



Effect of Fraud Triangle on Financial Statement Fraud (Empirical Study on Transportation and Logistics Subsector Companies on the Indonesia Stock Exchange for the Period 2021-2024)

Juliarta Elisabeth Silitonga^{1*}, Talitha Nabila², Dona Olivia Sihombing³, Muhammad Khoiri Luthfi⁴, An Suci Azzahra⁵

1,2,3,4,5 Universitas Pembangunan Panca Budi

DOI:

<https://doi.org/10.47134/aaem.v2i4.728>

*Correspondence: Juliarta Elisabeth Silitonga

Email: juliarta260705@gmail.com

Received: 07-04-2025

Accepted: 19-05-2025

Published: 30-06-2025



Copyright: © 2024 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Abstract: This study aims to analyze the effect of the Fraud Triangle consisting of pressure, opportunity, and rationalization on the financial performance of transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) for the 2021-2024 period. Financial statement fraud is a form of manipulation that can harm investors and damage the integrity of the capital market. The research method used is quantitative with an emphasis on empirical studies. The data used are financial reports and annual reports of companies sampled as many as 12 companies using financial reports for 2021-2024 using purposive sampling method. The analysis technique used is multiple regression to determine the effect of each variable in the Fraud Triangle, namely DER, TATO and ROE on the condition of the financial statements evaluated using the Beneish M-Score. Research findings, pressure and opportunity have a significant impact on the state of financial statement fraud, while rationalization does not have a significant impact on financial statements which provides important implications for regulators and business people to improve internal monitoring and development to prevent the occurrence of financial statement conditions.

Keywords: Financial Statement Fraud, Fraud Triangle, Benish M-Score.

Introduction

Indonesia has been named a country with a relatively high prevalence of fraud. According to research conducted by the Association of Certified Fraud Examiners (ACFE) Indonesia in 2016, there was fraud in financial reports amounting to 4%, with average losses exceeding Rp10 billion. Meanwhile, in 2019, this figure rose to 9.2% with total losses reaching Rp242,260,000,000 (ACFE Indonesia Chapter, 2020). These findings come from a survey known as the Indonesia Fraud Survey (SFI), which is based on the Report to the Nations (RTTN). This indicates an increase in cases of financial statement fraud each year (Nurhasanah et al., 2022).

According (Budiman et al., 2022) the Indonesian Public Accounting Association, known as the Indonesian Institute of Certified Public Accountants (IAPI), has released a statement regarding fraud in financial statement audits. The statement is recorded in Auditing Standard (AS) 240, which explains that "The aspects of fraud in financial

statements consist of the motivation or pressure to commit financial reporting fraud, the opportunity to do so, and the justification or rationalization of such actions" (IAPI, 2013).

The logistics and transportation sector was chosen as the focus of this study due to its critical role in supporting the sustainability of the national economy. This is particularly evident through the smooth distribution of goods and services, which has a direct impact on product prices, availability and competitiveness. The rapid growth in this sector, driven by advances in e-commerce and digitalization, has led to increased transaction volumes and high operational complexity. This situation creates opportunities for fraud due to weak internal control systems and the large number of parties involved in the supply chain. In addition, the sector also faces great pressure due to high capital requirements and large operating costs, so management is often driven to maintain the image of the company's financial performance, even in a manipulative manner. If fraud occurs, the impact is not only detrimental to stakeholders, but can also threaten the long-term sustainability of the company. With these characteristics, the logistics and transportation sector is very relevant to be analyzed in the context of the Fraud Triangle, and can make a practical contribution to efforts to improve governance and transparency in this very important sector (Gultom, 2022).

The main goal of every company is to get maximum profit. However, in its implementation, achieving these goals is often done in improper ways, one of which is by committing fraud. Fraud in the corporate sector is an important issue that attracts significant attention from various stakeholders, such as supervisors and auditors. This is because acts of fraud often involve irregularities or violations of the law that adversely affect the financial information submitted to the public.

One of the most important types of fraud is fraudulent financial reporting, which is the act of deliberately presenting false or misleading information in financial statements, to influence the decisions of outsiders such as investors and creditors. According to the Public Accountants Professional Standards (SPAP) and SAS No. 99, common forms of fraud include manipulation of financial records, omission of important data, and deliberate misuse of accounting principles.

Previous studies on financial statement fraud show mixed results, so there are still research gaps that need to be completed with further studies. In Indonesia, financial statement fraud is still common and some of the cases revealed have harmed companies and stakeholders, and can even lead to bankruptcy. Data from the Financial Services Authority (OJK) in 2014 shows the application of administrative sanctions against capital market players who commit violations, including financial statement fraud.

Fraud in financial reporting is a very important issue in business. This situation can cause many individuals and organizations to suffer losses when making financial decisions to invest in or lend to certain businesses (Putra Setya Julianto Ade, Noviyarty Helisa, 2024).

