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# IMPACT OF CORPORATE GOVERNANCE ON ACCOUNTING IRREGULARITIES IN VIETNAMESE LISTED COMPANIES: THE MODERATING ROLE OF FINANCIAL LEVERAGE

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## ABSTRACT

*This study aims to address limitations of previous research by testing the moderating role of financial leverage on the relationship between corporate governance (CG) and accounting irregularities (AIs). We employ both logistic regression and two-step system Generalised Method of Moments (GMM) regression to test these relationships through panel data of 382 companies listed on the Vietnamese stock market from 2011 to 2022. While a larger board of directors (BOD) size or companies being audited by Big 4 companies may reduce the likelihood of AIs, a chief executive officer (CEO) who also holds the position of chairman of the BOD or a longer audit tenure can increase the chance of AIs. Notably, the moderating role of financial leverage has a significant influence on the relationship between CG mechanisms and the likelihood of AIs. This study's findings provide policymakers and other stakeholders a strong foundation for making choices about building better CG practices, ultimately reducing the likelihood of AIs. Importantly, this research is the first to explore how financial leverage moderates the relationship between CG and AIs.*

**Keywords:** Corporate governance, Accounting irregularities, Financial leverage, System GMM regression, Vietnam

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## INTRODUCTION

A company's means of communicating with stakeholders includes financial reporting as a key component (Christensen et al., 2021). The accuracy of the data is essential to the efficient operation of the economic system as capital market participants rely on the information provided in financial statements when deciding the investments to make (Gardi et al., 2021). Nonetheless, as high-profile corporate scandals in the U.S. (Enron, WorldCom) and other nations (Parmalat, Vivendi, Ahold, Satyam) demonstrate, accounting irregularities (AIs) are becoming more prevalent in the business sector and might have a negative effect on the global economy (Meiryani et al., 2019). The public's confidence in companies has been damaged by the practice of "cooking the books" in financial reports and resulting complications in identifying errors (Sabatian & Hutabarat, 2020). Discovering AIs is a big deal for a business. To avoid this, managers may implement corporate governance (CG) mechanisms to mitigate the occurrence of AIs (Kassem, 2022). However, even with good CG in place, AIs continue to occur in both public and private companies (Chatterjee & Rakshit, 2023).

Fraud was once associated with deception for their own benefit or to the harm of others, and in much of society and human civilisation today, it is still a challenging issue to get rid of (Hashim et al., 2020). The state of the economy, weak law enforcement, proactive measures, and uncertainty all contribute to the growth of AIs (Ajayi-Nifise et al., 2024). These elements have combined to create a very welcoming atmosphere for AIs. To protect the interests of stakeholders and investors, there is a greater requirement for efficient management oversight and control due to the distinction between ownership and control (Nguyen, H. A. et al., 2021). The CG system makes sure that internal control systems are effective, procedures are followed, goals are met, performance is tracked, information is adequately provided, and company policies (i.e. independence, ethical standards, and quality control standards) are followed (Brenya Bonsu et al., 2023). These responsibilities will provide an efficient CG framework and eliminate any chance of financial reporting errors (Rostami & Rezaei, 2022). Strong CG mechanisms could cover up AIs meant to increase shareholder wealth, even if CG is a tool to prevent management from operating in their best interests. However, as the acts reduce shareholder value, CG should identify AIs that are detrimental to current owners (Anichebe, 2019).

Six keywords have been used to develop previous literature on AIs: executive compensation, forensic accounting, CG, risk assessment of AIs during the auditing process, tips for detecting AIs, and various topics related to senior management (Yu & Rha, 2021). Because of their substantial involvement in the

global economy, economic growth, and market restructuring, emerging markets have attracted a lot of scholarly interest lately (Gerged et al., 2023; Hashim et al., 2020; Hilal et al., 2022; Karpoff, 2021; Le & Nguyen, 2023). Vietnam is not an exception to the fact that there is still a lack of knowledge and empirical evidence regarding AIs in emerging market economies, although developed market economies have a wealth of empirical research on the subject (Cao et al., 2021; Nguyen, T. T. C. et al., 2022; Nguyen, L. A. et al., 2021; Nguyen, H. T. X. et al., 2022; Tran et al., 2020).

Over the past three decades, the term "corporate governance" has emerged as an independent field of research (Di Vito & Trottier, 2022), expanding its scope across various disciplines, including accounting, economics, ethics, finance, law, management, organisational behaviour and politics (Marantika et al., 2020). Banda (2023) defines CG as encompassing the allocation of ownership, capital structure, management incentives, takeovers, board of directors, pressure from institutional investors, competition in product and labour markets, and organisational structures. Conversely, Terry (1977) provides a broad definition of management, which aligns with corporate governance principles by emphasising structured oversight and strategic resource allocation to achieve organisational goals. In Vietnam, CG has been undergoing reform since 2004, driven by initiatives to promote sustainable development. Subsequently, in Decision No. 12/2007/QD-BTC, the Ministry of Finance Vietnam offered a concise definition of Corporate Governance (CG) as follows: "Corporate governance is a system of rules to ensure that a company is directed and controlled effectively for the benefit of shareholders and stakeholders." This shows that in Vietnamese law, the concept of corporate governance is presented in alignment with international principles, prompting its adoption in this research due to its relevance to the Vietnamese social context (Ngoc & Phuong, 2023; Nguyen et al., 2024).

In our research, we firstly want to investigate the relationship between CG and AIs. According to Dechow et al. (1996), businesses with poor CG practices tend to have higher levels of AIs. When CG is compromised, managers can alter results and conceal significant losses by using accounting loopholes (Alam et al., 2020). From agency theory perspective, ineffective CG practices can result in significant agency costs and agency problems (Nguyen et al., 2020), both of which are linked to poor management (Elsayed et al., 2022). Moreover, the crucial function of CG in fostering openness and effectiveness, safeguarding the interests of minority shareholders, guaranteeing equitable treatment for all owners, and creating necessary requirements for the prompt and precise disclosure of significant matters (Mrabure & Abhulimhen-Iyoha, 2020). As a result, several nations responded quickly to accounting crises by getting ready for comparable

domestic occurrences beforehand. More stringent investigation of boards and stronger CG have been urged by executives and authorities to prevent AIs and manipulative behaviour (Girau et al., 2022).

Prior studies have examined the role of institutional context in shaping the relationship between CG and AIs. For example, Chatterjee & Rakshit (2023) studied India, while El-habashy (2019) focused on Egypt, and Lel (2019) provided insights from developed markets. These studies indicate that political, legal, and economic conditions significantly influence the effectiveness of governance mechanisms in mitigating AIs. Indeed, every nation will have unique political, economic and social institutions that are shaped by its unique history of creation and evolution (Ahmed et al., 2023; Baatwah et al., 2019; Yuliusman et al., 2020). In India, there is a strong negative correlation between AIs and the percentage of independent board members, the proportion of proponents, the size of the audit committee and the public quality of board members' work (Chatterjee & Rakshit, 2023). However, they discovered no clear relationship between AIs and CG mechanisms including board size, meeting frequency, CEO duality, board independence, audit committee, audit committee meeting frequency and the presence of Big-4 audit companies. El-habashy (2019), focusing on Egypt, underscores that AIs are positively and significantly correlated with board independence, audit quality, and the Market-To-Book ratio. Based on the Fraud Pentagon, in Indonesia, effective corporate governance at all levels of the corporate organisation will help minimise the occurrence of fraud triggered, thus preventing AIs (Rohmatin et al., 2021). In the same vein, effective monitoring from a good CG mechanism is required to prevent the risk of AIs in management in order to maintain efficient management control and harmony between management and ownership (Reskino & Thamlim, 2023).

