

FRAUD DIAMOND ANALYSIS IN CONTROLLABLE ASPECTS OF FINANCIAL STATEMENT FRAUD: EMPIRICAL STUDY OF MANUFACTURING COMPANIES LISTED ON INDONESIA STOCK EXCHANGE (IDX) YEARS 2014-2016 UNDER THE SECTOR OF CONSUMER GOOD INDUSTRIES

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Abstract

This study aims to measure financial statement fraud based on a fraud diamond analysis. The fraud diamond theory proposed by Wolfe and Hermanson (2004) states that there are four factors that can trigger a person to commit fraud or fraud. The four factors are pressure, opportunity, rationalization and capability. The existence of limited data for the two uncontrollable fraud diamond factors, namely rationalization and capability, causes this study to only measure pressure and opportunity as quantifiable indicators of financial statement fraud. Based on the fraud diamond theory developed by Wolfe and Hermanson, researchers use financial ratios as a proxy for measures of the fraud diamond components studied and the fraudulent financial statements themselves.

The population of this research is manufacturing companies in the consumer goods industry which are listed on the IDX in 2014-2016. The sample selection was done by using purposive sampling method and the research sample was obtained as many as 30 companies. Hypothesis testing is done by using simple linear regression method. The results showed that the Pressure from Investor variable, which is proxied by Return on Assets (ROA), can be used to measure financial statement fraud as proxied by Return on Equity (ROE). The variable Pressure within Management, which is proxied by the Debt Service Coverage Ratio (DSCR), can be used to measure financial statement fraud as proxied by the Dividend Payout Ratio (DPR). The Leadership Control variable, which is proxied by the Debt to Equity Ratio (DER), can be used to measure financial statement fraud, which is proxied by the Retained Earnings / Total Asset ratio (RE / TA). Then finally, the Day-to-Day Control variable which is proxied by Inventory Turnover (InventoryTO), can be used to measure financial statement fraud proxied by Asset Turnover (AssetTO).

Keywords: *Fraud Diamond, Financial Statement Fraud, Pressure, Opportunity*



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Abstrak

Penelitian ini bertujuan untuk mengukur kecurangan laporan keuangan berdasarkan analisis *fraud diamond*. Teori *fraud diamond* yang dikemukakan oleh Wolfe dan Hermanson (2004) menyatakan bahwa terdapat empat faktor yang dapat memicu seseorang untuk melakukan suatu kecurangan atau *fraud*. Keempat faktor tersebut adalah *pressure*, *opportunity*, *rationalization*, dan *capability*. Adanya keterbatasan data untuk dua faktor *fraud diamond* yang tidak dapat dikendali, yaitu *rationalization* dan *capability*, menyebabkan penelitian ini hanya mengukur *pressure* dan *opportunity* sebagai indikator kecurangan laporan keuangan yang dapat dikuantifikasikan. Berdasarkan teori *fraud diamond* yang dikembangkan oleh Wolfe dan Hermanson, peneliti menggunakan *financial ratios* sebagai proksi ukuran dari komponen *fraud diamond* yang diteliti serta kecurangan laporan keuangan itu sendiri.

Populasi penelitian ini adalah perusahaan manufaktur sektor industri barang konsumsi yang terdaftar di BEI tahun 2014-2016. Pemilihan sampel dilakukan dengan metode *purposive sampling* dan didapatkan sampel penelitian sebanyak 30 perusahaan. Pengujian hipotesis dilakukan dengan metode regresi linier sederhana. Hasil penelitian menunjukkan bahwa variabel *Pressure from Investor* yang diproksikan dengan *Return on Asset (ROA)*, dapat digunakan untuk mengukur *financial statement fraud* yang diproksikan dengan *Return on Equity (ROE)*. Variabel *Pressure within Management* yang diproksikan dengan *Debt Service Coverage Ratio (DSCR)*, dapat digunakan untuk mengukur *financial statement fraud* yang diproksikan dengan *Dividend Payout Ratio (DPR)*. Variabel *Leadership Control* yang diproksikan dengan *Debt to Equity Ratio (DER)*, dapat digunakan untuk mengukur *financial statement fraud* yang diproksikan dengan *Retained Earnings/Total Asset ratio (RE/TA)*. Lalu yang terakhir, variabel *Day-to-Day Control* yang diproksikan dengan *Inventory Turnover (InventoryTO)*, dapat digunakan untuk mengukur *financial statement fraud* yang diproksikan dengan *Asset Turnover (AssetTO)*.

Kata Kunci: *Fraud Diamond, Financial Statement Fraud, Pressure, Opportunity*

1. Introduction

In a company, there are many important instruments that can be used as tools to show the conditions of a company, whether financially or in other aspects. One of those instruments is the financial statement of the company. Financial statement is a structured presentation that can provide information regarding a company's cash flows, financial position and performance. Financial statement can also showcase the

management's attitude toward the resources that they are held responsible for. (Sihombing, 2014).

Generally, financial statements are prone to manipulation by the party who prioritizes their own interests and wants which is one of the many forms of fraud. Often times, earnings manipulation happens because the company wants to make investors interested in buying their shares. There are many companies that are already listed on the Indonesian Stock

Exchange that are prone to financial statement fraud. It is usually caused by the company's management who implements earnings management practices. Susceptible corporate governance is often associated with financial statement fraud.

