

Audit Committee Characteristics and Earnings Management: The Moderating Effect of Accountability of the State Authority in Egypt

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ABSTRACT

Global and domestic business scandals have eroded public confidence in corporate financial reporting. Egypt, which has one of the largest stock markets in the Middle East and North Africa, initiated reforms in financial reporting, auditing and corporate governance in response. The audit committee (AC) plays a vital role in these reforms. Therefore, this study examined the relationship between AC characteristics and earnings management (EM) in Egypt. In addition, state authority accountability was included as a moderating variable in the study. From 2014 to 2016, a sample of 402 observations across different sectors of listed companies was analysed using multiple linear regression. The results revealed a negative correlation between AC meetings and EM across the entire sample. Furthermore, there was an insignificant relationship between AC independence and AC size with EM. No effect of state authority accountability was found on the relationship between AC characteristics and EM. The study's significance lies in its ability to shed light on the effectiveness of corporate governance reforms in Egypt, with specific reference to the role of AC and the potential influence of state authority accountability. Its findings have practical implications for policymakers, businesses and academics, all of whom can use this research to advance corporate governance practices and contribute to the sustainable growth of the Egyptian economy.

Keywords: Audit committee; earnings management; Egypt; corporate governance; accountability of the state authority

INTRODUCTION

Corporate failures, such as WorldCom, Enron, Parmalat and similar scandals often stemming from deliberate manipulation of financial statements, have significantly eroded public trust in the reliability of corporate financial reporting. These high-profile scandals have prompted comprehensive reforms in financial reporting, auditing practices and corporate governance worldwide, including in Egypt. Responding to domestic corporate scandals, notably the Al-Rayyan group incident, the Egyptian government collaborated with international organisations, such as the World Bank and the International Monetary Fund (IMF), through the Reports on the Observance of Standards and Codes (ROSC) programme to assess and enhance the quality of corporate governance practices among Egyptian companies (ROSC 2009). This evaluation plays a crucial role in safeguarding Egypt's economic interests, particularly given its standing as one of the Middle East and North Africa (MENA) region's largest stock markets in terms of listed firms and market capitalisation (Nasr & Ntim 2018). Accordingly, the Egyptian Code of Corporate Governance (ECCG) was introduced in 2005 and subsequently revised in 2011 and 2016 (ECCG 2005, 2011, 2016). A pivotal aspect of this code is the reinforcement of corporate governance mechanisms' roles and functions, including those of the board of directors and its subsidiary body, the audit committee (AC) (Sorour 2014; Nguyen et al. 2024).

The AC is widely recognised as a critical component of corporate governance, playing a vital role in overseeing the financial statement process and ensuring its integrity (Smith Report 2003; Chang 2015; Alzeban 2020; Almasarwah et al. 2022). The AC acts as a supplementary institution to the board of directors, aiming to enhance the quality of financial reporting (Klein 2002). Thiruvadi and Huang (2011) emphasised the AC's function in elevating financial reporting quality by top management's mitigating aggressive earnings management (EM) practices. While research on this topic has produced mixed results, evidence has suggested a positive and significant relationship between AC characteristics (independence, meeting frequency, financial expertise and size) and EM. For instance, Bajra and Cadez (2018) found a significant positive link between the existence and competence of the AC in publicly listed companies in the European Union and EM. Similarly, Albersmann and Hohenfels (2017) demonstrated that the presence of the AC, its financial expertise and meeting frequency were associated with reduced EM. In Malaysia, Nelson and Devi (2013) documented that AC's financial expertise reduced EM. Conversely, using data from United Kingdom-listed firms, Katmon and Al Farooque (2017) reported an insignificant relationship between AC characteristics (independence, size and financial expertise, except for meeting frequency) and EM. Overall, many past studies investigated the effects of the AC on EM in non-stated owned settings. There is limited research that examined the effects of audit corporate governance mechanisms on EM within the context of Egyptian state-owned firms.

Many studies have shown that state-owned companies are more likely to engage in EM than privately owned companies (Boardman & Vining 1989; Megginson et al. 1994; Shleifer 1998). There are two main points to this argument. First, state-owned companies often have problems like low incentives for managers, interference from the government and little competition. These problems can affect how a company is run, how its resources are used, how efficient it is as a whole and how ethically people act (Boardman & Vining 1989; Megginson et al. 1994; Shleifer 1998). Second, there is a principal-agent conflict in state-owned businesses because the controlling shareholders, who are often government entities,

act as agents for the real owners, whose interests may not always match those of the controlling entity (Ding et al. 2007). Nevertheless, it is theoretically plausible that in Egypt, ACs in state-owned companies may operate more effectively. The Accountability State Authority (ASA), a powerful government oversight agency, conducts audits on state-owned companies in Egypt. As part of the ASA's financial oversight, the financial reports are audited to ensure they meet international standards. Overall, state-owned companies have been linked to higher or lower levels of EM in the past. Conversely, Egypt's unique auditing framework, which involves the ASA, may create a different dynamic that needs to be examined. This study observes the relationship between AC characteristics and EM in Egypt and examines the ASA's role as a moderating variable.