Fraud or deception is a criminal act committed with the aim of obtaining material or non-material gains. According to a statement from the Association of Certified Fraud Examiners in 1998, as cited in Ernts and Young LPP (2009), fraud is defined as an error

committed by an individual or group who is aware that the consequences of such an error could result in losses for themselves, the company, or other parties (Budiman et al., 2022).

To determine the reasons behind financial statement fraud, the triangle theory of fraud introduced by Donald Cressey is a conceptual framework that is often utilized. This theory outlines that fraud occurs due to three main factors, namely pressure, opportunity, and rationalization. Pressure refers to the drive for individuals or organizations to achieve certain goals that are difficult to achieve honestly. Opportunity reflects deficiencies in the internal control system that provide opportunities for fraud. Meanwhile, rationalization is a moral justification made by individuals to support their actions.

The study of the fraud triangle is increasingly advanced as the number of fraud cases in financial reports increases, both domestically and abroad. This phenomenon indicates the need for empirical testing to determine how much each fraud triangle contributes to the occurrence of fraud. Thus, this study aims to analyze the impact of pressure, opportunity, and rationalization on financial statement fraud in the company. The findings of this study are expected to contribute to the development of internal control systems, making fraud prevention policies, and improving good corporate governance.

In this study, financial statement fraud is measured using the Beneish M-Score Index, which is a probabilistic way to identify possible manipulations in financial statements. The fraud triangle measurement is done by utilizing solvency ratio as an indicator of pressure, asset turnover ratio as an indicator of opportunity, and profitability ratio as an indicator of rationalization. This study aims to examine the impact of these three factors on financial statement fraud in transportation and logistics companies listed on the Indonesia Stock Exchange during the period 2021-2024.

Literature Riview

Agency Theory

"Based on Jensen and Meckling (1976), agency theory suggests that there is a relationship between two parties bound in a contract, consisting of the agent as the party given responsibility and the principal as the party who gives up responsibility. The situation will be prone to conflict because both parties seek to achieve their goals. Jensen and Meckling state that as long as the relationship between shareholders and managers in the company is purely agency in nature, it is natural to see a "separation between ownership and control" in the modern ownership structure model found in companies, which is related to general agency problems (Abbas et al., 2020)".

"Agency theory explains the relationship between one or more individuals (principals) who make an agreement with another person (agent) in the form of a contract that includes the transfer of authority to make decisions to the agent. The principal in the company is held by a number of parties who act as shareholders, while the agent in the company is the company's board of directors. Basically, the board of directors in carrying out its responsibilities will carry out tasks that are adjusted to the principle, this is because the board is employed by shareholders. Therefore, each agent can utilize their personal authority to present report information and change it without the knowledge of the

shareholders. This is what then causes fraud related to financial statements (Sukaesih et al., 2024)".

Fraudulent Financial Statement

"Based on the Report of the National Commission on Fraudulent Financial Reporting (1987), it is explained that financial statement fraud is a deliberate act or a result of negligence and carelessness that causes financial statements to provide materially misleading information. Fraud in financial statements is defined as a deliberate or negligent act in the preparation of financial statements that do not comply with and contrary to applicable accounting regulations, namely existing Accounting Standards. The negligence that occurs is material so that it affects the decision-making process of interested parties in a company or organization (Alfaridzi et al., 2024) ".

"The Indonesian Institute of Certified Public Accountants suggests that fraud in financial statements relates to the following actions: (1) falsification, modification, or manipulation of accounting records or supporting documents that supply information for financial statements; (2) misstatement or omission of transaction events or important information from financial statements; and (3) intentional errors in the application of accounting principles (Mangeka & Rahayu, 2020)".

Beneish M-Score

"This model was created by Beneish (1999) to distinguish companies that manipulate earnings (manipulators) from those that do not manipulate earnings (non manipulators). The model is implemented by calculating indices for eight financial statement ratios. Seven of the eight indices are designated as indices, with the aim of capturing the distortions that arise due to earnings manipulation. Each index conveys certain information about financial statement details over time. Beneish (1999) states that on average manipulating firms show an increase in days sales in accounts receivable, a decrease in gross margin index, a decrease in asset quality index, sales growth, and a higher increase in accruals than non-manipulator firms. The sum total of the M-score reflects the potential level of dishonestly presented financial statements. (Indriani & Rohman, 2022) ". The Benish M-Score formula is:

$$\text{M-Score} = -4.84 + (0.92 \times \text{DSRI}) + (0.528 \times \text{GMI}) + (0.404 \times \text{AQI}) + (0.892 \times \text{SGI}) + (0.115 \times \text{DEPI}) - (0.172 \times \text{SGAI}) + (4.679 \times \text{TATA}) - (0.327 \times \text{LVGI})$$

Where:

DSRI: (Day Sales in Receivables Index): A ratio that measures the company's efficiency in collecting receivables.

GMI: (Gross Margin Index): A ratio that measures the change in gross margin.

AQI: (Asset Quality Index): A ratio that measures the quality of a company's assets.

SGI: (Sales Growth Index): A ratio that measures the company's sales growth.

DEPI: (Depreciation Index): A ratio that measures changes in asset depreciation.

