**Acta Commercii - Independent Research Journal in the Management Sciences**
ISSN: (Online) 1684-1999, (Print) 2413-1903



# Fraud diamond insights: Predictors of financial statement fraud in the financial services sector



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**Dates:**
Received: 09 Dec. 2024
Accepted: 19 June 2025
Published: 22 Aug. 2025

**How to cite this article:**
Rahman, A.F., Iqbal, S. & Carolina, J., 2025, 'Fraud diamond insights: Predictors of financial statement fraud in the financial services sector', *Acta Commercii* 25(1), a1367. https://doi.org/10.4102/ac.v25i1.1367





**Orientation:** Indonesia's financial services sector faces significant challenges because of financial statement fraud, undermining economic stability and stakeholder confidence.

**Research purpose:** This study investigates the predictive power of the Fraud Diamond framework in detecting financial statement fraud, focusing on financial stability, external pressure, ineffective monitoring and rationalisation in this critical industry.

**Motivation for the study:** Despite the high incidence of fraud in Indonesia's financial sector, limited empirical research addresses its key determinants, prompting this study to fill the gap.

**Research design, approach and method:** Using multiple linear regression analysis, data from 63 publicly listed companies on the Indonesia Stock Exchange in the period of five year (170 from the Main board and 145 from the Development board) were analysed. Fraud Diamond variables were tested for their predictive capabilities across these groups.

**Main findings:** Financial stability consistently predicts fraud across all companies. However, ineffective monitoring and rationalisation significantly impact only in Development board companies, while external pressure shows no substantial effect in either group.

**Practical/managerial implications:** These findings highlight the need for enhanced financial stability frameworks and oversight mechanisms to mitigate fraud risks. For Development board firms, governance reforms and addressing rationalisation tendencies are critical to combating fraud.

**Contribution/value-add:** By extending the Fraud Diamond model to an emerging market, this study provides nuanced insights into the dynamics of financial statement fraud and offers a foundation for targeted anti-fraud strategies tailored to Indonesia's financial sector.

**Keywords:** fraud; fraud diamond; predictors; financial statement; financial statement fraud.

## Introduction

According to the Committee of Sponsoring Organizations of the Treadway Commission (2010), financial statement fraud involves deliberate actions that materially mislead financial statements. Such actions encompass manipulation, falsification, alteration of accounting records, omission of significant information from financial reports and intentional misapplication of accounting principles. This type of fraud is often perpetrated to enhance a company's financial performance. Fraud is a latent issue that frequently underpins and significantly impacts a company's economic condition.

In Indonesia, a major fraud incident occurred in 2020, notably involving PT Asuransi Jiwasraya, which failed to honour its Jiwasraya Saving Plan insurance policies. Badan Pemeriksa Keuangan Republik Indonesia (BPK RI), the Indonesia Governmental Auditor, records indicate that Jiwasraya had been reporting fictitious profits since 2008 (BPK RI 2020). This case represents a large-scale fraud that necessitates comprehensive data and factual disclosure. In the same year, Maybank revealed that its branch head illicitly opened an insurance policy worth 6 billion rupiah and disbursed 4.8 billion rupiah into the victim's father's account, indicating collusion. Furthermore, Bank BJB Syariah was implicated in a fictitious credit case amounting to 548 billion rupiah, causing substantial losses for the company. The National Police Criminal Investigation Department (Bareskrim Polri) identified the head of the financing division and the Retail Group Head of Bank BJB Syariah as suspects in corruption related to issuing fictitious credit to private entities. In addition, Bank BJB Syariah surpassed the maximum fund distribution limit (BMPD) in 2018. Another case involved SNP Finance, where management was found manipulating financial data and reports, including pledging fictitious receivables as collateral to creditors through

non-existent sales. When the receivables were collected, SNP Finance settled with its creditors, making them victims of SNP Finance's default. The Public Accounting Firm auditing SNP Finance's financial reports failed to detect the fraud.

The prevalence of fraud cases in the financial sector, which far exceeds the number of related studies, underscores the need for empirical research to detect financial statement fraud in companies listed on the Indonesia Stock Exchange (IDX). Adherence to Audit Standards (AS) established by the Indonesian Institute of Certified Public Accountants (IAPI) can aid in fraud detection. These standards cover general guidelines, fieldwork and reporting. In addition, the American Institute of Certified Public Accountants (AICPA) issued Statement of Auditing Standards (SAS) No. 99, providing Fraud Considerations in Financial Report Audits, which aims to enhance auditors' effectiveness in detecting fraud by assessing a company's fraud risk. The International Federation of Accountants (IFAC) in Germany also publishes the International Standards on Auditing (ISA), which is aimed at detecting fraud.