According to research conducted in Vietnam, the chance of AIs is increased by more frequent board meetings and the separation of the chief executive officer (CEO) and chairman roles (Nguyen & Anh, 2023). They also find that the adverse impact of qualified assurance audit services on earnings management is little. Furthermore, Le et al. (2022) showed through the application of fixed effects panel regression analysis that AIs in Vietnamese companies are favourably impacted when the CEO also serves as the chairman of the board of director (BOD). Nguyen et al. (2024) from Vietnam offer strong evidence that, when compared to businesses in the same industry, private companies (as opposed to state-owned companies), businesses with high foreign ownership and low ownership concentration, and businesses with rapid growth rates usually show a stronger negative correlation between CG quality and AIs. Notably, the findings of recent global research revealed that, in comparison to developed markets, AIs

are more common in emerging market companies (Le & Nguyen, 2023; Lel, 2019). Scholars have increasingly focused on emerging countries due to their rapid economic development, structural revitalisation and major engagement in the global economy (Bao & Lewellyn, 2017). In developed market economies, there is a wealth of empirical research on earnings management (Delgado et al., 2023; Toumeh et al., 2023). However, in emerging market economies, there is still a dearth of knowledge and empirical evidence on earnings management (Al-Begali & Phua, 2023; Nguyen et al., 2024), with Vietnam undoubtedly being an exception.

In recent cross-country research, the result discovered that because legal enforcement is laxer in developing markets than in developed ones, companies there often manipulate earnings at a considerably greater rate (Le & Nguyen, 2023; Lel, 2019). Companies' practices in managing their earnings have had a number of detrimental effects on investors and consumers of accounting data (Dang et al., 2020). In Vietnam, businesses that engage in profit-taking practices risk severe repercussions, including bankruptcy (Dzung et al., 2024). This demonstrates how listed companies frequently engage in accounting fraud to meet their objectives, which has a significant negative impact on shareholders' and investors' interests. More significantly, this conduct erodes investors' trust in companies, particularly when it comes to obtaining money for expansion. Thus, research on the effects of corporate governance elements on accounting errors in developing markets such as Vietnam will contribute to reducing ambiguity and uncertainty in business outcomes; thus, investors will be provided with a transparent and equitable business and investment environment (Cao et al., 2021; Nguyen et al., 2024; Nguyen H. T. X. et al., 2022).

Numerous connections to AIs have been found in earlier research. But according to the majority of research, CG procedures are mostly responsible for AIs (Anichebe, 2019; Buraik & Idris, 2020; Dechow et al., 1996; Farmer, 2022; Le et al., 2022). We investigate the connection between AIs and CG considering all of the above factors. According to agency theory, board size, board independence and CEO duality, as well as the type and frequency of audit company changes, are the primary factors that affect CG (Vitolla et al., 2020; Wicaksono & Suryandari, 2021). We consequently adopt agency theory and related research to create a research model related to the previous connection.

Prior research (Ghofir & Yusuf, 2020; Sodan et al., 2023) suggests that high leverage, characterised by a high debt-to-equity ratio, can pressure management to engage in earnings management to maintain financial stability and investor confidence. This is due to the company's desire to avoid showing poor performance that would discourage potential investors and lead creditors to

lose faith in the state of the business (Ghofir & Yusuf, 2020). According to agency theory, managers are more likely to select an accounting process that moves reported earnings from future periods to the current period if their company is in danger of breaking an accounting-based debt arrangement (Sodan et al., 2023). The BOD is simultaneously under pressure to consistently act in line with principles by means of oversight through the CG system, particularly the independent committee. Therefore, the influence of the leverage factor on the company's profit management decisions is lessened by the independent commissioner's monitoring (Ruwanti et al., 2019; Sadiq & Abbas, 2023).

Previous studies present conflicting findings regarding the moderating effect of CG on the relationship between financial leverage and AIs. Some argue that strong CG mitigates opportunistic earnings management, while others suggest that high financial leverage may weaken CG effectiveness (Ruwanti et al., 2019; Sadiq & Abbas, 2023). Meanwhile, these findings remain circumstantial and ambiguous in both industrialised and developing nations. The moderating effect of financial leverage on the association between AIs and CG, building on the shortcomings of earlier research.

Consequently, this study examines the relationship between AIs and CG as well as the moderating role of financial leverage. Our study uses both logistic regression and two-step system GMM regression approach, which has not been widely applied in prior research. Fixed and random effects models are inappropriate for estimation during data analysis due to endogeneity, lagged dependent variables, and non-homogeneity; this method reduces these issues. Moreover, while analysing the association between AIs and financial leverage, prior researches have frequently considered CG as a moderating factor (Ruwanti et al., 2019; Sadiq & Abbas, 2023). The evidence regarding the moderating role of financial leverage remains inconclusive. Additionally, limited research has explored this phenomenon in emerging economies. Therefore, we provide evidence in this study about the financial leverage's moderating effect on the association between Vietnam's AIs and CG.

This article begins with an overview of AIs and corporate governance CG, setting the context for the study. It then explores the theoretical framework, model, and hypotheses. The next part describes the research data and methods. This is followed by a presentation of the key findings, which help explain how corporate governance practices influence accounting irregularities. The final part offers conclusions and practical implications based on the results.

## THEORETICAL FRAMEWORK AND HYPOTHESIS

### Agency Theory

A circumstance in which the agent faces challenges is the agreement between the principal and the agent (Jensen & Meckling, 1976). In reality, business managers work to increase the owner's revenue while also having the chance to look out for their personal well-being (Maulani et al., 2024). Theoretically, agency theory contends that important components of CG that aid in preventing and identifying AIs include auditors, audit committees and BOD (Buraik & Idris, 2020; Sodan et al., 2023). There is a heated discussion over the best ways to gather and publish financial information as a result of AIs and the resulting effects on the market (Buraik & Idris, 2020). This is because such immoral sentiments are a reflection of morality, ethics and kindness in conduct (Cygańska & Bartoszewicz, 2024). Thus, a connection between the frequency of AIs and management misconduct which is frequently associated with agency theory addressing agency problems can be imagined (Ayyed, 2024). The organisation must continuously monitor its staff in order to stop such activity and guarantee honest financial reporting after ethical hazards have been recognised (Kagiri, 2023; Martins & Junior, 2020).