SGAI: (Sales, General and Administrative Expenses Index): A ratio that measures changes in operating expenses.

LVGI: (Leverage Index): A ratio that measures a company's use of debt.

TATA: (Total Accruals to Total Assets): A ratio that measures accumulated income or expenses as a proportion of total assets.

Fraud Triangle

According to SAS No. 99 (AICPA, 2002), there is a fraud triangle, which categorizes three factors that can lead to fraud. These three factors include pressure, opportunity, and rationalization (Handayani, 2023)

Fraud Triangle is a theory proposed by Donald R. Cressey which puts forward a hypothesis to explain the reasons why people commit fraud. There are 3 factors that support a person to commit fraud, namely:

1. ***Pressure***: a state in which a person feels pressured and a severe condition when a person faces difficulties. Solvency ratio is a measure that shows pressure. The DER formula is:

$$\text{DER} = \text{Total Debt} / \text{Total Equity}$$

Where:

Total Debt: Includes short-term, long-term, and other liabilities.

Total Equity: Includes shareholders' equity, retained earnings, and reserves.

2. ***Opportunity***: this situation arises due to deficiencies in internal control and opportunities for fraud. Asset turnover ratio with Gross Profit to Total Asset (GPTA) and Inventory to Sales proxies is used to measure opportunity. The TATO formula is:

$$\text{TATO} = \text{Net Sales} / \text{Average Total Assets}$$

Where:

Net Sales: This is the total revenue earned by the company from the sale of products or services after deducting returns, deductions, and discounts.

Average Total Assets: This is the average of the company's total assets at the beginning and end of the period.

3. ***Rationalization (razionalization)***: there is tension in the relationship between management and the current auditor / previous auditor as a sign of fraud in the financial statements and taking advantage of the auditor change mechanism to reduce the risk of detection of fraudulent financial statements committed by the company. (Wahyuni & Budiwitjaksono, 2021). Measurement of Rationalization using Profitability. The ROE formula is:

$$\text{ROE} = (\text{Net Income} / \text{Shareholders' Equity}) \times 100\%$$

Where:

Net Profit: Profit that remains after all operating expenses, tax expenses, and other costs are deducted from revenue.

Shareholders' Equity: The total capital or funds invested by owners and investors in the company.

Theory Development

The Effect of Solvency Ratio on Financial Statement Fraud

Solvency ratio is an important tool used to assess how well a company can meet its long-term obligations. This ratio is usually measured in two ways, namely Debt to Equity Ratio (DER) and Total Debt to Total Asset (TDTA). In the context of the fraud triangle, the solvency ratio reflects the pressure element, which means the financial pressure felt by management when the company's financial condition worsens, such as increased debt or bankruptcy risk. This pressure can encourage managers to manipulate financial reports so that the company still looks healthy in the eyes of investors and creditors (Sembiring, 2021).

Based on empirical studies, companies with low solvency levels tend to be more vulnerable to fraud. This is due to the pressure from shareholders and creditors that can create a strong impetus for management to meet certain targets, such as ideal profits or financial ratios. In the capital-intensive transportation and logistics industry, debt financing is often an important part of expansion and operations. When debt increases without being offset by stable financial performance, the risk of fraud also increases (Rahma & Suryani, 2021).

Recent research also shows a positive relationship between financial stress and financial statement manipulation practices. For example, a study by (Sabatian & Hutabarat, 2022) found that a high solvency ratio significantly increases the likelihood of managers committing fraudulent acts through earnings engineering. This pressure may not always be directly visible, but can be measured through extreme changes in capital structure. Therefore, the solvency ratio is one of the main indicators in detecting the risk of financial statement fraud, especially in sectors with a high fixed cost structure, such as transportation and logistics. Thus, the hypothesis is:

H1: Solvency ratio has a positive effect on financial statement fraud.

The Effect of Asset Turnover Ratio on Financial Statement Fraud

Asset Turnover Ratio is an important measure to assess how efficiently a company uses its assets to generate sales. This ratio also reflects the manager's ability to maximize the potential of assets to create revenue. In the context of the fraud triangle, this ratio serves as a proxy for the opportunity element. When a company shows a high level of efficiency, positive expectations from external parties also increase. This pressure can provide an opportunity for managers to exploit loopholes in the accounting system and internal controls to improve the company's financial image.

Companies in the transportation and logistics sector often have a significant composition of fixed assets, such as vehicles, warehouses, and other operational equipment. If asset turnover is not optimal or has decreased, this can open up opportunities for

managers to manipulate, for example through inventory accounts, depreciation, or revenue recognition. Research by (Kurnia & Asyik, 2022) shows that low asset turnover ratios are often followed by accounting manipulation actions to adjust the performance expected by owners or investors.

Furthermore, this study found that the level of efficiency in the utilization of company assets has a positive correlation with the likelihood of fraud. This suggests that when management feels they have enough space and control over assets, the opportunity to commit fraudulent acts increases. Therefore, asset turnover ratio can be an early indicator in detecting potential financial statement fraud, especially in asset-intensive sectors such as transportation and logistics. Thus, the hypothesis is:

H2: Asset turnover ratio has a positive effect on financial statement fraud.

