



Article

The Impact of Tax Avoidance on Earnings Management: The Moderating Role of Board Governance Characteristics

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Abstract

The study aims to investigate the impact of tax avoidance (TA) on earnings management practices (EM). The current research also investigates the moderating role of board governance characteristics on this relationship in the Egyptian context. The sample incorporates all the non-financial companies included in the Egyptian Stock Exchange between 2017 and 2021. The final sample comprises 120 enterprises from 12 industries, with 600 observations. Statistical analysis employs fixed effects regression, pooled OLS, and GMM estimations to test the proposed hypotheses. We found a significant positive impact of TA on the level of EM. Further, board gender diversity (BGD) and board independence (BIND) were found to have a negative moderating impact as they alleviate the effect of TA on the level of EM. Finally, CEO duality (CEOD) was found to have no moderating impact. To the authors' knowledge, this is the first study examining how board governance characteristics moderate and influence the level of EM in emerging markets. This adds new insights to the TA and EM literature, as previous research mainly focused on the direct effects of BGD, BIND, and CEOD on EM levels. The current study provides fresh evidence from an emerging market context.

Keywords: tax avoidance; earnings management; gender diversity; board governance; emerging economy; Egypt



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1. Introduction

As multinational corporations continue to expand, the prevalence of tax avoidance (TA), tax evasion, and earnings management (EM) also increases, prompting governments worldwide to regularly adjust their tax policies to address these behaviors. These adjustments are crucial to ensure the collection of necessary amounts of tax that enable governments to do their duties towards society. Corporations see taxes from their side as a burden that is imposed by law, and if they can legally reduce this financial burden, it can enhance their competitiveness (Md Noor et al., 2010; Pohan, 2009), through saving this money for future investment or increasing owners' wealth (Stolowy & Breton, 2004; Watts & Zimmerman, 1978). If shareholders accept the management point of view regarding TA activities, they will pressure them to implement more aggressive TA plans (Desai & Dharmapala, 2009; Putri et al., 2016).

Taxation literature contains two opposite views regarding TA. The first viewpoint explains how TA strategies aim to enhance shareholders' wealth by retaining more resources within the company instead of paying them in taxes (Nebie & Cheng, 2023). The second viewpoint was cautious and warned from TA practices, suggesting that if not managed

effectively, it could result in increasing costs relating to agency and a decrease in the wealth accumulation for shareholders. Supporters of the second strand explain their results through the agency theory lens (Elamer et al., 2024). Therefore, companies must manage their tax behavior in a balanced way that can produce a proper amount of profits as well as paying the proper amount of tax. The balance is the proper way of maximizing shareholders' wealth (Lee et al., 2015).

Recent corporate scandals like Enron and WorldCom, caused by accounting manipulations, have triggered several concerns about the reliability of financial reporting among regulators and professionals (H. Chen et al., 2021). A key factor behind these scandals is that companies pursue aggressive tax strategies to cut costs. Reports show that most companies worldwide engage in some form of aggressive tax planning (Alomair & Metwally, 2025; Assidi et al., 2022; Duhoon & Singh, 2023). Due to managers' focus on TA practices, the significance of the TA-EM relationship has increased (Assidi et al., 2022; Neifar & Utz, 2019). Although it is commonly believed that companies manipulate earnings for tax purposes (Marques et al., 2011; Mills et al., 1998), research exploring the connection between TA activities and firm EM behavior remains limited (Assidi et al., 2022; Itan et al., 2024; Marques et al., 2011; Mills et al., 1998).

Having said this, differing perspectives on the effects of TA on firms and shareholders' wealth have inspired extensive recent research in the literature, investigating TA's impact on EM (Assidi et al., 2022; Dinata & Asqolani, 2024; Itan et al., 2024; Kusuma & Lukman, 2023; Susanto et al., 2019; Yustina et al., 2022). These studies reached mixed and conflicting findings. Some studies reported that TA has a positive impact on EM (Assidi et al., 2022; Kusuma & Lukman, 2023; Shittu et al., 2023; Susanto et al., 2019), while others reported no impact of TA on EM (Dinata & Asqolani, 2024; Yustina et al., 2022). While those studies present an addition to our understanding, the precise effect of TA on EM remains unclear, as many factors, mechanisms, and contexts are still not studied, which calls for further research to understand the impact of TA on EM in different settings (Hlel, 2025; Siska et al., 2024; Susanto et al., 2019).

Corporate governance (CG) represents one of the main themes in EM literature, as early research confirmed that effective CG can decrease the likelihood of EM in both developing and developed markets (La Porta et al., 2000; Le & Nguyen, 2023; Xie et al., 2003). Generally, the characteristics of the board are considered crucial elements of CG in limiting accrual-based earnings manipulation (Githaiga et al., 2022; Le & Nguyen, 2023). Many studies have consistently emphasized the three distinct characteristics—board gender diversity (BGD), board independence (BIND), and CEO duality (CEOD)—as having a direct impact on managerial decision-making and risk behaviors (Jarboui et al., 2020; Khlifi et al., 2024; Kovermann & Velte, 2019; Voinea et al., 2022). Concentrating on those governance mechanisms aims to explore how they can impact EM practices in the Egyptian context, which represents a blind spot in the literature that requires further investigation.

Research on BGD influence has recently gained attention across various disciplines, including accounting literature. Numerous studies in the literature have documented a positive effect of BGD on ethical decision-making and the improvement of ESG and CSR practices (Adams & Ferreira, 2009; Almulhim & Metwally, 2025). Some research indicates that female directors tend to be more risk-averse (A. Metwally, 2022; A. B. Metwally et al., 2024a), which in turn can enhance both tax compliance and accountability (Francis et al., 2014; Lanis & Richardson, 2015). Nevertheless, various factors, including culture, industry, community, location, and regulatory environment, can influence how BGD impacts tax strategies and EM practices (Khaw et al., 2022). Therefore, additional research is needed to investigate how BGD influences the relationship between TA and EM in various contexts.

BIND has been widely examined in research as an essential governance factor, as board members owe responsibilities to shareholders and the community, and they help prevent riskier actions (Khelifi et al., 2024). Moreover, having more non-executive directors on the board improves oversight and governance of management (Khelifi et al., 2024; Liao et al., 2015). Multiple studies show a negative correlation between BIND and EM, showing that boards with more independents are less inclined to engage in aggressive TA policies and EM activities (Choi & Park, 2022; Githaiga et al., 2022; Hossain et al., 2025; Khelifi et al., 2024; Lanis & Richardson, 2011; Le & Nguyen, 2023; Salhi et al., 2019). Agency theory also supports this, suggesting that increasing the number of independent directors can decrease managerial opportunism (Shaukat Malik et al., 2025).