According to Skousen *et al* (2009), companies often perform earnings management to attract the attention of investors. Companies are required to improve and increase their value in the stock market. If the company cannot do this, then it might go bankrupt. Financial statement fraud is a serious problem that can cause many negative impacts on users of financial statements. Therefore, the role and performance of the auditors should be improved so that fraud can be detected and prevented as early as possible before it develops into a major scandal (Skousen *et al.*, 2009). Nevertheless, the auditor cannot serve as the guarantor of the absence of fraud; the detection of material misstatements in the financial statements is the primary objective of

SAS99.

In Indonesia, there has been an absence in research of fraud diamond as a tool to assess fraudulent financial statement. Therefore, this research is to use fraud diamond as an assessment tool. However, due to the limitation of the data mining for two uncontrollable aspects of fraud diamond (rationalization and capability), this research measures merely pressure and opportunity as the quantifiable indicators of financial statement fraud. There have not been that many researches related to fraud diamond analysis. This is due to the difficulty of measuring the qualitative variables that exist. Now, however, some of these qualitative variables have been quantified.

In this research, a new model is proposed because in the previous similar researches there have not been a linkage between the financial ratios, meanwhile linkage between financial ratios could indicate some important information and help detect symptoms of fraud in a company. Therefore, this

study is conducted under the title "Fraud Diamond Analysis In Controllable Aspects of Financial Statement Fraud: Empirical Study of Manufacturing Companies Listed on Indonesia Stock Exchange (BEI) Year 2014-2016 under the Sector of Consumer Goods Industries."

2. Literature Review

Financial Statement Fraud is a deliberate attempt in reporting financial statements in which the financial statements presented are not in accordance with the basic of accounting. This omission is material which influences stakeholders' decision. In The Treadway Commission's Report of the National Commission on Fraudulent Financial Reporting, (1987), Financial Statement Fraud is defined as the deliberate attempt or carelessness in doing something or not doing something that is supposed to cause financial statements to be materially misleading.

2.1 Fraud Diamond

Fraud diamond is a new view of the phenomenon of fraud proposed

by Wolfe and Hermanson (2004). Fraud diamond is a form of refinement of the Fraud triangle theory by Cressey (1953). Fraud diamond adds a qualitative element that is believed to have significant influence on fraud, which is Capability.

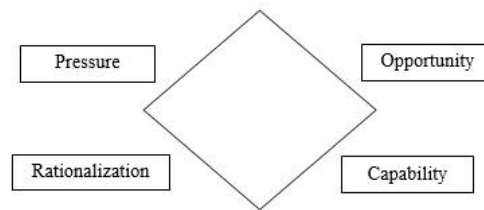


Figure 2.1

Fraud Diamond Theory

Source: Wolfe and Hermanson (2004)

Overall, Fraud Diamond is a refinement of the Fraud Model that Cressey proposed. The elements of fraud diamond theory include:

1. Pressure
2. Opportunity
3. Rationalization
4. Capability

However, for this research, the focus will only be on the controllable aspects of Fraud Diamond, which are pressure and opportunity. These factors can be measured quantitatively by extracting and analyzing numerical data from the financial statement.

Meanwhile, rationalization and capability are uncontrollable because those two elements depend on the individuals being analyzed, thus, making it more difficult to measure.

2.2 Pressure from Investor

The agency theory was first coined by Jensen and Meckling (1976). The agency theory explains the relationship between shareholders as principal and management as agents in a contract. Management is a party authorized by investors to work for the benefit of investors. Therefore, management must account for all its work to investors. Meanwhile, shareholders as principal are assumed to be interested only in improving the company's financial performance in the form of a high rate of return on their investment. While, the agents are assumed to receive an appreciation from the principal in the form of financial compensation and the conditions that accompany the relationship.

This distinction of interest causes a conflict of interest between the two parties. This conflict of interest

causes the company, as an agent, to face various pressures (pressure) to find ways to improve the performance of the company in the hopes that with the performance improvement, the principal will provide a form of appreciation (rationalization). The gateway to fraud will be more open if management has broad access (capability) as well as opportunities to increase profit (opportunity). The higher the return on investment earned by the principal the higher the compensation given to the agent (Sihombing, 2014).

2.3 Pressure within Management

According to Albrecht *et al.* (2011), Pressure can be categorized into three groups. First, financial pressure which is caused several factors, i.e. greed, living standard, debts, and unexpected financial needs. Second, vices pressures which is caused by the pressure to satisfy a bad habit, for example: gambling, drugs, alcohol, and other expensive things that are considered bad. Third, work-related pressures such as the absence of

job satisfaction obtained by employees, for example: lack of attention from management, the existence of injustice, etc., can make an employee commit fraud to get a “reward” for his/her hard work.

Based on Albrecht’s codification, it can be concluded that there could be two types of personal pressure: internal and external. Management has many responsibilities and targets to fulfill. One example is that the management has to be able to maximize sales and minimize expenses. Normally, when the amount of sales increases, the amount of expenses increases as well, though of course management would want sales to increase more than expenses.

However, there are situations in which the management are pressured to increase the sales and decrease the expenses. Although it is not impossible, it might take some out-of-the-ordinary actions to fulfill this target. These pressures caused by the unrealistic given targets thus cause the management to perform financial

statement manipulation. Besides maximizing sales and minimizing expenses, the management must make sure the company is making enough money to pay off its debts. If this is not the case, then the management will be in serious trouble because not only the company is operating inefficiently, investors will also hesitate to invest their money.

