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Huddersfield University
Business School
Department of Accounting, Finance & Economics



**Evaluating the Effectiveness of Corporate Governance
Mechanisms and External Audit on Earnings Management:
Empirical Study of Companies listed in the Egyptian Stock
Market**

Eman Fathi Ahmed Attia U1178937

A Thesis Submitted to the University of Huddersfield in
Partial Fulfilment of the Requirements for the Degree of
Doctor of Philosophy

Supervisor: Dr. Messaoud Mehafdi

Abstract

This thesis aims to examine the effects of corporate governance (CG) attributes and external auditing on accrual-based earnings management (EM) and real EM (REM) activities in the Egyptian context. CG attributes are divided into ownership structure, the board of directors (BOD) and audit committee (AC) mechanisms. 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) model. By contrast, REM activities are measured using Roychowdhury's (2006) abnormal operating cash flow (ABCFO), abnormal production cost (ABPROD), abnormal discretionary expenditures (ABDISX) and aggregate proxies.

This study finds that a theory explaining the general pattern of association between CG attributes and EM practice has not since been established. CG–EM relationship is based on various conflicting theoretical perspectives, such as agency theory, institutional theory, stewardship theory and resource dependence theory. Thus, these conflicting theories have resulted in inconsistent empirical findings on CG–EM relationship.

The dynamic panel system-generalized method of moments (δ) estimator is used as the main analysis to alleviate dynamic endogeneity concerns between the CG mechanisms and EM. Furthermore, this study selected a sample of 78 Egyptian Exchange (EGX)-listed companies for the period 2008–2017 representing a total of 780 observations. Organisations in the mining, financial and insurance and regulated industries are eliminated from the sample because of distinctive accrual options and valuation processes. Furthermore, Seo and Shin's (2016) dynamic panel threshold analysis is used to demonstrate the existence of a non-linear association between CG mechanisms and EM and CG attributes' optimal threshold that can achieve the minimum level of EM.

On one hand, results from SYSTEM GMM reveal that managerial and institutional ownership, the board's size, independence and diversity, AC meetings and external audit negatively significantly correlated with DAs. On the other hand, family and government ownership and AC size positively significantly related to DAs. In the terms of REM, the results from SYSTEM GMM reveal that managerial and family ownership, AC independence and meeting and the board's size and diversity negatively significantly correlated with REM proxies, except for ABCFO measure. Whereas, board meetings and AC size are positively and significantly related to REM except for ABCFO. By contrast, government and institutional

ownership, board independence, CEO duality and external audit provided varying results due to different REM proxies.

Dynamic panel threshold proposes the presence of a non-linear relationship between ownership structure, BOD's characteristics and AC, except AC independence with DAs. This finding supports the alignment–entrenchment hypothesis. The findings from almost of studies that are conducted in developed markets may not be generalized to developing countries due to different institutional settings. Hence, this work contributes to the literature in developing countries to determine whether CG compliance constrains EM. EGX participants and policymakers and stock markets similar to the Egyptian context can benefit from the results of this study. That is, they can identify essential CG attributes and their optimal threshold value that can enhance the quality of published information and achieve the minimum level of EM, respectively. Moreover, this study sheds light on the importance of firm-based determinants and characteristics of institutional settings in monitoring REM and DA-based EM based on the sample of Egyptian firms.

Keywords; Corporate Governance mechanisms, Accruals-Based Activity Earnings Management, Real-Based Activity Earnings Management, Generalized Moment Method system, Dynamic Panel Threshold Analysis.

Declaration

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Eman Fathi Ahmed Attia, 2020

Dedication

To my dear parents, for shaping whoever I am and working for happiness every
single day of my life

To my sisters and brothers, for always being my best friend

To Adam, my son and Alena, my little daughter growing sources of happiness.