CEOD has been studied extensively in the EM literature. Early studies reported mixed and contradictory results. Some studies revealed that the power given to CEOs through duality gives them an incentive to engage in more aggressive TA practices, potentially leading to EM (Jensen & Meckling, 1976; Lanis & Richardson, 2011). On the other hand, other studies reported that CEOD can enhance decision-making, encouraging balanced tax strategies and supporting long-term corporate sustainability (Donaldson & Davis, 1991; Ezejiofor & Ezenwafor, 2021; Khelifi et al., 2024; Kolias & Koumanakos, 2022). Additionally, some studies concluded no effect of CEOD on EM (Alareeni, 2018; Almarayeh et al., 2024; Bataineh et al., 2018). These contradictory findings call for further investigation of CEOD's influence on EM in the Egyptian context.

To summarize, reviewing the literature shows there are conflicting findings about the effect of TA on EM. Moreover, findings about how board governance characteristics directly influence EM are inconsistent and inconclusive. Additionally, the literature overlooks the potential moderating role of these characteristics in the TA-EM relationship. This evident gap motivated us to explore the direct effect of TA on EM and to investigate how board governance features might influence this relationship. In that sense, concentrating on BGD, BIND, and CEOD will extend the existing literature by concentrating on studying the abovementioned relations in an emerging market, namely the Egyptian context. Early research primarily focuses on the effect of TA on EM in Europe and Asia. Our study fills a notable gap by exploring an emerging African and Middle Eastern market, which represents an understudied context.

Focusing on the Egyptian context is a key aspect of the current study. Egypt represents a unique setting that needs further examination because of its sociopolitical and economic reforms that came after two recent revolutions (Alomair & Metwally, 2025; A. B. M. Metwally & Diab, 2024). The Egyptian government has undertaken economic reforms like privatization, cutting public spending, and empowering women by the late 1990s (A. B. Metwally et al., 2024a; Ramadan & Hassan, 2022). Nevertheless, Egypt underwent two revolutions despite regulatory reforms and economic restructuring (Diab & Metwally, 2020). The revolutions caused political unrest and economic instability, which raised concerns regarding foreign investment (A. B. M. Metwally & Diab, 2021). In response to these unexpected circumstances, the Egyptian government has enacted reforms such as regulations to protect workers, support women's empowerment, improve tax laws, and strengthen governance (Alomair & Metwally, 2025).

Despite these efforts toward implementing proper reforms, the Egyptian tax system still faces compliance challenges (A. M. Mohamed & Gan, 2024). The complexity and ambiguity of tax regulations, combined with limited access to financial and advisory services, create challenges for some firms in meeting their tax compliance requirements (Farghaly & Ahmed, 2021). Furthermore, Egypt is still unable to adopt uniform accounting standards due to diverse practices and structural issues, such as government intervention (M. K. A. Mohamed et al., 2025). Having said this, the Egyptian market has some deficiencies that

need further interventions. These difficulties include weak regulatory frameworks, political influence over businesses, limited transparency, and poor governance (A. Metwally, 2022; Ramadan & Hassan, 2022).

Consequently, Egypt's unique settings make it a context that requires further attention and exploration. The current study examines whether Egypt's evolving regulatory, governance, tax, and accounting frameworks have notably enhanced EM practices. It focuses on two key questions: (1) How does TA affect EM? (2) In what ways do board governance features impact the TA-EM link? The findings show that TA has a positive and significant effect on EM. Moreover, BGD and BIND are found to negatively moderate this relationship, which eliminates the positive impact of TA on EM and reduces EM practices. In contrast, CEOOD has no moderating effect. Overall, this study provides new evidence that both BGD and BIND are essential factors impacting EM in the Egyptian environment.

The current study offers several important contributions to the existing body of literature. Firstly, it examines how board governance characteristics act as a moderator in a developing country facing significant regulatory changes, economic challenges, and political instability, which have impacted governance and tax policies. Unlike early research, our work is distinguished by grounding hypotheses in agency, stewardship, and stakeholder theories, which help explain the findings. Finally, the results and implications of this study are likely to be of interest to Egyptian companies and their management, local investors, and regulatory bodies in other developing economies, especially in Arab nations that have faced similar political and economic disturbances as Egypt.

The paper is organized as follows: Section 2 reviews the relevant literature, discusses the theoretical foundations, and formulates hypotheses. Section 3 explains the methodology and techniques employed. Section 4 presents the empirical results and analyses. The final section offers conclusions and discusses the implications of the research.

2. Literature Review

2.1. TA and EM

Studying the impact of TA on EM practices is not as easy as it may appear. What makes understanding and explaining this relation complicated is that it involves understanding management behavior and actions regarding both taxation and accounting procedures (Assidi et al., 2022; Nobes, 2004). To properly understand the TA-EM relationship, one must first consider managerial incentives behind doing both (Assidi et al., 2022). Managers may employ specific TA strategies to lower their tax burdens in pursuit of their own goals (Assidi & Hussainey, 2021). Therefore, TA may result from conflicts of interest between managers and shareholders (Desai & Dharmapala, 2006). Moreover, managers in certain situations are obliged to supply trustworthy information to reduce information asymmetry to shareholders. In order to be able to do so, they may engage in EM practices (Dinata & Asqolani, 2024). In other circumstances, managers may hide information regarding the real reason behind their TA initiatives from their shareholders to protect their personal interests (Herusetya & Stefani, 2020).

Reviewing the TA literature revealed that there are two main contradictory strands of research. The initial explanation describes how TA strategies aim to increase the amount of wealth kept for shareholders by holding more resources within the company instead of distributing them through taxation (Nebie & Cheng, 2023). Conversely, the second strand warns from TA practices and claims that if not managed effectively, it could result in increasing costs relating to agency and a decrease in the wealth accumulation for shareholders. Supporters of the second strand explain their results through the agency theory lens (Elamer et al., 2024). Therefore, companies must manage their tax behavior in a balanced

way that can produce a proper amount of profits as well as paying the proper amount of tax. The balance is the proper way of maximizing shareholders' wealth (Lee et al., 2015).

