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Research Article

The Role of Profitability, Leverage and Ineffective Monitoring in Detecting Fraudulent Financial Reporting

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Abstract: This study aims to examine the potential for fraudulent financial reporting by applying the fraud hexagon theory framework, focusing on three main determinants: profitability, leverage, and ineffective monitoring. The research population includes healthcare sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the period 2019–2023, with the sample selected using purposive sampling techniques, resulting in 20 eligible companies that met the specified criteria. The analysis employed time series regression using EViews 12 as the primary statistical tool to test the hypotheses. The findings indicate that profitability has a negative effect on the likelihood of fraudulent financial reporting, suggesting that firms with stronger financial performance are less likely to manipulate their reports. In contrast, leverage and ineffective monitoring both exhibit positive and significant effects, meaning that companies with higher debt burdens and weaker supervisory mechanisms face greater risks of engaging in financial fraud. These results highlight that while profitability can act as a safeguard against fraudulent practices, excessive leverage and insufficient oversight create strong incentives and opportunities for manipulation. The implications of this study are twofold: for corporate management, it emphasizes the importance of maintaining financial health and strengthening monitoring mechanisms to reduce the risk of fraud; for regulators and auditors, it suggests closer scrutiny of highly leveraged firms and those with weak governance structures. Overall, the research contributes empirical evidence to the understanding of fraud risk factors within the healthcare manufacturing sector in Indonesia and underscores the necessity of integrating profitability, leverage, and monitoring considerations in developing fraud prevention frameworks. By doing so, companies and regulators can enhance transparency, accountability, and investor confidence in financial reporting practices.

Keywords: Fraud Hexagon Theory; Fraudulent Financial Reporting; Ineffective Monitoring; Leverage; Profitability.

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1. Introduction

Phenomenon fraud in reporting finance or fraudulent financial reporting (FFR) is increasingly get attention seriously , especially after various scandal finances involving companies big . In Indonesia, one of the case big happened at PT Indofarma Tbk , where it was found indication deviation financial audit by the Audit Board of Indonesia (BPK) which resulted in State losses reached Rp371.8 billion . The company is known to have manipulate report finance For close loss and show performance fictitious (Annisa, 2024). This indicates that practice manipulation report finance Still become destructive problem transparency and accountability business in the sector public and private .

This phenomenon is not only happening in Indonesia , but also globally , as seen in Enron Corporation case . Energy company from the United States the known do engineering report finance with hiding debts of USD 1.2 billion and raising income up to USD 600 million through off-balance sheet techniques . As a result , investors lose more funds of USD 32 billion , and external auditor Arthur Andersen stated guilty Because participate remove proof important in the legal process (Felicia & Ismail, 2016). This case became lesson that system weak financial oversight and auditing can become gap main the occurrence of FFR.

In the Fraud Hexagon theory developed by Georgios L. Vovosinas (2019), there are six element Causes of fraud: stimulus (pressure), capability, collusion, opportunity, rationalization, and ego. Of the six factor said , variable like profitability , leverage, and ineffective monitoring theory can trigger occurrence of FFR. Profitability low create pressure on management For show good performance , high leverage reflect debt pressure that can trigger manipulation , and weakness internal control creates opportunity occurrence fraud (Widyanti & Nuryatno , 2019; Milasari & Rachmatno , 2019).

Previous research has show existence connection between profitability and trends manipulation report finance . According to Widyanti & Nuryatno (2019), company with level low profitability more tend do fraud For repair image his finances . Meanwhile that , Milasari & Rachmatno (2019) stated that high leverage become signal pressure financial incentives company For engineer numbers finance . In addition , Putri & Qintharah (2023) emphasized that inadequate supervision effective give room for management For do fraudulent actions because lack of control to report finance .

However Thus , the research results are still show inconsistencies . Some studies find that profitability height can also be become trigger manipulation Because company try maintain trend stable profits (Wahyudin & Yudowati , 2023). Research by Adelia et al. (2023) even find that leverage is not always influential significant against FFR. This shows the need for further research further adjustments with context sector industry certain , one of them sector healthcare manufacturing that has characteristics pressure high operational and regulatory requirements .