### The Relationship Between Board Size and Accounting Irregularities

According to Vitolla et al. (2020), a major component of agency theory, board size is anticipated to reduce agency conflicts for businesses using conservative accounting rules. Following this perspective, Githaiga et al. (2022) point out that board size is a crucial management tool to lower conflicts of interest and stop opportunistic behaviour. According to Enoidem et al. (2023), bigger boards might be viewed as a more beneficial and efficient oversight tool as they provide better control over financial reporting and lessen managers' propensity to fudge results. Similarly, bigger boards enhance their supervisory function; the more members on the board, the more the board supervises (Githaiga et al., 2022), which eventually lowers the incidence of AIs. A larger board size may include more seasoned independent professional members who might be more adept at reducing AIs (Enoidem et al., 2023; Hamid & Bello, 2019; Thinh & Tan, 2019). Based on the description above, the following hypotheses can be formulated:

H1: There is a negative relationship between board size and accounting irregularities.

## The Relationship between Board Independence and Accounting Irregularities

The board independence is a critical component of its success (Lu et al., 2022; Nguyen, H. A. et al., 2021). Fraud can happen when agents (business managers) purposefully take advantage of weaknesses; these agents are skilled at seeing possibilities and hiding AIs from the principal (Andriani et al., 2022). Agency theory states that because of the highest authority's monitoring, independent directors are more perceptive to the principal's concerns (Nguyen, H. A. et al., 2021). Therefore, effective monitoring from an impartial party is required to prevent the risk of AIs in management in order to maintain efficient management control and harmony between management and ownership (Reskino & Thamlim, 2023). Additionally, the proportion of independent board positively impacts the reported earnings management (e.g. reduces AIs) (Dhu & Hbp, 2019). In line with this, previous studies reported a negative relationship between board independence and the likelihood of financial statement fraud, that is, as the proportion of non-executive directors increases, the likelihood of financial statement fraud decreases, ultimately minimising AIs (Files & Liu, 2022; Reskino & Thamlim, 2023; Subair et al., 2020). Regarding this, we hypothesise that:

H2: There is a negative relationship between board independence and accounting irregularities.

## The Relationship between CEO Duality and Accounting Irregularities

According to agency theory, CEO duality is the idea that a CEO holding many positions in the company may become arrogant and easily use their position of power to commit fraud (Wicaksono & Suryandari, 2021). Based on Ali et al. (2022), the CEO's influence may limit the BOD ability to intervene in business decisions, creating a conflict of interest between the agent and the principal. As a result, when there is CEO duality in a company, these CEO may consolidate management authority, exercising unilateral authority or swaying some BOD decisions for self-interest, which helps them to take advantage of internal control's weakness to hide AIs from the principal (Azhari et al., 2020). Hence, the necessity of having separate responsibilities for the Chairman of the Board and the CEO is essential in order to clearly examine the balance of power within a company and reduce the CEO's intention toward fraudulent financial reporting (Dhu & Hbp, 2019). In the same vein, the division of these responsibilities will improve income reporting quality, suggesting a decrease in AIs (Martins & Junior, 2020). In line with this, we put out the third hypothesis in the following manner:

H3: There is a positive relationship between the CEO duality and accounting irregularities.

### The Relationship between Big 4 and Accounting Irregularities

According to agency theory, the quality of an audit has a major impact on how successful it is and helps to identify and avoid AIs (Alayli, 2023). Numerous studies frequently utilise the variable Big4, which is whether the company is audited by a Big 4 auditor in the year, as a representation of audit quality (Rajgopal et al., 2021; Salman & Setyaningrum, 2023). Big 4 auditors rationally respond to stricter investor protection regimes which include the possibility of investor lawsuits against auditors for negligence and regulatory penalties for misconduct (Xiao et al., 2020)—by imposing higher income quality through greater conservatism in accounting for clients' financial reporting (Khaksar et al., 2022). On the other hand, non-Big 4 auditors are less motivated to pressure clients to improve income quality and reduce risk as they do not bear the same reputational risk as Big 4 companies (Alves & Carmo, 2022; Hasan et al., 2020). Companies audited by Big 4 companies will be subjected to a higher level of scrutiny and surveillance than those that are not (Alves & Carmo, 2022), which will minimise the practice of managers withholding information (Martins & Junior, 2020). As a result, there is less chance of AIs (Viana Jr et al., 2022). Thus, the fourth hypothesis that follows is:

H4: There is a negative relationship between the presence of Big 4 auditors and accounting irregularities.

### The Relationship between Audit Firm Change and Accounting Irregularities

According to agency theory, audit rotation is believed to be an effort to upgrade audit quality, thereby enhancing audit independence, and is also important in recognising and preventing AIs (Alayli, 2023; Khaksar et al., 2022). According to Gold et al. (2020), warning indications or problems pertaining to the accuracy of financial reporting and operational procedures are linked to shifts in auditors, suggesting that organisational rationalisation is reflected in the management–auditor interaction. However, there are varying results concerning this relationship. In order to reduce the likelihood of AIs inside a business, it is suggested to increase the frequency of audit rotations, which in turn makes the auditing process more resilient (Alvin & Susanto, 2022; Kurawa & Aca, 2020; Nwoye et al., 2021). This implies that companies with lower audit company turnover are more susceptible to AIs. On the other hand, some present the opposite findings in studies (Awuye, 2022; Sumiadji & Subiyantoro, 2019). Nonetheless, the majority of research suggests that AIs are more common in businesses that do not often switch audit companies. In summary, the following hypothesis is proposed:

H5: There is a negative relationship between audit company change and accounting irregularities.

**The Moderating Role of Financial Leverage in the Relationship between Corporate Governance and Accounting Irregularities**

Leverage has been thought to be closely related to corporate finance since the idea of debt irrelevance and dividend irrelevance was introduced (Kalantonis et al., 2021). According to agency theory, using external debt can lower the agency costs resulting from the conflict between corporate managers (Ugur et al., 2022). Furthermore, as a company has a high leverage ratio, the management is under pressure as the company faces the possibility of not being able to pay its obligations (Hung et al., 2019). As such, the likelihood of false financial reporting increases with the company's leverage ratio as it may incite management to engage in fraudulent activity (Evana et al., 2019). Moreover, agency theory states that by overcoming information asymmetry and making it simpler to manage illegal behaviours, a strong CG mechanism plays a crucial role in preventing AIs (Buraik & Idris, 2020; Sodan et al., 2023). The primary objective of a company's internal control system, known as effective CG, is to limit main risks by safeguarding corporate assets and boosting long-term investor capital (Jumroh, 2024).

