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### Does Audit Committee Effectiveness mean less fraud in Financial statement? :An Emerging Context

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# Does Audit Committee Effectiveness mean less fraud in Financial statement? :An Emerging Context

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## Abstract

This study looks at the impact of governance variables, notably audit committee independence, on earnings manipulation practices (discretionary accruals). We use a panel of 78 Egyptian public businesses from 2010 to 2020 to investigate the relationship between governance structure and earnings management, as measured by discretionary accruals. EM activity based on discretionary accruals (DAs) is measured using the modified Jones model (1995), Kasznik (1999), Kotahri, Leon, and Wasely's (2005) model, and Raman and Shahrur's (2008). Feasible Generalised Least Squares (FGLS) found that audit committee independence is adversely and strongly associated to DAs. Given these findings, the FGLS revealed negative relationship between Audit committee independence and earnings manipulations. we recommend that policymakers carefully weigh the benefits and drawbacks of governance indicators while implementing appropriate financial policies to improve the quality of financial reporting in emerging markets.

**Keywords:** Audit committee Independence, Financial Reporting, Accrual earnings Management, Egyptian context.

## 1. Introduction

The Audit Committee (AC) plays an important role in the application of corporate governance. The growing understanding of the value of CG and ACs has drawn the attention of stakeholders. This increased attention stems from earnings restatement scandals and financial statement fraud cases involving publicly traded corporations, as well as CG failures at well-known organisations including as Enron, Global Crossing, WorldCom, and Adelphia (Al-Ajmi, 2009; Bhasin, 2012). ACs are widely recognised by government officials, regulators, and international organisations as a potentially significant instrument for improving the dependability and transparency of financial data (Al-Ajmi, 2009; Bhasin, 2012). ACs play an important role in CG by managing the financial reporting process and internal control framework. Rezaee et al. (2003) emphasise that the AC's role has evolved over time, shaped by recommendations from the Treadway Report (1987), the Blue Ribbon Committee (BRC, 1999), the Securities and Exchange Commission (SEC, 1999) rules, the Sarbanes-Oxley Act of 2002, the UK's combined CG codes (2003), and organised stock exchanges such as the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and National Association of Securities Dealers Automated Quotation (NASDAQ).

Numerous studies have found that the Audit Committee (AC) is regarded an important component of corporate governance (CG) due to the fulfilment of numerous key functions such as: Financial reporting quality Assurance as the AC protects the integrity of the financial reporting process by validating the correctness and completeness of financial statements, internal control, and risk management evaluation; external audit oversight to ensure its independence and effectiveness; CG Standard Enhancement as The AC's duty goes beyond financial reporting to drive overall CG improvements throughout the organisation. In essence, the AC acts as a multidimensional guardian of financial reporting integrity and overall CG efficacy (Rezaee et al. (2003), OECD (2004), Chen, Lu, and Sougiannis (2008), Beasley et al. (2009), Collins (2009), Mohiuddin (2012), Lary and Taylor (2012), and Ilaboya and Obaretin (2015).

Improving oversight of financial statement quality requires effective collaboration among audit committee members, external auditors, and management. This study dives into audit committee characteristics, with the goal of identifying the aspects that have the greatest influence on earnings quality. These characteristics can be broadly classified into three categories (Al-Ajmi, 2009; Bhasin, 2012). First, the independence of AC directors is paramount for ensuring objective oversight and minimising potential conflicts of interest. Second, the frequency of AC meetings reflects the level of attention and engagement dedicated

to monitoring financial reporting matters. Third, the size of the AC can impact its effectiveness in terms of expertise, diversity of perspectives.

A slew of corporate scandals, including WorldCom, Enron, Swissair, Arthur Andersen, Parmalat, Adecco, Yukos, Baring Bank, and UBS, have eroded investor trust in multinational firms. These scandals have been marked by corporate disruption, accounting problems, corporate profiteering, excessive executive pay, and overstated and inadequate disclosure techniques. As a result, shareholders are becoming more sceptical of huge firms' financial health and ethical policies, throwing doubt on global portfolio investments. These scandals were centred on the phenomena of EM, which has gained substantial interest among stock market authorities, practitioners, researchers, and investors as a result of its large detrimental influence on financial reporting value, Ebaid's 2013 study emphasised the importance of investor perception for corporate performance. Building on Jensen and Meckling's seminal 1976 work, corporate governance (CG) addresses agency issues between shareholders and managers by implementing policies, rules, regulations, processes, and personnel to meet stakeholder needs and promote the direction and control of management activities with integrity, transparency, and objectivity. Man and Wong (2013) and Ji, Ahmed, and Lu (2014) defined CG structures as a combination of internal and external mechanisms.

The paper is organised as follows. The first section gives an overview of the study background (introduction), followed by a thorough literature assessment. The third section discusses the technique used in the study. The fourth portion offers the findings, together with their subsequent analysis and discussion. The fifth and last section summarises the research's conclusions, key steps, and findings.