Recent reports indicate that most companies around the world participate in some form of aggressive tax planning (Alomair & Metwally, 2025; Assidi et al., 2022; Duhoon & Singh, 2023). Due to managers' focus on TA practices, the significance of the TA-EM relationship has increased (Assidi et al., 2022; Neifar & Utz, 2019). Although it is commonly believed that companies manipulate earnings for tax purposes (Marques et al., 2011; Mills et al., 1998), research exploring the connection between TA activities and firm EM behavior remains limited (Assidi et al., 2022; Dhaliwal et al., 2004; Itan et al., 2024). Companies' tax strategies are often connected to EM activities. TA can encourage managers to engage in EM. Herusetya and Stefani (2020) pointed out that EM is a goal of various TA schemes used by companies. Susanto et al. (2019) supported this point of view as they concluded that higher tax planning aggressiveness is positively correlated with EM practices.

Having said this, recently, many studies have started to concentrate on the impact of TA on EM, and many of those studies explain their results by showing how TA affects companies and shareholders' wealth (Assidi et al., 2022; Dinata & Asqolani, 2024; Itan et al., 2024; Kusuma & Lukman, 2023; Shittu et al., 2023; Susanto et al., 2019; Yustina et al., 2022). These studies reported mixed and conflicting findings. Some studies concluded that TA positively and significantly affects EM practices (Assidi et al., 2022; Kusuma & Lukman, 2023; Shittu et al., 2023; Susanto et al., 2019), while others suggest no significant impact of TA on EM practices (Dinata & Asqolani, 2024; Yustina et al., 2022). Despite these results, the precise impact of TA on EM remains unclear, which calls for further research to understand the impact of TA on EM in different settings (Hlel, 2025; Siska et al., 2024; Susanto et al., 2019). Building on this, we suggest the following hypothesis:

H1. *There is a positive association between TA and EM.*

2.2. Board Governance Characteristics: Moderating Role

CG mechanisms studies and their impact on managerial decisions have increased extensively in recent years (Ali et al., 2024; Almarayeh et al., 2024; Fan et al., 2021; Ghaleb et al., 2021; Itan et al., 2024; A. Metwally, 2022). Many of those studies have concentrated on the direct impact of good governance on both TA and EM (Itan et al., 2024). The importance of CG mechanisms stems from the idea that EM represents a strategy used by firms to manipulate earnings and reduce taxes (Krull, 2004). In that sense, EM can result in misleading financial reports that include false information about a company's actual operations (Fan et al., 2021). Therefore, strong governance systems are essential for giving investors accurate financial data, as they can limit a firm's tendency to manipulate earnings excessively (Susanto et al., 2019). Lanis and Richardson (2012) argue that managers often pursue aggressive tax strategies to lower the company's tax burden, which may be done legally or illegally. Robust governance helps in preventing such actions (Widyaningsih et al., 2017).

In that sense, proper strong CG mechanisms are proven in the literature to limit from EM practices and strategies (Chouaibi et al., 2021). The main problem with EM initiatives is that they are often conducted through legal and legitimate activities, which can directly impact the firm's value. Hence, governance mechanisms are crucial in reducing conflicts of interest related to EM. An effective governance system protects the interests of both internal and external stakeholders (Assidi et al., 2022). Hence, the current study investigates how board governance impacts EM decisions, including managers' incentive-based contracts. It recognizes the important role played by CG in managing managerial opportunism, protecting stakeholder interests, and improving financial performance. The current study will concentrate on three main board governance characteristics (i.e., BGD, BIND, and CEOD) and their moderating impact on the relationship between TA and EM.

2.2.1. BGD Moderating Role

Recently, there has been growing attention to female representation on corporate boards across various organizational settings (Abdelazim et al., 2022; Almulhim & Metwally, 2025). Global regulatory changes drive this trend, stakeholder demands for more female directors, media coverage, and CG issues (Ben-Amar et al., 2017; Wahid, 2019). This study explores how gender diversity influences EM through two grand theories. First, agency theory suggests that gender diversity can reduce agency problems because women are often more independent and participative (Bravo & Alcaide-Ruiz, 2019). Therefore, appointing women to board roles can improve oversight, reporting, and diminish agency concerns (Issa & Zaid, 2021). From a resource dependency theory view, women represent a strategic additional resource on the board as they offer diverse skills and perspectives on decisions and actions, which may support company growth and performance (Ramadan & Hassan, 2022).

BGD impact has been studied in the literature in different disciplines and areas of concern to business and their performance. These studies include, but are not limited to, the following areas: decision-making quality; EM; TA; transparency; disclosure; ethical considerations; risk-taking and aversion (Abdelazim et al., 2022; Almarayeh et al., 2024; Almulhim & Metwally, 2025; A. B. Metwally et al., 2024a; Zalata et al., 2019). These findings support claims that female board members offer an alternative perspective that directly affects board decisions. Several studies revealed that females have more tendency to be risk-averse and more conservative compared to males (Adams & Ferreira, 2009; Croson & Gneezy, 2009). Other studies have emphasized that female directors tend to make more ethical judgments and act accordingly (O'Fallon & Butterfield, 2013; Vermeir & Van Kenhove, 2008). As a result, they are less inclined to participate in unethical behavior, helping reduce managerial opportunism (Zalata et al., 2019).

Multiple studies in the literature have examined the direct effect of BGD on EM, yielding varied and sometimes contradictory findings. Some report a negative effect, as BGD was able to reduce EM activities (Githaiga et al., 2022; Sial et al., 2019), while others found no significant effect (Abdullah & Ismail, 2016; Arioglu, 2020; Le & Nguyen, 2023; Sun et al., 2011). A review of the literature shows that there are no studies specifically exploring how BGD moderates the relationship between TA and EM in Egypt. This creates a research gap in understanding the moderating role of BGD on EM levels. Accordingly, this study hypothesizes the following:

H2. *BGD moderates the association between TA and EM.*

2.2.2. BIND Moderating Role

Fama (1980) and Fama and Jensen (1983) explained that the effectiveness of a board depends on its characteristics. In addition, Jensen and Meckling (1976) argue that adding more non-executive directors can help in mitigating agency conflicts. BIND is crucial in monitoring managerial opportunism due to the existence of independent judgment (Rediker & Seth, 1995). Moreover, Fama and Jensen (1983) emphasize that non-executive directors are more effective in supervising executives because they seek to sustain their professional reputations.