The Fraud Diamond theory, considered an extension of the Fraud Triangle originally proposed by Wolfe and Hermanson (2004), introduces the element of capability as an additional factor influencing individuals involved in fraudulent activities (Yunita, Wilopo & Oktarina 2023). This enhancement provides a more comprehensive framework for understanding fraudulent behaviour by emphasising not only external pressures, opportunities and rationalisations but also the internal capabilities of potential fraudsters. While the Fraud Triangle focuses on three primary motivators of fraud, the Fraud Diamond theory recognises that individuals must possess the ability to commit fraud in addition to experiencing pressure, facing opportunities, and rationalising their actions. By integrating these four dimensions, the Fraud Diamond theory offers a broader perspective on the complexity of fraudulent behaviour and enhances the ability to detect and prevent fraud in various organisational contexts. Therefore, the Fraud Diamond can be viewed as an evolution of the Fraud Triangle, enriching the traditional model by acknowledging the importance of an individual's capability to execute fraudulent activities. In the context of Fraud Diamond research, external pressure variables can be viewed as pressure factors, ineffective supervision as opportunities, rationalisation as rationalisation and financial stability as capability (Widnyana & Widyawati 2022). This study aims to test the ability of these independent variables to predict financial statement fraud proxied by earnings management (Skousen, Smith & Wright 2009). Financial statement fraud is closely associated with managerial earnings manipulation (Halim, Meiden & Tobing 2005). Managers, tasked with optimising shareholder returns, may also have personal interests, such as bonus plans, influencing their actions. Addressing these issues, this research is crucial to enhance the legitimacy of information in financial reports. Identifying financial statement fraud using the Fraud Triangle is one alternative for analysing financial reports to mitigate the risk of fraud in decision-making.

Based on the aforementioned background, this research aims to empirically investigate the following: the impact of financial stability variables (capability element in the Fraud Diamond model), external pressure (pressure element in the Fraud Diamond model), ineffective monitoring (opportunity element in the Fraud Diamond model) and rationalisation (rationalisation element in the Fraud Diamond model) on the occurrence of fraudulent financial statements.

# Literature review and hypotheses

## Agency theory

Agency theory, as articulated by Ross (1973), delineates the relationship between principals (company owners) and agents (management) within an organisation. This theory elucidates the governance of authority and responsibilities of both parties within a collective work contract, particularly focusing on the decision-making process conducted on behalf of the principal (Sirot, Arum & Wiralestari 2023). Agency theory centres on the dynamics of agency relationships and the associated costs arising from conflicts of interest between managers and shareholders (Sarker & Islam 2021). Fundamentally, the theory scrutinises the principal–agent relationship, wherein the agent is entrusted to act in the best interests of the principal but may have personal incentives that conflict with this duty, thus engendering agency problems. In this research, agency theory serves as a framework for understanding the interplay between the Fraud Diamond model – which comprises four elements: pressure, opportunity, rationalisation and capability (Made, Cahyaningsih & Djati 2023) – and financial statement fraud, particularly within the context of earnings management. Agency theory posits that the relationship between management and external stakeholders can foster conditions conducive to fraudulent activities, such as earnings management (Fitriana, Sinarasri & Nurcahyono 2024).

The elements of the Fraud Diamond interact with agency factors. Under the pressure aspect, management may experience stress to meet profit targets set by principals or investors, which can drive them to engage in earnings management to fulfil these expectations. Opportunities for financial report manipulation emerge because of weak internal control systems or insufficient oversight by principals. This is compounded by management's rationalisation, seeking justifications for their actions, such as believing they deserve bonuses or higher compensation if profit targets are met. Furthermore, management's ability to access and manipulate financial information facilitates easier execution of earnings management. Consequently, agency theory elucidates how conflicts of interest between principals and agents, along with information asymmetry, can create situations ripe for earnings management. The Fraud Diamond model adds depth by pinpointing specific conditions that may trigger such fraudulent behaviours.

## Fraud diamond

The Fraud Diamond concept enhances the fraud triangle theory by incorporating the element of capability into the existing elements of pressure, opportunity and rationalisation.

This model aims to offer a more comprehensive framework for understanding and detecting fraudulent behaviour, particularly in the realm of financial statement fraud. The four elements of the Fraud Diamond – pressure, opportunity, rationalisation and capability – interact to create conditions that may drive individuals within organisations to commit fraudulent acts (Fauzi, Marzuki & Zakaria 2022). Pressure within the Fraud Diamond refers to financial or emotional stress that individuals might face, which can compel them to manipulate financial statements to meet certain expectations or targets (Made et al. 2023). Opportunity encompasses circumstances that permit individuals to engage in fraud, such as weak internal controls or ineffective monitoring systems. Rationalisation pertains to the justification or normalisation of fraudulent actions, which can be influenced by factors such as changes in auditors or management. Capability, the additional element in the Fraud Diamond, focuses on an individual's ability to perpetrate fraud, which may be shaped by factors such as educational background or experience in accounting and finance (Fauzi et al. 2022). The Fraud Diamond concept provides a structured approach to understanding the complex nature of fraudulent behaviour by considering the interplay of these four elements. By collectively examining pressure, opportunity, rationalisation and capability, organisations can more effectively assess and mitigate the risks associated with financial statement fraud and other fraudulent activities.

## Financial statement fraud

Financial statement fraud involves the intentional presentation of misleading financial information in reports to deceive stakeholders and information users for personal or group gain (Roza 2024). This type of fraud leads to material misstatements in financial statements, undermining the accuracy and reliability of a company's financial information. The repercussions of financial statement fraud can be severe, including job losses, declines in share prices, damage to shareholder value and a tarnished corporate reputation (Awolowo & Garrow, 2022). In contrast, earnings management entails manipulating financial reports to meet specific financial targets or objectives, often within the boundaries of accounting standards and regulations (Wulandari, Setianingrum & Pratiwi 2023). While distinct from financial statement fraud, earnings management can serve as a proxy for it, given that it involves actions that may distort a company's actual financial performance and potentially mislead stakeholders. When such manipulations exceed ethical and legal limits, earnings management can escalate into financial statement fraud, causing significant misstatements in financial statements (Wulandari et al. 2023). Although different, these two concepts are interconnected, as earnings management can be an early indicator or precursor to financial statement fraud, particularly when aggressive accounting practices stray from principles of fair presentation and transparency. This relationship highlights the critical need for robust corporate governance, effective monitoring mechanisms and ethical financial reporting practices to prevent fraudulent activities and preserve the integrity of financial information.