## **2. The Socio-Economic Context of Egypt: Institutional Setting**

Egypt stands out as an attractive case study for investigating emerging capital markets due to a number of compelling reasons. For starters, Egypt's economy is active and expanding, with several investment prospects for international players. Second, the Egyptian business scene has seen a significant transformation in recent years, providing useful insights into emerging economies' adaptation and durability. Third, Egypt's distinct economic, financial, legal, cultural, and political frameworks have had a substantial impact on CG implementation, resulting in a microcosm of the challenges and opportunities faced by rising nations. Fourth, Egypt is a good model for nations experiencing similar economic and political reforms, providing a road map for navigating these complicated transitions while maintaining investor confidence (Hashim & Devi, 2008; Sorour and Howell., 2012). The Egyptian economy has

demonstrated extraordinary endurance and adaptation, moving through numerous evolutionary stages marked by a mix of public and private ownership systems (Dahawy & Kamel, 2006). The phases are the Colonial Period, Central Planning, Slow Development, Moderate Development, and Rapid Development (HassabElnaby & Mosebach, 2005). Egypt is exceptional among developing nations in that it went from a capitalist system to a planned economy before returning to a capitalist framework. This dynamic evolution demonstrates the country's ability to adapt to shifting economic and political environments while negotiating diverse legal, professional, and economic systems with variable levels of government engagement (Hassan, 2008). Banking, insurance, and pensions, Suez Canal Communications, and energy are all strong sectors of Egypt's economy. Egypt experienced four distinct economic phases during the twentieth century (Abdelsalam & Weetman, 2007): 1) pre-1952, with a dominant private sector; 2) 1952-1973, with nationalisation and socialist policies; 3) 1974-1991, with an open-door policy and an emphasis on foreign investment; and 4) since 1991, with privatisation efforts and capital market revitalization.

### **3. Literature Review and Hypotheses development**

This study takes an integrated approach, building on a variety of current theories rather than a single theoretical framework. This multifaceted approach is important to scholars who want to understand the complex interaction between CG processes and financial reporting quality. Agency theory (Jensen & Meckling, 1976), stakeholder theory (Freeman, 1984), and resource dependency theory (Hillman, Withers, & Collins, 2009; Pfeffer, 1973) all serve as theoretical foundations for investigating the relationship between governance indicators and financial reporting quality. There are differing views and discussions about the relationship between audit committees (ACs) and financial reporting quality. On the one hand, the existing literature emphasises various advantages and benefits of ACs. They are responsible for scrutinising financial accounts on behalf of the board of directors to ensure the integrity and accuracy of financial reporting. ACs also contribute to mitigating fraud by enhancing internal control mechanisms, fostering independent judgement among non-executive directors, supporting the internal audit function, facilitating effective communication with external auditors, and increasing public confidence in the transparency and objectivity of financial reporting (Kunitake, 1983; McDonald Report, 1988; Pincus, Rusbarsky, & Wong, 1989; Luecke & Westfall, 1990; Cadbury Committee, 1992). However, some research indicates that ACs may have a negative impact on earnings quality and business success. These concerns derive from the possibility for ACs to duplicate corporate tasks, resulting in higher administrative costs.

The existence of an AC may also result in additional costs for the company, such as travel, salary, and managerial time. Furthermore, excessive managerial monitoring and oversight may discourage innovation and creativity, reducing firm value and financial reporting quality (Bedard et al., 2008; Habbash, 2010). The relationship between audit committee characteristics and earnings management has been a source of ongoing dispute in both academic and practical settings. While some academics have found a favourable link between corporate governance procedures and earnings manipulation methods, others have discovered a negative link. Furthermore, a sample of empirical investigations found a non-linear link between CG indicators and financial reporting quality, consistent with the predictions of agency theory, stakeholder theory, and resource dependency theory.

### **3.1. Audit Committee Independence and Financial Reporting Quality**

Audit committees (ACs) can help to reduce information asymmetry, especially when independent auditors offer shareholders with accurate, sufficient, and trustworthy information on corporate operations and management activities. To ensure the AC's effectiveness and achieve its core goal, it should include both independent and internal executive directors. Including just internal directors may undercut the AC's objective and impair its capacity to carry out its duties. Aldamen et al. (2012) and Vlaminck and Sarens (2015) found a link between the number of independent auditors on an audit committee and a company's ability to continue operations and increase value. Organisations frequently attempt to reinforce their reputation and increase their exposure in this area by including independent auditors into their audit committees, which ensure effective compliance with accounting principles and standards. Empirical data, such as Aldamen et al.'s (2012) work, highlight the importance of ACs as "cornerstones of corporate governance" and the need for external and independent directors to enhance transparency and accountability. Agency theory emphasises the importance of ACs in resolving conflicts between shareholders and management, which improves strategic and tactical decision-making (Collins, 2009; Mohiuddin, 2012). ACs enable organisations to address agency issues and close the information gap between insiders and outsiders. As a result, an efficient CG system is distinguished by collaboration and coordination among the three primary stakeholders- the board of directors (BOD), management, and ACs, which include both internal and external auditors - in generating transparent financial reports (Collins 2009). This viewpoint is supported by the works of Jensen and Meckling (1976), Fama and Jensen (1983), the Cadbury Report (1992), the UK Combined Code (1998, 2006), the King Reports

(1994, 2002), and the Sarbanes-Oxley Act of 2002, which all emphasise the importance of independent oversight in corporate governance.