Previous research has explored how BIND has a direct positive impact on control over opportunistic earnings manipulation. Klein (2002) revealed a significant negative relationship between abnormal accruals and the ratio of non-executive directors to total board members. Peasnell et al. (2000) explained the impact of board composition and EM considering pre-post implementation of new governance regulations. They observed no correlation before the new rules but identified a significant negative correlation afterward,

linking higher proportions of independent directors to reduced abnormal accruals. In addition, [Gerald Alves \(2011\)](#) concluded that board structure affects EM levels among Portuguese firms; their results confirmed that a greater percentage of non-executive directors is associated with lower discretionary accruals, which entails that boards with more non-executive members tend to limit EM.

In a similar vein, [Rajeevan and Ajward \(2019\)](#) explored the impact of CG mechanisms and the level of EM. Their results highlighted that firms with a higher share of non-executive directors tend to reduce EM. Similarly, [Türegün \(2018\)](#) found a negative relationship between the BIND and EM. Contrary to these early studies, [Alareeni \(2018\)](#) found that BIND is positively impacting EM in the Bahraini context, while [Le and Nguyen \(2023\)](#) reported no impact of BIND on EM in the Vietnamese context. Overall, these findings suggest that non-executive directors are likely to restrict executives from manipulating the financial information ([Githaiga et al., 2022](#)).

To summarize, having an independent board aims to secure the company from information asymmetry and management's opportunistic behaviors. It actively encourages management to perform their supervisory and director roles effectively ([Githaiga et al., 2022](#); [Susanto et al., 2019](#)). This helps ensure the company adopts a solid business strategy and adheres to relevant laws and principles. In that sense, BIND was found to negatively affect EM in many studies in the literature. Therefore, the presence of independent directors can help reduce the likelihood of earnings manipulation ([Aleqab & Ighnaim, 2021](#); [Chouaibi et al., 2018](#); [Githaiga et al., 2022](#); [Rajeevan & Ajward, 2019](#); [Susanto et al., 2019](#); [Susanto et al., 2017](#)). A review of the available literature shows that there are no studies that specifically investigate how BIND moderates the relationship between TA and EM within the Egyptian context. Therefore, investigating the moderating effect of BIND on EM levels presents a research gap. Based on this, the current study proposes the following hypothesis:

H3. *BIND moderates the association between TA and EM.*

2.2.3. CEOD Moderating Role

CEOD has been extensively studied in academic research, resulting in diverse and contradictory findings. The differences in results arise because of differences in the sociopolitical factors in the contexts that were studied, as these considerations may significantly influence decision-making authority, which may impact tax and EM strategies ([Khelifi et al., 2024](#)). Some researchers argue that the power given to CEOs gives them an incentive to pursue more aggressive TA practices, potentially leading to EM ([Abbott et al., 2004](#); [Jensen & Meckling, 1976](#); [Lanis & Richardson, 2011](#)). By contrast, other studies in the literature suggest that CEOD can promote better decision-making, encouraging balanced tax strategies and supporting long-term corporate sustainability ([Donaldson & Davis, 1991](#); [Ezejiofor & Ezenwafor, 2021](#); [Khelifi et al., 2024](#); [Kolias & Koumanakos, 2022](#)). Additionally, certain studies reported no impact of CEOD on EM ([Alareeni, 2018](#); [Almarayeh et al., 2024](#); [Bataineh et al., 2018](#); [Le & Nguyen, 2023](#)).

Conflicting research results have made CEOD a debated governance mechanism, with many scholars suggesting it can increase EM ([Abbott et al., 2004](#); [Jensen & Meckling, 1976](#); [Lanis & Richardson, 2011](#)). Supporters of the positive impact of CEOD on EM interpret their findings through agency theory, which argues that when the chairman's interests differ from shareholders', holding the roles together may lead managers to act opportunistically for personal gain. On the other hand, a separate chairman who is not also the CEO is thought to enhance board oversight and reduce earnings manipulation ([Abbott et al., 2004](#); [Fama & Jensen, 1983](#); [Rajeevan & Ajward, 2019](#)). Conversely, some studies align with stewardship theory, claiming that role consolidation centralizes authority and responsibility, resulting in stronger CG and lower EM ([Bhagat & Black, 1999](#); [Davis et al., 1997](#)). Still, some studies

in the literature reported CEOD has little to no impact on EM (Alareeni, 2018; Almarayeh et al., 2024; Bataineh et al., 2018; Le & Nguyen, 2023). A review of the existing literature shows that no studies have specifically examined how CEOD moderates the relationship between TA and EM within the Egyptian setting. Consequently, exploring the moderating influence of CEOD on EM constitutes a gap in the research. Based on this, the current study suggests the following hypothesis:

H4. *CEOD moderates the association between TA and EM.*

3. Research Design

3.1. Sample Selection and Data

The study's sample includes all firms registered on the Egyptian Stock Exchange between 2017 and 2021, excluding the sectors with the fewest year observations, banking and finance, and some companies with incomplete data within the time frame (Abdelazim et al., 2022; A. B. Metwally et al., 2024b). The final sample consists of 120 enterprises from 12 industries, with 600 observations, as shown in Table 1. Mubasher Egypt, Bloomberg Asharq, corporate websites, and annual reports were the sources from which this study's data came.

Table 1. The study sample.

Industry	Companies	Observations	%
Travel & Leisure	14	70	11.6
Industrial Goods, Services, and Automobiles	10	50	8.3
IT, Media & Communication Services	4	20	3.3
Building Materials	11	55	9.2
Basic Resources	12	60	10
Paper & Packaging	5	25	4.2
Food, Beverage, and Tobacco	21	105	17.5
Real Estate	19	95	15.8
Energy and Support Services	2	10	1.7
Textile & Durables	9	45	7.5
Shipping & Transportation Services	5	25	4.2
Health Care & Pharmaceuticals	8	40	6.7
Total	120	600	100%

3.2. The Study Models

It is essential to understand the reasoning behind the regression model selection, which is based on the panel data aspect of our dataset. Regression using ordinary least squares (OLS) and fixed effects (FE) are the methods we use. We used the FE model according to the Hausman test results. This approach helps reduce bias from omitted variables and accounts for annual variations. We used robust standard errors in OLS and FE regression analysis to overcome the issues of autocorrelation and heteroscedasticity. Additionally, we controlled for industry and year effects in all models. All the variables are described in Table 2, and the research model is shown as follows:

