

Fraudulent Financial Reporting Indications In Banking Before And During The COVID-19 Pandemic

Falsa Dzaky Arifian^{1*} and Indira Januarti²

^{1,2} Department of Accounting, Faculty of Economics and Business, Diponegoro University, Semarang, Indonesia

Email Address:

falsadzakyarifian6320@gmail.com*, ienjanuarti@gmail.com

*Corresponding Author

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Abstract: This study analyses indications of banking fraudulent financial reporting (FFR) before and during COVID-19. FFR indications are seen using the fraud pentagon theory through pressure (liquidity), opportunity (effective monitoring), rationalization (external auditor quality), competence (managerial ability), and arrogance (prominence of the CEO's photograph). This research was conducted on banks in the IDX from 2018 to 2021. The sample was selected using a purposive sampling method, consisting of 76 observations before COVID-19 (2018 to 2019) and 81 observations during COVID-19 (2020 to 2021). The analysis tool uses OLS regression. The results showed that rationalization negatively affects FFR indications before and during COVID-19, while competence had a positive effect only before COVID-19. The pressure, opportunity, and arrogance couldn't indicate FFR before and during COVID-19. This research has implications for good auditor quality and managerial ability that can assist banks and regulators in building anti-fraud programs for preventing, detecting, and investigating FFR.

Keywords: Banking; COVID-19; Fraudulent Financial Reporting; Pentagon.

Abstrak: Penelitian ini bertujuan untuk menganalisis indikasi kecurangan laporan keuangan perbankan sebelum dan selama pandemi COVID-19. Indikasi kecurangan laporan keuangan dilihat dengan *fraud pentagon theory* melalui *pressure (liquidity)*, *opportunity (effective monitoring)*, *rationalization (external auditor quality)*, *competence (managerial ability)*, dan *arrogance (prominence of the CEO's photograph)*. Penelitian ini dilakukan pada perbankan di BEI tahun 2018 sampai 2021. Pemilihan sampel dengan metode *purposive sampling*, sebanyak 76 observasi sebelum COVID-19 (2018 sampai 2019) dan 81 observasi selama COVID-19 (2020 sampai 2021). Alat analisis menggunakan *OLS regression*. Hasil menunjukkan *rationalization* berpengaruh negatif terhadap indikasi kecurangan laporan keuangan sebelum maupun selama COVID-19 sedangkan *competence* berpengaruh positif hanya pada masa sebelum COVID-19. Adapun variabel *pressure*, *opportunity*, dan *arrogance* tidak mampu mengindikasikan kecurangan laporan keuangan baik sebelum maupun selama COVID-19. Penelitian ini berimplikasi pada kualitas auditor yang baik serta kemampuan manajerial dapat membantu perbankan dan regulator dalam membangun program anti-*fraud* berupa pencegahan, pendeteksian, dan investigasi kecurangan laporan keuangan.

Kata Kunci: Perbankan; COVID-19; Kecurangan Laporan Keuangan; Pentagon.

INTRODUCTION

Banks are institutions that rely on public trust in placing their funds in banking products (Bukit, 2019). It has a very important role for a country in increasing economic growth. Banking also contributes to the growth of the real sector by mobilizing capital from its customers (Setiawan and Pratama, 2019). Through bank financing services, other companies can grow so that a country's economy can run well. Conversely, if banking is not run properly, such as through acts of corruption or financial statement manipulation, it will have various adverse effects on a country.



A survey by (ACFE, 2022) shows that most fraud cases result in banking and financial services (BFS) industry losses. Worldwide, BFS industry fraud cases reached 351 with an average loss of \$100,000. This condition makes banking the industry with the highest number of frauds compared to other industries. Of 351 fraud cases in the BFS industry, 11 per cent were financial statement fraud (ACFE, 2022). In line with this survey, the (ACFE Indonesia Chapter, 2020) found that as many as 41 per cent of the BFS industry had lost most of their assets due to fraud. The ACFE survey over the last five years, as shown in **Figure 1**, shows an upward trend in FFR cases in the BFS industry globally. ACFE data shows that the growth in the number of FFR cases indicates an increase in the BFS industries. This shows that the BFS industries are still not free from the amount of fraud risk they have.

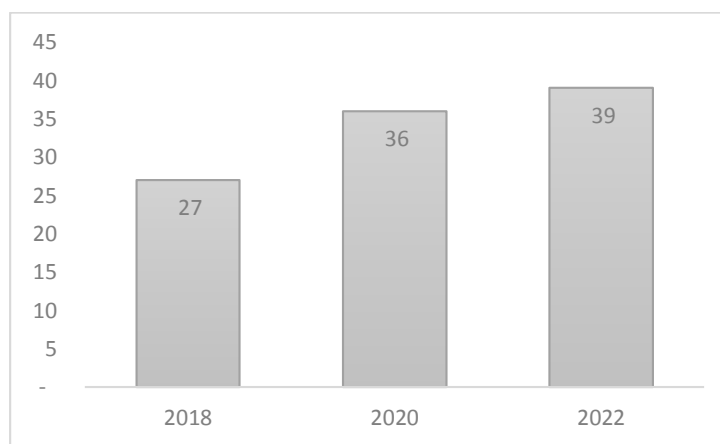


Figure 1. Cases of Banking Fraudulent Financial Reporting in the World

Source: Data from ACFE's Report to The Nation (RTTN) 2018-2022, ACFE

Financial statements are very important in the economic system to maintain the efficiency of a country's capital market. An organization's financial condition or performance that appears in the financial statements is sometimes deliberately misrepresented (Purwanti, 2022). This deliberately misstated financial statement is referred to as FFR. Company management is the one who plays a role in committing this fraud. Management manipulates financial statements to make the company perform better than it should. Manipulated financial statements can lead to significant losses for investors and lead to loss of market confidence (Tanjaya and Kwarto, 2022). Therefore, it is important to build an anti-fraud program by identifying various indications that lead to FFR.

Banks' vulnerability to fraud has increased with the emergence of the COVID-19 pandemic, which has affected various aspects. The pandemic has caused customer credit quality to decline, and interest rate conditions to become low and continue from year to year (Badan Kebijakan Fiskal Kemenkeu RI, 2021). The pressure to maintain liquidity amid deteriorating credit quality makes banks work extra hard to keep running their business transparently and adequately without fraud. The pandemic has also forced banking companies to make adjustments that can increase the loopholes for someone to commit fraud. The form of adjustment is like shifting activities from face-to-face to online. This change has made direct supervision more difficult to carry out, so the loopholes for fraud are getting bigger.