According to stakeholder and resource dependence theories, (ACs) should include outside or independent directors who have expertise, qualifications, and experience managing unforeseen events, navigating the organization's surrounding circumstances, and dealing with resource uncertainties (Basiruddin, 2011; Alessandro, 2013). ACs provide as a conduit for developing the network of linkages between directors, shareholders, and stakeholders. This network promotes the acquisition of financial, technological, human, and vital resources for the organisation in its working environment (Alessandro, 2013). Several studies support the positive impact of independent members of audit committees (ACs) on corporate value, which is consistent with stakeholder and resource dependence theories. According to Martinov-Bennie, Soh, and Tweedie (2015), AC members typically have the qualifications and expertise to effectively manage firms' risk appetites, allowing them to handle technical aspects of corporate operations like risk assessment, risk management, and conflict of interest situations.

In contrast, stewardship theory suggests that audit committees (ACs) may hinder the firm's growth prospects and impede the development of long-term performance or the prevention of opportunistic behaviors due to several factors (Guthrie and Turnbull, 1995; Rainsbury, Bradbury, and Cahan, 2008); ACs may dilute the authority of executives, restricting their ability to make strategic decisions and execute plans effectively; They may divert the attention of non-executive directors from strategic matters to the more mundane task of auditing and financial reporting, potentially hindering their ability to provide valuable insights and guidance; ACs may impede communication and interaction between auditors and the board, potentially limiting the flow of information and hindering effective oversight; ACs may become a mere rubber stamp for management decisions, reducing the board's scrutiny and oversight role; the presence of ACs may make management more cautious in accessing the knowledge and expertise of lower-level employees, potentially hindering innovation and risk-taking.

Previous research in developing nations has revealed inconsistent results regarding the association between (ACs) and earnings management (EM) methods. Carcello and Neal (2003) investigated the relationship between AC independence and disclosure quality, finding a positive and substantial link between independent ACs and optimistic disclosure about a company's financial situation. In addition, AC independence appears to have a positive effect

on disclosure quality. In China, Chen et al. (2006) investigated the relationship between board of director traits and financial fraud. Surprisingly, their data showed that organisations with a higher share of independent non-executive directors and more frequent meetings were less likely to commit fraud. Saleh et al. (2007) investigated the impact of AC features such as independence, size, meeting frequency, and AC members' expertise and monitoring capacities on Malaysian EM practices. Their findings revealed that the implementation of alternative accounting processes could cause disagreements between management and external auditors, resulting in EM practices. Furthermore, they discovered a strong negative relationship between AC independence and discretionary accruals. Furthermore, companies with AC members who excelled in professionalism, financial literacy, expertise, knowledge, and frequent meetings were found to be less vulnerable to EM manipulation. These results are consistent with the findings of Madi, Ishak, and Manaf (2014). Hutchinson and Zain (2009) explored how AC and internal audit characteristics affected financial statement auditing in Malaysia. Their findings demonstrated a link between the job of the internal auditor and AC characteristics such as financial knowledge and experience, independence, and internal auditor auditing and reviewing programmes. They concluded that effective oversight and monitoring functions by external and internal auditors can increase accounting conservatism, reduce litigation risk, and improve financial statement auditing quality.

In the Egyptian context, the impact of (ACs) on earnings management is still being researched. Kamel and Elkhatib (2013) undertook a study to better understand the perspectives of three groups-accounting professors, external auditors, and financial managers or senior accountants - about the role of ACs in Egypt and their impact on financial reporting quality and credibility. According to the study, the most significant characteristics of a competent accountant are independence and financial or accounting ability. Independent audit committees serve an important role in preventing fraudulent financial reporting and increasing investor confidence in audited organisations. ACs also serve to promote communication between internal and external auditors, as well as mediate issues between external auditors and management. ACs' primary job is to assess substantial changes in accounting principles and practices. This is consistent with Egyptian CMA laws, which require listed businesses to establish ACs with at least three qualified non-executive members, one of whom acts as AC chair. In 2016, the Egyptian Stock Exchange (ECCG) proposed that ACs be made up of at least three non-executive board members, including two independent directors. One of these independent directors should have the necessary knowledge, experience, analytical and



technical abilities, as well as financial and accounting expertise, to efficiently detect manipulations that may jeopardise the integrity of financial reporting. Previous study has demonstrated that ACs in a two-tiered board structure may have little impact on CG effectiveness due to the voluntary nature of their installation and the "comply or explain" approach. However, Albersmann and Hihenfels (2017) claimed that mandated AC adoption for all listed corporations, like in the United States, does not ensure increased CG efficacy because ACs can be established merely for legitimacy purposes. The bulk of studies have used quantitative methodologies, such as published annual reports and OLS regression analysis, to investigate the relationship between AC independence and financial reporting quality. While some studies, such as Abbot et al. (2007), Klien (2002), Bedard (2004), Saleh et al. (2007), Garcia et al. (2012), Aldamen et al. (2012), Kamel and Elkhatib (2013), Madi et al. (2014), Miko and Kamardin (2015), Vlaminck and Sarens (2015), and Salehi and Shirazi (2016), have found a negative and significant association between AC independence and earnings management, others, such as Xie et al. (2003), Lin et al. (2006), Hama Based on these findings, researchers recommend that future studies looking at the impact of AC independence on company performance take into account other CG characteristics such as ownership structure, CEO duality, and block holders. This study suggests the following idea on AC independence:

**H1: There is a negative association between AC independence and Accruals-based activity management (AEM).**

H1a: There is a negative association between AC independence and (AEM) using Modified Jones model.