2.4 Leadership Control

Fraud can be done if there is an opportunity to do it. That opportunity can be used if the fraud that is being committed only has a small risk of being detected. If there is an opportunity to commit fraud at a company, it means that the company has a weak internal control. According to COSO (2013) internal control framework, there are five types of internal controls that a company should maintain in order to prevent fraud from occurring. The five types of internal controls include:

1. Control Environment
2. Control Activity
3. Risk Assessment
4. Information and

Communication

5. Monitoring

These internal controls can be divided into two categories based on which ones should be implemented by the leaders of the company and which ones should be implemented within the management itself. The leaders of the company of course would want their company to be able to gain more money from investors. The money they get from investors could then be used for matters such as paying off debts and financing their assets.

2.5 Day-to-Day Control

As for the management, they have to make sure that the daily activities are performed accordingly and efficiently. They have to make sure that the assets given are able to produce targeted revenue, the inventories are not stacking up (unsold), and that they are able to collect as much receivables as they can. However, in certain situations, these matters can give opportunities for the people in a company to manipulate the financial statement and gain something out of it.

The absence of effective control will allow the management to commit illegal acts by lying using a series of fraudulent acts through creative accounting, such as the existence of unbearable receivables that should be eliminated but not (lapping), which ultimately affects the amount of asset value in the balance sheet. In addition, income smoothing can also be done by dividing the profit to another period so that the company seems to gain a profit, when in fact they're suffering from a loss. Thus, internal control is very crucial.

2.6 Previous Researches

Spathis (2002) proved that the research model was accurate in classifying the total sample with a rate of accuracy exceeding 84 percent. Wolfe and Hermanson (2004) state that fraud triangle is a set of individual capabilities defined as personal traits and ability to play an important role in which fraud can happen together because of the three factors of fraud triangle.

Skousen *et al* (2009) conclude that rapid asset growth, increased cash needs, and external financing are positively related to the possibility of fraud. Then external and internal share ownership and control of the board of directors are also associated with an increase in financial statement fraud. Last, the expansion of the number of independent members in the audit committee is negatively related to the occurrence of fraud.

Prasastie (2015) conclude that financial Stability had a positive influence on the occurrence of financial statement fraud. Then effectivity of monitoring had a negative influence on the occurrence of financial statement fraud. Beside that, change in auditor did not have an influence on the occurrence of financial statement fraud. Last, capability did not have an influence on the occurrence of financial statement fraud.

2.7 Hypotheses Development

2.7.1 Pressure from Investors as a Variable to Assess Financial Statement Fraud

In performing its tasks, corporate managers are required to perform the best so as to achieve the planned financial targets. The ratio of earnings to assets or return on assets is a measure of operational performance that is widely used to show how efficiently assets have worked (Skousen *et al.*, 2009). Return on asset is used to measure the company's management in obtaining profit as a whole. The greater the ROA obtained, the greater the level of profit achieved by the company and the better the company's position in terms of asset usage (Dendawijaya, 2005). Carlson and Bathala (1997) in Widyastuti (2009) prove that firms with large profits (measured by profitability or ROA) are more likely to perform earning management than firms with smaller profits.

Aside from ROA, ROE is also an important aspect to look at. ROE is used to measure how well a company

is using the money given by investors to operate the company. Both ROA and ROE are used to measure rates of return. A company might manipulate its earnings in order to get a high number of ROE so that they could keep their investors happy. Not only that, they could also get executive incentives for their good performance. For example, according to Johnson *et al.* (2009), fraudulent firms have much greater incentive from unrestricted stockholdings compared to control firms.

In carrying out its activities, the company often manages the level of profit to be earned to actually get the profit. One measure to assess the level of profit earned by the company is by using return on asset (OP/AA). The ratio of operating profit to average assets (OP/AA) is a measure of operational performance that is widely used to show how efficiently assets have worked (Skousen *et al.*, 2009). It is often used in assessing the performance of managers and in determining bonuses, wage increases,

and others. Besides return on asset, return on equity (NI/AE) is also important. Investors will want to make sure that the company they invest in is able to return their investment.

H1: Pressure from Investors, indicated through the positive and significant association between ROA to ROE can be used to assess the risk of fraud

2.7.2 Pressure within Management as a Variable to Assess Financial Statement Fraud

When a company is in stable condition then its value will rise in the eyes of investors, creditors, and the public. According to SAS No. 99, managers face pressures to commit fraudulent financial statements when profitability are threatened by an economic, industrial, or operating entity situation (Skousen *et al.*, 2009). Loebbecke *et al.* (1989) Bell *et al.* (1991) suggests that in cases where firms experience growth that is below the industry average, management will manipulate the financial statements to improve the prospects of the company

(Skousen *et al.*, 2009).

The management has to make sure that the company is able to pay off its debts and pay its dividends to the investors. If they are not able to pay their debts, investors will surely hesitate to invest because they know that the company will not be able to pay dividends as well. Pressure like this may cause the management to manipulate the financial statements of the company. This research uses DSCR (Debt Service Coverage Ratio) to measure the sample companies' abilities to maintain its current debt levels. A high ratio is always more favorable than a low ratio. A higher ratio shows that there is more profit available to pay off debts. Normally, companies with higher DSC ratios tend to have more cash and are able to pay off their debts on time.

