

## DETECTION OF FRAUDULENT FINANCIAL STATEMENTS USING THE BENEISH RATIO INDEX FOR MANUFACTURING COMPANIES LISTED ON THE INDONESIAN STOCK EXCHANGE IN 2016 AND 2017 PERIOD

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### ABSTRACT

*Fraud is an action taken intentionally and it is done for personal or other people's purposes, where the action has caused harm to certain parties or certain institutions. Misstatements contained in fraudulent financial statements are intentional misstatements to deceive users of financial statements. The source of this misstatement includes manipulation or falsification of accounting records, intentional misstatements or omissions from financial statements, and / or incorrect application of accounting principles. In Indonesia, accounting fraud also occurs at the company level, both private and government companies. On December 6, 2012, the announcement of Indonesia's score in the Corruption Perception Index (CPI) was 32 and ranked 118th out of 176 countries which measured the level of corruption (Transparency International, 2012). In 2001, a fraud scandal occurred by PT Kimia Farma Tbk. PT Kimia Farma is a state-owned company whose shares have been traded on the exchange to become public company. Based on indications by the Ministry of BUMN and Bapepam's examination, it was found that there were misstatements in the financial statements which resulted in overstatement of net income for the year ended 31 December 2001 of Rp. 32.7 billion, which represented 2.3% of sales and 24.7% from net income. The author's purpose of this study is to discuss about detecting fraud in financial statements by using 5 (five) of the 8 (eight) Beneish ratio indices, because Beneish's research states that the Days Sales in Receivables Index (DSRI) ratio index, the Gross Margin Index (GMI), Asset Quality Index (AQI), Sales Growth Index (SGI), and Total Accrual to Total Asst Index (TATA) have significant results to detect financial report manipulation.*

*Keywords: fraud, financial report, Beneish ratio index*

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## 1. INTRODUCTION

Financial reports provide information that is useful in making decisions for stakeholders and potential stakeholders (Statement of Financial Accounting Standards-PSAK No.1). In order to protect the interests of stakeholders, the Law No. 8 of 1995 was drafted on the capital market. Law Number 8 of 1995 concerning capital market requires issuers or public companies to convey information disclosure or material facts. Material information or facts are important and relevant information about events where events and facts that can affect securities prices, and stakeholder decisions (Financial Services Authority, 2015 in Rahayu 2016). Violations of capital market regulations are found in Indonesia. During 2014, the Financial Services Authority (OJK) reported 171 sanctions and 30 written warnings



related to the delay of issuers and public companies in submitting periodic reports and incidental reports. In 2014 there were also 7 sanctions and 8 written warnings in connection with cases of violations of issuers and public companies against provisions in the capital market sector. Violations of provisions in the capital market sector can be in the form of violations of the provisions of financial statement presentation (OJK, 2014 in Rahayu 2016).

In Indonesia, accounting fraud also occurs at the company level, both private and government companies. On December 6, 2012, the announcement of Indonesia's score in the Corruption Perception Index (CPI) was 32 and ranked 118th out of 176 countries which measured the level of corruption (Transparency International, 2012). This can be seen from the number of cases related to the issue of corruption and fraudulent practices such as the liquidation of several banks, the submission of BUMN and private management to the courts, banking crime cases, tax manipulation, etc. (Wilopo, 2006).

Similar research was also conducted by Wells (2001), which was published in his article entitled "Irrational Ratios". Wells used the Beneish Ratio Index to reveal financial reporting fraud cases carried out by a carpet cleaning company in the United States "Best Carpet Cleaning Service", which occurred in mid 1980. It was proven that Barry Minkow's company tricked investors and auditors into fraudulent schemes financial statements that reached \$ 100 million. Beneish (1999) suggests the use of accounting variables that are considered to signal future prospects as a technique for detecting manipulation. The technique is based on the notion of the importance of information of a company that can capture the nature of the company's operations or activities economically and have detection capabilities that make economic sense (Yavida, 2001).