## Relevance of financial stability and financial statement fraud

The relevance of financial stability as a capability element in the Fraud Diamond theory is intrinsically linked to the likelihood of financial statement fraud. A company's financial stability significantly impacts the potential for fraudulent financial reporting, emphasising the importance of this factor within the Fraud Diamond framework (Khamainy, Ali & Setiawan 2021). When a company faces compromised financial stability, the pressure on individuals within the organisation to breach ethical and legal boundaries escalates. The capability element in the Fraud Diamond underscores that individuals with the access, ability and authority to manipulate financial records possess a heightened opportunity to commit fraud. Hence, financial stability is a crucial factor in comprehending and preventing financial statement fraud. Stable financial conditions can mitigate the motivation and opportunities for fraudulent activities, while also enhancing the effectiveness of internal controls. Consequently, hypothesis 1 (H1) proposed is:

**H1:** Financial stability can be used to predict financial statement fraud.

## Relevance of external pressure and financial statement fraud

External pressure, as a component in the Fraud Diamond theory, plays a pivotal role in influencing financial statement fraud. Several studies have explored the correlation between external pressures and fraudulent activities in financial reporting. For instance, Achmad et al. (2022) discovered that external pressures positively impact fraudulent practices in financial reports. Similarly, findings from Fitriana et al. (2024) and Wijaya and Witjaksono (2023) corroborate that external pressures significantly contribute to fraudulent financial reporting. Furthermore, Made et al. (2023) delve into how pressure, as an element within the Fraud Diamond model, fosters fraudulent behaviours in financial reporting. External pressure encompasses pressures originating from outside the company or organisation, compelling individuals to engage in fraudulent activities. Factors of external pressure influencing financial statement fraud include: pressures to meet market or investor expectations during challenging economic conditions, which may drive individuals or companies to manipulate or commit fraud in financial statements; intense competition in business creating pressures to achieve or surpass targets, motivating individuals to manipulate financial reports to maintain or enhance their market position. In addition, pressures from creditors, investors, or other external stakeholders expecting specific performance or outcomes from the company can induce unethical behaviours or fraudulent practices to meet these expectations. Based on these observations, the following hypothesis (H2) is formulated:

**H2:** External pressure can be utilised to predict financial statement fraud.

### Relevance of ineffective monitoring and financial statement fraud

Ineffective monitoring, identified as a key element influencing opportunities within the Fraud Diamond Model, has been consistently highlighted in various studies as a significant factor impacting the occurrence of financial statement fraud. Rohmatin, Apriyanto and Zuhroh (2021) underscore that ineffective monitoring may lead to the production of misleading financial reports. Furthermore, research conducted by Andriani et al. (2022), Wilantari and Ariyanto (2023) and Azizah, Purnamasari and Maemunah (2024) reveals a positive correlation between ineffective monitoring and instances of fraud in financial reporting. These findings underscore the pivotal role ineffective monitoring plays in fostering opportunities for financial fraud. Ineffective oversight also contributes to a lack of rigorous inspection and reconciliation processes. In cases where internal monitoring systems are inadequate, there exists potential for individuals to manipulate data or transactions without detection. For instance, insufficient scrutiny of reconciliations or daily transactions may facilitate undetected manipulation. Moreover, ineffective supervision results in an inability to detect fraudulent activities. Inadequate internal controls, such as deficient segregation of duties or weak interdepartmental checks, provide malicious actors with opportunities to perpetrate fraud without detection. Thus, ineffective monitoring not only facilitates opportunities for financial fraud but also diminishes an organisation's capacity to effectively identify, prevent, or mitigate fraud risks. Based on these observations, the following hypothesis (H3) is formulated:

**H3:** Ineffective monitoring serves as a predictor of financial statement fraud.

### Relevance of rationalisation and financial statement fraud

Rationalisation within the Fraud Diamond theory plays a pivotal role in influencing the occurrence of financial statement fraud. Financial statement fraud involves intentionally manipulating financial records to create a misleading portrayal of a company's condition, often with the aim of deceiving stakeholders (Owusu et al. 2021). Rationalisation denotes the cognitive process whereby individuals convince themselves that their actions are reasonable and acceptable, despite conflicting with ethical norms and legal standards. In the context of financial statement fraud, rationalisation enables perpetrators to justify manipulating financial data or information as necessary or justifiable. This psychological mechanism supports fraudulent behaviour by simplifying or rationalising actions that are inherently unethical or unlawful. Within the framework of the Fraud Diamond Model, rationalisation serves to provide rationale or justification for individuals to engage in fraud, despite understanding the potential consequences of such actions. Thus, rationalisation facilitates fraudulent activities by reinforcing the belief that the actions are justified or necessary within a specific context. Numerous studies indicate that rationalisation, along with pressure and opportunity, are significant factors contributing to financial statement fraud (Stevansyah & Suhendah 2023; Widnyana & Widyawati 2022). Furthermore, rationalisation can also impact the ability to detect fraud in financial reports (Prastyo, Sarwono & Astuti 2023). Therefore, rationalisation stands as a critical element influencing fraud in financial reporting. Based on this analysis, the following hypothesis (H4) is proposed:

**H4:** Rationalisation can serve as a predictor of financial statement fraud.

A schematic representation of all research hypotheses is depicted as conceptual framework in Figure 1.