By analysing more recent evidence on the correlation between AC characteristics and EM, this research makes a scholarly contribution to the domain of corporate governance, particularly in the Egyptian context. It illuminates the efficacy of ACs in alleviating financial misconduct in the framework of corporate governance reforms in Egypt. Specifically, it builds upon the research conducted by Soliman and Ragab (2014), who investigated the correlation between AC and EM. Furthermore, this research paper presents the distinctive moderating factor of the ASA, providing valuable insights into the interplay between the ASA, AC properties and their influence on EM. The results of the study have practical ramifications for policymakers and regulators in Egypt. They can assist in the development of corporate governance regulations and guidelines that are more efficient, thereby enhancing the transparency and reliability of financial reporting in the Egyptian market.

The following section provides a brief background of the study, a review of the literature and hypothesis development. Section 3 describes the methodology of the study, followed by the research findings and discussion. The final section concludes the paper.

BACKGROUND

Significant developments in corporate laws, financial reporting and corporate governance practices have unfolded in Egypt over the past two decades. These developments are integral to the country's economic and social policies, aimed at earning the trust of the international capital market community and preventing corporate failures from recurring (Aboud & Diab 2018). In the 1990s, the Egyptian government initiated an economic restructuring programme involving the privatisation of state-owned enterprises. This privatisation drive aimed to accelerate the growth of the capital market. By 2002, state-owned firms accounted for 34% of the total capital market in Egypt (Omran et al. 2008). Under Egyptian laws, state-owned companies are legally obligated to appoint the ASA to audit their financial statements. Simultaneously, the regulations permit these firms to engage a private audit firm to conduct audits alongside the ASA. The ASA is mandated to report any non-compliance with financial regulations by state-owned companies.

In 2003, the Egyptian Institute of Directors (EIOD) was established, marking a significant milestone as the first institute in the Middle East and North Africa (MENA) region to focus on corporate governance practices. Subsequently, the EIOD published the initial guidelines and standards for corporate governance tailored to listed companies on the Egyptian Stock Market in 2005 (Elsayed 2007). Revisions to the code occurred in 2011 and the latest in 2016. According to the Egyptian Code of Corporate Governance, every board of directors is required to establish an independent AC. The code emphasises enhancing the independence of the board by specifying AC member requirements and compensation standards. The AC should be composed of independent or non-executive members, with at least one member possessing accounting and financial expertise. The code outlines various responsibilities and functions of the AC, including the review of financial statements before submission to the board of directors and the submission of a report expressing its opinion. In the Egyptian context, there is a theoretical basis to expect that the AC may operate more effectively in state-owned companies. This expectation arises from the fact that these companies are subject to auditing by the ASA, a powerful government agency responsible for overseeing the financial reporting quality of state-owned firms.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

AUDIT COMMITTEE AND EARNINGS MANAGEMENT

One of the pivotal players in the realm of corporate governance is the AC. The Cadbury Report of 1992 emphasised the establishment of an AC within all firms. This recommendation led to the widespread adoption of ACs across various organisations worldwide. Subsequent initiatives and reforms, such as the Sarbanes-Oxley Act of 2002 and the Smith Report of 2003, underlined the overriding importance of the AC. The key roles of the AC encompass reviewing internal control systems, ensuring the effectiveness of internal audits, monitoring the independence of external auditors, supervising the integrity of financial statements and offering recommendations regarding the appointment and remuneration of external auditors. Likewise, in the Egyptian context, three versions of the Code of Corporate Governance have been published: in 2005, 2011 and 2016. These iterations all underscore the pivotal role of the AC in corporate governance and its responsibility for overseeing financial reporting, auditing and internal control processes.

One of the primary responsibilities of the AC is to scrutinise the quality of financial statements, which can be influenced by EM (Broye & Johannes 2023). EM, as described by Schipper (1989), involves deliberate interventions in the external financial reporting process to secure private gains. Healy and Wahlen (1999) expanded on this, stating that EM

occurs when managers exercise judgment in financial reporting and transaction structuring to alter financial reports. They either mislead certain stakeholders about the company's underlying economic performance or influence contractual outcomes depending on reported accounting figures. EM can take various forms, including manipulating accruals, changing accounting methods and altering capital structures. According to Jones (2011), EM involves the deliberate and strategic application of accounting flexibility to manipulate financial statements to attain predetermined profits or specific objectives. Ronen and Yaari (2008) classified this manipulation into three categories: (i) beneficial (white) – where EM leverages accounting flexibility to signal the manager's private information regarding future cash flows, thereby enhancing report transparency; (ii) neutral (grey) – where EM involves selecting accounting treatments that are either opportunistic (serving the interests of management exclusively) or economically efficient; and (iii) pernicious (black) – where EM involves blatant misrepresentation and fraudulent practices aimed at distorting or reducing the transparency of financial reports.

Numerous studies, including those by Biddle et al. (1995), Liu et al. (2002) and Francis et al. (2003), have demonstrated that investors heavily rely on earnings as a performance metric, more so than any other performance indicator. Additionally, earnings play a pivotal role in asset valuation models, as evidenced by the work of Ohlson (1995) and Pope and Wang (2005). Likewise, EM is indicative of earnings quality (Lo 2008). Prior research suggested that managers may resort to EM practices for various reasons, such as avoiding losses, meeting analysts' expectations, concerns about stock price fluctuations and aligning compensation with the company's performance (Saleh et al. 2005; Mishra & Malhotra 2016). Consequently, investors are increasingly focused on the issue of EM and are now actively seeking higher earnings quality to improve the overall quality of financial statements (Al-Rassas & Kamardin 2015; Makhail 2017). In achieving this quality, a robust mechanism, including the effective roles of the AC for monitoring managerial decisions, serves as a deterrent against excessive EM practices (Al-Thuneibat et al. 2016; Fitri & Siswantoro 2021).