One of the efforts that can be made to prevent and detect FFR is to identify actions that indicate fraudulent acts. A commonly used approach is identifying the factors that encourage someone to commit fraud through a fraud theory approach. The earliest fraud theory approach was carried out by Donald Cressey in 1953 with a fraud triangle consisting of pressure, opportunity, and rationalization components. The fraud hexagon model is the most recent model discovered by (Vousinas, 2019). However, in discussing fraud during the COVID-19 pandemic, the fraud hexagon model is less relevant because to see collusion by banks, such as political relations with the authorities, requires long observation data and searches from many data sources. Therefore, because the available pandemic year data only covers two years of observation, it is only relevant to explain the causes of the emergence of FFR up to the Pentagon fraud model.

The first indication of FFR through the fraud pentagon theory approach can be seen through the liquidity ratio, which is a proxy for pressure. According to (Setiawan and Pratama, 2019), liquidity plays a crucial role in ensuring the seamless operation of the banking business. The pressure to remain liquid will motivate management to show good liquidity so that their performance looks good, too. This situation was then exacerbated during the COVID-19 pandemic, further pressuring the liquidity of banking companies. From previous research, there are still few studies that test pressure through liquidity proxies. Research by (Wilevy and Kurniasih, 2021) shows that banking liquidity significantly affects corporate financial stress. Meanwhile, research by (Idawati and Wardhana, 2021) states that banking liquidity does not involve financial distress.

Further indications can be seen through how effective the company's monitoring (effective monitoring) is as a proxy for opportunity. Effective monitoring in the corporate environment narrows the opportunity for management to commit fraud. In the context of the COVID-19 pandemic, previous research has not examined the impact of effective monitoring on FFR. Banking operational activities are limited during the COVID-19 pandemic, making it difficult for supervisory organs such as independent commissioners to monitor management directly. This condition increases the opportunity for management to act more fraudulently than before the COVID-19 pandemic. Previous research on effective monitoring by (Fitri et al., 2019), (Ghafoor et al., 2022), (Tinambunan and Januarti, 2022), and (Khamainy et al., 2022) shows that effective monitoring has a negative effect on FFR. Different results are seen from the research of (Omukaga, 2020) and (Koharudin and Januarti, 2021), which state that effective monitoring doesn't affect FFR.

External auditor quality is a proxy for rationalization. Suitable resources support a qualified public accounting firm and produce a better audit because it can assess the company more rationally. This can reduce rationalization or justification for fraud committed by management. Auditor quality can be classified into three levels. The first level of qualified auditors is auditors from the Big Four Accounting Firms, the second is International Accounting Firms other than the Big Four, and the third is National Accounting Firms.

On the other hand, the COVID-19 pandemic has caused changes in various aspects, including financial statement audits. This condition may ultimately affect the quality of audits performed by external auditors. The COVID-19 pandemic increases the possibility of auditors providing greater tolerance for the accounting policies used by management due to new things that arise. (Apriliana and Agustina, 2017) concluded that the quality of external auditors has a negative effect on FFR. On the other hand, research by (Syarif et



al., 2021) shows different results, namely, the quality of external auditors does not affect FFR.

Managerial ability is a proxy for competence. Managerial ability is the ability of management to utilize inputs in the form of company resources to produce outputs in the form of income (Hakim et al., 2022). The expertise of management in using company inputs shows that management has good abilities and a lot of information related to the company. The more information the manager has, the more the asymmetric information gap will increase the risk of fraud. During the COVID-19 pandemic, management's ability is challenged to adapt to the changes, so management is still learning to utilize inputs properly during the pandemic. Therefore, the company's efficiency may decrease if management cannot adapt. Many studies, such as (Demetriades and Owusu, 2022) and (Khamainy et al., 2022), examined managers' abilities measured by CEO changes. The proxy for changes in the CEO is not relevant for the COVID-19 pandemic period because the available data only spans two years.

In comparison, changes in the CEO generally occur within three to five years. This makes the available data insufficient to describe the effect of changes in the CEO. Therefore, this study uses another measurement in the form of technical banking efficiency through data envelopment analysis, which can be measured for each year of observation without requiring an extended period span.

The last indication of FFR can be seen through how prominent the photo displayed by the CEO in the annual report) which is a proxy for arrogance. The desire to stand out can be seen by how many photos of the main director are in the annual report. Following the definition of arrogance, namely an attitude that shows one's superiority so that a feeling arises that internal control does not apply to him, the prominence of the CEO's photograph can indicate fraudulent acts. Previous studies have not used many proxies for the prominence of the CEO's photo for the arrogance variable. Research by (Lin et al., 2020) mentioned that the CEO's desire to stand out affects earnings management. Other studies use more photos of the CEO in the financial statements, such as research by (Koharudin and Januarti, 2021) and (Tinambunan and Januarti, 2022). The number of photos of the CEO alone is not enough to describe arrogance, so it needs additional measurement by looking at how prominent the image of the managing director is based on the size of the photo displayed in the annual report. Then, it is related to the COVID-19 pandemic. In that case, the desire of a CEO to stand out can increase due to the limited platform for the CEO to meet face-to-face with his subordinates or other parties so that the annual report is used as a suitable platform to show his existence and superiority during COVID-19.

This study aims to analyze the effect of each indication of fraud through the fraud Pentagon theory approach on banking FFR indications before and during the COVID-19 pandemic. The difference from the previous studies such as (Koharudin and Januarti, 2021), (Hakim et al., 2022), (Khamainy et al., 2022), and (Tinambunan and Januarti, 2022) is that this study uses the pandemic years, namely 2020 and 2021 as objects in the study. Measure competence using managerial ability, while previous studies mostly used the change of the director and arrogance using the prominence of the CEO's photograph. In contrast, various previous studies only used the photo of the CEO. Measuring fraud indications uses discretionary loan loss provisions, while most previous studies have used the Beneish M-Score or Dechow F-Score. This study will contribute to developing science, adding new insights, and providing a reference source for further research. This research



will also help companies in the financial sector and regulators create anti-fraud programs in the form of prevention, detection, and investigation of FFR.