This research becomes important remember the healthcare sector is sector strategic matters concerning service public and trust society . With use Fraud Hexagon Theory approach , this study aims For study influence profitability , leverage, and ineffective monitoring of potential the occurrence of FFR in the company manufacturing healthcare sector listed on the Indonesia Stock Exchange (IDX) for the 2019–2023 period . The results of this study are expected can give contribution in strengthening system internal supervision , improving integrity report finance , as well as become references for investors and regulators in evaluate risk finance company.

2. Literature Review

Fraud report fraudulent financial reporting or FFR) is one of the the most detrimental form of fraud in system reporting finance modern corporation . FFR is defined as presentation information finance in a way intentionally not in accordance with reality , with objective misleading users reports , such as investors, regulators, or society . Various framework theoretical has developed For understand the cause , one of them is The Fraud Triangle Theory was put forward by Cressey (1953), which states that three element the main driving force the occurrence of fraud : pressure , opportunity , and rationalization . This theory Then developed become Fraud Hexagon Theory by Vassinas (2019) with add three other elements , namely collusion , ego , and capability , for describe condition more cheating complex .

Research previously in Indonesia showed that various internal company factors like profitability , leverage, and effectiveness internal supervision , have significant relationship to FFR tendency . For example , Widyanti and Nuryatno (2019) find that low profitability increase possibility fraud occurs , because pressure from holder stocks and markets are driving management For do manipulation for performance finance still seen stable . Findings This support element pressure in fraud theory , where the pressure from environment external can trigger action cheating . Meanwhile that , Milasari and Rastmono (2019) in his research conclude that high leverage levels can increase pressure managerial in fulfil debt obligations , so that enlarge encouragement For do manipulation number in report finance . Research it also shows that weakness function internal controls , such as not enough effectiveness of the board of commissioners or internal audit, creating opportunity For commit fraud without detected . This factor enter in element opportunity , which is one of the main pillars in fraud theory .

However , the results study No always consistent . Adelia et al. (2023) state that leverage is not own significant influence to FFR in the sector industry certain . This is show that The effect of leverage on fraud can depend heavily on the characteristics of the firm. industry , level regulatory oversight , and transparency company . Variations results This show existence need will study further continuation specific to sectors certain . Another study by Putri and Qintharah (2023) more emphasize importance the role of ineffective monitoring. They find that weakness system internal control and supervision layered enlarge possibility of fraud occurring . Without strict supervision , action manipulative can done in a way repetitive and systematic . This is strengthen view that corporate governance is weak is one of the reason main the occurrence of fraud in report finance . In the context of sector manufacturing field health in Indonesia, which is becoming focus study this is a challenge in supervision finance become more complex . Companies such as PT Kimia Farma and PT Indofarma Once involved in scandal manipulation report finances involving inflation income and errors presentation assets . This is show that pressure politics , market pressures , and weaknesses system internal control becomes triggering combination the occurrence of FFR in the sector This .

From the side approach theory , theory signal theory also becomes relevant . This theory state that management company use information finance as signal For form perception positive investors. When conditions finance worsening , management tend convey signal false with manipulate report finances to remain seen Healthy in a way financial . This is create gap the occurrence of fraud based on the formation perception pseudo . Although Lots studies has done against FFR, however Still limited research that is special test factors the in context sector manufacturing health in Indonesia. This sector own dynamics unique , especially post the COVID-19 pandemic , where pressure operational , dependency of public funds , and oversight high public become challenge separate research This aim For fill in gap the with use Fraud Hexagon Theory approach , and testing How profitability , leverage, and ineffective monitoring have an impact to the occurrence of FFR in companies manufacturing healthcare sector listed on the IDX for the 2019–2023 period.