## Research methodology and design

This study employs a quantitative approach to examine the impact of financial stability, external pressure, ineffective monitoring and rationalisation (as independent variables) on financial statement fraud (as the dependent variable). According to agency theory, companies need to maintain their reputation, particularly in the eyes of investors and creditors. However, in the pursuit of this image, unexpected issues, such as poor financial performance, can arise. In such scenarios, management (as agents) is inclined to make concerted efforts to present a favourable image of the company to stakeholders, particularly investors and owners (as principals).

The objective of this research is to identify potential risks of financial statement fraud through the lens of the Fraud Diamond. According to Fauzi et al. (2022), the four components of the Fraud Diamond – pressure, opportunity, rationalisation and capability – interact to create conditions that may drive individuals within organisations to commit fraud. The first independent variable is financial stability (capability element), proxied by asset changes (ACHANGE). The second independent variable is external pressure (pressure element), proxied by free cash flow (FCASH). The third independent variable is ineffective monitoring (opportunity element), proxied by the ratio of independent commissioners (IND). The fourth independent variable is rationalisation (rationalisation element), proxied by audit opinion (AUDOP). Detailed indicators for each variable are provided in Table 1.

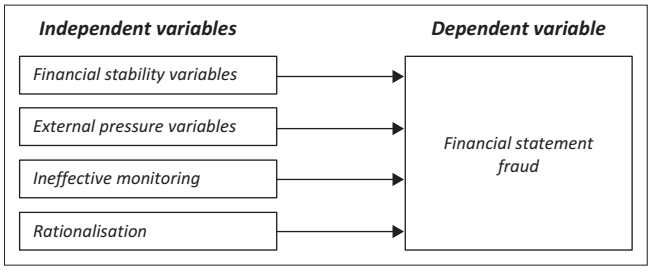


**FIGURE 1:** Conceptual framework.

The population for this research encompasses all financial companies listed on the IDX during 2018–2022. The focus on financial companies is driven by the high incidence of fraud in this sector within Indonesia. Financial services and insurance companies in Indonesia exhibited higher involvement in financial statement fraud compared to other industries (Kristiana & Hatta 2022). This study employs a purposive sampling method to obtain the samples. This method is chosen as it allows for the selection of a representative sample based on predetermined criteria. The criteria used for selecting samples in this research are as follows: (1) Financial companies that have gone public and are listed on the IDX during the 2017–2022 period; (2) Companies that publish audited annual reports and financial statements on their website or the IDX during the 2018–2022 period; (3) Financial statements of the companies are reported in Indonesian Rupiah (Rp); and (4) All necessary data for calculating variables are fully available.

This research was initially intended to test the entire sample simultaneously. However, a significant disparity between data from large and small companies rendered it impossible to pass the normality test. Besides, there is a specific difference between both groups (large vs. small company), that is all large companies were audited by public accountant while same is not the case always in small companies. This condition is depicted in Table 2 with value of AUDOP being Min = Max. Consequently, this study categorised the sample into two groups, namely Main and Development. Based on the predetermined sample criteria, the final sample comprised of 34 companies in the Main group and 29 companies in the Development group. Over a 5-year observation period, this resulted in a total of 170 samples for the Main group and 145 samples for the Development group (see *N* in Table 2). Then, data were analysed using multiple regression, after ensuring that the analysis was free from classical assumption problems (normality, heteroscedasticity, autocorrelation and multicollinearity).

**TABLE 1:** Operational research variables.

| Identifier | Variables | Measurement equations |
|---|---|---|
| X1 | Financial stability | $\text{ACHANGE} = \frac{(\text{Total assets (t)} - \text{Total assets (t} - 1))}{\text{Total assets (t} - 1)}$ |
| X2 | External pressure | FCASH = Total net cash from operating activities – Capital expenditures |
| X3 | Ineffective monitoring | $\text{IND} = \frac{\text{Total board of independent commissioners}}{\text{Total board of commissionerris}}$ |
| X4 | Rationalisation | AUDOP (dummy) = 1: The company received an unqualified opinion 0: The company received other types of opinions. |

*Source:* Skousen, C.J., Smith, K.R. & Wright, C.J., 2009, *Detecting and predicting financial statement fraud: The effectiveness of the fraud triangle and SAS No. 99 in advances in financial economics: Corporate governance and performance*, 1st edn., vol. 13, Emerald Group Publishing, UK; Susanti, Y.A., 2014, 'Detection of fraudulent financial statements using fraud triangle analysis', Doctoral dissertation, Airlangga University; and Dechow, P.M., Sloan, R.G. & Sweeney, A.P., 1996, 'Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC', *Contemporary Accounting Research* 13(1), 1–36. https://doi.org/10.1111/j.1911-3846.1996.tb00489.x

FCASH, free cash flow; IND, independent commissioners; AUDOP; audit opinion; ACHANGE, asset change.

## Ethical considerations

Ethical approval to conduct this study was obtained from the Universitas Brawijaya Research and Community Service Agency (BPPM), Faculty of Economics and Business (No. 13261/UN10.F0201/B/PT/2024).