H1b: There is a negative association between AC independence and (AEM) using Kothari model.

H1c: There is a negative association between AC independence and (AEM) using Kasznik Model.

H1d: There is a negative association between AC independence and (AEM) using Rahman and Sharur model.

## **4. Research Methodology**

### **4.1 Data and Sample selection**

I used the listed companies on the Egyptian Exchange (EGX) to construct our database. A sample of 78 listed non-financial companies from 2010 to 2020 was employed in our analysis. Excluded from our research were financial, insurance, and investment firms;

enterprises without information for a minimum of three years; and firms with comparatively incomplete corporate governance data. A total of 780 firm-year observations are obtained from 78 firms. Our panel database's structure is outlined in Table 1. Note that our sample size of 78 represents approximately 36% of the 226 listed enterprises in total, the data studied in this study are derived from a recognized data set that represents a sample of publicly listed non-financial enterprises in Egypt from 2008 to 2020. Two years prior to the research base year, the proxies of REM are calculated. Since the study's focus is on the years 2010–2020. The primary sources from which ownership structure data were manually gathered were Egypt for Information Dissemination (EGID), the Capital Market Authority (CMA), and the EGX. Data gathered from the DataStream is used to calculate data for the control variables set and EM proxies.

**Table 1.** Summary of the Study Sample

Sample	N	%
Firms listed on the Egyptian Stock Exchange	226	100%
Less: financial, insurance, and investment firms	(47)	21%
Less: firms that do not have information for at least 3 years	(30)	13%
Less: industry sectors that do not have homogeneity	(5)	1%
Less: sectors that do not have at least 7 firms	(18)	8%
Less: firms with missing DataStream information	(23)	10%
Less: firms with missing corporate governance data	(25)	11%
Total firms included in the sample after excluding the missing data	78	36%

## 4.2 Variables Measurement

This study provides an explanation of the study's variables of interest. First off, the audit committee make up our primary independent variable. The EM comes in second, followed by control variables.

### First, Dependent Variable: Earnings management Measurement

Accruals-based Activity EM, which measures earnings management (manipulation), is one tool for quantifying discretionary accruals (DAs). Because of this, it is vital to grasp the distinction

between non-discretionary and discretionary accruals. In the literature, a range of models—from simple to complicated and sophisticated—are proposed to segregate accruals into discretionary and non-discretionary components before determining DAs. The original Jones (1991) model considers the effects of changes in a firm's economic circumstances on non-discretionary accruals, as opposed to the models proposed by Healy (1985), DeAngelo (1986), Dechow and Sloan (1991), and Aharony et al. (1993). To capture sales-based manipulation practices generated from the Jones model, the bulk of past studies used the Modified Jones model (Kaszniak, 1999; Klein, 2002; Kothari et al., 2005; Habbash, 2010; Doukakis, 2014; ElKalla, 2017). Dechow et al. (1995) believe that the modified Jones model is the most effective since it takes into account the change from receivables to earnings management. As a result, the modified Jones model can detect discrepancies in sales-based earnings management. The study measures the DAs using a cross-sectional approach based on each firms' industry classification. Numerous studies, including those by Subramanyam (1996), Bartovand et al. (2001), and Basiruddin (2011), have shown that the results of the two models—time series and cross-sectional Jones/Modified models—are identical and unaffected by the methodology used (time series versus cross-sectional). They discovered that the cross-sectional strategy outperformed time-series models for coefficient estimation and EM detection. The cross-sectional strategy avoids the time series approach's survivorship bias problems (Al-Ghamdi, 2012; Spinos, 2013). The DAs are the projected residual from the linear function of change in sales and gross plant, property, and equipment, as defined by Peasnell et al. (2005). Furthermore, the other models use a large number of conditioning factors to capture earnings manipulations (El-Kalla, 2017). To estimate the DAs model empirically, the non-discretionary accruals (NDA) from the current model must be removed from the total accruals (TACC).

The total accruals in the corpus of available literature can be determined using one of two approaches: the cash flow statement technique or the balance sheet approach. The study highlighted why it chose the balance sheet approach over the cash flow statement approach. If the balance sheet technique is used, there is an error in the projected total accruals, which are considered discretionary accruals (Kothari et al. 2005). Furthermore, as Hribar and Collins (2002) demonstrated, measurement errors in the calculation of total accruals were detected in studies that focused on using the balance sheet approach to calculate EM.