AUDIT COMMITTEE INDEPENDENCE

The independence of AC members and directors on the board is widely acknowledged as a fundamental safeguard that plays a crucial role in shaping investors' decisions and perceptions of a company's integrity and financial reporting quality (Jensen & Meckling 1976). Investors rely on the independence of these key governance bodies to ensure that their investments are adequately protected and that financial information is reliable and transparent. The emphasis on independence is rooted in the need to maintain the integrity of financial reporting and enhance investor confidence. When the AC is composed of independent members, it is more likely to provide unbiased oversight and be diligent in scrutinising financial statements and internal control processes. The agency theory suggests that independent directors possess greater credibility, especially when in monitoring firms (Fama & Jensen 1983). This independence helps mitigate the risk of management manipulating financial results, engaging in EM practices to meet specific targets or concealing adverse financial conditions. Furthermore, companies with a higher proportion of independent AC members are less likely to engage in fraudulent activities (Beasley 1996). Additionally, governance is generally strengthened with an increase in AC independence (Klein 2002; Xie et al. 2003; Mangala & Singla 2023).

As defined by Klein (2002), independent directors are external directors who lack any affiliations with the organisation, such as business or family relationships, except for their role as board members. Non-executive members are those who do not hold employment within the organisation, encompassing both affiliated and independent directors (Kuang 2007). This study considered both independent and non-executive members as indicators of AC independence. In Egypt, the Code of Corporate Governance (2011) stipulated a requirement for at least three independent members on the AC. The latest Code of Corporate Governance (2016) mandated that all AC members must be non-executive, independent or outside directors.

The relationship between AC independence and EM is a subject of extensive research, and the findings have indeed been mixed, reflecting the complexity of this relationship. Various studies conducted in different contexts have produced diverse results, highlighting the nuanced nature of AC effectiveness in mitigating EM practices. In the Egyptian context, for example, Soliman and Ragab (2014) observed a negative relationship between AC independence and EM. The finding suggested that companies with more independent AC tend to engage in fewer EM activities (Klein 2002; Xie et al. 2003; Davidson et al. 2005; Lin & Hwang 2010; Bajra & Cadez 2018; Nikulin et al. 2022). Abbott et al. (2004) found evidence supporting a negative correlation between an independent AC and financial reporting misstatements and fraud. This result indicated that an independent AC is more effective in detecting and preventing financial irregularities, including EM practices that might lead to financial misstatements. Nevertheless, some prior research has also documented an insignificant relationship between AC independence and EM practices (Abdul Rahman & Ali 2006; Siregar & Utama 2008; Katmon & Al Farooque 2017; Wan Mohammad & Wasiuzzaman 2020). This divergence in results underscores the need for a nuanced understanding of the factors that influence the effectiveness of the AC in curbing EM practices. Consequently, this study hypothesises the following:

H₁ There is a negative relationship between audit committee independence and earnings management.

AUDIT COMMITTEE SIZE

A larger AC is frequently perceived as more capable of allocating greater authority and resources to effectively carry out its responsibilities (Allegrini & Greco 2013). According to research, an AC with fewer than three members may be less effective at discharging its responsibilities (Menon & Williams 1994). This concept is centred on the notion of a “critical mass” of members required for effective oversight. With an insufficient number of members, the committee may lack the diversity of skills, expertise and perspectives required to challenge management and detect EM practices effectively. A key function of the AC is to serve as a mechanism for ensuring the accuracy of financial reporting. Potentially, a larger committee can improve its monitoring function, making it more difficult for management to engage in EM practices (Kiel & Nicholson 2003; Xie et al. 2003; Almarayeh et al. 2022). A larger committee has access to a larger pool of skills and knowledge when evaluating financial reports and internal controls.

The underlying argument is that a sufficiently large AC can draw from a wider variety of experiences and professional judgement (Braiotta 2000). This diversity of perspectives and collective strength becomes more attainable when the AC has a larger membership, allowing it to effectively address and uncover potential issues in the financial reporting process (Bédard et al. 2004). Nevertheless, the existing literature has also documented an insignificant relationship between AC size and EM practices (Albersmann & Hohenfels 2017; Katmon & Al Farooque 2017; Nazir & Afza 2018). This may be the case for numerous reasons, including the fact that a larger AC may include members with differing opinions and perspectives. Although diversity can be advantageous, it can also result in more complicated decision-making processes. Disagreements or a lack of consensus among committee members can impede their ability to take decisive action to prevent EM (Lin et al. 2006, Xie et al. 2003; Bédard et al. 2004). Similarly, in larger committees, communication and coordination can become more difficult. Members of the committee might not have the same level of interaction and information exchange, making it difficult to detect and respond to subtle indications of EM (Nikulin et al. 2022). Even though some studies have found inconclusive or insignificant relationships between AC size and EM (Albersmann & Hohenfels 2017; Katmon & Al Farooque 2017; Nazir & Afza 2018), the theoretical foundation and prevailing literature predominantly support the idea that a larger committee is better equipped to mitigate EM due to its enhanced oversight capabilities and broader expertise. Therefore, this study proposes that:

H₂ There is a negative relationship between audit committee size and earnings management.