# Results and discussions

To scrutinise the relationship between the dependent and independent variables, this study tested its hypotheses through multiple linear regression analysis. The regression equation serves as a tool to ascertain the nature of the relationship between the independent and dependent variables. The results of statistical analysis (see Tables 3 and 4) construct the regression model for the main group and the development group as Equation 1 and Equation 2:

$$\text{FRAUD} = -0.104 + 0.650\ \text{ACHANGE} + 3.517\times10^{-15}\ \text{FCASH} + 0.291\ \text{IND} + \varepsilon \quad \text{[Eqn 1]}$$

$$\text{FRAUD} = -0.855 + 0.748\ \text{ACHANGE} - 1.075\times10^{-13}\ \text{FCASH} - 1.515\ \text{IND} + 1.531\ \text{AUDOP} + \varepsilon \quad \text{[Eqn 2]}$$

**TABLE 3:** Multiple linear regression test results (main group).

| Variable | *B* | *t*-statistic | *P*-value *t* | Explanation |
|---|---|---|---|---|
| Constant | -0.104 | - | - | - |
| ACHANGE (*financial stability*) | 0.650 | 2.933 | 0.005 | Significant |
| FCASH (*external pressure*) | $3.517\times10^{-15}$ | 1.257 | 0.213 | Insignificant |
| IND (*ineffective monitoring*) | 0.291 | 1.154 | 0.253 | Insignificant |

Note: Adjusted $R^2$ = 0.116; *F*-value = 3.937; *F*-table = 2.748; *P*-value *F* = 0.012; *t*-table = 1.998.
FCASH, free cash flow; IND, independent commissioners; ACHANGE, asset change.

**TABLE 2:** Descriptive statistics in currency units Rupiah.

| Variable | *N* | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| **Main group** | | | | | |
| ACHANGE (*financial stability*) | 170 | -0.14 | 0.79 | 0.0966 | 0.15160 |
| FCASH (*external pressure*) | 170 | -34.395.4 | 55.439.7 | 817.875.899.600 | 12.031.599.87 |
| IND (*ineffective monitoring*) | 170 | 0.33 | 1.00 | 0.5334 | 0.13326 |
| AUDOP (*rationalisation*) | 170 | 1.00 | 1.00 | 1.0000 | 0.00000 |
| FRAUD (*financial statement fraud*) | 170 | -0.72 | 0.91 | 0.1170 | 0.29239 |
| **Development group** | | | | | |
| ACHANGE (*financial stability*) | 145 | -0.57 | 1.66 | 0.0906 | 0.30510 |
| FCASH (*external pressure*) | 145 | -29.058.7 | 75.73.9 | 70279844420 | 1.186.280.505 |
| IND (*ineffective monitoring*) | 145 | 0.25 | 1.00 | 0.5446 | 0.13986 |
| AUDOP (*rationalisation*) | 145 | 0.00 | 1.00 | 0.9828 | 0.13131 |
| FRAUD (*financial statement fraud*) | 145 | -2.29 | 1.07 | -0.1152 | 0.62907 |

FCASH, free cash flow; IND, independent commissioners; AUDOP; audit opinion; ACHANGE, asset change.

**TABLE 4:** Multiple linear regression test results (development group).

| Variable | *B* | *t*-statistic | *P*-value *t* | Explanation |
|---|---|---|---|---|
| Constant | -0.855 | - | - | - |
| ACHANGE (*Financial stability*) | 0.748 | 2.309 | 0.025 | Significant |
| FCASH (*External pressure*) | $-1.075\times10^{-13}$ | -1.354 | 0.182 | Insignificant |
| IND (*Ineffective monitoring*) | -1.515 | -3.043 | 0.004 | Significant |
| AUDOP (*Rationalisation*) | 1.531 | 2.701 | 0.009 | Significant |

Note: Adjusted $R^2$ = 0.317; *F*-value = 7.606; *F*-table = 2.546; *P*-value *F* = 0.000; *t*-table = 2.006. FCASH, free cash flow; IND, independent commissioners; AUDOP; audit opinion; ACHANGE, asset change.

The Main group regression analysis in this study did not involve the AUDOP variable because there were no differences in the data on this variable. All AUDOP data have value 1, meaning all companies in this group were audited by public accountant.

The Adjusted $R^2$ in the Main group indicates that the collective contribution of the independent variables to the dependent variable is 0.116. This result implies that the financial stability, external pressure and ineffective monitoring variables account for 11.6% of the variance in the financial statement fraud variable, while the remaining 88.4% is attributed to other independent variables not included in this equation. Conversely, in the Development group, the independent variables collectively contribute 31.7% to the dependent variable. This means that the financial stability, external pressure, ineffective monitoring and rationalisation variables together explain 31.7% of the variance in the financial statement fraud variable, with the remaining 68.3% being influenced by other independent variables.

It is evident from Table 3 and Table 4 that the observed *F* value exceeds the critical *F* value (3.937 > 2.748) and has a *p*-value lower than α (0.012 < 0.050). This suggests that collectively, the independent variables significantly influence the dependent variable in the Main group. Similarly, in the Development group, the observed *F* value surpasses the critical *F* value (7.606 > 2.546) with a *p*-value lower than α (0.000 < 0.050), indicating that the four independent variables jointly exert a significant influence on the dependent variable.