In other words, company will less likely to avoid AIs if strong CG is enforced at all organisational levels (Rohmatin et al., 2021). Therefore, more oversight provided by efficient CG will lessen information asymmetry between creditors and business management (Tulcanaza-Prieto et al., 2020). This is because the amount of money that creditors receive back from the company for their investments must be known by them. Management attempts to lower perceived risk for creditors when corporate risk is high, as shown by high leverage ratios, by adhering more strictly to accounting conservatism, which eventually lowers the likelihood of AIs (Hajawiyah et al., 2020). On the other hand, excessive leverage, a result of a high debt-to-equity ratio, drives management to concentrate on AIs as the company works to provide favourable performance results to maintain the trust of investors and creditors (Ghofir & Yusuf, 2020). Previous studies have shown that an efficient CG mechanism minimises the influence of leverage on AIs choices by putting ethical and responsible pressure on leadership (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas, 2023). In line with the above arguments, we expect financial leverage has a moderating role in the link between AIs and CG. Drawing on previous evidence, we posit the subsequent hypothesis:

H6: Financial leverage moderates the relationship between corporate governance and accounting irregularities.

## METHODOLOGY

### Research Sample

This study utilises a sample comprising all companies listed on the Ho Chi Minh City Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX) during the period from 2011 to 2022. The sample consists of 735 companies, collected from Eikon data at the Banking Technology Institute of the University of Economics and Law, as well as from audited consolidated financial reports. During the analysis, 100 financial companies were excluded from the research sample due to differences in their objectives, transaction recording methods, characteristics, accounting methods and presentation on reporting systems. Additionally, over 250 companies were eliminated from the sample for not meeting the necessary criteria (i.e., lack of financial data, financial statements and annual reports that had been audited and published during the research period). As a result, the final research sample comprises 382 companies, totaling 2,713 observations across various industries, all of which meet the study's criteria.

### Research Design

#### *Research model*

The Altman Z-score model (Altman, 1968) and the Dechow F-score model (Dechow et al., 2011) are frequently used to quantify financial statement fraud. Siddhpuria (2023) created the Z-score model to shed light on the likelihood of an institution filing for bankruptcy. According to earlier research (Ghafoor et al., 2022; Saleh et al., 2021), this model consistently identifies financial deficits, which are thought to be one of the main motivators for fraudulent activity. In the meantime, Dechow et al. (2011) refined the Dechow F-score model to evaluate the chance of manipulation instead of bankruptcy. The core of this model is centred on the risk assessment of fraud indicators and it computes the likelihood of finding and predicting major breaches in the financial statements (Craja et al., 2020). According to Ratmono et al. (2020), the Dechow model has an average accuracy of 73.17% and 76.22% in predicting fraud and non-fraud businesses, respectively. Based on the aforementioned justification, we employ the F-score model to measure AIs since it was created specifically to evaluate the possibility of financial statement manipulation and provides a reliable risk assessment of fraud indicators with an academic record of accurately identifying both fraudulent and non-fraudulent companies.

Based on prior studies, we applied the F-score in Dechow et al. (2011) to measure AIs (Arum et al., 2023; Saleh et al., 2021). According to Dechow et al. (2011), the F-score classifies a company as having AIs if the F-score > 1, and it is classified as not showing signs of AIs if the F-score ≤ 1 (Arum et al., 2023). The F-score calculation method is presented in Table 1. If a sample meets any of the F-score criteria as a company, indicated as having AIs, then it will equal 1, and 0 if not (Maulani et al., 2024; Ratmono et al., 2020; Sari & Kiswanto, 2020; Pamungkas et al., 2018).

For interaction variables, we used the mean-centring approach to calculate in order to eliminate the possibility of multicollinearity (Xie, 2022). For example, the interaction between board independence and leverage is abbreviated as bind_lev which is calculated by (BIND – mean of BIND) * (LEV – mean of LEV). The interaction variables for other governance mechanisms are analysed and presented in Table 1.

Table 1
*Describe the variables in research model*

| Variables | Acronym | Measurement | Source |
|---|---|---|---|
| Dependent variables | | | |
| Accounting irregularities | AIs | Code 1 if the F-score > 1; 0 otherwise | (Maulani et al., 2024; Ratmono et al., 2020; Sari & Kiswanto, 2020). |
| | F-score | F-score = predicted probability/0.0037<br>Predicted probability = $e^{\text{predicted value}}/(1 + e^{\text{predicted value}})$<br>Predicted value = – 7.893 + 0.790*RSST* + 2.518Δ*REC* + 1.191Δ*INV* +1.979*SOFTASSETS* + 0.932Δ*ROA* + 1.029*ISSUE* | (Arum et al. 2023; Dechow et al., 2011; Saleh et al., 2021). |
| | RSST | RSST = (ΔWC + ΔNCO + ΔFIN)/ Average total assets<br>WC = (Current assets – cash and short-term investments) – (current liabilities – debt in current liabilities)<br>NCO = (total assets – current assets – investments and advances) – (total liabilities – current liabilities – long-term debt)<br>FIN = (short-term investments + long-term investments) – (long-term debt + debt in current liabilities + preferred stock) | |
| | REC | Accounts receivables/Average total assets | |

(*Continued on next page*)

Table 1 (*Continued*)

| Variables | Acronym | Measurement | Source |
|---|---|---|---|
| Dependent variables | | | |
| | INV | Inventory/Average total assets | |
| | SOFT ASSETS | (Total assets – PPE – Cash and cash equivalents)/Average total assets | |
| | CASH SALES | Percentage change in cash sales (Sales – Accounts receivable) | |
| | ROA | Earnings/Average total assets | |
| | ISSUE | If a company issued securities during the year *t*, it is worth 1, else it is worth 0. | |
| Independent variables | | | |
| Board size | BSIZE | Total number of directors on the board. | (Hamid & Bello, 2019; Maulani et al., 2024; Thinh & Tan, 2019). |
| Board independence | BIND | The % of independent directors to total number of directors on the board. | (Files & Liu, 2022; Subair et al., 2020; Wu et al., 2023). |
| CEO duality | DUAL | Equals 1 if the same person holds CEO and the chairman positions, 0 otherwise. | (Azhari et al., 2020; Dhu & Hbp, 2019; Martins & Junior, 2020). |
| Type of audit company | BIG4 | 1 if the company is audited by a Big 4 auditor in year *t*, 0 otherwise. | (Hasan et al., 2020; Khaksar et al., 2022; Viana Jr et al., 2022). |
| The change of audit company | AUDITCHANGE | Code 1 if company experience change in audit company, otherwise 0. | (Alvin & Susanto, 2022; Kurawa & Aca, 2020; Nwoye et al., 2021). |
| Interaction variables | | | |
| Financial leverage | LEV | Total debt /Total equity | |
| The interaction between board size and financial leverage | BSIZE_LEV | (BSIZE – mean of BSIZE) * (LEV – mean of LEV) | (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas, 2023). |
| The interaction between board independence and financial leverage | BIND_LEV | (BIND – mean of BIND) * (LEV – mean of LEV) | (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas, 2023). |
| The interaction between CEO duality and financial leverage | DUAL_LEV | (DUAL – mean of DUAL) * (LEV – mean of LEV) | (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas, 2023). |

(*Continued on next page*)

Table 1 (*Continued*)

| Variables | Acronym | Measurement | Source |
|---|---|---|---|
| The interaction between type of audit company and financial leverage | BIG4_LEV | (BIG4 – mean of BIG4) * (LEV – mean of LEV) | (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas, 2023). |
| The interaction between the change of audit company and financial leverage | AUDITCHANGE _LEV | (AUDITCHANGE – mean of AUDITCHANGE) * (LEV – mean of LEV) | (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas, 2023). |
| Control variable | | | |
| Firm size | SIZE | The natural logarithm of total assets | (Le & Nguyen, 2022; Orazalin, 2020; Rajeevan & Ajward, 2020). |
| Return on equity | ROA | The % of N\net income to average total assets | (Maulani et al., 2024; Ratmono et al., 2020; Zimon et al., 2021). |

*Source*: Author's collection

The model is constructed based on the foundation of agency theory and the relationship of factors related to CG with AIs as well as the moderating role of leverage (Dechow et al., 2011; Githaiga et al., 2022; Le & Nguyen, 2022; Maulani et al., 2024; Ratmono et al., 2020; Soepriyanto et al., 2022; Vitolla et al., 2020). Table 1 presents the variables used in the study and their measurements.