AUDIT COMMITTEE MEETINGS

The research by Katmon and Al Farooque (2017) underscored that the frequency of AC meetings serves as a critical gauge of the committee’s effectiveness. More frequent meetings indicate that the committee dedicates more time to discussing and addressing matters related to the firm’s financial health. An active AC that promptly addresses issues affecting financial reporting is more likely to be effective in reducing EM. Research suggests that frequent meetings held by the AC would provide members with sufficient time to carry out their responsibilities diligently (Lin & Hwang 2010). Frequent meetings can facilitate timely issue resolution, ensuring that potential concerns or irregularities in financial reporting are addressed promptly (Agustia et al. 2022). This proactive approach may act as a deterrent to EM practices.

On the one hand, past studies have discovered a significant inverse relationship between meeting frequency and EM practices, indicating that more frequent meetings are associated with decreased EM (Lin & Hwang 2010; Metawee 2013; Soliman & Ragab 2014). On the other hand, several studies failed to find a negative relationship between meeting frequency and EM practices (Bédard et al. 2004; Davidson et al. 2005; Lin et al. 2006; Mardessi 2022). This inconsistency in findings may be attributable to other factors, such as the legal and regulatory environment, standard practices in the industry and particular corporate cultures that can all have an impact on how effectively the AC addresses EM (Nikulin et al. 2022). For example, regional and international variations in regulatory requirements can influence how the AC performs, such as mandating the meeting frequency, while others leave the decision up to the organisation. Despite the inconsistency in empirical findings, the rationale is based on the premise that more frequent meetings enable proactive, thorough discussions that enhance the committee’s ability to address financial irregularities, potentially deterring EM practices. Given these observations, this study predicts a negative relationship between AC meeting frequency and EM. Therefore, this study proposed the following hypothesis:

H₃ There is a negative relationship between audit committee meetings and earnings management.

ACCOUNTABILITY OF THE STATE AUTHORITY

State-owned enterprises frequently face several obstacles that can affect their corporate governance and performance. State-owned entities may be subject to bureaucratic procedures and decision-making, which can delay decision-making processes and inhibit adaptability. Managers may have weaker financial incentives tied to performance than their private sector counterparts. Consequently, the motivation to optimise firm performance may decrease (Megginson et al. 1994; Shleifer 1998). In addition to financial objectives, state-owned enterprises may pursue social and political goals. These competing

objectives can result in suboptimal decision-making and inefficiency within an organisation. Consequently, some state-owned companies have poor governance practices, possibly affecting the quality of their financial reporting. The results of studies examining the relationship between state ownership and EM are mixed. Some studies have discovered a positive correlation between state ownership and EM, indicating that state-owned companies may be more susceptible to earnings manipulation (Liu & Lu 2003; Chen & Yuan 2004; Aharony et al. 2010). In contrast, other studies have found a negative correlation between state ownership and EM (Ding et al. 2007; Tao et al. 2009; Wang & Yung 2011). These results indicate that government oversight and control can discourage EM. Government entities may serve as external monitors, reducing the likelihood of earnings manipulation. Bureaucratic involvement in state-owned firms may lead to interference in financial reporting decisions, thereby decreasing the likelihood of earnings manipulation.

In the context of this study, the ASA is a governmental body responsible for overseeing and ensuring accountability in state-owned firms in Egypt. This authority is essential in monitoring the companies' operations, financial reporting and governance practices. In Egypt, many state-owned firms follow a dual auditing process. In addition to the external auditing performed by privately-owned auditing firms, the ASA conducts audits of state-owned companies. This dual auditing system is designed to enhance transparency and accountability in state-owned enterprises. The presence of the ASA as an additional auditor for state-owned firms acts as a safeguard against financial irregularities and mismanagement. The ASA's involvement theoretically enhances the corporate governance structure of these companies by providing an external check on management practices. The dual auditing process can curb EM practices. The ASA's role as an auditor with a vested interest in the accuracy and transparency of financial reporting may deter managers from engaging in EM. Managers of these firms are subject to scrutiny not only by external auditors but also by a government authority.

The ASA's presence as an additional auditing entity alongside the AC augments the oversight landscape within state-owned firms. When AC characteristics exhibit a negative relationship with EM (e.g., larger committee size, higher independence and greater expertise), the ASA's involvement further reinforces the vigilance against potential EM practices. The combined effect of a robust AC and the ASA's scrutiny intensifies the checks and balances, potentially strengthening the negative association between AC characteristics and EM. In cases where the AC might have certain limitations in its effectiveness regarding EM mitigation, the ASA's involvement could compensate to some extent. If the AC lacks several attributes negatively associated with EM, such as independence or expertise, the ASA's oversight might supplement these deficiencies. The ASA's additional scrutiny might counterbalance or mitigate the impact of weaker AC characteristics, potentially influencing the negative relationship between AC attributes and EM. Overall, the authority's role in moderating the negative relationship between AC characteristics and EM lies in its ability to reinforce effective AC attributes, compensate for potential deficiencies, validate the significance of these attributes and ultimately contribute to the overall reduction of EM within state-owned firms in Egypt. Therefore, this study's hypothesis is as follows:

H₄ Accountability of the state authority moderate the relationship between audit committee characteristics and earnings management.

CONCEPTUAL FRAMEWORK

This conceptual framework (Figure 1) established a roadmap for investigating the interplay between AC characteristics and EM within state-owned firms. The first three hypotheses (H₁, H₂ and H₃) were set out to examine the anticipated negative relationships between distinct AC attributes—specifically, independence, size and meeting frequency—and EM. These hypotheses anticipated that greater independence, a larger committee size and more frequent meetings correlate with reduced occurrences of EM within state-owned entities. These hypotheses were aligned with the research objectives, aiming to scrutinise the effects of different facets of the AC might influence EM practices.