If a company is able to pay of its debts, it should be able to pay dividends to its investors as well. If this is not the case, then there could be an indication of fraud. La Porta *et al.* (2000) have collected evidence that dividends were

paid because shareholders pressured corporate insiders to spew cash. Their findings are in agreements with the agency theory which proposes that unless profits are given out to shareholders, the profit may be taken advantage of by the insiders for personal use or may be utilized for unprofitable projects that offer private benefits for the insiders. This research uses Dividend Payout Ratio to determine sample companies' abilities in paying dividends to their investors as well as their reliability in doing so (Bragg, 2018).

H2: Pressure within Management, indicated through the positive and significant association between DSCR to Dividend Payout can be used to assess the risk of fraud

2.7.3 Leadership Control as a Variable to Assess Financial Statement Fraud

In a company, internal control becomes one of the most important things in achieving a better working mechanism. The absence of or poor

internal control in a company can cause many negative things like the occurrence of fraud. Leaders of a company are the people who generally know the most about the company's finances and other important details. Thus, leaders of a company are usually the ones seeking investment from outside investors. They will want to make sure that investors are aware of the company's abilities to pay off its debts and finance its assets. In order to do this, sometimes they have to manipulate the financial statement to make their financial condition more appealing to investors.

In this research, Debt-to-Equity Ratio (DER) is utilized as a leverage ratio. DER shows the total debts used to finance a company's assets. It also measures a company's abilities to pay its financial obligations (Alkhatib and Marji, 2012). When a business has a high DER, it means that its earnings are more volatile compared to the case without the debt (Bragg, 2018). A high DER also means that there would be less retained earnings available to

finance the company's assets, since most of the money would be used for debt obligations.

The retained earnings of a company are the portion of net earnings not paid out as dividends; they are retained to be reinvested in the company. The ratio of retained earnings to total assets is used in this research to measure the extent to which a company relies on debt, or leverage. A low RE/TA ratio means that the company is funding its assets by borrowing instead of using its retained earnings. This increases the risk of bankruptcy if the company cannot meet its debt obligations (The Altman- Z Score, 2012). If DER is high or low and so is RE/TA, that could indicate something is not quite right with the company's finances. For example, if DER is low, then there should be more retained earnings available to finance the company's assets, thus making RE/TA high.

H3: Leadership Control, indicated through the negative and significant association between

DER to RE/Asset Ratio can be used to assess the risk of fraud

2.7.4 Day-to-Day Control as a Variable to Assess Financial Statement Fraud

The activities of a company are what keeps the company going. In order to be a good and balanced company, the activities need to be carried out in an efficient and effective manner. However, expectations from leaders of the company and investors are not always fulfilled. When that happens, the management needs to take an action to “fix” the unwanted situation. This is when earnings management usually happens. This research studies manufacturing companies in the consumer goods industries. One of the main activities in a manufacturing company is selling, which involves having inventory.

If the inventory turnover is high, it means the company is selling their products efficiently. If that is the case, then the asset turnover should be high as well because the better the company sells, the better it is at gaining revenue.

The ratio of sales to total assets, more commonly known as asset turnover, measures how efficient a company is on using its assets to generate sales. A higher number is more favorable, while a low number can be an indication of things such as failure of the company to expand its market share (The Altman-Z Score, 2012). Thus, inventory turnover and asset turnover should be linear of each other regarding its fluctuations.

H4: Day-to-Day Control, indicated through the positive and significant association between Inventory Turnover to Asset Turnover can be used to assess the risk of fraud

	Independent Variables (X)		Financial Statement Fraud (Y)
Pressure from Investors (H1)	ROA (X1)	➡	ROE (Y1)
Pressure within Management (H2)	DSCR (X2)	➡	DPR (Y2)
Leadership Control (H3)	DER (X3)	■■■➡	RE/TA (Y3)
Day-to-Day Control (H4)	InventoryTO (X4)	➡	AssetTO (Y4)

Figure 3.1
Conceptual Framework
Source: developed in research (2018)

3. Research Methodology

3.1 Population and Sample

This study uses data in numbers form as indicators of research variables so this research uses quantitative method as a way to analyze research problems. Quantitative method is the science related to data collection methods, data analysis, and interpretation of the results of analysis to obtain information for conclusion (Tuban, 1976).

The limitations of this research are the sample manufacturing companies used are only under the sector of consumer goods industries; the financial statements used are only during the years 2014-2016; and only two (controllable) elements of the fraud diamond, pressure and opportunity, are analyzed. The consideration for choosing a manufacturing company population is because firms in the manufacturing industry tend to have almost equal accrual characteristics (Halim *et al.*,

2005). In addition, the financial statements of manufacturing companies are more reliable in the presentation of financial statement accounts, such as assets, cash flow, sales, and others.

The sampling technique that is chosen is purposive sampling, with the aim to get a representative sample in accordance with the criteria specified. The criteria used to select the sample are as follows:

1. Manufacturing companies under the sector of consumer goods industries that are listed on Indonesia Stock Exchange (BEI) during the years 2014-2016.
2. Companies that publish their annual financial statements on the company's website or BEI website during the years 2014-2016 and stated in rupiah (Rp).
3. Data relating to research variables that are available completely (overall data is available in publications during the period 2014-2016).

- Companies that are not listed on BEI during the observation period (2014- 2016).

3.2 Operational Variables

There are some variables that analyzed in this reseach such as:

- Pressure from Investors

This variable is calculated by using ROA and ROE.

ROA	(OP/AA) =	$\frac{\text{Operating Profit}}{\text{Avg. Asset}}$
ROE	(NI/AE) =	$\frac{\text{Net Income}}{\text{Avg. Equity}}$

- Pressure within Management

This variable is calculated by using DSCR and Dividend Payout.