## **2. LITERATURE REVIEWS**

### **2.1. Fraud**

According to Singleton and Singleton (2010: 40), fraud as a crime, generic term, and embraces all the multifarious means that human ingenuity can devise which are resorted to by one individual, to get an advantage by false means or representation ... as it includes surprise, tricks, cunning, and unfair ways by which another is cheated. the only boundaries defining it are those that limit human knavery. By this definition then it can be concluded that there are at least three fundamental elements in fraud which are: (a) fraud is done by someone intentionally; (b) fraud is done in the form of fraud or coercion of truth; and (c) fraud is done to gain the benefit of certain parties. According to Priantara (2013), in general, the elements of cheating are: (1) there is a statement that is made wrong or misleading (misrepresentative) that can be a report, data or information, or proof of transaction; (2) acts violate regulations, standards, provisions and in certain situations violate the law; (3) there is abuse or utilization of position, occupation, and position for personal interests and benefits; (4) covers the past or present because the calculation of losses suffered by victims is generally associated with actions that have been and are happening; (5) supported by facts are material (material fact), must be supported by objective evidence and in accordance with the law; (6) action gaps or careless intentional (recklessly) to cause a party to testify or be affected or deceived in reading and understanding the data; and (7) the aggrieved party relies on and is deceived by misrepresentation which is detrimental (detriment).

### **2.2. Financial statement**

The financial condition and results of the company's operations reflected in the company's financial statements are essentially the final results of the accounting activities of the company concerned. According to Fahmi (2012: 22), financial reports are information that describes the condition of a company, which in turn will be an information describing the performance of a company. Jumingan (2008: 2) defines that financial statements are basically the result of an accounting process that can be used as a tool to communicate with parties

with an interest in the financial condition and results of the company's operations. According to the Indonesian Institute of Accountants - IAI (2017), financial statements are prepared with the aim of providing information regarding financial position, performance, and changes in the financial position of a company that benefits a large number of users in economic decision making. The financial statements also show what has been done by management (stewardship), or management's responsibility for the resources entrusted to it.

### 2.3. Financial statement fraud

Rezaee (2005) cited by Wardhani (2012) defines fraud in the financial statements as follows: "Financial statements of fraud are deliberated by companies to represent users of published financial statements, especially investors and creditors, by preparing and disseminating materially misstated financial statements ". Financial report fraud can be related to several schemes such as: (1) falsification, alteration, or manipulation of financial records, supporting documents or business transactions; (2) intentional misstatement, deletion, or misrepresentation of events, transactions, accounts or other significant information which is a source of financial statement-making information; (3) application errors and intentional misinterpretations and wrong execution of accounting standards in terms of the application of principles, policies, and methods used to measure, acknowledge, and report economic events and business transactions; (4) intentional omission of disclosure or presentation of inadequate disclosures related to standards, principles, accounting practices based on available accounting standards that have weaknesses or gaps that can be used by companies to cover the economic substance of their performance (Rezaee in Wardhani, 2012 : 2). The Association of Certified Fraud Examiners (ACFE), one of the associations in the USA that devotes its activities to fraud prevention and eradication, categorizes fraud in three groups as follows:

1. *Fraud financial statements (financial statement)*. Fraud of financial statements can be defined as fraud committed by management in the form of material misstatement of financial statements that harm investors and creditors. This fraud can be financial or non-financial fraud.
2. *Asset Misappropriation*. Misuse of assets can be classified as fraudulent cash or fraudulent inventories and other assets, and fraudulent disbursement.
3. *Corruption*. Corruption is the act of an official or officer who is illegally and cannot be justified in using his work or character to benefit himself or for others, by violating the obligations and rights of others (Black's Law Dictionary in James A. Hall and Tommie Singleton, 2007: 285). According to ACFE, corruption is divided into conflicts of interest, bribery, illegal gratuity, and extortion (economic extortion).

### 2.4. Detection of fraudulent financial statement

The technique for detecting frauds in this category is very varied. However, proper understanding of good internal control in these posts will be very helpful in carrying out fraud detection. Thus, there are many techniques that can be used to detect any case of asset abuse. Each type of fraud can be detected through several different techniques, including: (a) analytical review. A review of account sharing that might indicate unfamiliarity or unexpected activities; (b) statistical sampling. Testing of the basic documents of an account can determine the presence of irregularities; (c) vendor or outsider complaints. Complaints from consumers, suppliers, or other parties are good detection tools, so that later further investigation can be carried out; (d) site visit - observation. Observation of how accounting transactions are carried out will sometimes give a warning of the existence of areas that have potential problems.