Adding depth to the exploration, H₄ introduced the moderating role of the ASA in the relationship between AC characteristics and EM. This hypothesis suggested that the ASA's oversight, represented by its role as an additional auditing entity in state-owned firms, may potentially alter or influence how AC attributes affect EM. Investigating this interaction delves into the external oversight role of the ASA might impact or modify the relationship between AC features and EM practices within state-owned organisations. Overall, this framework systematically addressed the research objectives, providing a structured approach to examining the nuanced dynamics between AC attributes, external oversight by the ASA and their collective influence on EM within state-owned firms.

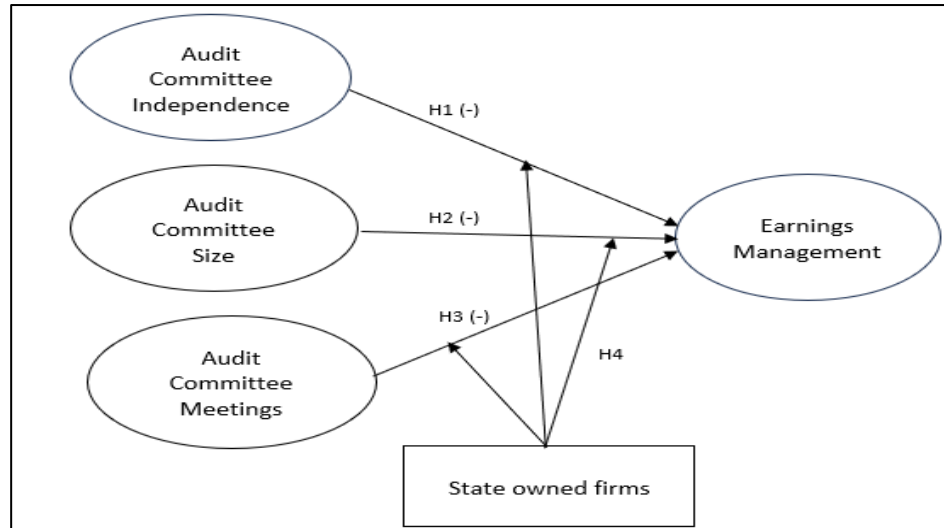


FIGURE 1. The conceptual framework

METHODOLOGY

SAMPLE SELECTION AND DATA COLLECTION

The data were collected from the annual reports of companies listed on the Egyptian stock exchange from 2014 to 2016. The Financial Regulatory Authority requires companies to publish AC data since January 2014. Banks, financial institutions and other sectors that contained less than eight observations were excluded. Each observation represents the data of a firm in a year. In addition, 78 observations were excluded because their financial statements contained missing or incomplete information. The final sample comprised 147 firms or 407 observations, from which 64 were state-owned. These 147 firms were collected from nine sectors, namely basic resources, construction and materials, food and beverages, healthcare and pharmaceuticals, industrial goods and services and automobile, personal and household products, real estate and travel and leisure. Table 1 summarises the observations.

TABLE 1. Sample selection

Year	2014	2015	2016
Number of observations	153	169	175
Less: observations that have less than eight	6	5	6
Less: Incomplete financial statements	26	25	27
Total number of observations	121	139	142

MEASUREMENT OF VARIABLES

INDEPENDENT VARIABLES

AC independence, AC size and AC meetings were the independent variables in this study. AC independence was measured as a continuous variable by calculating the percentage of independent or non-executive directors on the AC (Kuang 2007). Following Katmon and Al Farooque (2017), AC meetings were evaluated by the number of meetings during the year, while the number of AC members measured AC size.

DEPENDENT VARIABLES

EM was the dependent variable in this study. Accrual-based EM was used to measure the dependent variable. Total accruals were divided into discretionary accruals and non-discretionary accruals. In calculating the total accruals, this study employed the cash flow statement approach (Höglund, 2012). The cash flow statement approach depends on the cash flow statement to calculate total accruals, and thus, the following equation was applied:

$$TACC = EXBI - CFO$$

Where EXBI refers to earnings before extraordinary items and CFO refers to cash flows from operations.

After calculating the total accruals (TACC), discretionary accruals were estimated. The aim of separating discretionary accruals from non-discretionary accruals was that managers have little to no control over non-discretionary

accruals. In contrast, discretionary accruals can be controlled by managers. Therefore, the estimation model was required to estimate the discretionary accruals as a proxy for EM (Höglund 2012).

This study used Kothari et al.'s (2005) adjusted performance model to include the impact of past performance on accruals. This model overcame the limitations in the Jones and Modified Jones Models, which considered contemporary firms' performance but ignored past performance. Kothari et al. (2005) model suggested two approaches. First, by adjusting a firm's discretionary accruals by the performance-matched firm. Second, the current or the past year's return on assets is included as an independent variable. The model employed the following formula:

$$TACC_{it}/TA_{it-1} = \alpha_0 + \alpha_1(1/TA_{it-1}) + \alpha_2(\Delta REV_{it} - \Delta REC_{it})/TA_{it-1} + \alpha_3(ROA_{it-1}) + \alpha_4(PPE_{it}/A_{it-1}) + \epsilon_{it}$$

Where ROA = return on assets.