To test hypotheses H1 through H5 in this research, Model 1 is presented as follows:

$$AIs = \beta_1 + \beta_2 BSIZE_{it} + \beta_3 BIND_{it} + \beta_4 DUAL_{it} + \beta_5 BIG4_{it} + \beta_4 AUDITCHANGE_{it} + \beta_7 SIZE_{it} + \beta_8 ROA_{it} + \varepsilon$$

To examine hypothesis H6, the moderating role of financial leverage in the relationship between CG and AIs, Model 2 is presented as follows:

$$AIs = \beta_1 + \beta_2 BSIZE_{it} + \beta_3 BSIZE\_LEV_{it} + \beta_4 BIND_{it} + \beta_5 BIND\_LEV_{it} + \beta_6 DUAL_{it} + \beta_7 DUAL\_LEV_{it} + \beta_8 BIG4_{it} + \beta_9 BIG4\_LEV_{it} + \beta_{10} AUDITCHANGE_{it} + \beta_{10} AUDITCHANGE_{it} + \beta_{11} AUDITCHANGE\_LEV_{it} + \beta_{12} SIZE_{it} + \beta_{13} ROA_{it} + \varepsilon$$

While Model 2 incorporates variables used in H1 to H5, H1 is retained as it directly tests the independent effect of CG on AIs before introducing interactions and moderating effects.

***Regression method***

In our research, the dependent variable (i.e., AIs) is binary, representing whether companies exhibit AIs or not (Fan et al., 2021; Rahman et al., 2021; Ratmono et al., 2020; Soepriyanto et al., 2021). In this case, Previous studies indicated that logistic regression was employed to model the relationship between the dependent variables with two categories and the independent variables (Kim & Woo, 2022; Schober & Vetter, 2021). Moreover, when dealing with prediction and classification issues, logistic regression is frequently employed (Itoo et al., 2021). One of the most common use cases is fraud detection, which is predictive of fraud using logistic regression models to identify data anomalies (Alenzi & Aljehane, 2020). Hence, we estimated a logistic model with marginal effects for panel data to test the proposed hypotheses. The data analysis method used in this study is logistic regression analysis, which includes four tests: model evaluation, assessment of the regression model's goodness of fit, the determination coefficient (Nagelkerke's R-square), and the correlation matrix (Beram & El-Kotory, 2024).

Additionally, fixed and random effects models were found inappropriate for estimation to avoid endogeneity issues and observe delayed effects of dependent variables and heteroscedasticity (Voumik et al., 2022). Due to endogeneity issues, differences and estimates of the system GMM (Difference GMM and System GMM) were developed (Li et al., 2021; Mulusew & Mingyong, 2023; Sun & Chen, 2022), and became widely used (Alonso et al., 2020). Standard GMM is unique as it adjusts for endogeneity and both ordinary least squares (Sun & Chen, 2022). However, this model has limitations as the lag of the regression variables may be a weak instrument for differenced variables (Shakil et al., 2019). Blundell and Bond (1998) introduced the level equation into the estimation process to create a system GMM consisting of two equations related to both the level and the first-order difference equations.

According to above arguments, to control for potential endogeneity (Mulusew & Mingyong, 2023), we use the two-step System GMM method, where the estimation instruments are likely more reliable. Moreover, regarding system GMM, Alonso et al. (2020) stated that the constant term is usually not mentioned because it is of little practical significance and only shows up in the levels equation. Using "xtabond2" code in stata, he indicated that reported constants add minimal value to the findings because the focus is on fixed effects control and dynamic interactions. Furthermore, the variance that the constant would capture is typically accounted for by time dummies or other fixed effects. As a result, eliminating the constant makes the output simpler without changing how important the coefficients should be understood (Alonso et al., 2020). After conducting the regression, we

test for AR2 to confirm the existence of endogeneity problems, along with the Hansen test, which indicates that the technical parameters encounter an over-identification problem. We then proceed to test the proposed hypotheses.

## RESULTS AND DISCUSSION

### Descriptive Statistics

Table 2 presents the descriptive statistics results for all variables of the 382 listed companies on the Vietnam stock market from 2011 to 2022. The dependent variable AI has an average value of 0.219, indicating that a small number of companies have AIs. Additionally, the standard deviation of the dependent variables has a low value (S.D. = 0.413), suggesting that data points tend to be close to the dataset's mean.

Table 2
*Descriptive statistics*

| Variable | Obs. | Mean | S. D. | Min | Max |
|---|---|---|---|---|---|
| AIs | 2,713 | 0.219 | 0.413 | 0.00 | 1.00 |
| BSIZE | 2,713 | 5.525 | 1.228 | 2.00 | 12.00 |
| BIND | 2,713 | 0.589 | 0.215 | 0.00 | 0.91 |
| DUAL | 2,713 | 0.260 | 0.439 | 0.00 | 1.00 |
| BIG4 | 2,713 | 0.244 | 0.430 | 0.00 | 1.00 |
| AUDITCHANGE | 2,713 | 0.206 | 0.405 | 0.00 | 1.00 |
| SIZE | 2,713 | 27.782 | 1.503 | 25.30 | 30.66 |
| ROA | 2,713 | 0.069 | 0.062 | –0.01 | 0.22 |
| LEV | 2,713 | 76.733 | 72.751 | 2.45 | 255.81 |
| BSIZE_LEV | 2,713 | –6.798 | 65.717 | –148.05 | 121.51 |
| BIND_LEV | 2,713 | –0.161 | 12.556 | –22.77 | 28.00 |
| DUAL_LEV | 2,713 | –3.818 | 26.919 | –59.03 | 36.71 |
| BIG4_LEV | 2,713 | –2.391 | 25.700 | –57.52 | 37.32 |
| AUDITCHANG_LEV | 2,713 | –1.868 | 23.536 | –56.87 | 36.81 |

*Source*: Author's calculations from research data

The variable BSIZE has an average value of 5.525 with a standard deviation of 1.228, implying that the number of board members fluctuates between 5 and 6. The variable BINDs, with an average value of 0.589, indicates that there are usually more non-executive members on the BOD. Moreover, the variable DUAL, with an average value of 0.260, shows that in most companies, the Chairman of the Board does not simultaneously hold the position of CEO. Furthermore, the Big4 variable, with an average value of 0.244 and a standard deviation of 0.430, indicates a small number of companies audited by Big4. Finally, the AUDITCHANGE variable has an average value of 0.206, indicating that companies tend to stay loyal to one audit company.