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List of Abbreviations

GAFI	General Authority for Free Zones and Investment
EIoD	Egyptian Institute of Directors
ECGC	Egyptian CG Code
IASS	International Accounting Standards
IASB	International Accounting Standard Board
EUAS	Egyptian Unified Accounting System
CASE	Cairo Alexandria Stock Exchange
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
EMs	Earnings Management
WB	World Bank
IMF	International Monetary Fund
IFC	International Finance Corporation
UN	United Nations
CIPE	Center for International Private Enterprise
MENA	Middle East and North Africa Countries
AC	Audit Committee
CG	Corporate Governance
CEO	Chief Executive Officer
ROA	Return on Assets
ROE	Return on Equity
UK	United kingdom
RDT	Resources Dependency Theory
REM	Real Earnings Management
AEM	Accrual-Earning management
DAs	Discretionary accruals
UNCTAD	United Nations Conference on Trade and Development
OECD	Organisation of Economic Cooperation and Development
EGX	Egyptian Exchange
CMA	Capital Market Authority
ROSC	Report on the Observance of Standard and Codes
2SLS	A Two-Stage Least Squares Regression
ABCFO	Abnormal Cash Flow From Operations Activities
ABPROD	Abnormal Production Cost
ABDISCX	Abnormal Discretionary Expenditures
FAM OWN	Family Ownership
MAG OWN	Managerial Ownership
GOV OWN	Governmental Ownership
INST OWN	Institutional Ownership
OLS	Ordinary Least Square
GLS	Generalized Least Square
FGLS	Feasible Generalized Least Square
VIF	Variance Inflation Factors
SOX	Sarbanes-Oxley Act

SEC	Securities and Exchange Commission
Bsize	Board Size
BINDEP	Board Independence
BMEET	Board Meeting
ASSTAN	Asset Tangibility
EMFLEX	Earnings Management flexibility
MODCFO	Modified Cash Flow model

Chapter One

Introduction

1.1. Overview

This study examines the relationship between corporate governance (CG) characteristics and financial reporting quality in Egypt's business environment by examining accrual-based and real-based earnings management (EM) of organisations listed on the Egyptian Stock Exchange (EGX). This study utilised EM literature by Healy (1985), Roychowdhury (2006) and Cohen et al. (2008), who concluded that managers manipulate firm earnings (e.g. window dressing financial performance before an initial public offering [IPO], raising the managers' compensations and job security and reducing regulatory costs) due to personal motives and incentives. They manipulate earnings through accrual-based and real EM which impair the quality of financial reports submitted to investors. Following Jensen and Meckling's (1976) seminal work, CG addresses shareholders and managers' agency problems encompassing policies, rules, regulations, processes and people to satisfy stakeholders' needs and promote directing and controlling of management activities with good business practices, integrity, transparency and objectivity. CG structure encompasses a set of internal and external mechanisms (Man and Wong, 2013; Ji, Ahmed, and Lu, 2014).

Within the broader context of globalisation, corporate scandal and corruption, liberalisation and deregulation, organisations worldwide compete in promoting financial reporting quality, accountability and reliability to attract additional potential investors and increase stakeholders' confidence. Corporate scandals have revealed that managers use accounting estimates (discretions) to provide misleading information about the financial positions of their companies (Al-Ghamdi, 2012). They often opportunistically exploit the flexibility of accounting standards to exercise their judgment in financial reporting. Hence, academics and policymakers have been actively promoting the application of CG structure to help prevent and detect such opportunistic management behaviour. Moreover, regulatory bodies in developed and developing countries have committed to promoting financial reporting integrity, validity, quality and reliability (Raafat, 2018).

According to Samaha et al. (2012) and Hassouna (2014), CG reforms in developed and developing countries have a significant impact due to their structural

and legislative changes in political, economic and historical experiences. Furthermore, several reasons increase the tendency of developing countries towards CG reform including the following:

- Developing countries suffer greatly from a weak economic performance that influences negatively their relationship with international financial bodies, such as the International Monetary Fund (IMF) and the World Bank. Thus, they should restrict and impose aggressive rules and regulations and a series of liberalisation measures, referred to as structural adjustment programs, to address CG issues (Samaha et al., 2012; Amer, 2016).

- The government legitimises public undertaking of liberalisation and privatisation policies to promote the effectiveness of corporate structure in enhancing organisational growth (Reed, 2002)

- Globalisation significantly pressure developing countries to compete globally; hence, they need to reform their governance system.

- Developing countries are highly likely to minimise the problems of information asymmetry and agency costs to enhance investor assurance on the reliability of the published accounting information.