MODERATOR VARIABLE

This study applied the ownership structure as a moderator variable. Following Ding et al. (2007), this study used a dummy variable to measure state ownership. The firm takes the value of 1 if it is a private firm; otherwise, it takes the value of 0.

CONTROL VARIABLES

This study used seven control variables, namely the Big 4 audit firms (Big4), the natural logarithm of total assets (LnTa), financial leverage (LEV), sales growth (SGrowth), loss (Loss), cash flow from operations (CFO) and market-to-book ratio (MTB). These variables are necessary to capture the impact of EM. The Big 4 takes the value of 1 if the auditor is one of the Big 4; LnTA is the natural logarithm of total assets; LEV is the financial leverage of the firm calculated by dividing total liabilities on total assets; SGrowth is the annual changes of sales; Loss is a dummy variable that takes the value of 1 if the company made Loss and takes value of 0 if otherwise; CFO is the lagged cash flow from operations; and MTB is the market-to-book ratio.

The Big 4 was applied as a control variable following Velury (2003), Kent et al. (2010), Katmon and Al Farooque (2017) and Wan et al. (2016). The natural logarithm of total assets (LnTA) included controlling the impact of firm size on the discretionary accruals. Research has shown that firms with significant total assets reported relatively less discretionary accruals than small firms because they have more stable operations (Kraub et al. 2015).

LEV was included in the model to control financial insolvency because firms with large liabilities and financial insolvency are motivated to improve their net income to meet debt contracts and avoid bankruptcy (Reynolds et al. 2004; Choi et al. 2010; Kraub et al. 2015; Katmon & Al Farooque 2017; Wan et al. 2016). CFO was considered as a control variable in the model to control the impact of financial performance on the discretionary accruals because companies with large cash flows are motivated to decrease the level of discretionary accruals (Johl et al. 2007).

This study included Loss in the model to control the impact of the probability of EM behaviour between the firms with profit and other firms because firms that made a loss have less motivation to practise EM (Reynolds et al. 2004). Many studies used loss as a control variable, such as Moreira and Pope (2007), Kent et al. (2010) and Katmon and Al Farooque (2017).

This study considered SGrowth and MTB to control the likely growth of the firms on EM (Choi et al. 2010; Kraub et al. 2015). Firms with a high possibility of growth may be motivated to meet the profit forecasting (Reynolds et al. 2004). Furthermore, the industry is controlled because firms in the same industry are normally homogeneous regarding their characteristics. In addition, the year was included to control the year effect, which is consistent with Lapointe-Antunes et al. (2006).

REGRESSION MODEL

The following regression model is used to test the impact of AC characteristics on EM as a first step:

$$DACC = \beta_0 + \beta_1 ASize + \beta_2 ACIndep + \beta_3 ACMeetings + \beta_4 Big4 + \beta_5 LnTa + \beta_6 LEV + \beta_7 SGrowth + \beta_8 Loss + \beta_9 CFO + \beta_{10} MTB + \text{industry and year dummies} + e \dots (1)$$

Where DACC denotes the discretionary accruals, which are the independent variables. The variables of interest are ASize = audit committee size, ACIndep = audit committee independence, and ACmeetings = audit committee meetings. By using state-owned firms as a moderator for the relationship between AC characteristics and EM, the study applied the following model:

$$\begin{aligned} \text{DACC} = & \beta_0 + \beta_1 \text{ACSize} + \beta_2 \text{ACIndep} + \beta_3 \text{ACMeetings} + \beta_4 \text{SOC*ACSize} + \\ & \beta_6 \text{SOC*ACIndep} + \beta_7 \text{SOC*ACmeetings} + \beta_8 \text{Big4} + \beta_9 \text{LnTa} + \beta_{10} \text{LEV} + \beta_{11} \\ & \text{SGrowth} + \beta_{12} \text{Loss} + \beta_{13} \text{CFO} + \beta_{14} \text{MTB} + \text{industry and year dummies} + e \dots(2) \end{aligned}$$

Where SOC*ACSize, SOC*ACIndep and SOC*ACmeetings are used to moderate the relationship between the variables.

RESULTS AND DISCUSSION

Multiple linear regression was utilised to regress the models. Ordinary Least Squares (OLS) is the most used approach. This study used Cluster Robust Standard Error to run the regression and Cluster Robust Standard Error to avoid the effect of pesky outliers and follow the correct trend of data plurality. Furthermore, the cluster approach was used to consider heteroscedasticity across observations. Pooled regression was applied to regress the model because the study did not follow the same units during the test period but included all firms in the stock exchange, which differed from one year to another.

FIRST MODEL

TABLE 2. Regression results for Model 1

Variables	Coefficient	T	P> t
ACInd	-0.0109549	-0.29	0.770
ACSize	-0.0059516	-0.36	0.720
AcMeetings	-0.0084569	-2.63	0.009
Big4	0.0373991	1.03	0.305
Ln TA	-0.0059792	-0.62	0.533
LEV	-0.0953879	-2.32	0.022
Growth	0.0031437	1.15	0.251
Loss	-0.0430161	-1.37	0.173
CFO	-0.256574	-2.09	0.038
MTB	0.0008861	0.28	0.779
D2014	0.0443717	1.17	0.187
D2015	0.2426079	3.42	0.101
D2016	0.0226917	1.77	0.178
Basic Resources	0.106479	2.65	0.109
Construction	0.0342015	1.28	0.201
Food	0.0544079	2.75	0.107
Chemicals	-0.0612705	-1.95	0.054
Real Estate	0.0467813	1.89	0.061
Auto	0.6779406	6.56	0.110
Travel	-0.0301897	-1.57	0.119
Household	-0.0189416	-0.94	0.349
cons	0.1984515	0.98	0.328

As depicted in Table 2, a significant negative relationship was found between ACmeetings, LEV, CFO and EM at the 5% significance level. ASize, ACIND, LnTotalAssets and Loss had an insignificant negative relationship with EM. Big4, GROWTH and MTB had insignificant positive relationships with EM.