THEORETICAL REVIEW

Fraudulent behaviour by management can be explained through agency theory. The relationship between a principal and an agent is called an agency relationship. The principal delegates his work to the agent, hoping that the agent will act in his interests. However, in this theory, both parties maximize their utility so that the agent is not always acting in the best interest of the fiduciary. This situation triggers a conflict of interest between the principal and the agent. This conflict of interest is referred to as the agency problem. This causes information asymmetry between the principal and the agent. This information asymmetry then causes the possibility that the agent will commit moral hazard to fraud that harms the principal. Agency theory then develops with various countries' increasingly complex and diverse economies. In the context of the Indonesian economy, most companies in the capital market have an unbalanced portion of capital ownership between family and public ownership. This triggers new problems, namely problems between principals (majority and minority shareholders), called agency theory type II (Flayyih and Khiari, 2023). These conflicts arise because the majority group's interests may differ from those of the minority. These differences relate to management choices, business strategy choices regarding risk-taking, acquisitions and diversification, international expansion, capital structure, research and development investments, and the application of governance practices (Purkayastha et al., 2022).

Management fraud can also be explained in more detail through fraud theory. The emergence of fraud theory begins with fraud triangle theory, which consists of three components: pressure, opportunity, and rationalization. This model was then developed by adding a capability component called the fraud diamond theory. Another theory that extends the fraud triangle is the fraud pentagon theory, which adds two elements: competence and arrogance. The fraud pentagon theory defines pressure, opportunity, and rationalization as the same as the fraud triangle model.

In contrast, the purpose of competence is similar to the capability in the fraud diamond. The last component of the fraud pentagon model is arrogance. The arrogance that can lead to fraudulent acts is supported by impression management theory, which states that individuals will tend to make impressions to direct a person's view in assessing that individual. Therefore, a person's opinion can create a specific impression, such as through photos or images. This theory can explain why the CEO displays his picture in the annual report and what impression he wants to display through the photo.

(ACFE, 2022) classifies fraud into three main categories: asset misappropriation, corruption, and financial statement fraud. In these three categories, each has a different scheme. Based on the classification of fraud schemes by (ACFE, 2022), financial statement fraud can occur through overstated and understated net income schemes. The two methods can be explained in more detail through the same five sub-schemes: time differences, fictitious revenue, concealed liabilities and expenses, improper asset valuation, and improper disclosure.

The COVID-19 pandemic impacts every aspect of life, including the emergence of FFR. The pandemic provides more significant pressure and opportunities for banks to increase the risk of fraud. (Hsu and Yang, 2022) conducted research by testing the effect



of corporate governance on the quality of financial reporting during the COVID-19 pandemic. The results showed that the quality of financial statements declined during the COVID-19 pandemic compared to pre-pandemic. In other words, FFR increased during the COVID-19 pandemic.

Liquidity is the ability of a firm to meet its current obligations. In the context of the banking industry, liquidity refers to the adequacy of existing assets to meet the swift withdrawal of funds from depositors and provide funds promptly in response to debtor credit requests (Setiawan and Pratama, 2019). Liquidity measures banking companies in delivering the promised return on funds placed by customers. Companies in the financial sector must maintain the trust of customers who place their funds so that business can run well. Therefore, liquidity is essential for a company, especially in banking (Setiawan and Pratama, 2019).

Companies that have low liquidity will encourage management to carry out fraudulent activities so their liquidity looks better. Following the fraud pentagon theory, pressure will inspire someone to commit fraud. In banking, liquidity has a role in putting pressure on management to always display good liquidity. Management must present high liquidity information so that its performance is adequately assessed. Therefore, if the company's liquidity is low, it will pressure management to commit fraud to make liquidity appear higher. Suppose it is associated with the COVID-19 pandemic. In that case, the liquidity pressure is getting more significant because of the emergence of a crisis due to a pandemic that reduces the level of banking liquidity, such as an increase in the number of credit defaults.

(Wilevy and Kurniasih, 2021) show that liquidity negatively influences FFR. During the COVID-19 pandemic, many banking restructured their loans to adjust the condition of their customers. This increases the burden on banking companies to remain liquid so that management will be more encouraged to carry out fraudulent activities during the COVID-19 pandemic. Therefore, the hypotheses built are:

H.1a: Pressure has a negative effect on indications of fraudulent financial reporting before the COVID-19 pandemic.

H.1b: Pressure has a negative effect on indications of fraudulent financial reporting during the COVID-19 pandemic.

Effective monitoring will narrow the opportunity for management to carry out fraudulent activities. Based on the fraud pentagon theory, opportunities will pave the way for managers to commit fraud. Even though management has great pressure to commit fraud but does not have the chance to do so, fraudulent activities will not occur. Therefore, effective monitoring should be implemented within the organization to reduce the possibility of fraudulent activity. The fraud pentagon theory also states that the opportunity dimension is a dimension that can be flexibly controlled in the context of preventing and detecting fraud.

The organization that monitors activities within the company is the board of commissioners. They exist to create good corporate governance to advance the company. The Board of Commissioners has a monitoring function over the performance of the Board of Directors so that it is aligned with the interests of shareholders or other stakeholders. This supervisory function is often ineffective due to the need for independent

commissioners comprising the board. Research by (Rengganis et al., 2019) shows that effective monitoring negatively affects FFR. When associated with the COVID-19 pandemic, according to (ACFE, 2022), The shift from offline to online business activities during the COVID-19 pandemic has become the most significant factor in providing management with opportunities for fraudulent conduct. Restrictions on personal activity make monitoring difficult and ineffective and increase opportunities for management to commit fraud. Research by (Hsu and Yang, 2022) shows a significant difference in the number of independent commissioners before and during the pandemic regarding the quality of financial reporting. Therefore, the hypotheses built are:

H.2a: Opportunity has a negative effect on indications of fraudulent financial reporting before the COVID-19 pandemic.

H.2b: Opportunity has a negative effect on indications of fraudulent financial reporting during the COVID-19 pandemic.

The external auditor is responsible for ensuring that the financial reports prepared by management are fair and presented following applicable accounting standards. Through the fraud pentagon theory approach, qualified external auditors will produce quality audits with a level of tolerance for rational management accounting policies to reduce the rationalization of management to commit fraud. Qualified external auditors have more auditing experience and quality resources, so it will be easier to find fraud committed by managers.