## Financial stability and financial statement fraud

The first hypothesis in this study is confirmed, indicating that financial stability serves as an indicator for predicting financial statement fraud. These findings corroborate with earlier studies by Skousen et al. (2009) and Annisya and Lindrianasari (2016), which demonstrates that financial stability exerts a positive and significant impact on financial statement fraud. This research employs changes in assets as a proxy to gauge financial stability. Assets represent a company's wealth; companies with historically small asset bases tend to augment their assets. Consequently, both firms with modest and substantial asset bases, particularly those facing significant cash outflows, are inclined to manipulate their financial reports to project stability that does not truly exist. The findings of this study support previous conclusions that companies with growth rates below industry averages may incentivise managers to manipulate financial reports to enhance the company's outlook. Furthermore, the study reveals that higher fluctuations in a company's asset base correspond to increased risks of financial statement fraud. To present a facade of steady growth, managers frequently resort to manipulating financial reports by substantially inflating asset values. Consequently, shareholders suffer as they perceive the company as achieving stable growth when, in reality, it is not. Therefore, the measure of financial stability through changes in total assets can effectively forecast potential financial statement fraud, applicable to companies categorised under both Main and Development sectors.

## External pressure and financial statement fraud

The second hypothesis in this study, asserting that external pressures cannot predict financial statement fraud in both groups of companies, was not supported by the findings. This outcome aligns with prior research conducted by Lou and Wang (2009) and Susanti (2014), indicating that not all firms utilise surplus cash flows for internal purposes. High levels of free cash flow within a company can lead to conflicts between managers and shareholders. While managers may seek to control the allocation of cash flows, ultimate decision-making authority rests with shareholders, as stipulated in payment and bonus policies established through general shareholder meetings (GMS). Because shareholders retain control over these decisions, external pressures stemming from substantial free cash flows do not exert a significant influence on financial statement fraud. Therefore, such external pressures are inadequate for predicting the potential for fraudulent financial statements in both Main and Development category companies.

## Ineffective monitoring and financial statement fraud

The results of hypothesis testing in the Main group indicate that ineffective monitoring does not have a significant impact on financial statement fraud in these companies. Conversely, in the Development group, ineffective monitoring significantly affects financial statement fraud. Findings from the Main group align with research by Susanti (2014), Rachmania, Slamet and Iryani (2017) and Rahmanti (2013), which also concluded that ineffective monitoring does not significantly influence financial statement fraud. The lack of significant influence in the Main group is attributed to the fact that the appointment of independent commissioners is often merely to meet regulatory requirements, rather than to enforce good corporate governance (GCG) to prevent financial statement fraud. As a result, the supervisory role of independent commissioners is not fully optimised. Moreover, the quality of the board of commissioners has a greater impact on the likelihood of earnings management than the sheer number of commissioners (Restuningdiah 2011). In addition, the board of commissioners can establish an audit committee

responsible for reviewing accounting policies, evaluating internal controls and overseeing external reporting systems and regulatory compliance. Consequently, ineffective monitoring, proxied by the ratio of independent commissioners, does not significantly impact and cannot be used to predict the potential for financial statement fraud in companies within the Main group.

In contrast, research in the Development group shows that ineffective monitoring variables significantly influence financial statement fraud. This supports the findings of Prasastie and Gamayuni (2015), who demonstrated that a higher ratio of independent commissioners correlates with a lower likelihood of financial statement fraud (negative correlation). According to Boediono (2005), the composition of the board of commissioners can influence management in preparing financial reports to achieve high-quality earnings. This phenomenon is also observed in relatively smaller companies, such as those in the Development group in this study. These companies often prioritise producing attractive financial reports to appeal to investors or retain existing shareholders. Hence, the role of independent commissioners becomes crucial in mitigating earnings management. Therefore, the ineffective monitoring variable, proxied by the ratio of independent commissioners, can be used to predict the potential for financial statement fraud in companies within the Development group.

### Rationalisation and financial statement fraud

The results of testing H4 in the Development group indicate that rationalisation significantly affects financial statement fraud. These findings support the research performed by Susanti (2014) and Lou and Wang (2009), which state that rationalisation has a significant influence on earnings management. According to Skousen et al. (2009), rationalisation is challenging to measure, leading some studies to use changes in Public Accounting Firms (KAP) and others to use audit opinions as a proxy. Consistent with this approach, Annisya and Lindrianasari (2016) used audit opinions as a proxy. An unqualified audit opinion can motivate managers, as agents, to engage in earnings management. By receiving a clean opinion, fraud perpetrators can rationalise their actions. This allows them to justify their behaviour because the auditors did not detect any material misstatements. Consequently, they may commit fraud again on a larger scale. Therefore, the rationalisation variable, proxied by audit opinion, can be used to predict the potential for fraudulent financial statements in companies within the Development group.

## Conclusions and limitations

This research aims to determine whether the independent variables (financial stability, external pressure, ineffective monitoring and rationalisation) can predict financial statement fraud in two groups – Main and Development – based on the company listing board on the IDX. The hypothesis testing results for the Main group indicate that financial stability has a significant effect on financial statement fraud, whereas external pressure and ineffective monitoring do not significantly affect financial statement fraud. In the development group, the hypothesis testing results reveal that both financial stability and rationalisation have a positive and significant effect on financial statement fraud, while ineffective monitoring has a negative and significant effect.

The findings of this research have significant implications for various stakeholders on the IDX. For companies listed in the Main group, these results indicate that financial stability is a crucial factor that must be monitored to reduce the risk of financial statement fraud. This suggests that companies in the Main group need to prioritise policies that ensure financial stability to prevent fraudulent activities. In contrast, external pressure and ineffective monitoring did not show significant influence, indicating that other approaches may be needed to address fraud in this context. For companies in the Development group, the results of this research demonstrate that not only financial stability significantly affects financial statement fraud but also rationalisation. This suggests that companies in this group must focus on maintaining stable financial management and addressing the justifications used to rationalise fraud. In addition, ineffective supervision was found to have a negative and significant effect, implying that effective supervision can reduce the risk of fraud. Therefore, companies in the Development group need to enhance the effectiveness of their monitoring systems as part of their fraud prevention strategies. These findings also hold important implications for regulators and stock exchange authorities, who can use this information to design more targeted policies and regulations to monitor and support financial stability and prevent fraud in listed companies.