DSCR	(OP/TD) =	$\frac{\text{Operating Profit}}{\text{Total Debt}}$
Div. Payout	(Tdiv/NI) =	$\frac{\text{Total Dividend}}{\text{Net Income}}$

- Leadership Control

This variable is calculated by using DER and RE/Asset Ratio.

DER	(TD/TE) =	$\frac{\text{Total Debt}}{\text{Total Equity}}$
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RE/Asset (RE/TA)=	$\frac{\text{Retained Earnings}}{\text{Total Asset}}$
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- Day-to-Day Control

This variable is calculated by using inventory turnover and asset turnover.

Inventory TO	(COGS/AI) =	$\frac{\text{Cost of Goods Sold}}{\text{Avg. Inventory}}$
Asset TO	(NS/AA) =	$\frac{\text{Net Sales}}{\text{Avg. Asset}}$

3.3 Data Analysis Method

The data analysis method that is used in this research is the simple linear regression method. This method of analysis is used to obtain definite results in processing the data so it can be accounted for.

Simple Linear Regression Analysis is an approach method for modeling the relationship between one dependent variable and one independent variable. In the regression model, the independent variable describes the dependent variable. In simple linear regression analysis, the

relationship between the variables is linear, where the change in the variable X will be followed by changes in the variable Y constantly (Huang, 2016). The relationship between the independent variables and financial statement fraud is measured using the following formulas:

Notes:

ROE	= $\alpha + \beta ROA + e$
DPR	= $\alpha + \beta DSCR + e$
RE/TA	= $\alpha - \beta DER + e$
AssetTO	= $\alpha + \beta InventoryTO + e$

ROE	= Return On Equity
ROA	= Return On Asset
DPR	= Dividend Payout Ratio
DSCR	= Debt Service Coverage Ratio
RE/TA	= Retained Earnings / Total Asset
DER	= Debt to Equity Ratio
AssetTO	= Asset Turnover
InventoryTO	= Inventory Turnover
e	= error

4. Data Analysis and Discussion

4.1 Pressure from Investors (using ROA) impacts on FSF (using ROE) Significantly and Positively

According to Prastowo (2002:86) in Heikal *et al.* (2014), Return on Assets (ROA) is a ratio that measures the effectiveness of a company in generating profits by putting its assets to work. Investors would of course like companies that can produce a high ROA, as they are more capable in generating higher profits (Ang, 2001:231, in Heikal, 2014).

Return on Equity (ROE) shows the extent to which companies manage their own capital effectively. Ang (2001) mentions that the higher the ROE will increase the profit growth. The higher the value the higher the ROE level of profit generated due to additional working capital can be used to finance the company's operations that could ultimately result in profit (Suwarno, 2004).

Table 4.1
Descriptive Statistics for Independent Variable of Model H1 (ROA)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic Std. Error
OprProf/AvgAss	60	0.5	0.1	0.6	0.1917	0.13814	0.019	1.591	0.309	1.644	0.608
Valid N (listwise)	60										

Source: SPSS 26.0 (2018)

ROA is used as a proxy for pressure from investor. Based on table 4.1, the minimum value of ROA is 0.10, meanwhile the maximum value is 0.60. The mean value of 0.1917 shows that for every 19.17% of total industri bank yang memiliki

asset, the manufacturing companies can generate profit. A standard deviation of 0.13814 shows that the data spread is very wide and very heterogeneous.

Table 4.2
Descriptive Statistics for Independent Variable of Model H2 (ROE)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic Std. Error
NetInc/AvgEqu	60	1.1	0.1	1.2	0.2783	0.28765	0.83	2.222	0.309	4.206	0.608
Valid N (listwise)	60										

Source: SPSS 26.0 (2018)

ROE is used as one of the proxies for financial statement fraud. Based on table 4.2, the minimum value of ROE is 0.10, meanwhile the maximum value is 1.20. The mean value of 0.2783 shows that for 27.83%

of total equity, the manufacturing companies can generate profit. A standard deviation of 0.28765 shows the data spread is very wide and very heterogeneous.

Table 4.3
Coefficients Result for H1

Coefficients

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.038	.051		.747	.458
	OprProf/AvgAss	1.252	.219	.601	5.728	.000

a. Dependent Variable: NetInc/AvgEqu

Source: SPSS 26.0 (2018)

The condition in POPULATION is shown through t-student value as much as 5.728 with significance value of 0.000 is significant at $\alpha < 0.05$. So the relationship in POPULATION is the same as in SAMPLE that is the relationship between ROA with ROE is positive and its contribution in

forming ROE is as big as 35.0% (can be seen in table 4.4).

The effect of ROA (X) on ROE (Y) in SAMPLE is generated through linear regression equation $ROE (Y) = 0.038 + 1.252 ROA (X)$. This means that if ROA (X) is fixed through 1 economic intervention, then ROE (Y) will increase 1.252 times from current ROE (Y).

Table 4.4
Model Summary for H1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.601 ^a	.361	.350	.23186

Source: SPSS 26.0 (2018)

The relationship between ROA (X) and ROE (Y) in SAMPLE generated r_{yx} of 0.601 is positive. The

variance determination in the sample is shown by adjusted r_{yx} square of 0.350. This means that ROA gives relative

donation of the formation of ROE as much as 35.0% in sample.