Research conducted by (Apriliana and Agustina, 2017) and (Izzalqurny et al., 2019) concluded that external auditor quality has a negative effect on FFR. Companies with Big Four audit services have a lower tendency to commit fraud. Apart from distinguishing between Big Four and non-Big Four accounting firms, it is also necessary to determine accounting firms affiliated with international accounting firms other than the Big Four to assess auditor quality because several companies use international accounting firms other than the Big Four in Indonesia. On the other hand, changes in audit matters during the pandemic may reduce audit quality due to limited activity and mobility in carrying out field audit activities in companies. Therefore, the hypotheses built are:

H.3a: Rationalization has a negative effect on indications of fraudulent financial reporting before the COVID-19 pandemic.

H.3b: Rationalization has a negative effect on indications of fraudulent financial reporting during the COVID-19 pandemic.

Managerial ability is the ability of management to utilize inputs in the form of company resources to produce outputs in the form of income (Hakim et al., 2022). In line with the fraud pentagon theory, the ability is needed so that fraud can occur. Someone will not be able to commit fraud without the ability to commit fraud. The more expertly management utilizes company input, and the more management has information related to the company. By agency theory, the more information management has, the more significant the asymmetric information gap between management and shareholders. Therefore, it will increase the risk of management committing moral hazard to fraud.



During the COVID-19 pandemic, management is still adapting to utilize inputs properly due to changes in many aspects of the company. Therefore, management has yet to capture the ability to manage inputs during the COVID-19 pandemic, so the company's efficiency will decrease. This will impact management, who will no longer care about efficiency and choose to commit fraud by utilizing the conditions of the COVID-19 pandemic that have never happened before. Research by (Hakim et al., 2022) concluded that managerial ability positively affects FFR. Therefore, the hypotheses built are:

H.4a: Competence has a positive effect on indications of fraudulent financial reporting before the COVID-19 pandemic.

H.4b: Competence has a positive effect on indications of fraudulent financial reporting during the COVID-19 pandemic.

Impression management theory states that a person can manage the impression displayed to another individual to influence the individual's view of them. The CEO will display his photo in various sizes throughout the annual report. This is certainly used to manage impressions to report readers. The large size of the image shows the appearance of the great power held within the company. Of course, the CEO's photo will be larger than the other director's. The larger the size, the greater the impression of power that wants to be displayed. This is consistent with the fraud Pentagon theory that great power and dominance lead to the arrogance of managers and the belief that internal controls do not apply to them. As a result, management encourages fraudulent behaviour.

Research by (Apriliana and Agustina, 2017) concluded that the number of photos taken by the CEO positively impacted FFR. However, more than the number of photos alone is needed to assess the arrogance of the managing director. Therefore, in addition to looking at the number of images, it is also necessary to see how prominent (size) the images displayed in the annual report are. Research by (Lin et al., 2020) also concluded that the CEO's preminent position positively impacts earnings management.

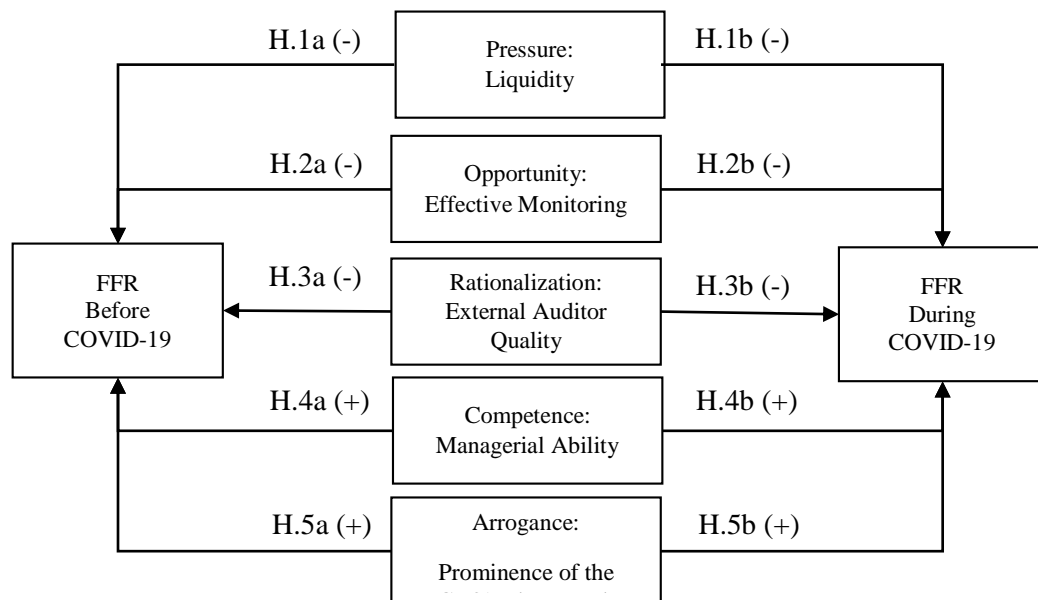
Suppose it is related to the COVID-19 pandemic. In that case, the limited face-to-face platform for directors to meet directly causes the annual report to be increasingly utilized to demonstrate their existence and superiority. Therefore, the hypotheses are:

H.5a: Arrogance has a positive effect on indications of fraudulent financial reporting before the COVID-19 pandemic.

H.5b: Arrogance has a positive effect on indications of fraudulent financial reporting during the COVID-19 pandemic.

A complete description of the relationship between research variables is summarized in the research framework in **Figure 2** as follows.




Figure 2. Theoretical Framework

Source: Processed data, 2023

METHODS

This study uses five independent variables in the form of five components in the fraud pentagon theory, namely pressure proxied by liquidity, opportunity proxied by effective monitoring, rationalization proxied by external auditor quality, competence proxied by managerial ability, and arrogance proxied by the prominence of the CEO's photograph on indications of fraudulent banking financial reporting in Indonesia.

The research population includes all banking companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2021. The purposive sampling method was chosen to select the sample. The data sample before the COVID-19 pandemic was taken from the 2018 to 2019 data. Meanwhile, data samples during the COVID-19 pandemic were taken from data from 2020 to 2021. Data is collected from financial statements, annual reports, and databases available at the Bloomberg Laboratory, Faculty of Economics and Business, Diponegoro University. Based on the research data selection results, 76 observations were obtained for the sample before the COVID-19 pandemic and 81 observations for the sample during the COVID-19 pandemic. Details of the number of companies and samples used in the study are presented in **Table 1** as follows.

