Hexagon Fraud: Detection of Fraudulent Financial Statement in Indonesia

Julia Rachma Handayani[1], Nurcahyono Nurcahyono[1(✉)], Nailis Saadah[2], and Winarsih[2]

[1] Department of Accounting, Universitas Muhammadiyah Semarang, Semarang, Indonesia
nurcahyo@unimus.ac.id

[2] Department of Accounting, Universitas Islam Sultan Agung, Semarang, Indonesia

Abstract. Economic growth has positively impacted companies in Indonesia, as seen from the many companies that register their companies every year to enter the capital market. This phenomenon affects very rapid competition in the business sector and can lead to crimes, one of which is fraudulent financial reporting. This phenomenon is caused because each entity must submit accurate and relevant financial information. So it is essential to know what indicators can be used to identify fraudulent financial statements. The goal to be achieved from the results of this study is to empirically determine the effect of financial stability, several directors turnover, e-procurement, whistleblowing system, government ownership, and Frequent Number of CEO pictures on fraudulent financial statements. This study uses a quantitative approach. The population of this study is state-owned enterprises companies in 2017–2021, listed on the IDX, namely 105 companies. Using a purposive sampling technique, 21 companies were studied. The analytical method in this study is Multiple Linear Regression Analysis which is processed using the SPSS 26 application. The results show that financial stability, a director change, e-procurement, whistle-blowing systems, and government ownership positively affect fraudulent financial statements. In contrast, the frequent variable number of CEO pictures has a negative impact on financial statement fraud.

Keywords: Fradulent Financial Statement · F Score · state-owned enterprises · Hexagon Fraud

1 Introduction

Since Indonesia confirmed the first case of covid 19 in March 2020, WHO has begun to provide efforts for sustainable management with the Indonesian government, WHO, and other partners. Market fluctuations that have occurred in Indonesia due to the COVID-19 pandemic in recent years have caused many sectors to experience unstable economic cycles. This is due to a slowdown in financial operations in the long term. Based on data from the Ministry of Finance of the Republic of Indonesia (www.kemenkeu.go.id), economic growth in Indonesia can only stay in a positive range in the first quarter. In the second quarter, the economy in Indonesia was observed to decline drastically when

Large-Scale Social Restrictions (PSBB) were imposed in various regions. All components experienced negative growth at -1.1% to 0.2%, far below the initial estimate of 5.3%. This condition explains the high pressure on sectors that reduce their activities, both from the demand side and from the supply side. Likewise, data Central Statistics Agency (BPS) explains that the Indonesian economy experienced deflation or decreased by -2.07%. One of the impacts of COVID-19 on the economic sector is business competition in the digital industry. Many companies focus on developing digital businesses so that companies can continue to gain profitability in economic limitations. Intense competition between companies can lead to financial crimes, one of which is financial statement fraud.

Financial reports are the primary indicator for evaluating company performance and being a medium of communication with users of internal and external financial reports [1]. Therefore, many companies are trying to provide the best information so that their performance looks positive and appropriate to meet user needs. So companies usually commit fraud in financial reports and present manipulative and detrimental financial details. Financial statement fraud is essential to study because the impact of these financial crimes results in losses to the state, entities and interested parties. Fraudulent is carried out intentionally, and aware that the reports produced are not following applicable accounting standards and are only intended for certain parties [2, 3].

The Association of Certified Fraud Examiners (ACFE) Indonesia survey 2020 reports that there are 70% of corruption cases occur in Indonesia [4]. Financial statement fraud is a behavior that violates the law and is very detrimental to many parties. Indonesia itself is in position 85 of 185 countries that experience budget deviations of 2% [5]. Meanwhile, the survey results in different years noted the occurrence of financial fraud by 6.7%, which resulted in a loss of IDR 2,260,000,000 or 9.2%. Report [5] this shows that financial statement fraud is still prevalent in Indonesia. Types of fraud cases [5].

The public has provided many cases of misappropriation of accounting practices. Examples of companies that have committed fraud include PT Garuda Indonesia, PT ASABRI, PT Angkasa Pura II, PT Waskita Karya, PT Jasindo, PT Pelindo, and PT Jiwasraya. Based on investigations by the Supreme Audit Agency (BPK) and the Financial Services Authority (OJK) proved several cases to have involved bribery in the procurement of goods and services, manipulation of financial reports, mismanagement of assets and investments, and abuse of authority. In addition, one case of fraudulent financial statements that caught the public's attention was the Enron case in 2001. As many as 43% were cases that dominated acts of corruption, while 11% were cases of fraudulent financial statements, which had the most significant losses with a total of $954,000 [6–8]. Various parties were harmed by acts of fraud, including the government, with losses reaching 8.5%, then the BUMN sector, which suffered losses of 31.8%, followed by private companies at 15.1% and non-profit institutions at 2.9% and other agencies related by 1.7% [5].