### 2.5. Beneish Index Ratio

The benchmark ratio index used to detect manipulations in the financial statements includes:



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a. Days Sales in Receivables Index (DSRI)

$$\text{DSRI} = \frac{(\text{Accounts Receivable}_t : \text{Sales}_t)}{(\text{Accounts Receivable}_{t-1} : \text{Sales}_{t-1})}$$

DSRI is the ratio of daily sales in the form of accounts receivable in year t to year t-1. This variable measures whether accounts receivable and out of balance in two consecutive years. This can be seen from the increase in accounts receivable relative to sales. This increase can indicate a surge in income. A surge in income that is related to the possibility of recording sales and income that is great. If there is a large increase, this is a result of changes in credit policy.

## b. Gross Margin Index (GMI)

$$\text{GMI} = \frac{(\text{Sales}_{t-1} - \text{Cost of Good Sold}_{t-1}) / (\text{Sales}_{t-1})}{(\text{Sales}_t - \text{Cost of Good Sold}_t) / (\text{Sales}_t)}$$

If GMI is more than 1 (one), then there is a decrease in the gross margin and evidence of a bad signal on the company. The increase in GMI indicates the company to inflate profits. Thus there is a positive relationship between GMI and the probability of manipulation if the company's performance decreases.

## c. Asset Quality Index (AQI)

$$\text{AQI} = \frac{(1 - \text{Current assets}_t + \text{Net fixed assets}_t) / \text{Total assets}_t}{(1 - \text{Current assets}_{t-1} + \text{Net fixed assets}_{t-1}) / \text{Total assets}_{t-1}}$$

AQI measures the risk of assets at year t with year t-1. If AQI is greater than 1 (one), this indicates that the company has potentially increased cost control. AQI also measures the proportion of Total Assets to which future profits are potentially less certain. As a result, AQI has a positive relationship with the possibility of manipulation in financial statements.

## d. Sales Gross Index (SGI)

$$\text{SGI} = \frac{\text{Sales}_t}{\text{Sales}_{t-1}}$$

SGI can tell which company includes fake sales. The increase in SGI shows that there is a tendency for companies to record fictitious income to consider the normal growth expected in that period. Although growth does not indicate existence.

## e. Total Accruals to Total Assets (TATA)

$$\text{TATA} = \frac{\Delta \text{ Working capital} - \Delta \text{ Cash} - \Delta \text{ Current taxes payable} - \Delta \text{ Depreciation and Amortization}}{\text{Total assets}}$$

Beneish (1999) uses TATA to estimate the extent to which cash underlies reported income, and also estimates higher positive accruals (less cash) associated with the possibility of higher income manipulation.

### **3. RESEARCH METHOD**

#### **3.1. Data**

The population in this study is all manufacturing companies that are listed on the Indonesia Stock Exchange (BEI) that publish financial reports (audited) for the financial year 2017. Manufacturing companies (industrial processing) on the Indonesia Stock Exchange (IDX) covering the basic industrial and chemical sectors, various industrial sectors, and consumer goods industry sectors. The population is 132 companies, obtained from downloading the softcopy of the issuer's financial statements on the Indonesia Stock Exchange (IDX) website [www.idx.co.id](http://www.idx.co.id).

#### **3.2. Sample**

Determination of the sample in this study was carried out by means of non probability - purposive judgment sampling, where the sample was determined based on certain criteria determined by the author and had limitations in terms of generalization. Some of the criteria in determining the sample include: (a) the manufacturing company issues consolidated financial statements (audited) as of December 31, 2017; (b) the manufacturing company announced earnings as of December 31, 2017; (c) the manufacturing company experienced an increase in sales from 2016 to 2017. According to Beneish (1999), the possibility of manipulation could be marked by an increase in sales; (d) the manufacturing company experienced an increase in profits from 2016 to 2017. Beneish (1999) indicated that an increase in profits also indicated the possibility of manipulation.