Table 4.5
ANOVA Result for H1

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.764	1	1.764	32.809	.000 ^b
	Residual	3.118	58	.054		
	Total	4.882	59			

a. Dependent Variable: NetInc/AvgEqu

b. Predictors: (Constant), OprProf/AvgAss
Source: SPSS 26.0 (2018)

Meanwhile condition in POPULATION depicted through F_{reg} equal to 32.809 with significance value of 0.000 is significant at $\alpha < 0.05$. So the condition in POPULATION is the same as in SAMPLES is if ROA (X) in POPULATION is repaired through 1 economic intervention, then ROE (Y) will increase 1.252 times from current ROE (Y).

4.2 Pressure within Management (using DSCR) Impacts on FSF (using Dividend Payout Ratio) Significantly and Positively

Debt Service Coverage Ratio measures the cash flow that is available to pay current debt

obligations. Lenders will check a borrower's DSCR before making a loan. A DSCR that is less than 1 means negative cash flow. This means the borrower will be unable to pay their current debt obligations without taking even more from outside sources. Dividend payout ratio measures how much money a company can pay / return to its investors.

It also shows how much money the company is keeping for the reasons of reinvesting for growth, pay off debts, and other obligations (this is called retained earnings). This ratio can also measure a company's dividend sustainability. If a company's

dividend payout ratio is over 100%, it is giving out more money to its investors than it is making profit.

Which means, the company needs to decrease its dividends or even stop it completely.

Table 4.6
Descriptive Statistics for Independent Variable of Model H2 (DSCR)
Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
OprProf/TotDeb	90	2.2	0.1	2.3	0.47	0.44354	0.197	1.627	0.254	2.661	0.503
Valid N (listwise)	90										

Source: SPSS 26.0 (2018)

DSCR is used as a proxy for pressure within management. Based on table 4.5, the minimum value of DSCR is 0.10, meanwhile the maximum value is 2.30, which is owned by PT. Taisho Pharmaceutical Indonesia

(SQBB) in 2014. The mean value of 0.4700 that is higher than the standard deviation of 0.44354 shows that DSCR is relatively stable and the data spread is very wide and very heterogeneous.

Table 4.7
Descriptive Statistics for Dependent Variable of Model H2 (Dividend Payout)
Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
TotDiv/NetInc	90	1.6	0.1	1.7	0.5178	0.40435	0.164	1.063	0.254	0.228	0.503
Valid N (listwise)	90										

Source: SPSS 26.0 (2018)

Dividend payout ratio is used as one of the proxies for financial statement fraud. Based on table 4.6 the minimum value of dividend payout is 0.10, meanwhile the maximum value is 1.70 which is held by PT. Siantar Top (STTP) in 2016.

The mean value of 0.5178 that is higher than the standard deviation of 0.40435 shows that shows that dividend payout is relatively stable and the data spread is very wide and very heterogeneous.

Table 4.8
ANOVA Result for H2
Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.331	.056		5.872	.000
	OpPro/TotDeb	.397	.087	.436	4.544	.000

a. Dependent Variable: TotDev/NetInc

Source: SPSS 26.0 (2018)

The condition in POPULATION is shown through t-student value as much as 4.544 with significance value of 0.000 is significant at $\alpha < 0.05$. So the relationship in POPULATION is the same as in SAMPLE that is the relationship between DSCR with dividend payout ratio is positive and its contribution in forming dividend payout ratio is as big as 18.1% (can be seen in table 4.8).

The effect of DSCR (X) on dividend payout ratio (Y) in SAMPLE is generated through linear regression equation dividend payout ratio (Y) = $0.331 + 0.397$ DSCR (X). This means that if DSCR (X) is fixed through 1 economic intervention, then dividend payout ratio (Y) will increase 0.397 times from current dividend payout ratio (Y).

Table 4.9
Model Summary for H2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.436 ^a	.190	.181	.36597

Source: SPSS 26.0 (2018)

The relationship between DSCR (X) and dividend payout ratio (Y)

in SAMPLE generated r_{yx} of 0.436 is positive. The variance determination

in the sample is shown by adjusted r_{yx} square of 0.181. This means that DSCR gives relative donation of the

formation of dividend payout ratio as much as 18.1% in sample.

Table 4.10
ANOVA Result for H2

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.765	1	2.765	20.645	.000 ^b
	Residual	11.786	88	.134		
	Total	14.552	89			

a. Dependent Variable: TotDev/NetInc

b. Predictors: (Constant), OpPro/TotDeb
Source: SPSS 26.0 (2018)

Meanwhile condition in POPULATION depicted through F_{reg} equal to 20.645 with significance value of 0.000 is significant at $\alpha < 0.05$. So the condition in POPULATION is the same as in SAMPLES is if DSCR (X) in POPULATION is repaired through 1 economic intervention, then dividend payout ratio (Y) will increase 0.397 times from current dividend payout ratio (Y).

4.3 Leadership Control (using DER) Impacts on FSF (using RE/Asset Ratio) Significantly and Negatively

The DER represents the amount of debt a company is using to finance its assets in response to the value of shareholders' equity. A high DER usually means that a company has been financing its growth with debt in a vigorous manner. This will put the company in a high risk situation. If the DER is high, the company could potentially generate more earnings than it would have without this outside financing. If the cost of debt financing ends up outweighing the returns that the company generates on the debt through investment and business activities, stakeholders' share values may take a hit.