Dechow et al. (1995) proposed a modified model to get rid of the inclination of the standard Jones model in measuring DAs with errors when the discretion is applied to revenue recognition. Therefore, the Modified Jones model is controlled for the chance that revenue

recognition is exposed to management manipulations (Algharaballi, 2013; Doukakis, 2014). The Modified Jones model is applied to obtain the non-discretionary part of total accruals which is deducted from total accruals to compute DAs. The model is calculated like so:

$$NDA = \alpha_1 (1/TA_{it-1}) + \alpha_2 (\Delta REV_{it} - \Delta REC_{it})/TA_{it-1} + \alpha_3 (PPE_{it}/TA_{it-1}) \quad (1)$$

Where:

$\Delta REV_{it}$  = revenues in year  $t$  less revenues in year  $t-1$ ;

$\Delta REC_{it}$  = net receivables in year  $t$  fewer net receivables in year  $t-1$ ;

$\alpha_1$ ,  $\alpha_2$ , and  $\alpha_3$  are firm-specific parameters.

$$DA_t = TA_t - NDA_t \quad (2)$$

### **Second, Main Independent Variables**

The independence of (AC) is crucial for ensuring fair and objective decision-making. AC independence is defined as the proportion of independent directors on the AC to the total number of AC directors. This measurement method is consistent with previous research, including DeFond and Jiambalvo (1991), Beasley (1996), Rainsbury et al. (2008), Habbash (2010), Madi et al. (2014), Abata and Migiro (2016), and Chemweno (2016). The argument for selecting this proportion is that it shows the extent to which the AC is made up of directors who are not beholden to management and hence can make independent decisions. This technique also aligns with the UK CG Code's (2010) recommendations.

### **Third, Control Variable**

To account for company-specific and business-related factors that may influence the dependent variable (earnings management), numerous control variables are used in this study. These control variables are included in the model to create a more robust empirical framework and address the issue of endogeneity. The control variables in the model, as recommended by Emile et al. (2014), Samaha et al. (2015), Al-Najjar and Clark (2017), and Zalata et al. (2018), are leverage (LEV), operating cycle (OC), firm size (Size), profitability (ROA and ROE), gearing (Gear), liquidity (LIQ), asset tangibility (TANG), and market capitalization (MTKCAP).

**Table 2:** Summary of Variables and their Measurement

	Label	Measure	Source
<b>Independent variables</b>			
<b>1- Audit Committee</b>			
<b>Audit committee independence X2</b>	AUDIND	The number of independent directors in the AC scaled by the total members of AC.	Annual Disclosure Books By EGX, and Audit Committee reports
<b>Dependent variable</b>			
<b>AEM</b>	DACMJ	DAs is calculated based on Modified Jones model, (1995).	Data stream and financial statements
<b>AEM</b>	DAK	DAs is measured based on Kothari et al. (2005), including lagged ROA.	Data stream and financial statements
<b>AEM</b>	DAKZ	DAs is measured based on (Kasznik, 1999) model.	Data Stream and financial statement
<b>AEM</b>	DARS	DAs is calculated based on Raman and Shahrur (2008) Model	DataStream and financial statement
<b>Control variables</b>			
<b>Firm size</b>	SIZE	Natural log of the book value of a firm's total assets at the end of its financial year.	Data stream and financial statements
<b>Liquidity</b>	Liquid	It is ratio of current assets to current liabilities	Data stream and financial statements
<b>Performance</b>	ROA	The ratio of net income to total assets at the beginning of the year.	Data stream and financial statements
<b>Performance</b>	ROE	It is net income scaled by the total equity at the beginning of the year.	Data stream and financial statements
<b>Capital structure (Gearings)</b>	GEAR	It is total debt scaled by total equity at the end of fiscal year.	Data stream and financial statements
<b>Leverage</b>	LEV	It is the book value of total debt scaled by total assets at the end of its financial year.	Data stream and financial statements
<b>Assets Tangibility</b>	AT	It is total of net property plant and equipment scaled by total assets.	Data stream and financial statements
<b>Operating Cycle</b>	OC	The logarithm of the sum of the inventory and the receivables period.	Data stream and financial statements
<b>Earnings Management Flexibility</b>	EMFLEX	It is a total inventories and receivables scaled by total assets.	Data stream and financial statements

## 5. Data Analysis and discussion of results

### 5.1. Descriptive Statistics and Correlation Test

Descriptive statistics are used to present the level of DAs across accruals-based EM models. The mean value of DAs calculated using the Kothari et al. (2005) model is positive for Egyptian enterprises listed on the stock exchange. The mean value is negative for the Modified Jones, Kasznik, Raman, and Shahrur models. This could indicate that most Egyptian enterprises participate in more income-decreasing DAs than income-increasing DAs on average. The test of DAs (the dependent variable) across the four models reveals significant non-normality (skewness -0.234, kurtosis -0.033 for the Modified Jones model; skewness 0.145, kurtosis -0.175 for the Kothari model; skewness -0.088, kurtosis 0.102 for the Kasznik model; skewness 0.17, kurtosis -0.339 for the Raman and Shahrur (2008) model). This results in a non-normal residual in the regression, which violates the OLS condition. As a result, the study normalised data using the Van der Waerden method (Cooke, 1998), which effectively assigns ranks to non-normal data and converts ranks to numbers with a normal distribution. The majority of sample enterprises had a high level of AC independence, with an average of 99%. However, this figure is higher than that of Australia (2.50), according to Davidson et al. (2005).