#### **3.3. Method of analysis**

Data analysis is one of the research processes carried out after all the data needed to solve the problem under study has been obtained in full. This study uses the Ratio Index analysis technique to the company's financial statement data that is the sample. Calculation of the ratio index is intended to determine the category of a company classified as manipulators or non manipulators. Companies categorized as classified manipulators or non manipulators if they get the ratio index value according to the parameter index according to the Beneish Model. The steps used for calculating the ratio index to determine the category of companies classified as manipulators or non manipulators are as follows: (a) calculate the ratio of company index/calculated index; (b) compare the calculated index with the parameter index (Beneish Ratio Index) as presented in Table 1; (c) determining companies is classified as manipulators or non manipulators according to classification criteria (Fabelli, 2011), where : (1) companies that have  $\geq 3$  (three) calculated indices that are in accordance with the parameter index that states Manipulators, belong to the Manipulators company; (2) companies that have  $\geq 3$  (three) calculated indices that are in accordance with the parameter index stating Non Manipulators, are classified as Non Manipulators; and (3) companies that have  $\geq 3$  (three) calculated indices that correspond to the parameter index that states gray, and the calculated index that does not meet 2 (two) criteria for classifying Manipulators and Non Manipulators are classified as gray companies (Gray Company); and (d) calculate the percentage of companies belonging to manipulators or non manipulators.

**Table 1. Parameters and index value**

Index parameters	Index value	Description
Days Sales in Receivables Index (DSRI)	$\leq 1,031$	Non Manipulators
	$1,031 < index < 1,465$	Grey
	$\geq 1,465$	Manipulators
Gross Margin Index (GMI)	$\leq 1,014$	Non Manipulators
	$1,014 < index < 1,193$	Grey
	$\geq 1,193$	Manipulators
Asset Quality Index (AQI)	$\leq 1,039$	Non Manipulators
	$1,039 < index < 1,254$	Grey
	$\geq 1,254$	Manipulators
Sales Growth Index (SGI)	$\leq 1,134$	Non Manipulators
	$1,134 < index < 1,607$	Grey
	$\geq 1,607$	Manipulators
Total Accruals to Total Assets (TATA)	$\leq 0,018$	Non Manipulators
	$0,018 < index < 0,031$	Grey
	$\geq 0,031$	Manipulators

#### 4. RESULTS AND DISCUSSIONS

##### 4.1. Results

Table 2 presents the calculation based on parameters and its value.

**Table 2. Results of calculation based on Beneish ratio index**

Firms	DSRI	GMI	AQI	SGI	TATA	Categories
JPRS	N	M	M	G	M	Manipulators
LMSH	G	M	N	M	M	Manipulators
SPMA	M	N	M	M	N	Manipulators
SMCB	N	G	N	N	N	Non Manipulators
SMGR	N	G	N	G	N	Non Manipulators
ARNA	N	G	N	N	N	Non Manipulators
ALKA	N	N	M	N	M	Non Manipulators
MYRX	N	N	M	M	N	Non Manipulators
PICO	N	N	N	N	M	Non Manipulators
BUDI	N	N	N	N	M	Non Manipulators
ETWA	N	G	G	N	N	Non Manipulators
SRSN	G	N	N	N	M	Non Manipulators
TPIA	G	N	N	N	N	Non Manipulators
UNIC	N	N	N	M	N	Non Manipulators
BRNA	N	N	M	G	N	Non Manipulators
ALDO	N	M	N	N	G	Non Manipulators
INKP	N	N	G	N	N	Non Manipulators
TKIM	N	M	N	N	N	Non Manipulators
IMAS	N	M	N	G	N	Non Manipulators
INDS	N	N	N	G	M	Non Manipulators
SMSM	N	N	N	G	N	Non Manipulators
ADMG	G	N	N	G	N	Non Manipulators
ERTX	M	N	N	N	M	Non Manipulators
ESTI	N	N	N	G	M	Non Manipulators
RICY	G	N	M	N	N	Non Manipulators
IKBI	N	N	N	G	M	Non Manipulators
INTP	G	G	G	G	N	Grey