Research related to fraudulent financial statements has been widely studied in previous studies using the variable financial stability [9], Change Director [10] Government Ownership [1, 11]. Financial stability can be seen from changes in a company's assets affecting fraudulent financial statements [12]. Too frequent changes of directors can change corporate governance, which has the potential to commit fraudulent financial

Fig. 1. The Fraud Hexagon

statements [7, 8, 12]. The level of share ownership in a company can affect fraudulent financial statements [13].

However, several studies found different results. Study [9, 14–17] regarding the factors that influence financial statement fraud still show mixed results or results that are inconsistent with the results. Inconsistent. This study uses a modified F Score measurement of whether a company commits financial statement fraud. Based on the description of the background, phenomenon and research gap above allows researchers to identify indicators that can detect fraud in financial statements. Then the researcher adds a frequent number of CEO pictures. A regular number of CEO Pictures is a novelty that distinguishes it from previous research (Fig. 1).

2   Literature Review

2.1   Hexagon Fraud Theory

Research conducted by Donal Cressey revealed that three main factors cause fraud. The theory concludes that there are three possible frauds: pressure, rationalization, and opportunity [18]. Another study developed by [15] added another factor as a new indicator in detecting financial statement fraud: capability. Then, Crowe Howard set it again by adding two elements, competence, and arrogance [19]. And the latest is the development of the theory [14] by refining and adding another indicator, namely collusion, so that this theory is commonly called Hexagon Fraud. These six factors can be used for a fraud detection of financial statements (S.C.C.O.R.E).

In connection with the variables used, the hexagon theory reveals that the amount of total assets owned by a company affects the attractiveness of investors. A high percentage of share ownership in a company can also affect fraudulent financial statements. The variable number of photos of directors attached to the annual report influences fraudulent financial statements. Companies that change directors too often have the potential to commit financial statement fraud because a change in leadership can change the company's performance. Meanwhile, companies implementing e-procurement & whistleblowing systems can encourage companies to protect from fraudulent schemes.

2.2 Fraudulent Financial Statements

Fraudulent Financial Statements (FFS) are a form of intentional misstatement of accounting practices by eliminating company financial statement data to manipulate readers into believing that the company is in better financial condition than it is. FFS usually uses by overstating asset, income, and profit accounts and understating liabilities, losses, and expenses. However, counter-measures are needed to manipulate, for example, by hiding profits from a good year forecast to cover shortfalls in the next year that is predicted to be more difficult. From these examples, the implementation of this manipulation practice is much more complex than cases of asset misappropriation or corruption. Generally, with corruption and misuse of assets, fraudsters want the amount to be smaller so that there is no doubt, whereas, in the case of fraudulent financial statements, fraudsters need to increase the number so that readers believe that the company's finances are in a healthy and prosperous condition [20].

Fraudulent accounting practices is a type of fraud where company managers change financial information as a false image that damages the capital market system. Most copies cannot be detected on time because they must be visible from public scrutiny and auditor examinations. Reports from several organizations on the high losses caused by fraud include failure in detection. Therefore an effective tool is needed to analyze copy. In this study, researchers updated the F-score metric to measure the level of FFR. The F-Score is considered to be more complex than the M-Score, which was first introduced by [21], a study of Accounting and Auditing Enforcement Activities (AAER) related to the M-Score conducted between 1982 and 1992 (10 years) was published. Dechow's study, on the other hand, is based on the SEC from 1982 to 2005 (23 years). Study [22] for Malaysian companies found that Dechow's F-Score was 73.17% better than Beneish's M-Score in measuring fraud incidents, compared to 69.51%. However, their preliminary results show that a score above 1.0 indicates a higher error probability.

2.3 Financial Stability

Financial stability is a description of the financial stability of a company in a certain period, where asset management affects the company's profit acquisition which will later be used to present financial information properly to attract investors to collaborate with the company. However, when economic or industrial conditions experience a decline, managers often get pressure to continue to show that the company can earn profits that generate high returns for investors. This can potentially commit fraudulent financial statements by manipulating total assets to make them look big. If a company's assets experience a decline, management can use financial statements to cover the company's unstable economic condition [22–24]. Study [25] have carried out research related to financial stability [3, 10] and reported that financial stability affects fraudulent financial statements, which means that the greater the total assets of the company, the higher the investor's interest in the company.