The regression analysis resulted in the following equation for Model 1:

$$\begin{aligned} \text{DACC} = & \beta_0 + \beta_1 \text{ACSize} + \beta_2 \text{ACIndep} + \beta_3 \text{ACMeetings} + \beta_4 \text{Big4} + \beta_5 \text{LnTa} + \\ & \beta_6 \text{LEV} + \beta_7 \text{SGrowth} + \beta_8 \text{Loss} + \beta_9 \text{CFO} + \beta_{10} \text{MTB} + e \dots(1) \end{aligned}$$

AUDIT COMMITTEE INDEPENDENCE

According to the agency theory, there should be a significant negative relationship between AC independence and EM. Increased AC independence indicated that the neutrality between shareholders and managers would increase. Furthermore, the Code of Corporate Governance in Egypt (2011) required at least three independent directors in the AC because AC independence is one of the best safeguards against management fraud. Nevertheless, this study found contrary findings. Table 4.2 shows an insignificant negative relationship between AC independence and EM with a 5% significance level, indicating no strong relationship between the two variables. This result was consistent with Waweru and Riro (2013), Katmon and Al Farooque (2017) and Wan Mohammad and Wasiuzzaman (2020), among others, who also found an insignificant relationship between AC size and EM. Conversely, the finding contradicted the verdicts from Soliman and

Ragab (2014), Bajra and Cadez (2018) and Nikulin et al. (2022). Even though the hypothesis was not supported, the direction of the relationship was in the expected direction (negative). Therefore, AC independence does reduce EM, as found in the prior studies. AC independence is believed to provide honest assessment and judgement to management so that EM can be mitigated.

AUDIT COMMITTEE SIZE

According to the resource dependency theory, there should be a significant negative relationship between AC size and EM (Allegrini & Greco 2013). In addition, a large AC size is important in gaining a different experience and professional judgement (Braiotta 2000). A higher number of members in the AC means they are better able to practise more monitoring and overseeing practices (Kiel & Nicholson 2003; Xie et al. 2003).

Nonetheless, Table 2 demonstrates an insignificant negative relationship between AC size and EM with a 5% significance level. This result supported Xie et al. (2003), Bédard et al. (2004), Soliman and Ragab (2014), Albersmann and Hohenfels (2017), Katmon and Al Farooque (2017) and Nazir and Afza (2018). This agreement can be explained as the firms may superficially follow the principle of the Code of Corporate Governance. This argument was supported by reviewing AC reports in Egypt that were short and characterised by a lack of detail. In addition, AC reports in Egypt were not disclosed regularly, and some firms did not disclose their AC report. Notwithstanding, the result was incompatible with Lin et al. (2006) and Almarayeh et al. (2022), who found a negative relationship between AC size and EM. It is paramount that the AC will be less effective if it is too small because there would not be enough members to serve on it. A small committee could not carry out its responsibilities effectively, while a large committee may suffer from coordination and procedure challenges, which would be another reason contributing to poor monitoring (Vafeas 2005).

AUDIT COMMITTEE MEETINGS

Increasing the number of AC meetings means the directors spend more time discussing matters related to financial statements (Kartmon & Al Farooque 2017). Moreover, the committee can take immediate corrective action to correct any issue affecting the financial reporting process. The AC must give its directors sufficient time to carry out their responsibilities correctly (Lin & Hawang 2010).

As predicted, Table 2 shows a significant negative relationship between AC meetings and EM with a 5% significance level. AC meeting is the only AC characteristic that had a significant relationship with EM. This result was aligned with Soliman and Ragab's (2014) finding in the context of Egypt. It also supported the results of Xie et al. (2003), Abdul Rahman and Ali (2006), Lin and Hwang (2010) and Metawee (2013). Nevertheless, it is inconsistent with the results of Bédard et al. (2004), Davidson et al. (2005), Lin et al. (2006) and Mardessi (2022). The result of this study indicated that regular AC meetings are necessary for effective monitoring. More frequent meetings would influence the committee's ability to perform its responsibilities effectively, which subsequently leads to a reduction in EM.

CONTROL VARIABLES

Table 2 exhibits the insignificant relationship between the Big 4, natural logarithm of total assets, sales growth, loss and market-to-book ratio. In accordance with Lazzem and Jilani (2018), the table showed a negative relationship between leverage and EM because the higher leverage was related to financial distress (Lazzem & Jelani 2018). Furthermore, a high degree of leverage increased the control of the creditor over financial statements, thus decreasing EM. Operations' cash flows had a negative relationship with EM, meaning that higher operations' cash flows decreased EM. The increasing level of operating cash flows indicated a better performance of these firms, increasing the financial reporting quality.

SECOND MODEL

Table 3 presents the regression analysis of the second model used to show the effect of state ownership on the relationship between AC characteristics and EM.