**Table 3: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
<b>ACIND</b>	780	0	1	0.990662	0.0596373	-8.932	110.667
<b>ROA</b>	780	-0.0398	0.2163	0.051876	0.0650379	0.957	0.472
<b>ROE</b>	780	-0.0688	0.374	0.100429	0.1185833	0.813	-0.089
<b>LIQU</b>	780	0.5147	5.0461	1.833757	1.1885192	1.375	1.141
<b>LEV</b>	780	0.0182	0.6098	0.232505	0.1724446	0.618	-0.626
<b>GEAR</b>	780	0.0195	2.0804	0.518018	0.5552779	1.554	1.667
<b>ASSTANG</b>	780	0.0089	0.78	0.356718	0.2437437	0.134	-1.156
<b>OC</b>	780	4.0974	6.8154	5.351267	0.7572294	0.219	-0.776
<b>EMFLEX</b>	780	0.0799	0.8734	0.400584	0.2238405	0.557	-0.596
<b>FIRM-Size</b>	780	4.6774	6.9666	5.691671	0.6958374	0.374	-1.037
<b>DAMOD</b>	780	-0.2862	0.238	-0.003923	0.12784	-0.234	-0.033
<b>DAKOTH</b>	780	-0.1782	0.205	0.001786	0.09442	0.145	-0.175
<b>DAKAZNAK</b>	780	-0.2042	0.181	-0.008495	0.090701	-0.088	0.102
<b>DARAMAN</b>	770	-0.194	0.192	-0.012164	0.09742	0.17	-0.339
<b>Valid N (listwise)</b>	770						

This table 3 presents the descriptive statistics for accruals EM Models variables. The mean, median, standard deviation, minimum, and maximum values are presented in the columns for the CG characteristics, and firm-level characteristics on accrual-based EM for firms in the Egyptian context from 2010-2020.

AUDIND =AC independence; ROA= Return on assets; LIQ =Liquidity; Lev =Leverage; Gear =Gearing; Size = Firm size; AT = Asset Tangibility; OC =Operating Cycle; EMFLEX= EM-flexibility; GO=Growth

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Opportunities. EM measured by Modified Jones model developed by Dechow et al., (1995), the Kothari, et al. (2005) model, the Kasznik (1999) Model; and the Raman and Shahrur (2008) Model are used to measure the discretionary accruals from 2010-2020.

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A Pearson correlation matrix was created to investigate the possibility of multicollinearity between the variables. The results show that multicollinearity is not an issue, as all calculated coefficients are less than 0.80. This discovery was further confirmed by examining the variance inflation factor (VIF) and tolerance levels. Table 4 shows the maximum and mean VIFs for each variable in the accruals-based EM models. The VIF and tolerance values for all four accruals models are within acceptable ranges. Gujarati (2003) recommends that a VIF score less than 10 is appropriate. As indicated in Table 4, the VIF values for all models vary from 1.00 to 5.6, with no variable having a VIF value greater than 10 or a tolerance value less than 1. This confirms the lack of multicollinearity among the variables.

**Table 4:** Test Results For VIF and Tolerance Values

Variable	VIF	1/VIF
ROE	5.6	0.178505
ROA	5.51	0.181503
GEAR	3.51	0.284554
LEVERAGE	3.13	0.319064
OPERATING CYCLE	1.78	0.562315
LIQUIDITY	1.66	0.603080
ASSET TANGIBILITY	1.64	0.609605
EM FLEXIBILITY	1.58	0.633835
AC MEET	1.26	0.790957
AC SIZE	1.16	0.865413
AC INDEPENDENCE	1.10	0.907507
FIRM SIZE	1.03	0.966736
MEAN VIF	2.10	

## 5.2. Panel Regression Analysis (Feasible Generalized Least square)

Following the descriptive statistical analysis of the variables, it is critical to apply the necessary statistical tests to the panel data in order to examine the linear relationship between the CG mechanisms and DAs as proxies for EMs, as previously stated. In this context, it is critical to emphasise the features of panel data. To control time-variant unobserved heterogeneity in the pooled sample, the study recommends utilising Generalised Least Squares (GLS) analysis with either fixed-effect or random-effect estimators. However, there is problem related to cross-sectional time series data. This problem resides in contemporaneous and serial correlation. For macro panels of long time series (over 20-30 years), Baltagi (2008) considers cross-sectional dependence (contemporaneous correlation) as a major problem. Specifically, this type of problem does not affect micro-panels with few years and a large number of cases, such as the panel in this study. However, the model with individual effects has composite errors that are serially correlated. In this case, Hsiao (2007) indicates that the presence of the time-invariant error component gives rise to a serial correlation that does not die out over time. Then, it should be noted that solving this type of problem (correlation) could result in consistent estimates but biased coefficients and standard errors.

**Table 5:** Breusch-Pagan Test for Heteroskedasticity

	Obs	F-statistics	Pro> F
<b>Modified Jones model (1<sup>st</sup> Model)</b>	779	.51	.4761
<b>Kothari, (2005) model (2<sup>nd</sup> Model)</b>	770	2.35	.1252
<b>Kasznik (1999) model (3<sup>rd</sup> Model)</b>	779	00	.9624
<b>Raman and Shahrur (2008) model (4<sup>th</sup> Model)</b>	779	.67	.4141

The test of serial correlation for a panel data set is conducted by using a Wooldridge test for autocorrelation. To perform this test, xtserial command is applied in STATA software for autocorrelation checks. The results of the Wooldridge test lead to the rejection of the null hypothesis of no first-order autocorrelation at the 1% significance level for the study regression models except for Kasznik's (1999) model. Consequently, the study can resolve heteroscedasticity problems and first-order (AR1) serial correlation in error terms, by modeling random and fixed effects regressions with the cluster option which provides robust estimates of the regression parameters consistent with (Habbash, 2010).