Effect of Profitability Ratio on Financial Statement Fraud

In the *fraud triangle* theory proposed by Cressey (1953), there are three main elements that encourage fraud: *pressure*, *opportunity*, and *rationalization*. Profitability ratio, such as Return on Assets (ROA), reflects the company's efficiency in generating profits from its assets. A decrease in profitability can create pressure for management to meet stakeholder expectations, thus encouraging manipulative actions in financial reporting as a form of rationalization (Dina & Endang, 2024). Profitability ratio is used to measure the extent to which the company is able to generate profits from its operational activities. In the context of the transportation and logistics sector, profitability is an important indicator considering that this sector is highly influenced by fluctuations in fuel prices, market demand, and high operating costs. When profitability ratios such as Return on Assets (ROA) or Net Profit Margin (NPM) show a downward trend, the pressure on management to maintain the company's financial image will increase.

Recent research by proves that factors in the fraud triangle, including pressures triggered by low levels of profitability, significantly increase the risk of financial statement fraud. This research was conducted on transportation companies in Indonesia, so it is very relevant to the object under study. The study found that management facing financial pressure due to declining profits tends to use a rationalization approach to justify financial statement manipulation, such as fictitiously increasing revenue or hiding operating expenses.

In the context of transportation and logistics companies listed on the Indonesia Stock Exchange, maintaining attractive financial performance is critical to maintaining market confidence and obtaining external funding. Therefore, low levels of profitability not only reflect financial weakness, but also increase vulnerability to manipulative actions in the preparation of financial statements. Based on these theoretical studies and empirical evidence, the hypothesis is as follows:

H3: Profitability ratio has a negative effect on financial statement fraud.

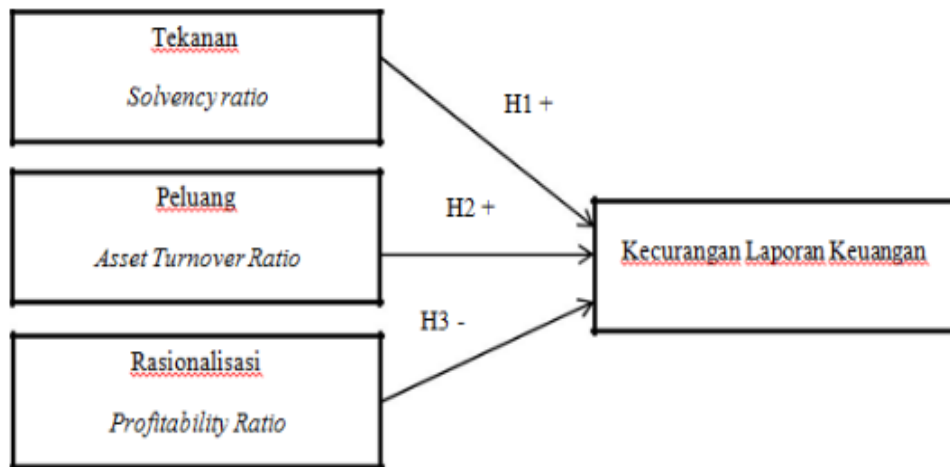


Figure 1. Framework of Thought
Source: Data Processed, 2025

Research Methods

Population, Sample and Sampling Technique

The population in this study were 12 companies listed on the Indonesia Stock Exchange for the period 2021-2024. The sampling method used is purposive sampling method. Purposive sampling with consideration

1. Transportation and logistics sector companies listed on the IDX for the period 2021-2024
2. The company did not incur any losses.

Variable Operationalization

The dependent variable used in this study is the beneish m-score index as follows measurement of financial statement fraud. 8 financial ratios used to identify whether the company has indications to commit income fraud in the financial statements (Beneish, 1999). With the model: To determine whether the company has committed fraud or not, the Beneish M-Score is used for the calculation model.

Results and Discussion

Research Results

Data Analysis

Table 1
Normality Test
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		48
Normal Parameters ^{a,b}	Mean	.0000292
	Std. Deviation	133763914222.70203000
Most Extreme Differences	Absolute	.105
	Positive	.105

	Negative	-.067
Test Statistic		.105
Asymp. Sig. (2-tailed)		.200 ^{c,d}

- Test distribution is Normal.
- Calculated from data.
- Lilliefors Significance Correction.
- This is a lower bound of the true significance.

Source: Processed Secondary Data, 2025

The normality test aims to test whether the residual data in the regression model is normally distributed. In this study, the test was carried out using the **One-Sample Kolmogorov-Smirnov (K-S)** method on the unstandardized residuals of the regression model. The following are the results of the interpretation of table 1, namely:

Interpretation: The significance value (Asymp. Sig. 2-tailed) is **0.074**, which is **greater** than the significance level $\alpha = 0.05$. Thus, based on the decision-making criteria:

- If **Sig. > 0.05**, then the residual data is **normally distributed**.
- If **Sig. \leq 0.05**, then the data is **not normally distributed**.