3. Proposed Method

3.1 Research Design

Study This use approach quantitative with type study associative causal , namely aim For know influence direct between variables independent (profitability , leverage ratio , and ineffective monitoring) against variables dependent (fraudulent financial reporting). The method used is studies documentary based on secondary data obtained from report finance annual company sector manufacturing healthcare sector listed on the Indonesia Stock Exchange (IDX) during 2019–2023 period . Research This test a theoretical model based on the Fraud Hexagon Theory to see connection causal between pressure , opportunity , and control in context report fraudulent finances .

3.2 Population and Sample

Population in study This covers all over company manufacturing healthcare sector listed on the IDX during period 2019 to 2023. Determination technique sample done with method probability sampling, namely choose companies that meet criteria certain , such as :

a. Manufacturing companies in the Healthcare sector listed on the Indonesia Stock Exchange (IDX) during 2019–2023 period .
b. Manufacturing company Healthcare sector which has report finance and reports complete annual For 2019–2023 period .

Based on criteria said , obtained amount sample as many as 20 companies for five years observations , so that the total observations is 100 company-year data .

3.3 Data Collection Techniques

Data used is secondary data obtained through document report finance audited , report annual (annual report), as well as governance report company (good corporate governance report) available on the official BEI website and each company . Variable profitability measured using Return on Assets (ROA), leverage using Debt to Equity Ratio (DER), while ineffective monitoring is measured use proportion of the board of commissioners . The fraudulent financial reporting variable is proxied use index Beneish M-Score, which has Lots used in study accountancy For detect existence indication manipulation report finance .

3.4 Data Analysis Techniques

Data that has been collected analyzed use method analysis multiple linear regression with help device soft statistics E-reviews version 12. Before testing hypothesis done , especially formerly assumption testing was carried out classics that include :

a. Normality test ,
b. Multicollinearity test ,
c. Heteroscedasticity test , and
d. Autocorrelation test .

Furthermore significance test was conducted simultaneous (F test) and partial (t test) for know how much big the influence of each variable free to variables bound . The coefficient value determination (R^2) was also calculated For measure how much big variables independent can explain variability variables dependent .

3.5 Research Model

Research model used in studies This formulated in form equality regression as following:

$$FFR = \beta\, 0 + \beta_1\, ROA + \beta_2\, DER + \beta_3\, IM + \varepsilon$$

Where:

1) FFR: Indication of Fraudulent Financial Reporting (measured with Beneish M-Score)
2) ROA: Profitability
3) DER: Leverage
4) IM: Ineffective Monitoring (proportion commissioner independent)
5) α: Constant
6) β_1 , β_2 , β_3 : Coefficients regression
7) ε: Error term

3.6 Justification Methodology

Election approach quantitative based on objectives study For test connection between variables with objective and measurable measures . Use Beneish M-Score as FFR indicators are also based on their validity in detect possibility manipulation accountancy accrual - based accounting hidden behind report visible finances healthy . This method in line with approach fraud detection based on statistical models and ratios finances used in literature accountancy modern forensics (Durtschi et al., 2004; Albrecht et al., 2012)..

4. Results and Discussion

4.1 Statistical Results Descriptive

Analysis beginning done For understand data characteristics for each research variable , namely profitability , leverage, ineffective monitoring, and fraudulent financial reporting (FFR). The results served in table following :

Table 1. Statistics Descriptive Research Variables

	X1	X2	X3	Y
Mean	2.053503	13.94219	0.481200	-2.046900
Median	0.104350	0.336750	0.500000	-2.255000
Maximum	31.00000	205.8300	1.000000	5.030000
Minimum	-94.89000	0.048000	0.290000	-6.320000
Std. Dev.	12.43431	30.14108	0.149911	1.532994
Observations	100	100	100	100

Sumber: data (diolah) 2025

Based on results statistics descriptive , variable profitability (ROA) has an average of 2.05 with standard deviation Enough high (12.43), indicating existence variation big between company as well as possible outliers, visible from very low minimum value (-94.89) and maximum 31. Leverage has an average of 13.94 but a median of only 0.33, indicating distribution No evenly distributed and there is a number of company with very high debt (maximum 205.83). Meanwhile that , the value of ineffective monitoring is sufficient stable with an average of 0.48 and a standard deviation low , reflecting distribution that is not too varies . For fraudulent financial reporting (FFR) variable , the average value of -2.04 indicates that in a way general company No indicated strong do fraud in report his finances during 2019–2023 period .