## Correlation Matrix

Table 3 displays the Pearson correlation matrix for the variables. To ensure that no serious multicollinearity issues occur among the variables, it is important that the Pearson correlation between independent variables remains below 0.8 (Armstrong, 2019). The results show that all correlation coefficients between the variables are below 0.8, which confirms the absence of serious multicollinearity.

Table 3
*Correlation matrix*

| Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| AIs (1) | 1 | | | | | | | | | |
| BSIZE (2) | 0.046 | 1 | | | | | | | | |
| BIND (3) | –0.001 | 0.096 | 1 | | | | | | | |
| DUAL (4) | 0.092 | 0.000 | –0.045 | 1 | | | | | | |
| BIG4 (5) | 0.066 | 0.124 | 0.211 | 0.021 | 1 | | | | | |
| AUDITCHANGE (6) | 0.006 | –0.009 | –0.027 | 0.039 | –0.020 | 1 | | | | |
| SIZE (7) | 0.179 | 0.284 | 0.022 | –0.082 | 0.342 | –0.007 | 1 | | | |
| ROA (8) | 0.006 | 0.123 | 0.047 | 0.030 | 0.080 | 0.007 | –0.041 | 1 | | |
| LEV (9) | 0.047 | –0.054 | –0.052 | –0.035 | 0.009 | 0.043 | 0.263 | –0.374 | 1 | |

*Source*: Author's calculations from research data

## Regression Result

### *Logistic regression*

In Table 4, the Chi-square value or the Hosmer and Lemeshow's test statistic is 3337.5, with a *p*-value of 0.4943. Since the *p*-value is significantly greater than 0.05, the null hypothesis (H0) is accepted, indicating that our model fits reasonably well. However, our result shows that the number of covariate patterns is close to the number of observations (2,694 and 2,713, respectively). Hosmer Jr et al. (2013) stated that the applicability of the Pearson 2 test is questionable if these two numbers have little difference. They suggest re-conducting Hosmer and Lemeshow's Goodness of Fit Test and collapsing observation on 10 quantiles of estimated probabilities, which is shown in Table 5. The *p*-value is now 0.4943 > 0.05 significance level, thus, the regression model used is overfitting the data. Hence, the logistic regression model employed cannot predict the observed values effectively. Therefore, alternative approaches or adjustments to the model may be necessary for a more accurate fit.

Table 4
*Hosmer and Lemeshow's Goodness of Fit Test*

| Hosmer and Lemeshow's Goodness of Fit Test | |
|---|---|
| Number of observations | 2,713 |
| Number of covariate patterns | 2,694 |
| Hosmer-Lemeshow $chi^2$ (3337) | 2,686.50 |
| Prob > $chi^2$ | 0.494 |

*Source*: Author's calculations from research data

Table 5
*Hosmer and Lemeshow's Goodness of Fit Test (obs. collapsed on 10 quantiles of estimated probabilities)*

| Hosmer and Lemeshow's Goodness of Fit Test | |
|---|---|
| Number of observations | 2,713 |
| Number of covariate patterns | 10 |
| Hosmer-Lemeshow $chi^2$ (8) | 19.94 |
| Prob > $chi^2$ | 0.011 |

*Source*: Author's calculations from research data

**System GMM Regression**

After conducting the two-step system GMM regression analysis for Model 1, the *p*-value of the AR2 test in Table 6 is 0.224, which is greater than 0.1. This implies that the system GMM is statistically significant, and we accept the null hypothesis (H0) that there is no endogeneity issue. Furthermore, the Hansen test shows *p*-values of 0.503 also greater than 0.1, indicating that the technical parameters face no overidentification problem. Therefore, the two-step system GMM is deemed the most suitable regression model for this analysis.

Table 6
*Two-step System GMM regression for model 1*

| Variable | AIs |
|---|---|
| BSIZE | –0.020*** [–8.27] |
| BIND | –0.071*** [–13.83] |
| DUAL | –0.009* [1.88] |
| BIG4 | –0.046*** [12.04] |
| AUDITCHANGE | –0.035*** [–8.88] |
| SIZE | 0.010*** [–3.30] |
| ROA | 0.875*** [20.70] |
| N | 2,713 |
| No. of group | 382 |
| No. of instrument | 273 |
| AR1 test | 0.000 |
| AR2 test | 0.224 |
| Hansen test | 0.503 |

*Notes*: The numbers in brackets are test statistics. *, ** and *** indicate significant at 10%, 5% and 1%, respectively. (Source: Author's calculations from research data)

To test the first hypothesis, the results in Table 5 for the independent variable BSIZE in Model 1 (BSIZE = –0.020, $t$ = –8.27) indicate that the number of board members has an inverse effect on AIs, and this variable has high reliability. This supports H1.

Our findings align with previous studies (Enoidem et al., 2023; Hamid & Bello, 2019; Thinh & Tan, 2019). This suggests that a larger board may be more effective in limiting AIs. This result contradicts agency theory, which posits that a larger board may frequently encounter information asymmetry,

making it harder to control illegal behaviours such as AIs (Girau et al., 2022). However, an explanation for this result is that a larger board increases diversity in expertise, including expertise in financial reporting. Larger boards also enhance the representation of independent directors, thereby reducing the likelihood of AIs (Kjærland et al., 2020). Enoidem et al. (2023) suggests that larger boards provide better monitoring capabilities, thereby reducing the tendency of managers to manipulate earnings. Larger boards improve the supervisory role of the board; the more board members, the greater the supervisory activities of the board (Githaiga et al., 2022), ultimately reducing the occurrence of AIs.

The results in Table 6 for the independent variable BIND in Model 1 indicate that the independence of the BOD negatively affects AIs. Moreover, this variable in Model 1 is statistically significant (BIND = –0.071, $t$ = –13.83). Therefore, we accept H2.

Our finding aligns with previous studies (Dhu & Hbp, 2019; Files & Liu, 2022; Subair et al., 2020; Wu et al., 2023). Independent directors are more sensitive to the principal's concerns, according to agency theory, because of the highest authority's oversight (Nguyen, H. A. et al., 2021). In order to preserve efficient management oversight and harmony between management and ownership, adequate monitoring from an unbiased party is therefore necessary to prevent the risk of AIs in management (Reskino & Thamlim, 2023). Furthermore, the percentage of independent board members has a positive effect on reported profits management, eventually diminishing AIs (Dhu & Hbp, 2019). This suggests that the likelihood of financial statement fraud diminishes with an increase in the number of non-executive directors, thereby minimising AIs (Files & Liu, 2022; Subair et al., 2020; Wu et al., 2023).

For the independent variable DUAL in H3, the results of Model 1 in Table 6 show that a CEO serving as Chairman of the Board has a negative impact on AIs (DUAL = –0.009, $t$ = –1.88), and the relationship is statistically significant. Thus, H3 is rejected.