TABLE 3. Regression results for model 2

Variables	Coefficient	T	P> t
SOC	0.0870526	0.59	0.556
ACInd	-0.0011256	-0.02	0.982
ACSize	-0.0038784	-0.22	0.829
ACmeetings	-0.0011256	-2.02	0.045
SOCACInd	-0.0471694	-0.58	0.566
SOCACSize	-0.0126526	-0.35	0.729
SOCACMeet	-0.0019247	-0.28	0.782
Big4	0.0391519	1.04	0.300
Ln TA	-0.0061579	-0.65	0.520
LEV	-0.1002084	-2.30	0.023

Growth	0.0032217	1.17	0.244
Loss	-0.0437994	-1.37	0.173
CFO	-0.2636172	-2.03	0.045
MTB	0.0007562	0.24	0.814
D2014	0.04242609	1.05	0.204
D2015	0.2424098	3.4	0.103
D2016	0.0219629	1.66	0.198
Basic Resources	0.1136392	2.24	0.127
Construction	0.0382742	1.34	0.181
Food	0.0578807	2.37	0.119
Chemicals	-0.0537275	-1.55	0.123
Real Estate	0.0517736	1.87	0.064
Auto	0.06839762	6.22	0.102
Travel	-0.025392	-1.19	0.235
Household	-0.0121718	-0.42	0.675

The table showed a significant negative relationship between ACmeetings, LEV, CFO and EM at the 5% significance level. Other relationships were insignificant.

AUDIT COMMITTEE AND EARNINGS MANAGEMENT IN STATE-OWNED FIRMS

Table 3 displays an insignificant negative relationship between AC independence and AC size with EM in state-owned firms. The relationship between AC size and EM was insignificant in private and state-owned firms. These results contradicted the findings of Liu and Lu (2003), Chen and Yuan (2004) and Aharony et al. (2010). This study also found a significant negative relationship between AC meetings in state-owned firms and EM at the 5% significance level. This is the only significant relationship between audit characteristics in state-owned firms and earnings management found in this study. Ding et al. (2007), Tao et al. (2009) and Wang and Yung (2011) also discovered a negative correlation between state ownership and EM.

Overall, the findings of this study could be explained by the lack of intention to state-owned firms in Egypt. Although the Egyptian Institute of Directors (EIOD) published three versions of the Code of Corporate Governance in 2005, 2011 and 2016, it published only one version for state-owned firms in 2006. This version has not been updated or developed. In addition, as argued by Megginson et al. (1994) and Shleifer (1998), bureaucracy, weak managerial incentives and conflicting objectives in state-owned firms are the main reasons for the decreased effectiveness of corporate governance. According to these results, state-owned firms must pay much more attention to developing corporate governance to reduce the EM practices within these firms. Furthermore, the differences in corporate governance practices as a result of the country's unique legal systems, cultures and political challenges in private and state-owned firms could also influence the differences in the findings.

CONCLUSION

Overall, the study contributed to the comprehension of AC characteristics and their influence on EM in the Egyptian context, shedding light on the unique influence of the ASA on these relationships. Several conclusions can be drawn from the study's findings. First, the relationship between AC meetings and EM was significantly negative. This finding suggests that AC meetings that occur more frequently are associated with fewer EM practices. This finding is consistent with previous research and highlights the significance of an active AC in maintaining the integrity of financial reporting. Second, there was no correlation between the independence of the AC and EM. This result contradicts the agency theory and regulatory requirements-based expectations. It indicates that AC independence may not be as effective in preventing EM in the Egyptian context as anticipated. Third, the study found an insignificant relationship between AC size and EM. This result is consistent with previous research and demonstrates that merely increasing the AC size may not result in a significant decrease in EM. The study discovered that the ASA's role did not significantly moderate the relationship between AC characteristics and EM when examining the impact of the ASA on this relationship.

The findings of this study have several implications for both researchers and practitioners. First, the study underscores the importance of an active and engaged AC in reducing EM. Companies should encourage regular AC meetings to ensure thorough oversight of financial reporting processes. Second, the results challenge the conventional wisdom that AC independence alone is sufficient to mitigate EM. Companies and regulators should consider other factors that may influence the effectiveness of an independent AC. Third, while larger ACs are often assumed to be more effective, this study suggests that their size alone may not be a significant factor in curbing EM. Companies should focus on the competencies and activities of their AC rather than just their size. Lastly, despite government oversight through the ASA, state-owned firms in Egypt still face challenges related to EM. This suggestion highlights the need for ongoing efforts to improve corporate governance within these entities. Therefore, regulators and policymakers should revisit corporate governance regulations in light of these findings. Tailored approaches to governance reform may be necessary for different types of firms, including state-owned entities.

This study identifies several limitations and areas for future research. The study began with cross-sectional data, providing a snapshot of a particular time. Cross-sectional data may not capture the dynamics and changes in corporate governance practices and EM. Future research could benefit from longitudinal data that allows for tracking changes and trends. Second, the study is Egypt-centric and may not be directly applicable to other nations or regions with distinct regulatory environments and business practices. Researchers should be cautious when extrapolating their findings to other contexts. Researchers can conduct comparative studies comparing corporate governance practices and EM in Egypt to other nations with comparable or dissimilar regulatory structures. This comparison can help identify best practices and improvement opportunities. Lastly, the study measured EM primarily through financial data. Future research could consider incorporating qualitative data or interviews with key stakeholders to provide a fuller understanding of governance practices and their effects.

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