Model 1:

$$EM_{it} = \beta_0 + \beta_1 TA_{it} + \beta_2 Fsize_{it} + \beta_3 Lev_{it} + \beta_4 ROA_{it} + \beta_5 BS_{it} + \varepsilon_{it}$$

Model 2:

$$EM_{it} = \beta_0 + \beta_1 TA_{it} + \beta_2 BGD_{it} + \beta_3 TA * BGD_{it} + \beta_4 Fsize_{it} + \beta_5 Levit + \beta_6 ROA_{it} + \beta_7 BS_{it} + \varepsilon_{it}$$

Model 3:

$$EM_{it} = \beta_0 + \beta_1 TA_{it} + \beta_2 BIND_{it} + \beta_3 TA * BIND_{it} + \beta_4 Fsize_{it} + \beta_5 Levit + \beta_6 ROA_{it} + \beta_7 BS_{it} + \varepsilon_{it}$$

Model 4:

$$EM_{it} = \beta_0 + \beta_1 TA_{it} + \beta_2 CEOD_{it} + \beta_3 TA * CEOD_{it} + \beta_4 Fsize_{it} + \beta_5 Levit + \beta_6 ROA_{it} + \beta_7 BS_{it} + \varepsilon_{it}$$

Table 2. Variable definitions.

Variables	Definition	Expected Sign
Dependent Variables		
Earnings Management (EM)	computed as the absolute value of the firm's discretionary accruals using the modified Jones (1995) model.	
Independent Variables		
Tax Avoidance (TA)	$\frac{\text{tax expense}}{\text{pre-tax income}}$	+
Moderating Variables		
Board gender diversity (BGD)	The percentage of females on the board.	-
Board independence (BIND)	The percentage of the board's independent non-executive directors.	-
CEO duality (CEOD)	When the two positions are combined (duality), the value of the dummy variable is 1, and when they are separated, it is 0.	+
Control variables		
Board Size (BS)	Natural log of the number of directors on the board.	-
Firm Size (Fsize)	Natural log of the entire amount of assets.	-
Firm Leverage (Lev)	$\frac{\text{total debt}}{\text{total assets}}$	+
Firm Profitability (ROA)	$\frac{\text{Net income}}{\text{total assets}}$	-

3.3. Measurement of Study Variables

3.3.1. Measurement of Earnings Management (EM)

EM is the dependent variable in this research. A substantial body of research has studied EM based on the absolute value of discretionary accruals determined by applying the modified Jones model (Almarayeh et al., 2024; Dechow et al., 1995; Eissa et al., 2023; Orazalin & Akhmetzhanov, 2019). In order to represent EM, we thus relied on the modified Jones model developed by Dechow et al. (1995). According to the modified Jones model, the following model residuals were used to determine discretionary accruals:

$$TA_{it}/A_{it-1} = \alpha + \beta_1(1/A_{it-1}) + \beta_2((\Delta REV_{it}-\Delta REC_{it})/A_{it-1}) + \beta_3(PPE_{it}/A_{it-1}) + \varepsilon_{it} \quad (1)$$

where TA_{it} , or total accruals, is computed as the difference between cash flows from operations and profits before taxes and exceptional items. Lagged total assets are represented by A_{it-1} , and the change in operating revenues is represented by ΔREV_{it} . The variation in net receivables is known as ΔREC_{it} . Gross property, plant, and equipment are referred to as PPE_{it} .

3.3.2. Measurement of Tax Avoidance (TA)

TA is measured using the effective tax rate (ETR), in line with previous research ([Abdelfattah & Aboud, 2020](#); [Alomair & Metwally, 2025](#); [Hope et al., 2013](#); [Laguir et al., 2015](#)). ETR is frequently employed in academic studies as a reliable stand-in for TA. In accordance with earlier research, we defined TA as any activity that lowers a firm's taxes in comparison to its pre-tax net income. To get the ETR, tax expenses were therefore divided by pre-tax income and were anticipated to be positively correlated with EM, since companies with greater tax avoidance rates typically manipulate earnings to hide aggressive tax planning strategies.

3.3.3. Measurement of Moderating Variable

To represent board characteristics, we employ three moderator variables. The ratio of female board directors was used to measure board gender diversity (BGD), to determine if the impact of TA on EM is dependent on the degree of female representation, and whether the moderating variable BGD interacts with TA. A negative coefficient of the interaction term ($TA \times BGD$) would suggest that the positive correlation between tax evasion and earnings management is weakened when there are more women on the board. The percentage of independent directors on the board is known as board independence (BIND), which was used to determine whether the impact of TA on EM is dependent on the ratio of board independence, and whether the moderating variable BIND interacts with TA. A negative coefficient of the interaction term ($TA \times BIND$) would suggest that the positive correlation between tax avoidance and earnings management is weakened by a higher ratio of board independence. The last dummy variable is CEO duality (CEOD), which is equal to 0 if the CEO is not also the chairman of the board and 1 otherwise, used to determine if the presence of CEO dualism affects how TA affects EM, and whether the moderating variable CEOD interacts with TA. A positive coefficient of the interaction term ($TA \times CEOD$) would suggest that CEO duality reinforces the positive correlation between tax avoidance and earnings management ([Ali et al., 2024](#); [Almarayeh et al., 2024](#)).

3.3.4. The Control Variables

To prevent biased results, the study models included a set of control variables that are conceptually related to EM, in accordance with other studies ([Almarayeh et al., 2024](#); [Ghaleb et al., 2021](#); [Le & Nguyen, 2023](#)). These included company size (Fsize), which is determined by the natural logarithm of a company's total assets and is expected to have a negative association with EM, as larger firms are less likely to participate in earnings management; firm leverage (Lev), which is determined by the proportion of total debt to total assets and is expected to have a positive relationship with EM, as firms with greater leverage ratios are more likely to participate in earnings management; and board size (BS), which is determined by the natural logarithm of the number of directors and is anticipated to have negative effect with EM, since larger boards of directors provide more efficient oversight, which lowers the use of earnings management techniques. Lastly, net income as a percentage of total assets is employed to compute firm profitability (ROA) and is expected to have a negative relationship with EM, as firms with lower performance are more likely to participate in earnings management.