Retained Earnings/Asset ratio measures the extent to which a company relies on debt. The lower the ratio, the more a company is funding assets by borrowing instead of through retained earnings which, again,

increases the risk of bankruptcy if the firm cannot meet its debt obligations. The higher the retained earnings to assets ratio the less reliant the company is on other common types of debt and equity financing.

Table 4.11
Descriptive Statistics for Independent Variable of Model H3 (DER)

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Kurtosis Statistic	Std. Error	Std. Error
TotDeb/TotEqu	90	5.89	0.11	6	0.9289	0.77501	0.601	3.382	0.254	19.699	0.503
Valid N (listwise)	90										

Source: SPSS 26.0 (2018)

DER is used as a proxy for leadership control. Based on table 4.9, the minimum value of DER is 0.11 which is owned by PT. Mayora Indah (MYOR) in 2016, meanwhile the maximum value is 6.00 which is held by PT. Schering Plough Indonesia in

2016. The mean value of 0.9289 which is higher than the standard deviation of 0.77501 shows that DER is relatively stable and the data spread is very wide and very heterogeneous.

Table 4.12
Descriptive Statistics for Dependent Variable of Model H3 (RE/Asset Ratio)

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Kurtosis Statistic	Std. Error	Std. Error
RetEarn/TotAss	90	0.7	0.1	0.8	0.4016	0.18672	0.035	0.469	0.254	-0.829	0.503
Valid N (listwise)	90										

Source: SPSS 26.0 (2018)

RE/Asset ratio is used as one of the proxies for financial statement fraud. Based on table 4.10, the

minimum value of RE/Asset ratio is 0.10, meanwhile the maximum value is 0.80. The mean value of 0.4016 with

a standard deviation of 0.18672 shows and the data spread is very wide and that RE/Asset Ratio is relatively stable very heterogeneous.

Table 4.13
Coefficients Result for H3

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	.487	.029		16.962	.000
	TotDeb/TotEqu	-.092	.024	-.381	-3.865	.000

a. Dependent Variable: RetEar/TotAss

Source: SPSS 26.0 (2018)

The condition in POPULATION is shown through t-student value as much as -3.865 with significance value of 0.000 is significant at $\alpha < 0.05$. So the relationship in POPULATION is the same as in SAMPLE that is the relationship between DER with RE/Asset ratio is negative and its contribution in forming RE/Asset ratio

is as big as 13.5% (can be seen in table 4.12).

The effect of DER (X) on RE/Asset ratio (Y) in SAMPLE is generated through linear regression equation RE/Asset ratio (Y) = 0.487 – 0.092 DER (X). This means that if DER (X) is fixed through 1 economic intervention, then RE/Asset ratio (Y) will decrease 0.092 times from current RE/Asset ratio (Y).

Table 4.14
Model Summary for H3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.381 ^a	.145	.135	.17376

Source: SPSS 26.0 (2018)

The relationship between DER (X) and RE/Asset ratio (Y) in SAMPLE generated r_{yx} of 0.381 is negative. The variance determination in the sample is shown by adjusted r_{yx}

square of 0.135. This means that DER gives relative donation of the formation of RE/Asset ratio as much as 13.5% in sample.

Table 4.15
ANOVA Result for H3

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.451	1	.451	14.942	.000 ^b
	Residual	2.657	88	.030		
	Total	3.108	89			

a. Dependent Variable: RetEar/TotAss

b. Predictors: (Constant), TotDeb/TotEqu

Source: SPSS 26.0 (2018)

Meanwhile condition in POPULATION depicted through F_{reg} equal to 14.942 with significance value of 0.000 is significant at $\alpha < 0.05$. So the condition in POPULATION is the same as in SAMPLES is if DER (X) in POPULATION is repaired through 1 economic intervention, then RE/Asset ratio (Y) will decrease 0.092 times from current RE/Asset ratio (Y).

4.4 Day-to-Day Control (using Inventory Turnover) Impacts on FSF (using Asset Turnover) Significantly and Positively

Inventory turnover is used to measure how fast a company is selling inventory. A low turnover indicates poor sales and excess inventory. A high turnover represents either strong sales or large discounts. When a company's inventory turnover is decreasing, it means that it is holding its inventory a little too long compared to previous time periods.

Asset turnover ratio measures a company's sales that are generated relative to the value of its assets. The higher the asset turnover ratio, the better the company is doing, since

higher ratios show that the company is gaining more revenue per dollar/rupiah of assets. The asset turnover ratio is one of the more dependable indicators of financial statement fraud.

Table 4.16
Descriptive Statistics for Independent Variable of Model H4 (Inventory Turnover)
Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
Cogs/AvgInv	60	9.7	1.2	10.9	4.7967	2.39278	5.725	0.562	0.309	-0.448	0.608
Valid N (listwise)	60										

Source: SPSS 26.0 (2018)

Inventory turnover is used as a proxy day-to-day control. Based on table 4.13, the minimum value of inventory turnover is 1.20 which is held by PT. Delta Djakarta (DLTA) in 2015, meanwhile the maximum value is 10.90 which is owned by PT. Sekar

Bumi (SKBM) in 2015. The mean value of 4.7967 with a standard deviation of 2.39278 shows that inventory turnover is relatively stable and the data spread is very wide and very heterogeneous.