Since the test results show **Sig. = 0.200 > 0.05**, then: **the residual data in this model is normally distributed**, and the classic assumption of normality is met.

Table 2. Multiple Linear Regression Model Feasibility

Statistics	Value	Description
F Count	13,056	Test the significance of the regression model simultaneously
Significance (p-value)	0,000	<0.05 → Significant Model
R Square (R²)	0,471	47.1% of fraud variation is explained by the model
Adjusted R Square	0,435	Adjusted to the number of variables and samples
Std. Error Estimate	138.248.860.192,93	The magnitude of the average error (residual error) of the model

Source: Processed Secondary Data, 2025

The multiple linear regression model used in this study shows good and statistically significant results. Based on the results of the F test, the F value is 13.056 with a significance level of 0.000, which is far below the 0.05 limit. This shows that the regression model is simultaneously able to explain the effect of pressure, opportunity, and rationalization on financial statement fraud. The coefficient of determination (R²) of 0.471 indicates that 47.1% of the variability in financial statement fraud can be explained by this model. Meanwhile, the remaining 52.9% is influenced by other factors outside the independent variables used. Adjusted R² of 0.435 also shows that the model results remain stable after adjusting for the number of predictors and sample size.

Table 3. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Description
PRESSURE (DER)	4 8	0,09	3,66	0,7242	0,76662	Company financial pressure
OPPORTUNITIES (TATO)	4 8	0,22	2,37	0,8485	0,53587	Asset utilization efficiency
RATIONALIZATION (ROE)	4 8	0,00	0,51	0,1107	0,11747	Reasons for justifying fraud
FRAUD	4 8	-78.859.923.429	909.507.000.000	88.590.128.413	183.904.589.563	Allegations or indications of fraud

Source: Processed Secondary Data, 2025

Based on the results of the above calculations, it can be interpreted that:

1. The mean values of DER, TATO, and ROE are all relatively low, indicating that most companies have mild to moderate levels of pressure, opportunity, and rationalization.
2. The fraud value has a very large range, characterized by a very high standard deviation (> 180 billion), indicating a large variability between companies.
3. The minimum fraud value is even negative, which can be interpreted as a correction/loss or potential recording error that needs further investigation.

Table 4. Regression Analysis Results

Variables	Regression Coefficient (β)	Std. Error	T Count	Sig. (p-value)	Description
(Constant)	129.699.625.379,133	49.305.497.002,435	2,631	0,012	Significant
DER (Pressure)	109.872.376.185,724	27.073.289.270,236	4,058	0,000	Influential Positive Significant
TATO (Opportunity)	-142.091.076.023,760	38.890.786.579,788	-3,654	0,001	Influential Negative Significant
ROE (Rationalization)	-1.015.494.955,285	172.450.923.607,925	-0,006	0,995	No Effect

Source: Processed Secondary Data, 2025

Based on the results of the above calculations, it can be interpreted that:

1. **DER (Pressure)** has a **positive and significant** effect on fraud ($p = 0.000$). This means that the higher the company's debt to equity ratio, the greater the likelihood of fraud.

2. **TATO (Opportunity)** has a **negative and significant** effect on fraud ($p = 0.001$). This means that the higher the efficiency of using company assets, the lower the potential for fraud.
3. **ROE (Rationalization)** has **no significant effect** on fraud ($p = 0.995$), so it cannot be concluded that the return on owner's capital (ROE) has a meaningful relationship to the company's tendency to commit fraud.

Hypothesis Discussion

The Effect of Solvency Ratio on Financial Statement Fraud (Fraud)

The regression test results show that the Debt to Equity Ratio (DER) variable which represents the pressure element in the fraud triangle theory has a significant effect on fraud, with a significance value of 0.000 and a positive regression coefficient of 109,872,376,185.724. This means that the greater the proportion of corporate debt compared to equity, the greater the pressure felt by management to display good financial performance. This kind of pressure, both external such as creditors and internal such as profit targets, can trigger fraud, especially in the form of financial statement manipulation.

Financial stress is one of the unavoidable conditions in the modern business world. Companies with high debt burdens are often in a "bind" between the need to maintain financial reputation in the eyes of investors and operational realities that are not always ideal. In this situation, management may be tempted to take shortcuts by manipulating financial statements in order to maintain market confidence and stock price stability. This phenomenon has long been theoretically explained by Cressey (1953) in his book on the fraud triangle, which calls pressure the starting gate for fraud.

In the context of this study, the results found strengthen this argument. The positive direction of the effect of DER on fraud proves that the pressure due to an unhealthy financing structure really contributes to the increased risk of fraud. Therefore, the **hypothesis stating that DER has a significant effect on fraud is accepted**. The practical implication of this finding is the need for stricter financial risk management, such as leverage restrictions, financial reporting transparency, and periodic evaluation of the company's financial ratios so that pressure can be minimized before it turns into potential fraud.