**Table 6:** Wooldridge Test for Serial Autocorrelation Results

	obs	F-statistics	Pro> F
<b>Modified Jones model (1<sup>st</sup> Model)</b>	779	4.11	.0461
<b>Kothari et al. (2005) (2<sup>nd</sup> Model)</b>	770	6.921	.0103
<b>Kaszniak (1999) model (3<sup>rd</sup> Model)</b>	770	1.431	.2352
<b>Raman and Shahrur (2008) model (4<sup>th</sup> Model)</b>	770	6.571	.0123

However, Baltagi (2008) shows that OLS and GLS models are not always effective when heteroskedasticity and serial correlation problems are present. In this context, he indicated that feasible generalized least squares (FGLS) and panel-corrected standard error (PCSE) techniques can be used to address such problems, thereby generating unbiased and consistent results. The findings of Breusch-Pagan/Cook-Weisberg and Wooldridge tests showed that our data suffer from heteroscedasticity and autocorrelation problems. In this case, we use the FGLS method to remedy these problems. Tables (7) summarize the results. The estimated model can be written as follows:

$$EM_{it} = \beta_0 + \beta_2 Governance_{it} + \beta_j \sum_{j=3}^{12} X_{it} + t_i + v_i + \varepsilon_{it} \quad (3)$$

Where;

$EM_{it}$  is the proxy of EM of firm  $i$  and time  $t$ ,  $Governance_{it}$  is the governance indicators,  $X_{it}$  is the vectors of control variables,  $t_i$  is the time fixed effects,  $v_i$  firms fixed effects and  $\varepsilon_{it}$  represents an error term.

The FGLS procedure transforms the data taking into account the structure of autocorrelation and the heteroskedasticity. The FGLS on the transformed data fulfills the assumptions of standard least-square. It is called feasible because the autocorrelation coefficient is unknown and estimated in the procedure (Gujarati, 2004). The study uses the `xtgls` command with Stata 14.1 which allows for panel-specific (AR1) autocorrelation structure and heteroskedasticity.

### 5.3. Empirical results and Discussion

In terms of AC independence, as shown in Table (7), the study results demonstrate that the estimated coefficient of AC independence is negative and significantly linked to the DAs, specifically the Kasznik model and Raman and Shahrur at a 1% and 10% significance level. This result is consistent with the findings of Abbot and Parker (2000); Bedard et al. (2004); Saleh et al. (2007); Piot and Janin (2007); Garcia-Meca and Sanchez-Bellesta (2009); Lin and Hwang (2010); Habbash (2010); and Soliman and Ragab (2014), who discovered that AC independence is one of the key CGs methods used to mitigate earnings manipulation practices and that AC independence is strongly related to lower levels of EM. This partially verifies hypothesis (H1), which states that the number of independent directors in the AC is negatively related to DAs. Furthermore, Madi et al. (2023) highlighted the function of independent directors in the AC in promoting voluntary disclosure since they work in the best interests of minority shareholders and do so objectively and independently of management influence. However, the modified Jones model and Kothari et al. (2005) models suggest a non-significant and negative association between AC independence and DAs (as a surrogate for EMs), whereas the Raman and Shahrur model reveals a 5% significant relationship with DAs. These findings are consistent with those of Sun, et al., 2014 Xie et al. (2003), Yang and Krishnan (2005), Abdul Rahman and Ali (2006), Lin et al. (2006), Susanto, (2016) and Hamdan (2020), who discovered that AC independence did not play a role in preventing earnings manipulation. They also stated that the establishment of an AC in publicly traded businesses has yet to effectively monitor and improve the quality of financial reporting. They may be able to prevent aggressive profit manipulations if AC members have financial skills, knowledge, and company experience, have more non-executive directors, and hold more meetings.

The difference in variables used to measure discretionary accruals as a substitute for EM has an impact on the coefficients' significance levels. This could be due to the fact that the Raman and Shahrur model governs growth and profitability. The Kothari et al. (2005) model includes a constant term that controls for the influence of the firm's performance. The Modified Jones model does not account for the effects of business profitability and lacks a constant term. As a result, the coefficients' significance values differ on the relationship between AC independence and EM.