This study has several limitations. Initially, it was designed to analyse the entire sample simultaneously. However, significant disparities in the data, particularly between large and small companies, resulted in the normality test being unmet. Consequently, the sample was divided into two groups: Main and Development. Despite this adjustment, the study could not yield a comprehensive overview representing the entire population. In the light of these limitations, it is recommended that future research employs methodologies capable of accommodating the entire sample to produce results that accurately reflect the population as a whole.

## Acknowledgements

### Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

## Authors' contributions

A.F.R. conceptualised and designed the study, developed the research methodology, and led the data analysis team. He also drafted the initial manuscript and revised it based on feedback from the other authors. S.I. contributed to data collection and statistical analysis, offered essential advice on research methodology and assisted in interpreting the results. He played a crucial role in preparing data collection instruments and conducting field surveys, assisted in initial data processing and provided critical input for manuscript revisions. J.C. contributed to developing the theoretical framework and conducting the literature review. She was also involved in writing the background section and discussing the research findings.

## Funding information

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

## Data availability

Data in this research have been collected from financial statements published by each company in Indonesia capital market.

## Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. The article does not necessarily reflect the official policy or position of any affiliated institution, funder or agency, or that of the publisher. The authors are responsible for this article's results, findings and content.

# References

Achmad, T., Ghozali, I., Helmina, M.R.A., Hapsari, D.I. & Pamungkas, I.D., 2022, 'Detecting fraudulent financial reporting using the fraud hexagon model: Evidence from the banking sector in Indonesia', *Economies* 11(1), 5. https://doi.org/10.3390/economies11010005

Andriani, K.F., Budiartha, K., Sari, M.M.R. & Widanaputra, A.A.G.P., 2022, 'Fraud pentagon elements in detecting fraudulent financial statement', *Linguistics and Culture Review* 6(S1), 686–710. https://doi.org/10.21744/lingcure.v6nS1.2145

Annisya, M. & Lindrianasari, Y.A., 2016, 'Detecting financial report fraud using fraud diamond. Faculty of Economics and Business, University of Lampung', *Journal of Business and Economics (JBE)* 23(1), 72–89.

Awolowo, I.F. & Garrow, N., 2022, 'Why audit will continue to fail!', *Academia Letters* 5141, 1–8. https://doi.org/10.20935/AL5141

Azizah, I.H., Purnamasari, P. & Maemunah, M., 2024, 'Pengaruh fraud pentagon terhadap financial statement fraud', *Bandung Conference Series: Accountancy* 4(1), 15–23. https://doi.org/10.29313/bcsa.v4i1.10278

Badan Pemeriksa Keuangan Republik Indonesia (BPK RI), 2020, *Kerugian Negara Kasus Jiwasraya*, Official Press Release, viewed 15 November 2024, from https://www.bpk.go.id/news/kerugian-negara-kasus-jiwasraya-rp1681-triliun.

Boediono, G., 2005, 'Earnings quality: Study of the influence of corporate governance mechanisms and the impact of earnings management using path analysis', in: Proceeding of *National Accounting Symposium VIII*, Solo (Indonesia), 15–16 September, IAI, pp. 172–194.

Committee of Sponsoring Organizations of the Treadway Commission, 2010, *Enterprise risk management: Integrated framework*, Jersey City.

Fauzi, W.N.A.W., Marzuki, M.M. & Zakaria, N.B., 2022, 'Fraud diamond factors, risk management practices and the likelihood of fraud among financially distressed companies listed on the Malaysian stock exchange', *Asia-Pacific Management Accounting Journal* 17(2), 131–159. https://doi.org/10.24191/APMAJ.V17i2-05

Fitriana, L., Sinarasri, A. & Nurcahyono, N., 2024, 'Factors affecting financial statement fraud in banking sector: An agency perspective', *Maksimum* 14(1), 102–138. https://doi.org/10.26714/mki.14.1.2024.102-113

Halim, J., Meiden, C. & Tobing, R.L., 2005, 'Pengaruh Manajemen Laba Pada Tingkat Pengungkapan Laporan Keuangan Pada Perusahaan Manufaktur Yang Termasuk dalam Indeks Lq-45', in *Simposium Nasional Akuntansi VII*.

Khamainy, A.H., Ali, M. & Setiawan, M.A., 2021, 'Detecting financial statement fraud through new fraud diamond model: The case of Indonesia', *Journal of Financial Crime* 29(3), 925–941. https://doi.org/10.1108/JFC-06-2021-0118

Kristiana, D.R. & Hatta, A.J., 2022, 'Portrait of the polemic of fraud in conventional and sharia insurance company', *E-Jurnal Akuntansi* 32(6), 1603–1626. https://doi.org/10.24843/EJA.2022.v32.i06.p16

Lou, Y.-I. & Wang, M.-L., 2009, 'Fraud risk factor of the fraud triangle assessing the likelihood of fraudulent financial reporting', *Journal of Business & Economics Research* 7(2), 63–78. https://doi.org/10.19030/jber.v7i2.2262

Made, K.A., Cahyaningsih, D.S. & Djati, W., 2023, 'Fraud diamond: Four elements of financial report fraud detection – Study on coal producers', *Journal of Research on Business and Tourism* 3(1), 55–72. https://doi.org/10.37535/104003120236

Owusu, G.M.Y., Koomson, T.A.A., Alipoe, S.A. & Kani, Y., 2021, 'Examining the predictors of fraud in state-owned enterprises: An application of the fraud triangle theory', *Journal of Money Laundering Control* 25(2), 427–444. https://doi.org/10.1108/JMLC-05-2021-0053

Prasastie, A. & Gamayuni, R.R., 2015, 'Analysis of factors that influence financial statement fraud with a fraud diamond perspective (Empirical Study of LQ-45 Companies Listed on the IDX 2009–2013)', *Journal of Accounting and Finance* 20(1), 19–31.