In the transportation and logistics sector, debt-dependent financing is common, given the high capital requirements for investment in infrastructure, fleet, technology and other operations. When a company's debt ratio increases significantly, management faces pressure not only from external parties such as creditors and investors, but also from internal pressure to maintain operational stability. In this situation, the potential for fraud increases, as management seeks to maintain a positive image through manipulation of financial statements. The pressure caused by an unbalanced capital structure can encourage unethical decision-making, especially if the supervisory system is inadequate. Therefore, high debt in the solvency ratio not only reflects financial pressure, but also indicates low governance risk if not balanced with effective risk mitigation policies.

The Effect of Asset Turnover Ratio on Financial Statement Fraud (Fraud)

The Total Asset Turnover (TATO) variable, which in this study is used as a representation of the opportunity element, also shows a significant effect on fraud with a negative relationship direction. This can be seen from the significance value of 0.001 and the regression coefficient of -142,091,076,023.760. The negative direction of this coefficient indicates that the higher the company's efficiency in utilizing assets to generate revenue, the lower the possibility of fraud. In other words, companies that are able to manage their assets optimally tend to have tighter control structures and internal supervision, so that the space for perpetrators to commit fraud is limited.

Opportunity in the context of fraud refers to the existence of a gap that allows someone to commit fraud without being immediately detected. This gap often arises due to weak internal control systems, lack of internal audits, or lack of rotation in the work system. However, in the condition of an active and efficient company reflected through a high TATO ratio, this indicator is a sign that the company has been able to build an effective and measurable work system. Good internal control is the main obstacle to the formation of opportunities for fraud. This result is also in line that the efficiency of asset management is inversely proportional to the potential for fraud because it shows strong control in operational activities.

Thus, it can be concluded that the opportunity for fraud will be smaller if the company has effectiveness in managing its resources. Therefore, the **hypothesis stating that TATO has a significant effect on fraud is accepted**. This finding provides important input for company management that maintaining asset efficiency is not only related to profitability, but also an integral part of an effective fraud prevention system.

The transportation and logistics sector is an industry that relies heavily on assets, such as vehicles, warehousing facilities, and technological equipment, all of which require efficient operational management. When asset management is done well and transparently, it indicates a strong internal control system. Conversely, if these assets are not optimally utilized or inaccurately reported, it can create loopholes that management can exploit for manipulation. The opportunity to do so is greater when there is no regular monitoring of asset utilization or when performance reports are not regularly examined. Therefore, the effectiveness of asset utilization not only affects financial performance, but also the level of security and integrity of the company's financial statements.

The Effect of Profitability Ratio on Financial Statement Fraud (Fraud)

The results showed that the variable Return on Equity (ROE) which in this study is used to represent rationalization, has no significant effect on fraud. This can be seen from the significance value of 0.995 and the negative regression coefficient of -1,015,494,955.285. Although the direction of the effect is negative, it is not statistically significant, so it is not strong enough to conclude that ROE has a relevant relationship in explaining the occurrence of fraud in the sample of companies studied.

Rationalization is a more complex aspect because it is rooted in moral or psychological justifications made by the perpetrator to justify fraud. In the *fraud triangle*

theory, this aspect is very subjective and not easily measured by quantitative indicators such as financial ratios. ROE itself describes more about the company's ability to generate profits from its own capital, and is not a direct reflection of the perpetrator's internal reasons for committing fraud. Research by Dwianto et al. (2023) also found that several factors in the Fraud Diamond, such as pressure and opportunity, have a more significant influence on financial statement fraud than rationalization which can be represented by ROE (Puspitasari & S, 2024).

Therefore, although theoretically rationalization has an important role in fraud, in this study **the hypothesis that ROE has a significant effect on fraud is rejected**. This provides an understanding that to accurately measure rationalization, qualitative approaches such as in-depth interviews, observations of organizational behavior, or analysis of corporate work culture are needed. Thus, ROE can still be used as a performance measurement tool, but it is not an adequate indicator in measuring the psychological dimension of fraud.

Although rationalization is one of the key elements in the Fraud Triangle theory, financial indicators such as Return on Equity (ROE) have limitations in capturing the psychological or moral dimensions that can lead to fraud. In practice, fraudsters often use personal justifications to support their actions, such as feeling "entitled" to additional compensation or believing that their actions have not directly harmed anyone. Such justifications are not always reflected in a company's financial statements or performance. Moreover, in the transportation and logistics sector, which faces high operational challenges, work pressure and performance expectations often encourage employees or management to cut corners with certain moral justifications. Therefore, relying solely on ratios such as ROE is not enough to capture this dynamic; a more in-depth and contextual approach is needed to accurately measure the rationalization aspect.

Conclusion and Suggestion

This study aims to examine the influence of the three elements of the Fraud Triangle—pressure, opportunity, and rationalization—on financial statement fraud. In this context, pressure is measured using the Debt to Equity Ratio (DER), opportunity is assessed through Total Asset Turnover (TATO), and rationalization is represented by Return on Equity (ROE). The research focuses on transportation and logistics sector companies listed on the Indonesia Stock Exchange during the 2021 to 2024 period.