H1:   financial stability affects fraudulent financial statements

2.4   Director Change

Director change is a reorganization that occurs in a company within a certain period involving the board of directors. Every change of directors is often associated with the interests of several parties and the game of power politics that triggers conflict in the work environment [26, 27]. So that there is information asymmetry and instability of company control, parties with interests and capabilities can design strategies to determine the right time for fraud when instability occurs. This statement is supported by [6, 28], which shows that the higher the turnover of directors, the greater the fraud reporting index.

H2:   Director Change affects fraudulent financial statements

2.5   E-Procurement

E-procurement is an information technology-based alternative related to procuring goods and services using electronic transactions by established laws. Government is an institution where collusive practices often occur through the procurement of goods and services. According to [1], Collusion occurs because internal parties conspire with certain parties to reduce the quality of goods or services and increase prices. In this case, e-procurement is designed to work better, is transparent, and is supported by an electronic catalog also published. Several studies from [9, 29–31] emphasized that E-Procurement can prevent fraud (conspiracy) and minimize fraudulent financial statements.

H3:   E-Procurement affects fraudulent financial statements

2.6   Whistleblowing System

A whistleblowing system is an application with a mechanism for submitting complaints of fraud or criminal acts involving employees or other people in a work environment where the complainant is not part of the perpetrator of the reported crime. Companies with significant assets need a hotline to detect fraud rather than direct supervision. The results of an explosive study [32] on state companies that implement the whistleblowing system work well and reduce fraud.

H4:   Whistleblowing System affects fraudulent financial statements

2.7   Government Ownership

Government Ownership is the number of shares owned by an entity [13]. Investors in monitoring company performance generally support decision-making by managers. Share ownership establishes a relationship between the needs of the management party's shareholders and the manager's shares so that investors entrust the management of claims to managers and managers can act according to the needs of shareholders. This statement is supported by research [33] which reveals that the size of shares indicates the same interests between managers and shareholders so that they can influence fraudulent financial statements.

H5: Government Ownership affects fraudulent financial reporting.

2.8 Frequent Number of CEO'S Picture

The frequent Number of CEO's Pictures is the number of photos displayed in a company's financial statements. The more pictures of the CEO in the company's financial statements, the more it is considered to make a CEO feel he has high power. They think that their position is high, so the regulations and punishments in the company do not apply to them, including committing fraud [34].

H6: Frequent Number of CEO's Picture affects fraudulent financial statements.

3 Research Methods

The research uses a quantitative approach correlational type of approach. A correlational approach is an approach that aims to detect the relationship between variations in a factor with variations in other factors based on the coefficient of the connection [35]. The population in this study are state-owned companies in 2017–2021 listed on the Indonesia Stock Exchange (IDX). The number of go public state-owned enterprise companies listed on the IDX, 21 companies with 105 unit companies. The sampling method is purposive sampling, namely, selecting samples with specific criteria. The criteria used (1) Companies listed on the IDX 2017–2021, (2) Companies that publish a complete annual report on their website and company website, (3) Companies that have complete data for calculating the F Score.

The type of data in this study uses secondary data from the IDX and the company's official website. The data collection technique uses documentation techniques and secondary data in the form of an annual report that has been audited by an independent auditor and published by the company. Documentation technique is a technique of collecting data by collecting and analyzing documents in writing, pictures, and electronically [35].

The dependent variable of this research is, fraudulent financial statements, independent variable, is financial stability, a director change, e-procurement, whistleblowing system, government ownership, and a frequent number of CEO pictures. The measurement used to assess the level of fraudulent financial statements is the F Score model. This method was developed by Dechow and is considered better than the [21]. According to research [35], the F-Score way is suitable for implementation in developing countries for fraud or fraud cases.

3.1 Variable Measurement

Research using the dependent variable; fraudulent financial statements, independent variables; financial stability, a director change, e-procurement, whistleblowing system, government ownership, and a frequent number of CEO's pictures. The variable of financial statement fraud in this study was measured using the F Score model, and this method was developed by (Dechow et al.) which is considered better than other models in measuring financial statement fraud in developing countries. The variable measurements used in this study are shown in Table 1.