The findings of previous studies present conflicting results with our relationship (Azhari et al., 2020; Dhu & Hbp, 2019; Martins & Junior, 2020). It is evident that the agency theory does not support these results. The agency theory suggests that when a CEO holds multiple positions, it creates an arrogant attitude, making it comfortable for them to misuse their power for fraudulent behaviour, leading to a higher likelihood of AIs (Wicaksono & Suryandari, 2021). However, the results are still essential. Some boards prefer dual roles because of

coordination issues if the CEO and chairman are separated (Mejri et al., 2024). Moreover, there will be less interference in the management of companies with dual roles, and these companies may rely on a strong board to provide adequate checks and balances (Nguyen et al., 2023). Prior reserach also demonstrates a negative relationship between the dual role of the CEO and income management (Asema & Abanyam, 2023). When the CEO also assumes the role of Chairman of the Board, it gives them a prominent position in the governance structure and allows them to hold a defensive position more easily (Mejri et al., 2024).

H4, regarding the independent variable BIG4 in Model 1, based on the analysis results in Table 6, indicates that the presence of a Big 4 auditor reveal a negative relationship on AIs (BIG4 = –0.046, $t$ = –12.04), and the reliability of this variable is high. The analysis results support the fourth hypothesis, so we accept it.

Our results align with previous research (Alves & Carmo, 2022; Hasan et al., 2020; Khaksar et al., 2022; Viana Jr et al., 2022). Additionally, these results are consistent with the argument of agency theory. Companies audited by Big 4 companies will undergo more rigorous scrutiny and monitoring compared to those not audited by Big 4 (Alves & Carmo, 2022), limiting the managerial information hiding behaviour (Martins & Junior, 2020). Consequently, the likelihood of AIs is lower (Viana Jr et al., 2022). Mardnly et al. (2021) demonstrate that Big 4 audit companies impose additional control over managers when they have the incentive to carry out AIs. Moreover, Big 4 auditors impose higher income quality through more conservative accounting for client financial reporting as a rational response to stricter investor protection regimes, including the potential for investors to sue auditors for negligence and regulatory penalties for misconduct (Hung et al., 2024). In contrast, auditors not belonging to Big 4 face less reputational risk than Big 4 companies and thus lack a strong incentive to compel clients to enhance income quality and eliminate risks (Alves & Carmo, 2022).

The results in Table 6 of Model 1 for the fifth hypothesis indicate that changes in audit companies have a negative relationship with AIs (AUDITCHANGE = –0.035, $t$ = –8.88), and this relationship is highly reliable. Therefore, H5 is accepted.

These results are supported by previous studies (Alvin & Susanto, 2022; Kurawa & Aca, 2020; Nwoye et al., 2021). This can be understood as the longer the audit tenure, the higher the likelihood of AIs. This result is supported by agency theory. Previous study stated that a long-term relationship with auditors allows company leadership to engage in income management because the longer the audit tenure, the higher the threat of familiarity, which adversely affects AIs (Sharf & Nassar, 2021). Auditors who have been responsible for a company for a

long time may develop significant emotional relationships with clients, leading to a reduction in auditor independence, which tends to stand in favour of the principal (Nwoye et al., 2021). Emotional relationships lead to information asymmetry between the principal and the agent, but they also increase AIs due to actions taken by the agent (Alvin & Susanto, 2022).

For H6, Table 7 show the result of two-step system GMM regression analysis for Model 2. As can be seen, the *p*-value of the AR2 test in Table 7 is greater than 0.1 (0.233, respectively). This implies that the system GMM is statistically significant, and we accept the null hypothesis (H0) that there is no endogeneity issue. Furthermore, the Hansen test shows *p*-values of 0.6, also greater than 0.1, indicating that the technical parameters face no overidentification problem. Therefore, these findings support the reliability of the two-step system GMM method in our analysis.

Table 7
*Two-step system GMM regression for Model 2*

| Variable | AIs |
|---|---|
| LEV | 0.001*** [37.51] |
| BSIZE | –0.037*** [–25.51] |
| BSIZE_LEV | –0.001*** [–28.75] |
| BIND | –0.027*** [–6.33] |
| BIND_LEV | –0.001*** [–13.75] |
| DUAL | –0.025*** [–9.25] |
| DUAL_LEV | –0.001*** [–24.05] |
| BIG4 | –0.050*** [19.98] |
| BIG4_LEV | 0.001*** [18.74] |
| AUDITCHANGE | –0.031*** [–21.13] |
| AUDITCHANGE_LEV | 0.001*** [20.91] |
| SIZE | 0.012*** [–6.06] |
| ROA | 1.369*** [47.21] |
| N | 2,713 |
| No. of group | 382 |
| No. of instrument | 319 |
| AR1 test | 0.000 |
| AR2 test | 0.233 |
| Hansen test | 0.600 |

*Notes*: The numbers in brackets are test statistics. *, ** and *** indicate significant at 10%, 5% and 1%, respectively. (Source: author's calculations from research data).

For the final hypothesis (H6), the results in Table 7 of Model 2 demonstrate that the relationship between CG and AIs is moderated by financial leverage, and this result has high reliability. In particular, the CG–AIs relationship is buffering by leverage when it moderates the relationship of board size, board independence and CEO duality on AIs (BSIZE_LEV = –0.001, $t$ = –28.75; BIND_LEV = –0.001, $t$ = –13.75; DUAL_LEV = –0.001, $t$ = –24.05). On the contrary, the weakened effect of leverage can be seen when it moderates the relationship regarding the presence of Big4 and the change of audit company on AIs (BIG4_LEV = 0.001, $t$ = 18.74; AUDITCHANGE_LEV = 0.001, $t$ = 20.91). This finding aligns with the agency theory. Specifically, companies primarily utilising financial leverage are likely to enhance the relationship between CG and AIs. This can be understood as when investing through financial leverage, companies need a robust CG mechanism to limit the likelihood of AIs (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas, 2023).

Specifically, the buffering effect for board-related mechanisms is critical in highly leveraged companies, where financial discipline is paramount. Larger boards bring diverse expertise and enhanced monitoring capacity, which reduces opportunities for financial misreporting. This effect is amplified under high leverage, as the stakes for maintaining financial integrity increase, reinforcing the importance of robust governance (Kjærland et al., 2020). Similarly, the presence of independent directors is particularly valuable for highly leveraged companies, as their external perspective helps ensure transparent reporting and mitigates risks of financial irregularities (Reskino & Thamlim, 2023). Leverage is shown to buffer the link between board independence and AIs, enhancing the board's capacity to rein in financial irregularities in highly leveraged companies, as indicated by the interaction term (BIND_LEV = –0.001). The negative interaction term (BIND_LEV = –0.001) highlights that leverage enhances the role of independent directors in safeguarding against AIs, as heightened external scrutiny demands greater accountability. In contrast, CEO duality, which centralises leadership, shows a complex dynamic. While generally considered detrimental to governance, the negative interaction term (DUAL_LEV = –0.001) suggests that in highly leveraged companies, the stabilising influence of dual leadership might reduce the likelihood of financial manipulation, potentially due to the urgent need to manage financial obligations effectively (Asema & Abanyam, 2023).