The results of multiple linear regression analysis, classical assumption tests, and descriptive statistics reveal several key findings. Pressure, as measured by DER, has a positive and significant impact on financial statement fraud. This indicates that a higher debt-to-equity ratio increases financial pressure on management, which may encourage the manipulation of financial statements to maintain the trust of stakeholders, particularly investors and creditors. This finding supports the Fraud Triangle theory, which identifies pressure as a major driver of fraudulent behavior.

Opportunity, reflected in the company's asset utilization efficiency through TATO, shows a negative and significant effect on financial statement fraud. In other words, the

more efficiently a company utilizes its assets, the less likely it is to engage in fraudulent practices. This suggests that companies with strong operational systems and internal controls are more resistant to manipulation, thereby reducing opportunities for fraud. This reinforces the idea that efficiency is not merely an operational concern, but also a vital component of anti-fraud governance. Rationalization, measured by ROE, does not exhibit a significant effect on financial statement fraud. Although rationalization is often considered a moral justification for committing fraud, ROE as a quantitative financial indicator is not sufficient to capture this psychological dimension. This highlights the need for non-financial approaches—such as psychological surveys or assessments of organizational culture—to better measure rationalization.

Simultaneously, the overall model used in this study shows statistical significance, with an F-value of 13.056 and a significance level of 0.000. The coefficient of determination (R^2) of 47.1% indicates that the model explains nearly half of the variation in financial statement fraud among the sampled companies. The classical assumption tests confirm that the data are normally distributed, free from multicollinearity, and that the relationships between variables are relatively linear. However, a low Durbin-Watson value (0.706) suggests the presence of mild autocorrelation, which is not overly concerning given the cross-sectional nature of the data.

In conclusion, this study highlights the significant roles of pressure and opportunity in influencing financial statement fraud, while rationalization requires deeper qualitative exploration. To mitigate fraud risk, companies in the transportation and logistics sector are encouraged to strengthen financial oversight, optimize asset utilization, and adopt non-financial approaches—such as ethical or psychological assessments—to better detect and prevent fraudulent behavior. Implementing these strategies is expected to enhance corporate integrity and improve the reliability of financial reporting.

References

- Abbas, D. S., Mulyadi, Basuki, & Fatika, S. (2020). Analisis Fraud Triangle Dalam Mendeteksi Kecurangan Laporan Keuangan Dengan Menggunakan Fraud Score Model. *Intelektiva : Jurnal Ekonomi, Sosial & Humaniora*, 01(10), 65–75.
- Alfaridzi, H., PA, E. D., & Z, R. W. (2024). Pengaruh Fraud Triangle Theory dalam Mendeteksi Financial Fraud (Studi Kasus pada Perusahaan Makanan dan Minuman yang Terdaftar di Bursa Efek Indonesia pada Tahun 2019-2022). *Jurnal Akuntansi Dan Keuangan Universitas Jambi*, 9(4), 349–361. <https://doi.org/10.22437/jaku.v9i4.42059>
- Anggarani, D., Delfiana, P. W., Hasan, K., & Purnomowati, W. (2023). Analisis Pengaruh Fraud Triangle Terhadap Laporan Keuangan (Studi Kasus Perusahaan Properti di Bursa Efek Indonesia Tahun 2018-2020). *Jurnal Akuntansi STIE Muhammadiyah Palopo*, 9(1), 80. <https://doi.org/10.35906/jurakun.v9i1.1298>
- Boermawan, G., & Arfianti, R. I. (2022). Pengaruh Fraud Triangle Terhadap Kecurangan Pelaporan Keuangan Dengan Beneish M-Score Model. *Journal of Applied Managerial Accounting*, 6(2), 173–186. <https://doi.org/10.30871/jama.v6i2.4009>
- Brianta Ginting, D. (2023). Analisis Pengaruh Fraud Hexagon Terhadap Fraudulent