Table 1. Sample Selection

Description	Before COVID-19		During COVID-19	
	2018	2019	2020	2021
Banking listed on the IDX	44	44	46	47
Syariah banking	(4)	(4)	(4)	(4)
Banking with incomplete annual data	(2)	(2)	(2)	(2)
Total banking each year	38	38	40	41
Total sample	76		81	

Source: Processed data, 2023



Islamic banking is excluded from the sample because it has different credit characteristics from conventional banks. Islamic banking credit is channelled more to financing products than loans, so Islamic banking will show a smaller DLLP than conventional banks. Therefore, Islamic banking was excluded from the research sample to maintain comparability in the research results.

The data analysis method used in this study is ordinary least squares (OLS) performed in the Eviews 12 program. The analysis method also includes descriptive statistical analysis, classical assumption test, determination coefficient test, F-statistic test, and t-statistic test. The parameter estimation model constructed can be seen in the following equation.

$$FRAUD = \alpha + \beta_1 PRES + \beta_2 OPP + \beta_3 RATIO + \beta_4 COMP + \beta_5 ARRO + \varepsilon \dots \dots \dots (1)$$

Based on the regression model above, FRAUD represents fraudulent financial reporting indications. PRES represents the pressure element that is proxied by liquidity. OPP represents the opportunity element that is proxied by effective monitoring. RATIO represents the rationalization element that is proxied by external auditor quality. COMP represents the competence element that is proxied by managerial ability. ARRO represents the arrogance element that is proxied by the prominence of the CEO's photograph.

The description and measurement of both dependent and independent variables can be seen in **Table 2** as follows. Based on **Table 2**, LLP_{it} refers to the loan loss provision, while NPL_{it-1} refers to the beginning balance of non-performing loans. $CHNPL_{it}$ and $CHLOAN_{it}$ pertain to changes in non-performing and total loans, respectively. Then, ε_{it} signifies the residual in the regression model, representing the discretionary loan loss provision (DLLP). In the data envelopment analysis context, u_i represents the output weight, encompassing factors such as cash, other operating revenue, and loans. y_{ik} represents the total output. v_j , on the other hand, stands for the input weight, encompassing components like wage expense, PPE, and deposits. Lastly, x_{jk} represents the total input.

Table 2. Variable Measurement

Variable	Measurement	Formula
Dependent Variable		
Fraudulent Financial Reporting Indication	Discretionary loan loss provisions (DLLP)	$LLP_{it} = \alpha_0 + \alpha_1 NPL_{it-1} + \alpha_2 CHNPL_{it} + \alpha_3 CHLOAN_{it} + \varepsilon_{it} \dots \dots \dots (2)$
		$Fraud = \varepsilon_{it} \dots \dots \dots (3)$
Independent Variable		
Pressure: Liquidity	Loan-to-deposit ratio (LDR)	$Pressure = \frac{Total\ loans}{total\ deposits} \dots \dots \dots (4)$
Opportunity: Effective Monitoring	Percentage of Independent Board of Commissioners	$Opportunity = \frac{Number\ of\ independent\ commissioners}{Total\ number\ of\ board\ of\ commissioners} \dots (5)$
Rationalization: External Auditor Quality	External auditor quality category	Rationalization = (1) Big Four accounting firm is scored three; (2) National accounting firm affiliated with International KAP other than the Big Four is scored two; (3) Accounting firm other than both of them is scored one.



Variable	Measurement	Formula
Competence: Managerial Ability	Data envelopment analysis	$Competence = \frac{\sum_{i=1}^s u_i y_{ik}}{\sum_{j=1}^m v_j x_{jk}} \dots \dots \dots (6)$
Arrogance: Prominence of the CEO's photograph	CEO's photograph size in the annual report	Arrogance: (1) A single photo of the CEO covering one page is scored four; (2) Photos of the CEO alone and covering less than one page are scored three; (3) Only a photo of the CEO and other directors are scored two; (4) No photo of the CEO is scored one.

Source: Adapted from (Dewi and Eveline, 2017), (Khamainy et al., 2022), (Apriliana and Agustina, 2017), (Hakim et al., 2022), and (Lin et al., 2020) with modifications.

RESULTS

Descriptive statistical analysis for each research variable, as shown in **Table 3** to **Table 6**, is given below.

Table 3. Descriptive Statistic

Variable	Period	N	Mean	Min.	Maks.	Std. Dev.
Fraudulent Financial Reporting indication	Before	76	0.119	0.010	0.280	0.064
	During	81	0.126	0.010	0.747	0.100
Pressure proxied by liquidity	Before	76	0.906	0.472	1.627	0.200
	During	81	0.842	0.122	2.420	0.357
Opportunity proxied by effective monitoring	Before	76	0.589	0.429	1.000	0.115
	During	81	0.592	0.333	1.000	0.120
Competence proxied by managerial ability	Before	76	0.897	0.673	1.000	0.107
	During	81	0.866	0.327	1.000	0.181

Source: Processed data, 2023

Table 3 shows the results of a descriptive statistical analysis of mean FFR 0.119 in the pre-COVID-19 pandemic period. The average then rose to 0.126 during the COVID-19 pandemic. This indicates an increase in DLLPs during the COVID-19 pandemic. The results of descriptive statistical analysis for pressure variables proxied through liquidity show that the average level of banking liquidity was 0.906 before the COVID-19 pandemic and then decreased to 0.842 during the COVID-19 pandemic. The opportunity variable proxied through effective monitoring shows an increase in independent commissioners during the COVID-19 pandemic from 0.589 before the COVID-19 pandemic to 0.592 during the COVID-19 pandemic. However, the growth that occurred was not too significant. Then, the results on the competence variable proxied through managerial ability show that the average banking efficiency was at 0.897 before the COVID-19 pandemic and then decreased to 0.866 during the COVID-19 pandemic. This indicates a decrease in manager efficiency during COVID-19.