For external governance mechanisms, the findings suggest that leverage weakens their effectiveness. The presence of Big 4 auditors, typically associated with reduced AIs due to their stringent oversight, is less impactful in highly leveraged companies (Mardnly et al., 2021). This may reflect the management's tendency to adopt aggressive accounting practices under financial pressure, which are harder to detect even for highly reputable auditors. Similarly, frequent

audit company changes, while generally associated with closer scrutiny by new auditors, appear to exacerbate risks in highly leveraged contexts. Disruptions in audit continuity could lead to lapses in oversight, increasing susceptibility to financial anomalies (Alvin & Susanto, 2022).

Regarding control variables, the variable SIZE has a positive coefficient and high reliability. Previous studies have shown similar results (Bassiouny et al., 2016; Bouaziz et al., 2020; Nuanpradit, 2019; Saleh et al., 2021). It can be observed that larger companies are less motivated to manage accounting results (Bouaziz et al., 2020). Lastly, the coefficient of the variable ROA in Model 1 is positive and highly reliable. This result is supported and consistent with the findings of Abbas and Ayub (2019), Khuong et al. (2019) and Rhee et al. (2021). It can be seen that the most successful companies tend to accelerate profitability and performance through real and accrual-based income management methods, ultimately increasing the likelihood of AIs (Khuong et al., 2019).

## CONCLUSIONS

After conducting regression analysis on data from 382 companies, the obtained results showed that the H1 is accepted. This implies that a larger board would be better able to limit AIs (Enoidem et al., 2023; Githaiga et al., 2022; Hamid & Bello, 2019; Thinh & Tan, 2019). Our results show a negatively and statistically significant correlation between board independence and AIs. Therefore, we accept the H2. This aligns with previous studies (Dhu & Hbp, 2019; Files & Liu, 2022; Subair et al., 2020; Wu et al., 2023). This suggests that the likelihood of financial statement fraud diminishes with an increase in the number of non-executive directors, thereby minimising AIs (Files & Liu, 2022; Subair et al., 2020; Wu et al., 2023). Regarding the H3, our results indicate that the CEO concurrently serving as Chairman of the Board has a negative impact on AIs, which contradicts our hypothesis. Therefore, we reject this hypothesis. Previous studies have shown results in conflict with our relationships (Azhari et al., 2020; Dhu & Hbp, 2019; Martins & Junior, 2020). The H4 is accepted, which can be understood as businesses tend to perform AIs if audited by non-Big 4 companies compared to companies audited by Big 4 auditors (Alves & Carmo, 2022; Hasan et al., 2020; Khaksar et al., 2022; Viana Jr et al., 2022). Finally, the H5 was accepted. This result is supported by previous studies (Alvin & Susanto, 2022; Kurawa & Aca, 2020; Nwoye et al., 2021). Our results convey a message that the longer the audit period, the higher the likelihood of AIs.

In addition, the final hypothesis (H6) is also accepted, meaning that businesses that primarily use financial leverage will promote the relationship between CG and AIs (Rakshit & Paul, 2020; Ruwanti et al., 2019; Sadiq & Abbas,

2023). Particularly in highly indebted companies, larger boards and independent directors are more effective in reducing AIs. Nonetheless, CEO duality lowers AIs in leveraged companies in contrast to classic agency theory, indicating that concentrated leadership may offer stability in the face of financial strain. Even while Big 4 auditors reduce the danger of AIs, when financial leverage rises—possibly as a result of increased financial pressure—their efficacy decreases. Furthermore, even while switching audit companies usually lowers AIs, repeated changes in highly leveraged organisations may impair monitoring and raise the possibility of AIs.

**Implications and Research Limitations**

The importance of corporate governance (CG) systems in reducing accounting irregularities (AIs) is highlighted by the study's implications for the perspective of agency theory. This theory posits that there exists a principal-agent conflict in which managers, acting as agents, may exhibit self-interested conduct, which frequently results in the creation of AIs. The CG system is viewed as a crucial control mechanism to stop these abnormalities since it was created to match management with the interests of shareholders, or principles. Several factors like CEO duality, board independence and size, greatly affect the chance of AIs.

Specifically, expanding the size of the BOD enhances the professional diversity of independent members. Therefore, an expanded board enhances the capacity for monitoring and evaluating results, consequently decreasing the likelihood of managers engaging in AIs. Besides, the findings on CEO duality (H3) challenge traditional agency theory, which associates dual roles with risks due to power concentration. Instead, the results indicate a negative relationship between duality and accounting irregularities (AIs), suggesting that dual roles can enhance governance efficiency under certain conditions. Dual leadership may streamline decision-making and reduce conflicts when supported by robust internal controls, such as independent boards (Nguyen et al., 2023). However, caution is necessary, as duality can still pose risks without proper oversight mechanisms (Wicaksono & Suryandari, 2021). Companies opting for dual roles should strengthen supervisory boards to detect and prevent fraudulent activities promptly, ensuring checks and balances that mitigate potential governance vulnerabilities.

Globally, the independence and integrity of the BOD play a crucial role in ensuring the quality and reliability of published financial reports (Qawqzeh et al., 2021). For large companies, especially those listed on the stock market, hiring auditors from Big 4 companies can strengthen the audit process and quality of work, ensuring accuracy and compliance with accounting regulations. This, in turn, increases transparency in financial statements and instills confidence in

investors. Businesses should also avoid maintaining a long-term relationship with an auditing company, as it can compromise auditor independence and increase errors during the audit process. Changing audit companies contributes to ensuring full implementation of audit processes and improving audit quality.

Additionally, policymakers should consider financial leverage when designing governance regulations, particularly for highly leveraged companies, to ensure stronger CG practices. Corporate management should focus on optimising board structures and audit practices to effectively manage the risks associated with high leverage. Investors and auditors should be more cautious when evaluating companies with significant debt, as financial pressure may weaken governance mechanisms. Overall, the interplay between leverage and CG highlights the need for tailored governance strategies that address the specific risks posed by a company's financial structure.

The study has some limitations. Firstly, the analysis results may not be applicable to certain types of businesses such as those in medicine and healthcare, construction and other fields, potentially impacting the study's diversity and generalisability to all business types. Secondly, resource constraints prevented the research team from collecting data in many developing countries. Consequently, the research sample was limited to one developing country, Vietnam, introducing potential differences in political, legal institutions and socio-economic conditions compared to other countries.

The research focuses solely on companies listed on the Vietnamese stock market. Future articles could explore comparisons with the ASEAN Economic Community (AEC), other Southeast Asian countries or possibly other developed countries. Various factors need to be considered into account when assessing the extent of influence on AIs in listed companies across different countries. Additionally, examining the aspects between institutions and socio-economic conditions would allow for a more comprehensive and accurate assessment of the relationship between CG and AIs in companies.

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