Table 1. Variables Measurement

Variable	Measurement
Fraudulent Financial Statements	Dechow F-Score = Financial Performance + Acrual Quality
Financial Stability (AGROW)	$AGROW = \frac{\text{(Total Aset t}-\text{Total Aset t}-1)}{\text{Total Aset t}-1}$
Director Change (BDOC)	Number of director's replacement
E-Procurement (EPRO)	Dummy: 1 if companies have an e-procurement portal, 0 otherwise
Whistleblowing System (WBS)	Dummy: 1 if companies apply a whistleblowing system, 0 otherwise
Government Ownership (GOVSHIP)	Precentage of government ownership
Frequent Number of CEO's Picture	The number of CEO photos

Data analysis uses multiple linear regression to predict how strong the influence of the independent variable variations is on the dependent variable. The reason for using multiple linear regression analysis is to know the direction of the relationship between the independent variables and the dependent variable and whether each independent variable is positively or negatively related. The analytical tool used is SPSS 26. The research model in this study is:

$$FFR = \alpha + \beta1(AGROW)i.t + \beta2(BDOC)i.t + \beta3(EPRO)i.t + \beta4(WBS)i.t$$
$$+ \beta5(GOVSHIP)i.t + \beta6\ FRPHOTOi.t + e \qquad (1)$$

Description: FFR is fraudulent financial statements, AGROW is financial stability, BDOC is director change, EPRO is e-procurement, WBS is whistleblowing system, GOVSHIP is government ownership, FRPHOTO is Frequent Number of CEO's picture, i is BUMN companies, t is the time, $\beta1$, $\beta2$, $\beta3$, $\beta4$, $\beta5$, $\beta6$ are the coefficient for each independent variables in the model, α is Constanta, and e is an error.

4 Result and Discussion

4.1 Statistic Descriptive

Based on the information in Table 2, the financial stability variable shows a high distribution of data, with evidence that the value at the standard deviation of 0.32273 is greater than the average value of 0.1244 and the average state-owned company has a low level of financial stability as evidenced by the mean value close to the value minimum. The director change variable also has a high data distribution with a standard deviation of 0.50238 above the average value of 0.4952. The director change in the company is relatively significant, which can pave the way for fraudulent financial reporting. Meanwhile, different results were shown in the e-procurement & whistleblowing variable, which had

a low data distribution. This was because all companies in the year of observation implemented e-procurement and whistleblowing systems—the better the company's system implementation, the lower the individual motivation to commit fraud.

Government ownership has a typical data distribution, as evidenced by the standard deviation value of 0.26143, below the average value of 0.4112. The percentage of institutional share ownership in recent years has decreased significantly due to the co-19 pandemic. The frequent number of CEO's picture variables has a narrow data distribution, as evidenced by the standard deviation value of 1.16599, which is smaller than the average value of 2.9238. The number of CEO photos displayed in the annual report in the current year period, the average company presents CEO photos with the number which is quite a lot for the satisfaction of the ego of each individual. Finally, the variable of fraudulent financial statements has a low data distribution, as evidenced by the standard deviation value of 1.17103 below the average value of 5.8034, which concludes that, on average, in the sample companies, fraudulent financial statements rarely occur.

4.2   Multiple Linear Regression

This study uses multiple linear analyses to determine the factors influencing fraudulent financial statements. This analysis is used to determine the relationship between variables and the direction of the relationship.

4.3   Financial Stability

Financial stability plays an essential role as a proxy in assessing a company's performance which will later become a reference for decision-making and an attraction for external parties to the company. Therefore, the higher total assets in a company will increase the interest of investors and other stakeholders so that the company's internal parties are encouraged to present financial reports according to their needs [36]. The study results show that the financial stability variable affects fraudulent financial statements because it has a sig 0.023 below 0.05. Financial stability is a significant factor in detecting fraudulent financial statements in the state-owned enterprise sector. Financial stability is essential in seeing fraudulent financial information in the state-owned enterprise sector.

The study [3] also revealed that financial stability affects fraudulent financial statements. In practice, management is often under pressure to manipulate financial statements to make them look good in investors. Managers provide financial information that is not to the actual conditions of the company to maintain the company's reputation [37]. Studies conducted by [38] state that management uses financial reports to cover up unstable economic conditions to maintain the company's reputation [3]. Studies conducted by [39] state that management uses financial reports to cover up unstable economic conditions.

4.4   Director Change

Change of director is how many changes of directors of the company in a certain period. In the change of directors, differences in political interests can lead to information

Table 2. The Statistic Descriptive

Variables	Minimum	Maximum	Mean	Std. Deviation
Financial Stability	-0.76	2.28	0.1244	0.32273
Director Change	0.00	1.00	0.4952	0.50238
E-Procurement	0.00	1.00	1.0000	0.00000
Whistleblowing System	0.00	1.00	1.0000	0.00000
Government Ownership	0.00	0.99	0.4112	0.26143
Frequent Number of CEO's Picture	1.00	7.00	2.9238	1.16599
Fraud Financial Statements	1.10	7.74	5.8034	1.17103