Table 4.17
Descriptive Statistics for Dependent Variable of Model H4 (Asset Turnover)
Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
NetSal/AvgAss	60	12.5	2.2	14.7	7.965	3.03794	9.229	-0.03	0.309	-0.68	0.608
Valid N (listwise)	60										

Source: SPSS 26.0 (2018)

Asset turnover is used as one of the proxies for financial statement fraud. Based on table 4.14, the minimum value of asset turnover is 2.20 which is owned by PT. Tri Banyan Tirta (ALTO) in 2015,

meanwhile the maximum value is 14.70 which is held by PT. Cahaya Kalbar (CEKA) in 2016. The mean value of 7.9650 with a standard deviation of 3.03794 shows that asset turnover is relatively stable and the

data spread is very wide and very heterogeneous.

Table 4.18
Coefficients Result for H4

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	4.552	.739		6.161	.000
	Cogs/AvgInv	.711	.138	.560	5.153	.000

a. Dependent Variable: NetSal/AvgAss

Source: SPSS 26.0 (2018)

The condition in POPULATION is shown through t-student value as much as 5.153 with significance value of 0.000 is significant at $\alpha < 0.05$. So the relationship in POPULATION is the same as in SAMPLE that is the relationship between inventory turnover with asset turnover is positive and its contribution in forming dividend payout ratio is as big as 30.2% (can be seen in table 4.16).

The effect of inventory turnover (X) on asset turnover (Y) in SAMPLE is generated through linear regression equation asset turnover (Y) = 4.552 + 0.711 inventory turnover (X). This means that if inventory turnover (X) is fixed through 1 economic intervention, then asset turnover (Y) will increase 0.711 times from current asset turnover (Y).

Table 4.19
Coefficients Result for H4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
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1	.560 ^a	.314	.302	2.53769
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Source: SPSS 26.0 (2018)

The relationship between inventory turnover (X) and asset turnover (Y) in SAMPLE generated r_{yx} of 0.560 is positive. The variance determination in the sample is shown

by adjusted r_{yx} square of 0.302. This means that inventory turnover gives relative donation of the formation of asset turnover as much as 30.2% in sample.

Table 4.20
Uji Normalitas (Kolmogrov –Smirnov Test) tahap kedua

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	171.003	1	171.003	26.554	.000 ^b
	Residual	373.513	58	6.440		
	Total	544.517	59			

a. Dependent Variable: NetSal/AvgAss

b. Predictors: (Constant), Cogs/AvgInv

Source: SPSS 26.0 (2018)

Meanwhile condition in POPULATION depicted through F_{reg} equal to 26.554 with significance value of 0.000 is significant at $\alpha < 0.05$. So the condition in POPULATION is the same as in SAMPLES is if inventory turnover (X) in POPULATION is repaired through 1 economic intervention, then asset turnover (Y) will increase 0.711 times from current asset turnover (Y).

The purpose of this research is to analyze the controllable components of the fraud diamond in assessing financial statement fraud. There have not been that many researches on fraud diamond as a tool to assess financial statement fraud in Indonesia. Thus, this research uses fraud diamond as an assessment tool, though only focusing on the controllable aspects which are pressure and opportunity, for the reasons of rationalization and

5. Conclusion and Suggestions

5.1 Conclusion

capability being uncontrollable regarding the data mining.

From the hypothesis tests results and data analysis, it can be concluded that:

1. Pressure from investors was proxied with ROA has a significant and positive impact on financial statement fraud which is proxied with ROE, this means pressure from investors can be used to assess fraud risks.
2. Pressure within management was proxied with DSCR has a significant and positive impact on financial statement fraud which is proxied with dividend payout ratio, this means pressure within management can be used to assess fraud risks.
3. Leadership control was proxied with DER has a significant and negative impact on financial statement fraud which is proxied with RE/Asset ratio, this means leadership control

can be used to assess fraud risks.

4. Day-to-day control was proxied with inventory turnover has a significant and positive impact on financial statement fraud which is proxied with asset turnover, this means day-to-day control can be used to assess fraud risks.

5.2 Suggestions

Some suggestions that can be formulated based on this research's results are as follows:

1. For investors, it is suggested that they should be more cautious and skeptical when analyzing financial statements of the industrial sectors they invest in or thinking of investing in. Investors should pay more attention and always be on the lookout for warning signs / indications of fraud when examining a financial statement in order to know the

- real conditions of one's company and avoid unwanted loss.
2. It is suggested for every company's management to give more attention to the internal control. Having routine employee evaluations is also recommended. Doing these things will help the management become more organized and work more effectively and efficiently. It will also help decrease the number of employee misconducts.
 3. For regulators in Indonesia, it is suggested that they implement heavier punishments for people who commit fraudulent acts, to show authority and improve Indonesia's laws and regulations regarding corporate fraud.
 4. To better understand the relationship between financial analysis ratios and fraud risks, it is suggested for academicians in the accounting world to dig deeper into this topic and to include this matter in the forensic accounting and investigative audit studies.
 5. To overcome the limitations of this research and get better results, future researches must:
 - a. Analyze the uncontrollable aspects of the fraud diamond as well, which are rationalization and capability, to better understand the usefulness of the fraud diamond model.
 - b. Consider other factors that might affect the proxies used in this research (ROA, ROE, DSCR, dividend payout ratio, DER, RE/Asset ratio, inventory turnover, and asset turnover) to get a higher R^2 .

- c. Include companies from other categories as samples, not just manufacturing companies, in order to assess fraud risks in different categories of businesses.
- d. Extend research period to get more accurate results on fraud risks and to better understand the sample companies' true financial conditions.

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