Therefore, CG reform is highly essential for developing countries, such as Egypt, to mitigate their financial problems due to frequent government intervention, increased ownership concentration, human resource uncertainties, illiquid stock market and weak legal and judiciary system, investor protection and economic uncertainties (Reed, 2002; Samaha et al., 2012). Furthermore, these countries are likely to enhance their growth, employment, economic development and credit rating. Additionally, CG reform can also help corporations promote their confidence degree for current and potential regional and international investors regarding their investment opportunities in the emerging market and increase their savings mobilisation ability (Amer, 2016). Consequently, this condition supports the competitiveness of the private sector, improves the effectiveness and efficiency of economic sectors by securing financing tools for projects and decreases the ability of the bureaucracy and politicians to engage in ‘rent-seeking’ behaviour that undermines economic efficiency (Reed, 2002; Dahawy, 2008)

Among the Middle East countries, Egypt is the most important and influential country as it plays a central role in the region’s politics. Egypt’s characteristics and institutional contexts differ from common law countries, such as the US and the UK.

Egypt is a civil law country and thus characterised by ineffective and inadequate regulatory system, noncompliance with the disclosure requirements of the Egyptian accounting standards, specifically voluntary disclosure, high conformity of accounting earnings to taxable income, absence of control and monitoring mechanisms to check compliance with accounting standards that negatively influences the role of the country's stock market to raise capital (Samaha and Dahawy, 2010; Samaha et al., 2012).

Kamel and Elbanna's (2012) study revealed that EM is a common practice in Egypt along with accounting and auditing manipulations, resulting in investigations of the Egyptian capital market in recent years. Egyptian organisations have deliberately presented a fraudulent picture of their financial position and operating results to attract additional investments, maintain a high financial performance and increase their share prices and credit rating. Empirical evidence has indicated that Egypt face major barriers to CG application, such as the predominance of government ownership, lack of research and development (R&D) capabilities, wide business network, weak investor protection, illiquid stock market, weak legal control and economic uncertainties and low level of information disclosure (Soliman, 2013; Ebaid, 2013).

Thus, compared with those in common law countries, the Egyptian capital market has been described as inefficient, which affects negatively its level of transparency and value relevance in the financial market compared with those of the Western countries (Soliman, 2013; Hassouna, 2014). Furthermore, CG application in Egypt differs from those in developed countries. That is, CG implementation in Egypt is neither mandatory nor legally binding; rather, they motivate corporations to direct and control their system according to international best practice to confirm that management directs and controls their organisations in the best interest of owners and other stakeholders (Kamel and Elbanna, 2009; Ebaid, 2013; Mostafa, 2017). Therefore, the level of CG application is not sufficient to develop stock exchange performance and control EM practices (Samaha et al., 2012; Kamel and Elbanna, 2012).

1.2. Research Problem

CG has broad and critical implications not only from an economic perspective but also from social well-being perspective as it is greatly concerned with promoting accountability and transparency in equal distribution of rights among shareholders, corporations and society (Dahawy, 2008; Samaha et al., 2012). However, Emerging

economies¹ regarding the CG structure do not have a completely effective code of rules and regulations for good governance. Consequently, developing countries adopt developed countries' legal system and CG framework, such as the Anglo American system due to their international demands and internally driven reforms. However, developing countries failed to implement informal institutions, such as laws and regulations on accounting requirements, enforcement level, securities trading, disclosure and transparency due to improper implementation, ineffective institutional environment and unqualified regulatory agencies (Ebaid, 2013). As a result, the CG structure applicable in developed countries does not have a prominent role and institutional support in emerging markets (Young et al., 2008; Hassouna, 2014).

Various literature suggests several constraints regarding CG implementation in emerging markets. These constraints include (1) excessive governmental interference, (2) extremely high ownership concentration, (3) lack of external discipline in the corporate sector, (4) fragile legal systems and regulatory framework, (5) poor-quality financial reporting, (6) insufficient investor protection and (7) lack of developed capital market that undermine the efficiency of employed CG mechanisms as suggested in Hashim and Devi (2012), Samaha et al. (2012) and Kenawy and Abd-Elgany (2013).

When Egypt has begun to appreciate CG application in their business environment, many fundamental issues that hinder CG development have emerged: (1) family-owned organisations' control over the Egyptian private sector; (2) poor legal and judiciary frameworks; (3) limited proficiencies in R&D competencies, interconnections in the center of governments and neighbouring areas; (4) liquidity problems in the stock market, limited investor protection and restrained legal control;

¹ Emerging market have become major players in the global economy and the primary source for economic growth in 21st century. These countries are middle/low income economies with high potential economic growth with more tendency to shift from imperfection and instability to more rapid growth and industrialization. An emerging market, also known as emerging economies, or developing countries, are the nations that are moving away from traditional economies to more productive capacity. An emerging markets have some attributes of the developed countries but do not satisfy standards to be termed as developed countries (Meyer and Peng, 2016; Meyer and Grosse, 2018).