3.4. Descriptive Statistics and Correlation Matrix

The descriptive statistics for the key variables utilized in the research are shown in Table 3. There were 600 observations in the sample. EM had a range of 0.00 to 0.43 with a mean of 0.10. TA ranged from 0.00 to 0.89, with a mean value of 0.20. On average, there were 9% of female directors on boards. Independent members accounted for 77% of the

board. Additionally, the mean of CEOD, equivalent to 306 observations from the final sample, indicates that 51% of Egyptian businesses have CEO duality. In terms of the control variables, the board size had a mean value of 2.14 and a range of 1.95 to 2.77. With a range of 17.36 to 24.64, the average firm size was 21.52. The average corporate leverage was 43 percent. Furthermore, 15% was the average corporate profitability.

Table 3. Variables descriptive statistics.

Panel A: Summary statistics for continuous variables						
Variables	N	Mean	Median	SD	Min	Max
EM	600	0.10	0.08	0.09	0.00	0.43
TA	600	0.20	0.13	0.26	0.00	0.89
Fsize	600	21.52	21.63	1.64	17.36	24.64
Lev	600	0.43	0.45	0.23	0.04	0.91
ROA	600	0.15	0.11	0.22	−0.21	0.95
BS	600	2.14	2.20	0.31	1.95	2.77
BGD	600	0.09	0.082	0.12	0.00	0.38
BIND	600	0.77	0.78	0.12	0.45	0.94
Panel B: Summary statistics for dichotomous variable						
Variable	Modality		Frequency		(%)	
CEOD	0		294		49	
	1		306		51	

In Table 4, the correlation matrix results are presented, which indicate that there is little connection between the independent variables and no multicollinearity. Further evidence for this may be seen in the variance inflation factor (VIF), where each variable's VIF was less than 3.00. The correlation coefficients show the degree to which the variables have linear connections with one another. There are several intriguing trends and ramifications for the regression analysis that follow from the correlation investigation. With a coefficient of 0.106, TA and EM have a positive and significant correlation, indicating that higher levels of corporate EM are associated with larger levels of TA. In addition, there is an essential and negative correlation between EM and some of the moderating variables, including board independence (−0.088) and gender diversity (−0.020). Furthermore, there is a significant and negative correlation between EM and control variables, including board size (−0.087), company size (−0.136), leverage (−0.130), and profitability (−0.076).

Table 4. Correlation matrix.

Variables	EM	TA	Fsize	Lev	ROA	BS	BGD	BIND	CEOD	VIF
EM	1									----
TA	0.106 **	1								1.074
Fsize	−0.136 ***	0.045	1							1.242
Lev	−0.130 ***	0.110 ***	0.374 ***	1						1.255
ROA	−0.076 *	−0.211 ***	0.100 **	−0.162 **	1					1.144
BS	−0.087 **	−0.041	−0.077 *	−0.016	0.163 ***	1				1.228
BGD	−0.020 *	−0.098 **	−0.145 **	0.005	0.035	0.284 ***	1			1.134
BIND	−0.088 **	−0.048 *	0.010	0.090 **	0.049	0.302 ***	0.101 **	1		1.130
CEOD	−0.021	−0.119 **	−0.016	−0.115 **	0.119 **	0.097 **	0.129 **	−0.083 **	1	1.066

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

4. Findings and Discussion

4.1. Regression Results

4.1.1. TA and EM (Model 1)

Table 5 displays the results of the EM study, which used OLS and FE models to investigate the association between TA and EM (H1). The FE model's adjusted R² is 3.1%, whereas the OLS model's adjusted R² is 5.2%. We found that both models' TA coefficients are positive and significant at 1% ($B = 0.038, 0.054$), supporting H1. This implies that greater degrees of corporate EM are correlated with larger levels of TA. This suggests that most businesses are motivated to alter reported earnings in financial statements to lower their tax liabilities, as they are predisposed to engage in TA methods to minimize their tax responsibilities. The results echo what was concluded by many previous studies ([Assidi et al., 2022](#); [Kusuma & Lukman, 2023](#); [Shittu et al., 2023](#); [Susanto et al., 2019](#)). Company size, firm leverage, and board size are all significantly correlated negatively with EM for the control variables ([Zhang et al., 2022](#)).

Table 5. The impact of TA on EM—Model 1.

Variables	OLS		FE	
	Coef.	Z	Coef.	Z
TA	0.044	3.08 ***	0.056	3.41 ***
Fsize	−0.007	−2.58 **	−0.002	−1.21
Lev	−0.055	−2.73 **	−0.063	−1.54
ROA	−0.009	−0.45	−0.016	−0.38
BS	−0.040	−3.08 **	−0.014	−1.98 **
Cons	0.383	5.65 ***	0.066	0.35
Year		Yes		
Industry		Yes		
Adjusted R ²	9.7%		6.3%	
F-value	2.89 ***		2.91 ***	
Observation	600		600	

*** $p < 0.01$, ** $p < 0.05$.

4.1.2. BGD, TA and EM (Model 2)

We examined whether the ratio of female directors had an effect on the association between TA and EM (H2). The statistical findings in Table 6 show that the interactional variable (TA*BGD) significantly reduces the link between TA and EM. According to this perspective, having female directors can reverse the original positive link to a negative one, suggesting that women on the board adversely affect the association between TA and EM, supporting hypothesis H2. This finding aligns with agency theory, suggesting that having more women on the board enhances its oversight of financial reporting quality and helps prevent earnings manipulation ([Githaiga et al., 2022](#); [Le & Nguyen, 2023](#)). The notion that lower profits result from a varied spectrum of board gender representation is supported by these data. Our findings align with many studies in the literature ([Githaiga et al., 2022](#); [Sial et al., 2019](#)), while they contradict other studies ([Abdullah & Ismail, 2016](#); [Arioglu, 2020](#); [Le & Nguyen, 2023](#); [Sun et al., 2011](#)).

Table 6. BGD moderating role in TA-EM relationship—Model 2.