- Financial Reporting Menggunakan Metode Beneish M-Score (Studi Empiris pada Sektor Industri Barang Konsumsi yang Terdaftar di Bursa Efek Indonesia Tahun 2019-2021). *Diponegoro Journal of Accounting*, 12(3), 1–15. <http://ejournal-s1.undip.ac.id/index.php/accounting>
- Budiman, A., Ramadani, A., & Khalifa, L. R. (2022). Pengaruh Fraud Triangle Terhadap Deteksi Kecurangan Laporan Keuangan Pada Pt Garuda Indonesia Periode 2016-2020. *SENAKOTA–Seminar Nasional Ekonomi Dan Akuntansi*, 3–4.
- Dina, S. S., & Endang, U. S. (2024). 2, 12. 7.
- Elestine, A. Y., & Palupi, P. T. (2019). Pendeteksian Kecurangan Laporan Keuangan Dengan Beneish M-Score Pada Perusahaan L-Q 45. *Prosiding Seminar Nasional Pakar*, 1–5. <https://doi.org/10.25105/pakar.v0i0.4309>
- Handayani, M. (2023). Pengaruh Fraud Triangle Terhadap Kecurangan Laporan Keuangan (Studi Empiris Pada Perusahaan Badan Usaha Milik Negara Yang Terdaftar DI Bursa Efek Indonesia Periode 2017-2020). *Jurnal Ilmiah Ekonomi Dan Bisnis Universitas Multi Data Palembang*, 13(1), 169–176.
- Indriani, N., & Rohman, A. (2022). Fraud Triangle dan Kecurangan Laporan Keuangan Dengan Model Beneish M-Score. *Jurnal Akuntansi Bisnis*, 20(1), 85–104. <https://doi.org/10.24167/jab.v20i1.4367>
- Kadek, N., Tiapandewi, Y., Nyoman, N., Suryandari, A., Gede, A. A. P., & Arie, B. (2020). Dampak Fraud Triangle Dan Komite Audit Terhadap. *Kumpulan Hasil ...*, 2(2), 156–173. <https://ejournal.unmas.ac.id/index.php/kharisma/article/view/979%0Ahttps://ejournal.unmas.ac.id/index.php/kharisma/article/download/979/846>
- Khuzanisa, D. (2021). Fakultas Bisnis Dan Ekonomika Universitas Islam Indonesia Yogyakarta. *Universitas Islam Indonesia*, 19, 2.
- Kuang, T. M., & Natalia, E. (2023). Pengujian Fraud Triangle Theory Dalam Menjelaskan Kecurangan Laporan Keuangan Menggunakan Beneish M-Score. *Owner*, 7(2), 1752–1764. <https://doi.org/10.33395/owner.v7i2.1296>
- Kurnia, N., & Asyik, N. F. (2022). Analisis Fraud Triangle Sebagai Pendeteksi Kecurangan Laporan Keuangan Pada Perusahaan Yang Terdaftar Di Bursa. *Jurnal Ilmu Dan Riset Akuntansi*, 9(2460–0585), 1–22.
- Mangeka, D. P., & Rahayu, Y. (2020). Analisis Pengaruh Fraud Triangle Dalam Mendeteksi Financial Statement Fraud. *Jurnal Ilmu Dan Riset Akuntansi*, 4(1), 87–103.
- Nurhasanah, S., Purnamasari, P., & Hartanto, R. (2022). Pengaruh Fraud Triangle Theory terhadap Kecurangan Laporan Keuangan dengan Komite Audit sebagai Variabel Moderasi. *Bandung Conference Series: Accountancy*, 2(2), 1040–1048. <https://doi.org/10.29313/bcsa.v2i2.2910>
- Puspitasari, D., & S, N. A. (2024). *Fraud diamond*. 12(1), 1–20.
- Putra Setya Julianto Ade, Noviyarty Helisa, A. J. (2024). Menguji Ketepatan Laporan Keuangan Perusahaan Sektor Kesehatan Di Indonesia: Strategi Implementasi Model Beneish M-Score Dan Pengaruhnya Dengan Fraud Pentagon Ade. *Αγαη*, 15(1), 37–48.

- Rahma, D. V., & Suryani, E. (2021). Pengaruh Faktor-Faktor Fraud Triangle Terhadap Financial Statement Fraud. *Jurnal ASET (Akuntansi Riset)*, 11(2), 301–314. <https://doi.org/10.17509/jaset.v11i2.17926>
- Sabatian, Z., & Hutabarat, F. M. (2022). the Effect of Fraud Triangle in Detecting Financial Statement Fraud. *Jurnal Akuntansi*, 10(3), 231–244. <https://doi.org/10.33369/j.akuntansi.10.3.231-244>
- Sembiring, L. D. (2021). *Analisis Laporan Keuangan*.
- Sintabela, D., & Badjuri, A. (2023). Pendeteksian Kecurangan Laporan Keuangan Berbasis Fraud Triangle Melalui Kualitas Audit Sebagai Pemoderasi. *Jurnal Bina Akuntansi*, 10(1), 378–399. <https://doi.org/10.52859/jba.v10i1.375>
- Siregar, E., & Surlanti, M. (2022). Pendeteksian Kecurangan Laporan Keuangan dalam Perspektif Fraud Triangle pada Perusahaan Sektor Infrastruktur, Utilitas, dan Transportasi di Bursa Efek Indonesia. *Jurnal Akuntansi, Keuangan Dan Perpajakan*, 5(1), 27–39. <https://doi.org/10.51510/jakp.v5i1.771>
- Sukaesih, P. E., Indupurnahayu, & Hurriyaturrohman. (2024). Pengaruh Fraud Triangle Pada Kecurangan melalui Analisis Beneish Ratio Index Sebagai Pendeteksi Kecurangan Laporan Keuangan. *ECo-Fin*, 6(2), 279–289. <https://doi.org/10.32877/ef.v6i2.1009>
- Wahyuni, W., & Budiwitjaksono, G. S. (2021). Fraud Triangle Sebagai Pendeteksi Kecurangan Laporan Keuangan. *Jurnal Akuntansi*, 21(1), 47. <https://doi.org/10.24912/ja.v21i1.133>