Emerging economies are the developing market that are expected to grow relatively fast, given their increasing labor force and expanding market potentials versus the developed economies, which are mostly replacement markets. These countries are expanding their role both in the political frontier and in the world economy.

International Monetary Fund (IMF), Morgan Stanley Capital International (MSCI), Standard and poor's (S&P), Russell and Dow Jones are the five institutions that put a classification for the countries that are classified as emerging countries. MSCI, S&P, Dow Jones classified Egypt as one of emerging countries (Meyer and Peng, 2016; Meyer and Grosse, 2018).

(5) insufficient knowledge of CG concepts and benefits; and (6) fragility of the Egyptian economy (Desoky and Mousa, 2012; Soliman, 2013; Hassouna, 2014; Amer, 2016). Moreover, as confirmed by Kenawy and Abd-Elgany (2013), Egypt has various family-owned small and medium-sized enterprises (SMEs), thus rendering CG implementation more challenging. The Egyptian CG system is characterised by an insider-dominated system, in which publicly listed companies are controlled by a few major shareholders including mainly the government, founding families, a small group of controlling shareholders, such as lending banks, and other companies (Dahawy, 2008; Samaha et al., 2012)

Since 1997, Egypt has conducted several trials to harmonise Egyptian and international accounting standards. However, these international standards offer more opportunities and flexibility for managers to manipulate earnings. Egypt is classified under code law countries, where accounting standards and rules are recognised and enforced by the government and the financial market is dominated and controlled by a banking system (Ebaid, 2003). This situation gives additional opportunities to release low-quality financial reports, though adoption to accounting standards and principles is mandatory (Desoky and Mousa, 2012; Kenawy and Abd-Elgany, 2013)

At this stage, the Egyptian capital market may be concluded to be less efficient. This condition negatively affects transparency level, financial reporting quality and value relevance in the capital market in comparison with those of the Western countries. Studies conducted in Egypt, such as Kamel and El-Banna (2010), revealed that Egyptian firms deliberately presented an artificial picture of their financial position and operating results to attract additional investment, avoid being delisted and obtain the right to issue additional shares in addition to existing shareholdings (Egyptian Capital Market Authority, 2002, P.47-51). Additionally, Egyptian managers of state-owned enterprises (SOEs) offering IPO, such as the implementation of the privatisation program, may have contradictory incentives to participate in increasing income or declining EM practices (Kamal, 2012). Consequently, based on results and pieces of evidence revealed in the Egyptian capital market, this study aims to investigate whether the compliance with CG practice reduces opportunistic EM practice. Accordingly, Egypt can be considered as a typical example of a developing country that faces the same challenges in enforcing CG in its capital market.

Furthermore, prior studies (e.g. Omran, Bolbol, and Fatheldin, 2008; Hassouna, 2014; Amer, 2016) argued that CG implementation difficulties faced by developing countries where partly due to the characteristic differences between them and the developed countries whose the CG practices they try to adopt. Moreover, the following dilemmas in CG problems in the capital market also contribute to these difficulties:

First, internal and external CG mechanisms can be applied effectively in emerging economies compared with developed countries due to the difficulty in designing an identical framework of CG system that has evolved in the developed countries due to differences in cultural values and economic conditions in emerging economies (Samaha et al., 2012). The possibility of establishing an entirely new CG structure in the emerging economies may be an unpredictable event. Therefore, emerging countries are recommended to develop and implement their existing CG structure based on political, economic, social, historical and environmental circumstances (Elbayoumi, Awadallah, and Basuony, 2019).

Second, developed countries are largely interested in promoting external CG mechanisms and enhancing transparency, disciplinary takeover, legal requirements for selecting external directors and fraud regulations. On the contrary, developing countries work hard with these external mechanisms due to an inefficient stock market and ineffective banking system (Hassouna, 2014)

Third, the board does not perform its responsibilities and functions as defined in CG guidelines. This non-performance of responsibilities may be one of the main causes of corporate corruption and failure in developing countries. The dominance of public ownership and power misbalance among stakeholders limits the board's capability to control and maximise short- and long-term objectives. Hence, the board should be at the centre of the policy debate on CG reform and significant academic research. This action requires law regulators, governance practitioners and many academics to devote considerable attention to the conformance and role performance of the board (Hassouna, 2014; Raafat, 2018).