Table 4. Annual Average Descriptive Statistics

Variable	Mean			
	2018	2019	2020	2021
Fraudulent financial reporting indication	0.121	0.117	0.129	0.122
Pressure proxied by liquidity	0.903	0.908	0.883	0.801
Opportunity proxied by effective monitoring	0.580	0.600	0.590	0.600
Competence proxied by managerial ability	0.898	0.896	0.872	0.859

Source: Processed data, 2023

The analysis results for the FFR variable, as shown in **Table 4**, indicate that the DLLP level of banks has an increasing trend during the COVID-19 pandemic. In 2019, the DLLP level was at 0.117 then increased to 0.129 in 2020 which is the beginning of the COVID-19 pandemic year. This shows that during the COVID-19 pandemic, there was an increase in the number of DLLP values estimated by banking management. The average bank liquidity ratio before the COVID-19 pandemic was 0.908. This value has since dropped to 0.883 during the COVID-19 pandemic. The decline shows that during the COVID-19 pandemic, the level of banking liquidity was disrupted, causing the fall. The effective monitoring proxy did not experience a significant change. Before and during the COVID-19 pandemic, the ratio of independent committee members to committee members ranged from 0.580 to 0.600 over four years. The managerial ability proxy shows that banking efficiency in optimizing inputs in labour costs, fixed assets, and customer deposits to produce maximum outputs in the form of cash, loans, and other operating income has decreased. Before the COVID-19 pandemic, the technical efficiency level was 0.896. This figure was then reduced during the COVID-19 pandemic to 0.872.

Table 5. Frequency Distribution of Rationalization (External Auditor Quality)

Category	Before COVID-19			During COVID-19		
	<i>f</i>	<i>f distribution</i>	\bar{x} <i>fraud</i>	<i>f</i>	<i>f distribution</i>	\bar{x} <i>fraud</i>
(1) National	0	0 per cent	0.000	1	2 per cent	0.124
(2) International	36	47 per cent	0.148	40	49 per cent	0.166
(3) <i>Big Four</i>	40	53 per cent	0.093	40	49 per cent	0.085
Total	76	100 per cent		81	100 per cent	

Source: Processed data, 2023

Table 5 shows it is known that there is only one bank that uses a National Accounting Firm, while the rest use International Accounting Firms and Big Four Accounting Firms. The number of banks using International Accounting Firms increased from 47 per cent before the pandemic to 49 per cent during the pandemic. On the other hand, the number of banks using Big Four Accounting Firms decreased during COVID-19 to 49 per cent, which previously was around 53 per cent. The highest average banking fraud occurred in banks that used International Accounting Firms other than the Big Four, which was 0.148 before and 0.166 during the pandemic. This shows that there is a tendency for banks to reduce the use of qualified auditors during the COVID-19 pandemic.



Table 6. Frequency Distribution of Arrogance (Prominence of CEO's Photograph)

Category	Before COVID-19			During COVID-19		
	<i>f</i>	<i>f</i> distribution	\bar{x} fraud	<i>f</i>	<i>f</i> distribution	\bar{x} fraud
Less than one page	38	50 per cent	0.124	41	51 per cent	0.138
Full page	38	50 per cent	0.114	40	49 per cent	0.112
Total	76	100 per cent		81	100 per cent	

Source: Processed data, 2023

Table 6 shows it was found that only two out of the four categories were filled, namely categories three and four, which showed the CEO's photo on part of the annual report page and the CEO's photo covering a whole page. This indicates that most CEOs displayed their pictures for less than a page to a full page, and none displayed images of the board of directors only or no photos at all. The distribution of categories is equally distributed between the two filled types both before and during the pandemic, with only a slight increase in the third category during the pandemic. The average fraud of the third category, i.e. CEOs whose photos cover part of the page, is higher than the others.

Table 7. The Classical Assumption, Coefficient of Determination, and F-statistic Test

Test	Indicator	Before COVID-19	During COVID-19
Normality test	Jarque-Bera	0.272	0.024
	Prob.	0.873	0.988
Multicollinearity test	VIF Pressure	1.221	1.172
	VIF Opportunity	1.062	1.025
	VIF Rationalization	1.289	1.125
	VIF Competence	1.074	1.166
	VIF Arrogance	1.034	1.111
Heteroscedasticity test	Obs*R-Squared	5.627	13.038
	Prob. Chi-Square	0.350	0.023
Autocorrelation test	Obs*R-Squared	12.307	15.829
	Prob. Chi-Square	0.002	0.000
Determination coefficient test	R – Squared	0.492	0.328
	Adjusted R-squared	0.455	0.283
F – statistic test	F – Statistic	13.545	7.317
	Prob. (F – Statistic)	0.000	0.000

Source: Processed data, 2023

The classical assumption test, coefficient of determination, and F-statistic of the sample for the period before and during the COVID-19 pandemic are shown in **Table 7**. The results of the data normality test showed that the Jarque-Bera probability value is above the significance of 0.050. Therefore, the residuals have met the criteria for normal data. The multicollinearity test results show that the VIF value is already less than 10. Thus, each independent variable is free from multicollinearity. Heteroscedasticity testing with the Glejser approach results in the Chi-Square probability value being less than the significance value of 0.050 for samples during the COVID-19 pandemic, so the data are heteroscedastic. To avoid symptoms of heteroscedasticity, the parameter estimation calculation added White's Heteroskedasticity Test approach (Ghozali and Ratmono, 2017). Testing autocorrelation through the LM test shows the Chi-Square value is below 0.050, so the data is autocorrelated. Furthermore, to avoid autocorrelation symptoms, the



calculation of parameter estimation added the Newey-West standard error calculation (Ghozali and Ratmono, 2017).

The results of the calculation of the coefficient of determination of the regression equation model obtained an Adjusted R - Squared value for the sample before COVID-19 of 0.455 and an Adjusted R - Squared for the sample during the COVID-19 pandemic of 0.283. This illustrates that the independent variables of the sample before the COVID-19 pandemic can provide 45 per cent of the information related to the dependent variable. Meanwhile, the sample during the COVID-19 pandemic could only offer 28 per cent of the data.

The results of the F-Statistic test resulted in a probability value (p-value) of 0.000 for both the sample before and the sample during the COVID-19 pandemic. Therefore, the regression model is considered excellent and suitable for use in research.