Variables	OLS		FE	
	Coef.	Z	Coef.	Z
TA	0.046	2.62 **	0.051	2.66 **
BGD	−0.018	−1.20	−0.081	−1.22
TA*BGD	−0.023	−2.18 **	−0.063	−2.21 **
Fsize	−0.007	−2.49 **	−0.005	−1.16
Lev	−0.056	−2.75 **	−0.061	−1.54
ROA	−0.011	−0.46	−0.022	−0.67
BS	−0.041	−3.09 **	−0.020	−1.84 *
Cons	0.382	5.60 ***	0.132	1.08
Year		Yes		
Industry		Yes		
Adjusted R ²	10.9%		8.2%	
F-value	2.73 ***		3.22 ***	
Observation	600		600	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

4.1.3. BIND, TA, and EM (Model 3)

We looked at whether the BIND ratio affected the relationship between TA and EM (H3). The statistical findings in Table 7 show that the interactional variable (TA*BIND) significantly reduces the relationship between TA and EM. This implies that the outside directors carry out a crucial oversight and supervision role. They are supposed to provide an unbiased, independent assessment of the audit function, internal controls, and the financial reporting process. Consequently, EM is constrained by a more autonomous board (Githaiga et al., 2022). In other words, hypothesis H3 is validated by the fact that a large percentage of independent directors on the board impacts lowering EM. Our findings are in line with those of (Aleqab & Ighnaim, 2021; Chouaibi et al., 2018; Githaiga et al., 2022; Rajeevan & Ajward, 2019; Susanto et al., 2019; Susanto et al., 2017).

Table 7. BIND moderating role TA-EM relationship—Model 3.

Variables	OLS		FE	
	Coef.	Z	Coef.	Z
TA	0.037	2.61 **	0.048	2.80 ***
BIND	−0.059	−1.69 *	−0.079	−1.41
TA*BIND	−0.293	−3.47 ***	−0.249	−2.75 **
Fsize	−0.006	−2.37 **	−0.008	−1.12
Lev	−0.046	−2.30 **	−0.063	−1.61
ROA	−0.016	−0.31	−0.016	−0.58
BS	−0.026	−2.00 **	−0.033	−1.73 *
Cons	0.387	5.54 ***	−0.042	−0.32
Year		Yes		
Industry		Yes		

Table 7. Cont.

Variables	OLS		FE	
	Coef.	Z	Coef.	Z
Adjusted R ²	12.7%		9.9%	
F-value	3.58 ***		2.94 ***	
Observation	600		600	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

4.1.4. CEOD, TA and EM (Model 4)

We explored whether the CEOD affects the relationship between TA and EM (H4). The statistical findings in Table 8 show that the interactional variable (TA*CEOD) has a negative and insignificant effect on the association between TA and EM. These findings suggest that EM is unaffected by CEOD. The H4 hypothesis is rejected by the study's negligible correlation between CEOD and EM, implying that combining the CEO and chairman roles does not effectively monitor EM. It appears that CEOs are required to follow major shareholders; therefore, whether or not they have two roles would not influence their choices (Le & Nguyen, 2023). Nevertheless, the outcome contradicts the Stewardship theory, which holds that the CEO's and the board chairman's dual roles better concentrate the executives' authority and responsibilities (Bhagat & Black, 1999; Davis et al., 1997). This result aligns with the findings of many early studies (Alareeni, 2018; Almarayeh et al., 2024; Bataineh et al., 2018; Le & Nguyen, 2023). Having said this, our results conform with agency theory claims that when the chairman's interests differ from those of shareholders, ECOD leads to opportunistic behavior to increase the manager's personal gain (Abbott et al., 2004; Jensen & Meckling, 1976; Lanis & Richardson, 2011).

Table 8. Regression of CEOD, TA, and EM—Model 4.

Variables	OLS		FE	
	Coef.	Z	Coef.	Z
TA	0.051	2.48 **	0.053	2.57 **
CEOD	−0.004	−0.42	−0.003	−0.45
TA*CEOD	−0.012	−0.78	−0.015	−0.68
Fsize	−0.009	−2.57 **	−0.004	−1.11
Lev	−0.055	−2.67 ***	−0.063	−1.60
ROA	−0.019	−0.47	−0.017	−0.68
BS	−0.042	−3.08 **	−0.016	−1.52
Cons	0.382	5.62 ***	0.075	0.33
Year		Yes		
Industry		Yes		
Adjusted R ²	10.3%		8.4%	
F-value	2.97 ***		2.73 ***	
Observation	600		600	

*** $p < 0.01$, ** $p < 0.05$.

4.2. Robustness Analysis

4.2.1. An Alternate Measurement of EM

The study was re-estimated using a different EM indicator. According to Kothari et al. (2005), a performance-adjusted model is better than a modified Jones in terms of specification and power. Previous research supports the ability of the approach suggested by Kothari et al. (2005) to address the problems of misspecification, heteroscedasticity, and lack of control (F. Chen et al., 2011; Orazalin & Akhmetzhanov, 2019). Lagged return on assets (ROA_{it-1}) is introduced as the independent variable, based on the model of Kothari et al. (2005). As in the preceding equation (model 1), the remaining variables are identical:

$$TA_{it}/A_{it-1} = \alpha + \beta_1(1/A_{it-1}) + \beta_2((\Delta REV_{it}-\Delta REC_{it})/A_{it-1}) + \beta_3(PPE_{it}/A_{it-1}) + \beta_4(ROA_{it-1}/A_{it-1}) + \varepsilon_{it}$$

The results of sensitivity testing, in which various measures of the dependent variable were used to confirm our findings, are shown in Table 9. Models 2, 3, 4, and 5 produced results that were in line with the previous results.

Table 9. Results of sensitivity analysis.

Variables	Model 1		Model 2		Model 3		Model 4	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
TA	0.125 ***	0.112 ***	0.143 ***	0.110 ***	0.104 **	0.089 **	0.134 ***	0.131 ***
BGD			−0.045	−0.126				
TA*BGD			−0.230 **	−0.139 **				
BIND					−0.202 **	−0.171		
TA*BIND					−0.862 ***	−0.904 ***		
CEOD							−0.008	−0.004
TA*CEOD							−0.024	−0.049
Fsize	−0.023 ***	−0.008	−0.022 ***	−0.013	−0.021 ***	−0.009	−0.023 ***	−0.007
Lev	−0.162 ***	−0.203 **	−0.163 ***	−0.198 **	−0.133 ***	−0.196 **	−0.165 ***	−0.204 **
ROA	−0.004	−0.052	−0.003	−0.059	−0.004	−0.054	−0.006	−0.048
BS	−0.073 **	−0.045	−0.072 **	−0.051	−0.031 *	−0.111 **	−0.071 **	−0.049
Cons	1.059 ***	0.476	1.050 ***	0.582	1.081 ***	0.101	1.059 ***	0.423
Year					Yes			
Industry					Yes			
Adjusted R ²	12.4%	9.5%	12.6%	10.3%	16.7%	13.1%	12.6%	9.4%
F-value	4.15 ***	3.41 ***	3.76 ***	3.63 ***	5.27 ***	4.65 ***	3.79 ***	3.35 ***
Observation	600	600	600	600	600	600	600	600

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

4.2.2. The Endogeneity Issue

To tackle potential endogeneity issues and confirm our results, we employed the two-step generalized method of moments (GMM). This strategy aims to prevent or reduce endogeneity problems between EM and other unobserved business factors (Le & Nguyen, 2023). The GMM can also handle issues with autocorrelation and heteroscedasticity. Additionally, it addresses the potential for simultaneous and dynamic endogeneity by utilizing past values of EM as helpful tools.