Fourth, the significant differences between the internal mechanisms of CG structure in emerging markets, such as ownership structure, board of directors and audit committee's (AC) characteristics and CG structure in developed economies. For instance, the concept of ownership is debatable because the interest of capital has been neglected due to joint ownership among corporations, private and foreign individual owners, private sectors, managers, employees, the state and public corporate bodies;

thus, the lack of real owners may degrade the quality of capital and firms' long-term interest (Omran et al., 2008). In addition, claims of reports on Egypt's CG practices (2004) suggested that poor CG and the presence of dominant owners were key factors contributing to corporate crises as result of controlling their firms for their interest.

Fifth, the lack of ethical business behaviours at work is another drawback of poor CG practice in developing countries. This characteristic is combined with increased nepotism among managers, politicians, businessmen and civil servants who work on maximising their interest at the expense of stakeholder interest. Therefore, any reform to restructure the CG framework will not work effectively without inculcating ethical and moral values among stakeholders (Amer, 2016). Furthermore, following Fawzy (2003), Dahway (2008), Amer (2016) and Ebaid's (2016) conclusion on developing markets, CG practices used in developed countries may not be directly applicable in the Egyptian capital market due to political, economic, technological and cultural differences. Fifth, the lack of ethical business behaviours at work is another drawback of poor CG practice in developing countries. This characteristic is combined with increased nepotism among managers, politicians, businessmen and civil servants who work on maximising their interest at the expense of stakeholder interest. Therefore, any reform to restructure the CG framework will not work effectively without inculcating ethical and moral values among stakeholders (Amer, 2016). Furthermore, following Fawzy (2003), Dahway (2008), Amer (2016) and Ebaid's (2016) conclusion on developing markets, CG practices used in developed countries may not be directly applicable in the Egyptian capital market due to political, economic, technological and cultural differences.

It is clear from the above that, as a developing countries, Egypt was in need to properly address CG, taking into account the characteristics of the Egyptian context. The initial release of the Egyptian CG guidelines was in 2005 by the Egyptian Institute of Directors (EIoD). These guidelines were released to compensate for the lack of protection in the legal system and are, therefore, likely to be adopted in civil law countries (La Porta, Lopez-de-Silanes, and Shleifer 1999; Claessens, Djankov, and Lang, 2000). The ECCG (2005) provided guidelines and a comprehensive set of principles for the private sector to help them comply with CG and disclosure requirements and achieve the highest level of sustainability and efficiency. SOEs' code of CG, which presents comprehensive guidelines for those enterprises, was introduced

in July 2006. This code is described as an integrated framework for the general guidelines to CG principles in Egypt (Rafaat, 2018). However, the ECCG issued neither on a mandatory basis (such as that of the US) nor on a comply-or-explain basis (such as that of the UK) (Ebaid, 2011). The code is ‘partially voluntary’ and may result in more implementation and enforcement difficulties. This finding justifies McGee’s (2010) study on Egypt that concluded, ‘Enforcement of the CG rules continues to be a challenge’. Thus, investors in emerging market places suffer from information asymmetry, extreme deficiencies in transparency and disclosure practices and lack of integrity on the financial reporting system (Kamel and El-Banna, 2009; Samaha et al., 2012; Ebaid, 2013). This code involves several rules about CG aspects, particularly the board, AC, internal audit, external auditing, disclosure of social strategies and avoidance of conflict of interest. In 2011, the EIoD in cooperation with different entities reviewed the ECCG in October 2005 to update it based on regional and global best practices. The EIoD also tackled corporate social responsibility and recommended the application of the ‘comply or explain’ rule. Finally, in 2016, the ECCG has been released by the EIoD after upgrading and updating the previous codes and consolidating them into one single code. The application of this code has been broadened in terms of generality and comprehensiveness, which guides legislators in enacting the regulatory legislation and instruction regarding CG application. The code does not contradict with the Joint Stock Law No. 159 of 1981, the Capital Market Law No. 95 of 1992 and the EGX listing and delisting rules issued by the EFSA board of directors. This updated version of the ECCG provided detailed guidelines about financial and non-financial information disclosure, the role of the board of directors along with the associated committees, the regulatory framework of corporations, the importance of including a responsible person for shareholders and corporate internal codes and policies that should be implemented to confirm the proper CG enforcement (EGX, 2016).