Table 3. Multiple Linear Regression Test Results

Variable	Beta	T-statistic	Sig	R Square
Financial Stability	-0.058	-0.494	0.023	0.084
Director Change	-0.138	-1.217	0.027	
E-Procurement	0.088	0.784	0.035	
Whistleblowing System	-0.026	-0.230	0.819	
Government Ownership	0.222	1.874	0.005	
Frequent Number of CEO's Picture	0.122	1.077	0.025	

asymmetry and lack of oversight of corporate control. The results showed that the change of directors affected financial statement fraud, as evidenced by the sig value of 0.027 (<0.05). Table 3 explain that the more frequent changes of directors carried out by companies will have the potential to commit financial statement fraud because a change of directors is an opportunity for individuals who can carry out their plans amidst the company's unstable conditions. The results of this study are in line with [40], which state that with the skills and abilities possessed by an individual, he will quickly take advantage of opportunities to commit fraud. The study [16] reports that leadership changes can also identify specific interests by changing offline channels that can detect fraud within the company.

4.5 E-Procurement

Based on the Decree of the President of the Republic of Indonesia, Number 54 of 2010 stipulates that auctions related to the procurement of goods and services can be carried out through e-procurement (website). "E-Procurement" is the procurement of goods and services electronically, the implementation of which uses electronic transactions and information technology based on applicable laws and regulations. E-Procurement affects fraudulent financial reporting as evidenced by the sig 0.035 (<0.05) that e-procurement is one of the determining factors in efforts to reduce fraudulent financial

reporting. This means that the better the implementation of e-procurement, the quality of transparency and cost management in the procurement of goods and services will also provide many benefits, and it is hoped that the potential for fraud in the process of procuring government goods and services can be minimized [7, 41, 42] show that the e-procurement system prevents fraud in financial reports and that the implementation of good e-procurement in the process of procuring goods and services can increase fraud prevention efforts. Thus the motivation to take action against irregularities can decrease.

4.6   Whistleblowing System

The whistleblowing system is one of the efforts to prevent fraud in the work environment. The system is designed to receive complaints against fraudulent acts involving the interests of many people. The violation reporting system is one of the factors in detecting fraudulent financial statements, so it is considered a valuable instrument in corporate governance because it is supposed to help work safety, company profits, and reputation [9]. Companies with significant assets generally need a sound system for detecting fraud electronically. However, the results of the study show that the whistleblowing system has no effect, as evidenced by the sig value of 0.819 (>0.05), so it can be concluded that in the year of observation, the whistleblowing system did not run well enough on the average sample of companies, it is necessary to evaluate the company's performance. To increase the effectiveness of the system.

4.7   Government Ownership

Government ownership is the percentage of shares owned by the company. The higher the number of shares owned by the institution, the higher the potential for fraudulent financial statements due to the common interests of managers and shareholders, where managers will act according to the needs of investors who are motivated to improve the company's capabilities. The results showed that government ownership affected fraudulent financial reporting as evidenced by a sig value of 0.005 (<0.05). These results explained that the higher the number of shares owned by an institution, the greater the motivation of managers to improve the company's good image. This result is supported by (Furkan, 2017) reports that institutional ownership is expected to strengthen managers' supervisory and monitoring functions in stock management. Monitoring actions by institutional investors can encourage managers to focus more on company performance so that it will reduce selfish behavior and decision-making can work well.

4.8   Frequent Number of CEO'S Picture

The frequent number of CEO's picture is one of the factors in detecting fraudulent financial statements. The more CEO photos are displayed in financial statements, the more they feel they have more power as CEOs by ignoring policies and committing violations, including fraud in the work environment [7]. The results showed that the number of CEO photos affected financial statement fraud, as evidenced by the sig value of 0.025 (<0.05), which explains that the number of CEO photos attached to financial

reports is a form of power politics and individual ego. The results of this study are in line with research [36], which reports that the arrogance described here is the attitude of someone who feels that internal controls and company policies do not apply to him. He believes that these things are not binding on him, so he has the potential to commit more significant acts of fraud.

5 Conclusion

Based on the results and discussion, financial stability affects fraudulent financial statements, and this is because the management of a company's assets will reflect the company's performance. Director Change also affects fraudulent financial statements, which means that the more changes in the directors, the more excellent the opportunity to commit fraud because there are many opportunities open. Exemplary e-procurement implementation can reduce individual motivation to commit fraud. The whistleblowing system in this research does not affect financial statement fraud because the performance in the year of observation was not going well. Institutional share ownership affects fraudulent financial statements because investors trust management to manage related shares. The frequent number of CEOs' pictures involves financial statement fraud because the highest position of power can increase individual arrogance to commit financial statement fraud. The limitation of this study is that it has a low R Square value of 8.4% so further research can use moderating or control variables.

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