Table 8. t – Statistic

Variable	Before COVID-19		Hypothesis description	During COVID-19		Hypothesis description
	Koef.	p-value		Koef.	p-value	
Pressure	-0.377	0.237	H.1a: Rejected	0.337	0.347	H.1b: Rejected
Opportunity	1.160	0.006	H.2a: Rejected	0.940	0.037	H.2b: Rejected
Rationalization	-0.414	0.011	H.3a: Accepted	-0.558	0.002	H.3b: Accepted
Competence	2.785	0.000	H.4a: Accepted	-0.923	0.008	H.4b: Rejected
Arrogance	-0.119	0.395	H.5a: Rejected	-0.070	0.604	H.5b: Rejected

Source: Processed data, 2023

Parameter estimation through the t-statistic test, as in **Table 8**, shows that all independent variables, except pressure and arrogance variables in the model before the COVID-19 pandemic, affect indications of FFR. Rationalization proved to have a significant effect with a negative direction. Meanwhile, opportunity and competence have a positive impact before the COVID-19 pandemic. The parameter estimation results in the sample during the COVID-19 pandemic show almost similar results. Pressure and arrogance variables show an insignificant effect. The opportunity has a positive impact. Meanwhile, rationalization and competence have a negative effect.

DISCUSSION

Based on the results of empirical testing on the sample before the COVID-19 pandemic, the pressure variable proxied through liquidity has no significant effect on indications of FFR. The higher liquidity does not reduce banking fraud. Liquidity, described through the ratio of the amount of credit disbursed to the amount of deposits obtained by banks from customers, shows an increasing trend every year from 2018 to 2019. The average level of liquidity, as seen in **Table 4**, indicates that the LDR ratio continues to rise in the following years. Based on Bank Indonesia regulations, this average LDR ratio level is still in a safe zone. The secure area of banking liquidity, according to Bank Indonesia, is in the range of 78 - 92 per cent. Therefore, based on the fraud pentagon theory, liquidity did not pressure banks to commit fraud before the COVID-19 pandemic because the liquidity level was still reasonable according to Bank Indonesia regulations. This is in line with (Idawati and Wardhana, 2021), which concluded that liquidity does not



put significant pressure on managers but is different from the research of (Wiley and Kurniasih, 2021), which states that liquidity puts substantial pressure on managers. The results of this study imply that liquidity did not put pressure on banks to commit fraud before the COVID-19 pandemic, so liquidity cannot be an indicator in building anti-fraud programs in banks.

Testing samples during COVID-19 also showed the same for pressure variables as before COVID-19. Pressure through the liquidity proxy still does not affect indications of FFR. **Table 4** shows that the average banking liquidity level decreased during COVID-19. Although liquidity has decreased during COVID-19, the average level of liquidity shows a value that is still within the safe criteria, according to Bank Indonesia. This level is still in the safe category because it is still in the range of 78 to 92 per cent, according to Bank Indonesia. Therefore, the pressure caused by a decrease in liquidity is not too great, so banks are not encouraged to commit fraud during COVID-19. According to Devi et al. (2020), liquidity during COVID-19 decreased, but this was not significant, so liquidity was not a primary concern for banks during COVID-19. (Devi et al., 2020) added that during COVID-19, the ratio that experienced a significant decrease was the profitability ratio, while other ratios, such as leverage, did not experience substantial changes in the financial sector. As was the case before COVID-19, the research implication is that liquidity does not pressure banks to commit fraud during COVID-19. This makes liquidity not an indicator in building anti-fraud programs in times of crisis such as COVID-19.

Opportunity shown through effective monitoring is not empirically supported to reduce the risk of banking FFR before the COVID-19 pandemic. The test results show that opportunity through the effective monitoring proxy has a significant effect but with a positive direction. Therefore, the greater the percentage of independent commissioners, the greater the value of DLLP. The higher DLLP indicates the greater risk of management committing FFR. This condition is different from the initial hypothesis, which estimates that effective monitoring can reduce the tendency of banks to commit FFR. This condition is a concern for monitoring activities by independent commissioners. Independent commissioners need to carry out suitable monitoring activities to achieve the purpose of having independent commissioners in monitoring management. The results of this study support the research of (Omukaga, 2020) and (Koharudin and Januarti, 2021) which state that effective monitoring is unable to reduce the risk of FFR but contradicts the analysis of (Fitri et al., 2019), (Ghafoor et al., 2022), (Tinambunan and January, 2022), and (Khamainy et al., 2022) which concluded that effective monitoring reduces the risk of FFR.

The effect of opportunity on FFR during the pandemic is similar to that before the pandemic, which is significantly positive. These results indicate that opportunity through the proxy of effective monitoring is not empirically supported to reduce the risk of banking fraud during the COVID-19 pandemic. Banks will be more likely to implement FFR as the proportion of independent commissioners increases. (Hsu and Yang, 2022) stated that the percentage of independent commissioners to the total number of commissioners during the COVID-19 pandemic was not proven to reduce the risk of accounting fraud compared to before the COVID-19 pandemic. The average number of independent commissioners did not significantly increase or decrease during COVID-19, while company conditions changed due to new banking policies during COVID-19. This shows that during COVID-19, increasing the number of independent commissioners is not one of the solutions to deal with COVID-19, including preventing accounting fraud. In addition, monitoring activities



by independent commissioners need to be evaluated because empirical facts show that the percentage of independent commissioners isn't enough to reduce the risk of banking fraud.

Rationalization proxied by external auditor quality before the COVID-19 pandemic negatively affects indications of FFR. The better quality of KAP used by banks, there will be less risk of banking FFR. Before the COVID-19 pandemic, most banks had used the Big Four accounting firms. This shows that banks with Big Four accounting firm services in the period before COVID-19 tend to have a smaller DLLP so that there is less risk of experiencing FFR. **Table 5** shows that banks that use Big Four auditors have a smaller DLLP than those that operate auditors other than Big Four (other International Accounting Firms and National Accounting Firms). In addition, data shows that the average fraud rate for International Accounting Firms is higher than the average fraud rate for the Big Four Accounting Firms. The results of this study are in line with (Apriliana and Agustina, 2017), which show that external auditor quality has a significant negative effect on accounting fraud but is different from the research of (Syarif et al., 2021) which shows that external auditor quality has no significant effect on FFR. This study implies that the Big Four accounting firms have quality resources to conduct audits better than other accounting firms, so they can assist banks in finding fraud. Therefore, external auditor quality can be used as an indicator in building fraud prevention programs in banking under normal conditions.