**Table 2. Results of calculation based on Beneish ratio index**

Firms	DSRI	GMI	AQI	SGI	TATA	Categories
AMFG	G	G	G	N	N	Grey
TOTO	G	G	M	G	N	Grey
INAI	G	G	N	G	N	Grey
LION	G	G	G	G	M	Grey
TBMS	N	G	M	G	N	Grey
TRST	N	G	M	G	G	Grey
CPIN	G	G	M	G	M	Grey
MAIN	G	G	N	G	M	Grey
ASII	G	G	N	G	N	Grey
INDS	G	N	N	G	M	Grey
NIPS	N	N	G	G	G	Grey
PRAS	M	G	N	G	N	Grey
PBRX	G	N	M	G	N	Grey
POLY	N	G	N	G	M	Grey
JECC	N	N	G	G	G	Grey
AISA	G	G	N	M	N	Grey
ROTI	G	G	M	G	N	Grey
HMSP	N	N	G	G	M	Grey
MRAT	G	N	N	G	M	Grey

#### 4.2. Discussions

*Manipulators.* According to the results of an analysis of 4.48% of the total sample companies, they have committed fraud on the presentation of their financial statements. Taylor and Glezen (1997) in Princess Fabelli (2011) said that fraud can be seen in things including manipulation. If fraud is not immediately addressed and companies that manipulate are increasingly multiplying, this will lead to higher Non Performing Loans (NPLs) in Indonesian banks. In other words, there will be more and more customer (community) funds that will be lost because banks are unable to collect loans to fraudulent debtors. Therefore, action is needed for companies belonging to the category of manipulators, such as giving administrative sanctions (fines) so that these companies do not make the same mistakes in the next period. This ratio is also not yet final in deciding the company concerned to commit fraud but as the initial detector of the description of the company's financial statements. There needs to be a fraud test and a fundamental analysis of all company transactions within the year. Another possibility is the presence of residual earnings management. But managers do not calculate this index ratio whether it is detected as a manipulator or not.

*Non Manipulators.* According to the results of the analysis there were 44 (forty four) companies or 65.67% of the total sample companies did not commit fraud on the presentation of their financial statements. This shows that these companies have a commitment not to harm other parties, by not cheating or manipulating their financial statements. Investors and creditors can increase their trust in companies that fall into the category of non manipulators, because the financial statements they submit are not indicated by fraud, so that they can reduce the risk of return on capital for investors and the risk of loans that are not returned to creditors. Therefore, companies that are in the category of non manipulators deserve to get rewards from related parties for their commitment to protect the interests of users of financial statements.

*Grey.* According to the analysis there are 20 (twenty) companies or 29.85% of the total sample companies not included in the category of manipulators and non manipulators. To be categorized as a company that does not manipulate financial statements, the ratio index of the company exceeds the predetermined threshold value, while to be categorized as a company that manipulates financial statements, the company's ratio index has not exceeded

the threshold value. It is possible that there are efforts made by the company to manipulate its financial statements but not significantly, so the companies in this condition fall into the category of Gray or Gray Company. Therefore, the related parties are expected to be careful in using information from the company's financial statements in this category, because in the future these companies can fall into the category of company manipulators. Sanctions are also not yet needed for companies in this category, because they have not been proven to have committed excessive fraud.

## 5. CONSLUSION

This study aims to find out which companies are classified as Manipulators and Non Manipulators by comparing company ratio index or calculated index and Beneish index as parameters. The ratio index used is the Days Sales In Receivables Index (DSRI), Gross Margin Index (GMI), Asset Quality Index (AQI), Sales Growth Index (SGI), and Total Accruals To Total Assets Index (TATA). Based on the analysis and discussion in advance, conclusions can be drawn as follows:

1. *Manipulators*. Ratio index analysis shows that 3 (three) companies or 4.48% of sample companies are classified as Manipulators. Companies belonging to the Manipulators category of companies have an indication of fraud in the presentation of their financial statements. Another possibility is that there is a residual earnings management from the company that is detected in the index ratio manipulator group, and this final result is not yet final that the company is cheating, fraud testing and fundamentals need to be conducted on these results.
2. *Non manipulators*. Ratio index analysis shows that 44 (forty four) companies or 65.67% of sample companies are classified as Non Manipulators. Companies belonging to Non Manipulators companies have an indication of not committing fraud to the presentation of their financial statements.
3. *Grey*. Companies that are not classified as Manipulators and also as Non Manipulators are included in the Gray / Gray Company group, this group of companies consists of 20 companies or 29.85% of sample companies.

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