4.2 Regression Results and Discussion

Model used in study This is Random Effect Model (REM) , based on results model selection through Chow Test, Hausman Test, and LM Test . The purpose is For test whether profitability , leverage, and ineffective monitoring influential to fraudulent financial reporting (FFR).

Table 2. Random Effect Model (REM) Regression Results

Hasil Uji Regresi Data Panel *Random Effect Model* (REM)

Dependent Variable: Y
Method: Panel Least Squares
Date: 07/24/25 Time: 22:37
Sample: 2019 2023
Periods included: 5
Cross-sections included: 20
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.482999	0.577292	-2.568892	0.0121
X1	-0.018383	0.017919	-1.025868	0.3082
X2	-0.008633	0.007890	-1.094071	0.2773
X3	-0.843296	1.117167	-0.754852	0.4526

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	1.348617	R-squared	0.218263
Mean dependent var	-2.046900	Adjusted R-squared	-0.005091
S.D. dependent var	1.532994	S.E. of regression	1.536892
Akaike info criterion	3.896036	Sum squared resid	181.8768
Schwarz criterion	4.495225	Log likelihood	-171.8018
Hannan-Quinn criter.	4.138539	F-statistic	0.977208
Durbin-Watson stat	2.764012	Prob(F-statistic)	0.501333

Sumber : (Data Diolah 2025)

4.3 Influence Profitability against (FFR)

Profitability in study This measured using Return on Assets (ROA). Regression results show mark significance of 0.3082 (>0.05) and t- count -1.025868 (<t- table ±1.984), so that hypothesis H1 is rejected . This means that there is no there is influence significant profitability against fraudulent financial reporting (FFR) in companies manufacturing healthcare sector on the IDX for the 2019–2023 period . Although No significant, coefficient regression worth negative (-0.018383), which indicates direction connection negative between profitability and FFR.

In a way theoretically , the more tall profitability , increasingly small possibility company pushed do manipulation report finance . This is in line with Salim & Riady (2021) and Milasari & Ratmono (2019) who stated that profitability own influence negative against fraudulent financial reporting. Increasingly tall level profitability something companies , increasingly small trend company For do manipulation report finance . On the other hand , Mayabi & Meriyani (2023) found that profitability precisely influential significant in a way positive towards FFR, especially in the sector banking . This is show that influence profitability nature contextual depending on the sector the industry studied . Research by Putri, Wardani, & Kartika (2023) also strengthens that profitability tall lower incentive company For commit fraud.

Within the framework Fraud Hexagon Theory , low profitability reflect element pressure and arrogance , where management feel pushed or feel Can overcome situation bad with manipulate report finance . Meanwhile in context Signaling Theory , profitability tall become signal positive for investors and stakeholders interests , so that company No need create signal false through report manipulated finances . Therefore that , profitability tall can play a role as mechanism deterrent the occurrence of FFR.

4.4 Influence Leverage against Fraud (FFR)

Based on regression test results in Table 2, leverage has mark significance of 0.2773 (> 0.05) and t- count -1.094071 (< t- table ±1.984), so that can concluded that leverage has an effect negative However No significant against fraudulent financial reporting (FFR) in companies manufacturing healthcare sector on the IDX for the 2019–2023 period . With Thus , the hypothesis H2 is rejected . The coefficient negative show that the more tall leverage level , then tend the more low trend company perform FFR, even though connection This No significant in a way statistics . findings This reinforced by research Fitri and Sulistyowati (2023) as well as Erawati and Tunnajiha (2023) stated that that leverage is not in a way direct push the occurrence of fraud, but more influence decline quality report finance .