In each model, Arellano–Bond serial correlation tests indicate no serial correlation in the error terms, with AR (2) p -values exceeding 0.05, as shown in Table 10. The Hansen

J test further confirms that the over-identifying restrictions in the GMM model are valid. The results of these tests demonstrate that the instruments used in the GMM estimator are exogenous. Additionally, they show that the model does not have autocorrelation or serial correlation, which lends credence to the GMM estimator's applicability. Thus, the results in Table 10 align with the main findings, suggesting that our results are less influenced by endogeneity.

Table 10. Results of the GMM analysis.

Variables	Model 1	Model 2	Model 3	Model 4
	Coef.	Coef.	Coef.	Coef.
EM _{t-1}	0.291 ***	0.304 **	0.271 **	0.293 **
TA	0.100 **	0.044 **	0.168 **	0.066 **
BGD		−0.035		
TA*BGD		−0.529 **		
BIND			−0.174	
TA*BIND			−0.496 **	
CEOD				−0.007
TA*CEOD				−0.126
Fsize	−0.007 **	−0.006 **	−0.011 *	−0.008 **
Lev	−0.027 **	−0.014 **	−0.029 **	−0.043 **
ROA	−0.125	−0.099	−0.116	−0.132
BS	−0.030 *	−0.034 *	−0.050 **	−0.037
Cons	0.257 **	0.255 **	0.223 **	0.274 **
AR2(<i>p</i> -value)	0.193	0.197	0.246	0.109
Hansen test(<i>p</i> -value)	0.282	0.230	0.162	0.207
Wald chi ²	517.81 ***	375.19 ***	239.28 ***	466.25 ***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

5. Conclusions, Limitations, and Future Research

Using a sample of 120 firms from 12 industries, with 600 observations representing all Egyptian non-financial firms listed on the Egyptian Stock Exchange from 2017 to 2021, the current research examines the impact of TA on EM practices by these companies. It also explores how board governance traits (such as BGD, BIND, and CEOD) moderate the link between TA and EM. The study's results show a significant positive influence of TA on EM levels. This positive correlation between TA and EM aligns with earlier findings in the literature ([Assidi et al., 2022](#); [Kusuma & Lukman, 2023](#); [Shittu et al., 2023](#); [Susanto et al., 2019](#)).

To the authors' knowledge, this study represents one of the early investigations that concentrate on how board governance characteristics influence the level of EM in emerging markets, expanding the TA and EM literature by providing new insights from this context. Earlier research primarily focused on the direct effects of BGD, BIND, and CEO on EM. Our findings highlight that BGD and BIND negatively moderate this relationship, diminishing the impact of TA on EM and leading to an overall decrease in EM. This result conforms with early studies that reported a negative impact of BGD and BIND on EM practices ([Aleqab & Ighnaim, 2021](#); [Arun et al., 2015](#); [Chouaibi et al., 2018](#); [Githaiga et al., 2022](#); [Rajeevan & Ajward, 2019](#); [Sial et al., 2019](#); [Susanto et al., 2019](#); [Susanto et al., 2017](#); [Thiruvadi &](#)

Huang, 2011). Our findings also show that CEO duality does not have a moderating effect, as the reported result was an insignificant negative impact. This outcome is in line with early claims in the literature that reported the insignificant impact of CEO duality on EM (Alareeni, 2018; Almarayeh et al., 2024; Bataineh et al., 2018; Le & Nguyen, 2023).

The study results indicate that having female members on the board and including non-executive directors are crucial factors that improve adherence to good governance standards and reduce management opportunism, leading to lower EM levels. These results support our theoretical basis rooted in resource dependency and agency theories. Additionally, they suggest that Egypt's recent regulatory and governance reforms—focusing on empowering women, promoting gender diversity and equality, and ensuring non-executive directors are part of the board—are appropriate steps forward. Consequently, Egyptian authorities should continue to build on these initiatives and ensure that all listed firms comply with the mandated female representation and board composition guidelines outlined in the latest regulations.

This discussion highlights that the study has important implications for Egyptian companies, regulators, and investors. The findings suggest that Egyptian firms should prioritize gender diversity and ensure the inclusion of sufficient independent managers when forming boards. This approach offers broader insights into TA and EM decisions and practices. Moreover, the study can assist Egyptian regulators and policymakers by providing evidence of the significance of BGD and BIND and their influence on EM levels in Egypt. Therefore, regulators and policymakers should enforce the female quota and guidelines for forming boards of directors across all listed Egyptian companies. Finally, both potential and current investors should take these findings into account when making investment decisions related to Egyptian companies. For example, we recommend that investors seek additional information beyond annual reports if they plan to invest in firms with limited female representation or few independent members on their boards.

The present study faces certain limitations that offer avenues for future research. It relied on a quantitative approach, which may not fully capture the complex mechanisms influencing the observed relationships. Additionally, the study focused on Egyptian non-financial firms registered between 2017 and 2021. This scope and timeframe might not reflect all changes in Egyptian regulations, laws, and economic reforms. To address these limitations, future studies could use the same quantitative methods but with a larger sample size, covering various sectors and incorporating additional variables such as political connections, currency policies, and audit committee features—factors that could better explain what impacts EM in the Egyptian context. Moreover, replicating this study in other MENA or African countries using the same methodology could help identify key drivers to reduce EM practices. Finally, future research could adopt qualitative methods to explore the sociopolitical and economic factors influencing EM and uncover insights that may not be visible through quantitative analysis. While this study focused on board independence, CEO duality, and gender diversity, other aspects like board size, meeting frequency, and audit committee composition are also important and warrant further investigation to deepen the understanding of CG and EM.

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