,13 567	0,44079 36	0,2	0	1	1
TOB A	2019	- 18,806 792	0,06 893	0,26451 82	0	0	1	1
ZIN C	2017	- 22,359 899	0,06 353	0,27894 64	0,3333 333	0	1	1
ZIN C	2018	- 146,28 742	0,08 362	0,84975 4	0,3333 333	0	0	1
ZIN C	2019	- 4,0097 704	0,12 512	0,08498 49	0,25	0	1	1

Appendix 3

Statistical Descriptive Analysis Result

DESKRIPTIF

Date: 01/04/21
Time: 18:41
Sample: 2017 2019

	F_SCORE	ROA	ACHANGE	IND	CPA	DIR_CHANGE	DUALISM
Mean	-5.423679	0.035877	0.090838	0.194416	0.052083	0.510417	0.750000
Median	0.113363	0.040576	0.074632	0.200000	0.000000	1.000000	1.000000
Maximum	1.721884	0.455579	0.995083	0.500000	1.000000	1.000000	1.000000
Minimum	-231.0638	-1.538286	-0.614449	0.000000	0.000000	0.000000	0.000000
Std. Dev.	28.28221	0.210091	0.212091	0.132449	0.223361	0.502516	0.435286
Skewness	-6.717422	-4.491710	0.824073	0.072757	4.031742	-0.041676	-1.154701
Kurtosis	49.70473	34.88671	7.946581	2.523969	17.25495	1.001737	2.333333
Jarque-Bera Probability	9447.309 0.000000	4389.856 0.000000	108.7402 0.000000	0.991119 0.609230	1072.893 0.000000	16.00001 0.000335	23.11111 0.000010
Sum	-520.6732	3.444228	8.720475	18.66389	5.000000	49.00000	72.00000
Sum Sq. Dev.	75988.91	4.193119	4.273360	1.666568	4.739583	23.98958	18.00000
Observations	96	96	96	96	96	96	96

Appendix 4

Robust Regression Analysis Result

Regresi Robust

Dependent Variable: F_SCORE

Method: Robust Least Squares

Date: 01/04/21 Time: 18:41

Sample: 2017 2019

Included observations: 96

Method: M-estimation

M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)

Huber Type I Standard Errors & Covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.031983	0.176395	0.181316	0.8561
ROA	1.321539	0.410483	3.219472	0.0013
ACHANGE	-0.668306	0.386578	-1.728777	0.0838
IND	-0.074534	0.542952	-0.137276	0.8908
CPA	-0.142618	0.312526	-0.456340	0.6481
DIR_CHANGE	0.078364	0.147839	0.530062	0.5961
DUALISM	0.072481	0.162926	0.444868	0.6564

Robust Statistics

R-squared	0.076390	Adjusted R-squared	0.014124
Rw-squared	0.199034	Adjust Rw-squared	0.199034
Akaike info criterion	167.7921	Schwarz criterion	190.3890
Deviance	57.23025	Scale	0.601011
Rn-squared statistic	13.99237	Prob(Rn-squared stat.)	0.029721

Non-robust Statistics

Mean dependent var	-5.423679	S.D. dependent var	28.28221
S.E. of regression	29.75860	Sum squared resid	78816.10