Prastyo, A.M., Sarwono, A.E. & Astuti, D., 2023, 'Pengaruh fraud diamond dalam mendeteksi financial statement fraud', *Balance Vocation Accounting Journal* 6(2), 75–92. https://doi.org/10.31000/bvaj.v6i2.7278

Rachmania, A., Slamet, B. & Iryani, L.D., 2017, 'Analysis of the influence of the fraud triangle on fraudulent financial reports in food and beverage companies listed on the Indonesia Stock Exchange for the 2013–2015 period', *Student Online Journal (JOM) in Accounting* 2(2), 154–165.

Rahmanti, M., 2013, 'Detection of fraudulent financial statements through pressure and opportunity risk factors (Case Study of Companies Receiving Sanctions from Bapepam for the 2002–2006 Period)', *Diponegoro Journal of Accounting* 2(2), 1–12.

Restuningdiah, N., 2011, 'Independent commissioner, audit committee, internal audit and risk management committee on earnings management', *Journal of Finance and Banking* 15(3), 351–362.

Rohmatin, B.L., Apriyanto, G. & Zuhroh, D., 2021, 'The role of good corporate governance to fraud prevention: An analysis based on the fraud pentagon', *Jurnal Keuangan Dan Perbankan* 25(2), 280–294. https://doi.org/10.26905/jkdp.v25i2.5554

Ross, S.A., 1973, 'The economic theory of agency: The principal's problem', *The American Economic Review* 63(2), 134–139.

Roza, F., 2024, 'Pentagon fraud modelling: How it affects financial statement', *International Journal of Accounting, Management, Economics and Social Sciences* 2(1), 90–97. https://doi.org/10.61990/ijamesc.v2i1.190

Sarker, N. & Islam, R., 2021, 'Issues on bank's capital structure and profitability: A developing country context', *International Journal of Economics and Business Administration* 9(1), 86–104. https://doi.org/10.35808/ijeba/660

Sirot, B.S., Arum, E.D.P. & Wiralestari, W., 2023, 'The influence of financial distress, and earning management on tax avoidance with good corporate governance as a moderation variable in registered infrastructure sector companies on the indonesian stock exchange year 2019–2021', *Cashflow Current Advanced Research on Sharia Finance and Economic Worldwide* 3(2), 156–177. https://doi.org/10.55047/cashflow.v3i2.891

Skousen, C.J., Smith, K.R. & Wright, C.J., 2009, *Detecting and predicting financial statement fraud: The effectiveness of the fraud triangle and SAS No. 99 in advances in financial economics: Corporate governance and performance*, 1st edn., vol. 13, Emerald Group Publishing, Leeds, UK.

Stevansyah, N. & Suhendah, R., 2023, 'The effect of fraud triangle on financial statement fraud in banking companies', *International Journal of Application on Economics and Business* 1(4), 1988–1999. https://doi.org/10.24912/ijaeb.v1i4.1988-1999

Susanti, Y.A., 2014, 'Detection of fraudulent financial statements using fraud triangle analysis', Doctoral dissertation, Airlangga University.

Widnyana, I.W. & Widyawati, S.R., 2022, 'Role of forensic accounting in the diamond model relationship to detect the financial statement fraud', *International Journal of Research in Business and Social Science* (2147–4478)11(6), 402–409. https://doi.org/10.20525/ijrbs.v11i6.1924

Wijaya, T. & Witjaksono, A., 2023, 'Unmasking financial deception: Unraveling the fraud hexagon's influence on detecting financial statement fraud in indonesian public companies', *Journal of Applied Finance and Accounting* 10(1), 20–41. https://doi.org/10.21512/jafa.v10i1.9927

Wilantari, N.M. & Ariyanto, D., 2023, 'Determinan fraud hexagon theory dan indikasi financial statement fraud', *E-Jurnal Akuntansi* 33(1), 87–102. https://doi.org/10.24843/EJA.2023.v33.i01.p07

Wolfe, D.T. & Hermanson, D.R., 2004, 'The fraud diamond: Considering the four elements of fraud', *CPA Journal* 74, 38–42. https://doi.org/10.1016/S1361-3723(04)00051-X

Wulandari, L., Setianingrum, H.N. & Pratiwi, A., 2023, 'Diamond fraud analysis in detect financial statement fraud in lq45 company list on the indonesia stock exchange 2018–2020', *Journal of Islamic Economics Perspectives* 5(1), 18–25. https://doi.org/10.35719/jiep.v5i1.67

Yunita, H.I., Wilopo, R. & Oktarina, D., 2023, 'An analysis of pentagon fraud theory to detect fraudulent financial reporting (a case study at sub sector transportation that listed in Indonesian stock exchange 2014–2018)', *International Journal of Economics, Business and Management Research* 7(2), 48–59. https://doi.org/10.51505/IJEBMR.2023.7205