**Table 7.** Governance indicators AC Independence and DAs: FGLs estimation results.

VARIABLES	Modified	Kothari	kasznik	Raman and Shahrur
L. DA	-0.00276 (0.0594)	0.0112 (0.0468)	-0.109*** (0.0421)	-0.0807* (0.0437)
ROA	-0.117 (0.167)	-0.232** (0.118)	-0.210* (0.109)	-0.125 (0.117)
ROE	0.130 (0.0895)	0.137** (0.0637)	0.114** (0.0579)	0.0828 (0.0641)
Liq	0.000360 (0.00452)	0.00503 (0.00333)	-0.00433 (0.00317)	-0.000852 (0.00307)
Lev	-0.0171 (0.0513)	-0.0273 (0.0316)	-0.0472 (0.0320)	-0.0222 (0.0322)
Gear	0.0111 (0.0155)	0.0137 (0.00960)	0.0177* (0.00917)	0.00381 (0.0101)
Size	0.00841 (0.0192)	0.0263* (0.0138)	-0.00666 (0.0126)	0.0421*** (0.0137)
Asstan	0.0449 (0.0412)	0.00641 (0.0313)	0.0262 (0.0276)	-0.0370 (0.0311)
OC	0.00894 (0.0253)	-0.00740 (0.0187)	-0.0170 (0.0160)	-0.0171 (0.0187)
Emflex	-0.0220 (0.0344)	0.0203 (0.0273)	-0.00875 (0.0236)	-0.00276 (0.0278)
Constant	-0.101 (0.156)	-0.110 (0.118)	0.238** (0.108)	-0.187 (0.115)
Observations	780	780	780	780
Number of no	78	78	78	78
Hetero test	8.96	3.51	7.00	0.99
p-value	0.0028	0.0611	0.0082	0.3186
Autocorrelation test	16.443	2.411	9.588	1.645
p-value	0.0001	0.1246	0.0027	0.2035
Wald test	218.91	243.49	194.81	300.89
p-value	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	Yes	Yes	Yes
Firms fixed effects	Yes	Yes	Yes	Yes

The results of FGLS estimations is presented in this table. The AEM based on modified Jones, Kotharie, Kaznick, and Raman and Shahrur is the dependent variable. The sample consists of 780 observations from 2010 to 2020. ROA = return on assets; ROE = return on equity; LIQ = liquidity; Lev = leverage; Gear = gearing; Size = company size; MKT = market capitalization; AT = asset tangibility; OC = operational cycle; EMFLEX is an abbreviation for EM-flexibility

are all control variables. The symbols \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively

## **6. Summary and Conclusion**

This study contributes significantly to the literature on the influence of CG on financial reporting quality, but it also has several shortcomings. The study's findings have ramifications for standard-setting and add to the debate over whether worldwide harmonisation of CG practices is achievable. Based on a review of prior empirical research, various hypotheses about the effectiveness of CG mechanisms, and the current study's findings, it is clear that CG quality varies by country. This diversity in CG implementation could be attributed to differences in macroeconomic and microeconomic conditions, cultural norms, the level of disclosure necessary, stock market laws and regulations, the level of protection provided to minority investors, and ownership structures. Egypt is viewed as an example of a developing country that differs from the Anglo-Saxon environment (such as the United States and the United Kingdom).

With regards to AC independence, the study results report that the estimated coefficient of AC independence is negative and considerably linked to the DAs, namely the Kasznik model at a 1% significance level and Raman and Shahrur model at 5%. This outcome is in line with Abbot and Parker (2000); Bedard et al. (2004); Saleh et al. (2007); Piot and Janin (2007); Garcia-Meca and Sanchez-Bellesta (2009); Lin and Hwang (2010); Habbash (2010); Soliman and Ragab (2014) who revealed that AC independence is one of the key CGs methods used to mitigate earnings manipulation practices and found that AC independence is strongly related to lower levels of EM. This partially confirms the hypothesis (H1c, and H1d) which proposes that the number of independent directors in the AC is negatively linked with DAs. Furthermore, Madi et al. (2014) supported the role of independent directors in the AC in enhancing the voluntary disclosure as they work in favor of the minority shareholders and do their work objectively and independently from the influence of the management.

However, non-significant and positive relationship is revealed between AC independence and DAs (as a proxy for EMs) based on the modified Jones model and Kothari et al. (2005) model. These results are in line with the outcomes of Xie et al. (2003), Yang and Krishnan (2005), Abdul Rahman and Ali (2006), Lin and Yang (2006), Lin et al. (2006) and Hamdan et al., (2013) who revealed that AC independence does not have a part in stopping the occurrence of earnings manipulations. They also indicated that the establishment of an AC in listed

companies has not yet succeeded in fulfilling its monitoring role and enhancing the quality of financial reporting. They may have the ability to reduce aggressive earnings manipulations if AC members have financial expertise, knowledge and corporate background, have more non-executive directors and hold more meetings.

The difference between variables used to measure discretionary accruals as a substitute for EM impacts the significance level of the coefficients. This may be attributed to the fact that the Raman and Shahrur model controls growth opportunities and profitability. The Kothari et al., (2005) model consists of a constant term and control for the effects of the firm's performance. The Modified Jones model does not control for the effects of firm profitability and does not include a constant term. Therefore, the significance levels of the coefficients differ concerning the link between AC independence and EM.

The current study provides evidence that certain CG attributes are related to EM incidences. However, various factors, such as remuneration and nomination committee, are not covered in this study, which may be relevant to CG. Therefore, exploring the different aspects of these committees is necessary. The study focuses on large-size firms and eliminates certain industries, thus allowing an opportunity for future studies to measure the relationship between CG and EM in SMEs and industries excluded from this study. Future research is also needed to consider the role of ethics in CG. That is, business ethics is recently demanded by most institutional and individual investors, particularly after the increasing corporate scandals, extremely high compensation of directors and managers and recent financial crisis. The study suggests additional years of data and countries in the MENA region to extend the study and provide additional insights into different market responses to CG, external audit and EMs.

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