In the COVID-19 pandemic, the effect of rationalization through external auditor quality on indications of FFR also shows a negative impact. During the COVID-19 pandemic, there was a decrease in the number of banks with Big Four services. **Table 5** shows that during COVID-19, many banks switched to using International Accounting Firms other than the Big Four or National Accounting Firms even though they previously used the Big Four as their external auditors. According to (Albitar et al., 2021), during COVID-19, auditor quality has decreased due to adjusted audit fees, challenges in conducting going concern assessments, unreliable and insufficient audit evidence, high potential employee losses due to illness or quarantine, and reduced audit staff salaries. These factors are factors in the decline in audit quality during COVID-19, thus increasing the company's tendency to commit fraud. Therefore, during the COVID-19 pandemic, many banks switched to accounting firms with quality below that of the Big Four, so the average banking fraud increased. This implies that an accounting firm with good quality resources, such as the Big Four, can assist banks in finding fraud. External auditor quality can also be a good indicator of establishing anti-fraud programs in times of crisis, such as the COVID-19 pandemic.

The test results on the competence variable show a positive relationship between competence through the proxy managerial ability and indications of FFR before the pandemic. This condition illustrates that more efficient management will increase DLLP. The efficient management knows a lot of information in the company and which gaps can be filled to carry out fraud activities. Therefore, the more efficient the management, the more prone to fraud. In the period before COVID-19, managerial ability was proven to be an indicator of the tendency of banks to commit FFR. Research supported by (Hakim et al., 2022) states that managerial ability affects earnings management positively, thereby reducing the quality of financial reporting and increasing the risk of fraud. Still, it contradicts the research of (Wang et al., 2017), which states that managerial ability has a negative effect on indications of FFR. (Baik et al., 2019) state that management with good abilities will have a lot of information, thereby increasing the risk of asymmetric



information to shareholders. Under normal conditions, managers understand the company's situation so well that they have much information, including fraud gaps, that can be done. This implies that managers' ability to maintain company efficiency indicates increased banking FFR before the COVID-19 pandemic.

The effect of competence changes its direction during the COVID-19 pandemic. Competence through the proxy of managerial ability has a negative impact on indications of FFR. During the COVID-19 pandemic, there was a decrease in manager efficiency but an increase in the average banking fraud, according to **Table 4**. This proves that during the COVID-19 pandemic, managerial ability has a negative effect on indications of FFR. Research by (Wang et al., 2017) shows that managerial capacity has a negative impact on earnings quality. Therefore, more efficient management will further reduce the risk of FFR. This study's results align with the research of (Wang et al., 2017) but differ from the effects of research by (Hakim et al., 2022).

During the COVID-19 pandemic, new adjustments that had never been made before appeared in many banking activities, such as mobility restrictions and rapid technology escalation. Therefore, it will take a long time for management to adapt to the crisis. This can be seen in the reduction of banking efficiency during the COVID-19 pandemic. The adaptations that management is still making have caused efficiency to decline. Management does not know much about fraud loopholes due to new conditions that arise during the COVID-19 pandemic and is more focused on keeping the company alive during the COVID-19 pandemic crisis. Therefore, during the COVID-19 pandemic the more efficient the company, the less likely it is to commit fraud. This also shows that management prioritizes its integrity during the COVID-19 pandemic to maintain its position in the company due to new conditions that have never appeared before, which have the opportunity to make it fail to maintain its position due to not being able to manage the bank properly during the crisis. Therefore, managerial ability negatively affects FFR during the pandemic, so an increase in managerial capacity during the COVID-19 pandemic cannot indicate banks' tendency to commit fraud.

The test results on the arrogance variable through the proxy of the prominence of the CEO's photograph before the COVID-19 pandemic showed insignificant results. This insignificant result is because most of the CEOs of Indonesian banking companies display their photos from less than half a page to a full page. This causes a blank in the category of photos of the CEO with the board of directors only and annual reports without photos of the CEO. The study results align with almost similar research, namely (Koharudin and Januarti, 2021), but contradict the research of (Apriliansa and Agustina, 2017), which states that the photo of the CEO has a positive effect on FFR. Therefore, the prevention and detection of fraud cannot be seen in the size of the photo of the CEO in the annual report and needs other aspects to describe the arrogance. This variable is not empirically supported to describe fraud tendencies before COVID-19. This has implications that this variable cannot be used to detect and prevent fraud before the COVID-19 pandemic.

Insignificant results also occur in the prominence of CEO's photographs during the COVID-19 pandemic. **Table 6** shows that in the COVID-19 pandemic, the number of categories of companies displaying full and partial photos of the CEO is similar to the period before the COVID-19 pandemic. There is only a slight increase in the number of CEO photos that are partially displayed. This does not prove that CEOs tend to be more prominent during COVID-19. There needs to be more than the size of the CEO's photo to illustrate the arrogance of the CEO. The size of the CEO's photo in the annual report also



adjusts to the layout or design of the annual report so that it does not necessarily describe the arrogance of the CEO. Therefore, arrogance through the proxy of the prominence of the CEO's photograph is not empirically supported in encouraging banking fraud during COVID-19. This implies that the reputation of the CEO's photo is not a sufficient indicator of detecting and preventing fraud during the COVID-19 pandemic.

CONCLUSION

Pressure through the liquidity proxy has no adverse effect on indications of FFR both before and during the COVID-19 pandemic. Furthermore, opportunity proxied through effective monitoring also has no negative impact on signs of FFR, so it is not proven to be able to prevent FFR both before and during the COVID-19 pandemic. Rationalization through the proxy of external auditor quality is proven to have a negative effect on indications of FFR both before and during the COVID-19 pandemic. Then, competence proxied through managerial ability is demonstrated to impact representations of FFR before the COVID-19 pandemic positively but has no positive effect on representations of FFR during the COVID-19 pandemic. Finally, arrogance through the proxy of the CEO's photograph's prominence does not positively influence indications of FFR both before and during COVID-19.

The study still contains limitations that need to be given attention. In measuring arrogance through the proxy of the prominence of the CEO's photograph, it is only measured through the category of the size of the photo of the CEO in the annual report, which is not enough to see the arrogance of the CEO after the research. Therefore, suggestions that can be applied in further research include adding measurements in the form of the amount of compensation, both cash and non-cash, received by the CEO for his position to see the level of arrogance the CEO possesses.

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