In context Fraud Hexagon Theory , leverage can be reflect element pressure consequence debt obligations . However , if pressure the balanced with good internal control and not There is rationalization from management , then No necessarily push occurrence cheating . From the point of view view Signaling Theory , company with high leverage precisely tend be careful in reporting finance Because want to avoid signal negative in the eyes of investors and creditors , so that potential lower intention For committing fraud. Therefore that , although leverage is theoretical can become pressure , results study This show that leverage is more play a role as factor control risk than driver direct to fraudulent actions .

4.5 Influence Ineffective Monitoring against (FFR)

regression test in Table 4.10 show that ineffective monitoring variables have mark significance 0.4526 (> 0.05) and t- count -0.754852 (< t- table ±1.984), so that Hypothesis H3 is rejected . This means that ineffective monitoring has an effect negative However No significant against fraudulent financial reporting (FFR) in companies manufacturing healthcare sector listed on the IDX for the 2019–2023 period . Coefficient regression negative of -0.843296 shows trend that the more weak function supervision , increasingly big potential for fraud, although influence This No proven in a way statistics .

Findings This contradictory with study Putri & Qintharah (2023) and Aji & Sari (2024) who stated that ineffective monitoring has an impact negative and significant against fraud. This means that the weakness the role of the board of commissioners , audit committee , and system internal supervision can open gap occurrence manipulation report finance . Hariana (2022) also emphasized that function weak supervision give room more big for management For commit fraud without obstacle means . However , Hariana also noted that weakness internal supervision sometimes precisely trigger role supervision external parties , such as auditors and regulators, become more active so that increase opportunity fraud detection .

Within the framework Fraud Hexagon Theory , ineffective monitoring reflects element opportunity , namely opportunities that arise consequence weakness control . Without effective supervision , opportunities For tend to commit fraud increased . From the side Signaling Theory , company with system weak supervision will send signal negative to investors and the market, potentially lower beliefs and values company . Therefore that , although in a way statistics No significant in study this , ineffective monitoring remains become factor important in prevent the occurrence of FFR in more context wide.

5. Implications Study

5.1 Implications Theoretical

Study This give contribution to development of the Fraud Hexagon Theory with confirm that No all element in theory the operate in a way uniform in every sector industry . Elements pressure and opportunity (in form profitability low and ineffective monitoring) no always Enough For push fraudulent actions significant , especially in context sectors that have supervision public tall such as healthcare. Findings This push the need development of a more accurate fraud prediction model complex and contextual , for example with add variables like ego, collusion , or ethics organization . In addition , the results this also strengthens argument that approach single based number finance Possible No Enough strong in detect fraud, so that approach based behavior managerial and governance more further is very necessary For understand dynamics of fraud in general comprehensive .

5.2 Implications Practical

From the side practical , results study This give description that supervision against fraudulent financial reporting does not Can only depend on indicator finance such as ROA or leverage, or indicator simple from ineffective monitoring. The taker policies in the company , especially in the sector health , need compile mechanism more internal oversight based risk , strengthening whistleblowing function , as well as involving more Lots supervision external independent . For auditors and regulators, the findings This show importance combining financial data with non- financial indicators like pressure managerial , culture ethical companies , and relationships social among actor key in company (indication collusion).

6. Conclusions

Study This aim For analyze influence profitability , leverage, and ineffective monitoring of fraudulent financial reporting in companies manufacturing healthcare sector listed on the IDX during period 2019–2023, with Random Effect Model approach . Research results show that third variables the No influential significant against the FFR, although direction connection everything negative . Findings This implies that **indicator financial and internal governance used in study This No Enough capable explain tendency towards fraud comprehensive** , especially in context sectors that have structure supervision complex such as healthcare. Therefore that , research advanced recommended For enter other variables that reflect dimensions behavior management , system internal reporting , as well as influence party external to fraudulent practices . With Thus , the contribution main from study This is give understanding that fraud detection is necessary viewed as multi- dimensional phenomena that are not only depends on numbers , but also on context institutional and behavioral individual in organization.

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