Based on summarized CG dilemmas described above with regards to the emerging markets context, this study examines the extent of Egyptian CG mechanisms’ role in promoting financial reporting quality and that of Egyptian firms’ adherence to issued CG practices and recommendations.

1.3. Research Aim, Objectives and Questions

The main objective of the thesis is twofold: it is empirically investigating EM exercises including the motivations and techniques applicable and examining to what extent the CG mechanisms and external auditing can support organisations to minimise the aggressive earnings manipulations in the Egyptian context. To fulfill this, the study has the following sub-objectives;

- 1- To examine to what extent the ownership structure influences the quality of financial reporting.
- 2- To explore to what extent the board of directors' attributes strengthens the organisation's capability in constraining the opportunistic EMs.
- 3- To investigate to what extent AC characteristics enhance the organisations in constraining the opportunistic EMs.
- 4- To investigate to what extent the external auditing assists the listed companies of the Egyptian stock exchange in detecting and controlling earnings manipulations.
- 5- To determine the optimal threshold value regarding the mechanisms of CG that can achieve the minimum level of EMs.

The research seeks to fulfill these objectives by collecting and analyzing secondary data from companies listed on the Egyptian stock exchange to provide answers to the research questions:

- Which type of ownership structure (managerial, family, institutional, and governmental ownership) could promote the superiority of financial reporting?
- What is the role of each dimension of board of director (board size, board independence, board diversity, CEO duality, and board meetings) in constraining the opportunistic earnings behavior?
- To what extent AC characteristics (AC size, AC independence, and AC meetings) enhance the organisations in constraining the opportunistic earnings manipulations?
- Does the external audit perform a significant role in enhancing the quality of financial reporting?
- What is the optimal threshold value for each mechanism of CG that can reduce the level of EMs?.

1.4. Research Contributions

Studies on the relationship between CG and different types of EM practices in the Middle East and those in developed countries, such as the UK and the US, differ significantly in coverage and findings. Consequently, the recent study may provide intriguing, primary evidence from one of the developing countries with a different business environment and regulations. It may be described as a representative country of the Middle East and Arabian countries.

Financial reporting has great value for financial statement users in making appropriate decisions. Consequently, research on EM practice is expected to be significant and critical to existing and potential users. This study presents a new contribution to EM literature by examining to the extent of CG mechanisms (different types of ownership structure, board of directors' characteristics and attributes of the AC) and auditing's roles in reducing EM practices in the specific context of an emerging market economy with a well-established stock market.

This thesis extends the existing research concerning the impact of the CG qualities on real and accrual-based EM using advanced research design and data. Limited research has thoroughly investigated the influence of CG mechanisms on EM approaches. Thus, this study postulates further evidence on the extent of internal CG mechanisms and external auditing in Egypt in mitigating accrual-based and real EM practices. The study aims to support the policy agenda of several important organisations, such as the World Bank, the IMF and the Capital Market Authority (CMA), to encourage the government to promote CG standards as a broad CG reform.

This thesis addresses not only accrual-based EM but also real EM activities to examine whether both EM approaches are influenced by CG mechanisms, where research in this particular area is scarce, especially for organisations in the Egyptian context. Many previous works of literature have focused exclusively on the practice of discretionary accruals. Therefore, recent research should focus more on real and as accrual-based EM activities to have a better understanding of EM practice (Cohen and Zarwin, 2010).

Substantial evidence regarding REM practice in most organisations is available. However, most academic researchers focused on accrual-based EM. Several studies such as El-Kalla (2017), and Enomoto and Yamaguchi (2017) suggested that switching the organisations between accrual-based and real EM is ignored by investors, making

regulators pay significant attention to investigate those EM practices. Therefore, this study focuses on investigating how CG variables reduce both types of manipulations.

The relationship between gender diversity and EM practices has been always an issue with a few research dealing with. Outcomes of prior studies on this issue cannot be extrapolated and may not be applicable internationally due to differences in regulatory and economic systems, cultural norms, capital market size and efficiency of CG mechanisms. This study is one of the few types of research that investigated the relationship between women's existence on the board and EM practices.

In terms of measuring dependent variable, to the best of my knowledge, this study is the first to detect the earnings manipulation practice (EM) in the Egyptian context using several models of accrual-based EM: a modified Jones model (1995); Kothari, Leone and Wasley's (2005) model; Kasznik's (1999) model; and Raman and Shahrur's (2008) model. Furthermore, the study uses real EM activity using six models developed by Roychowdhury (2006) to be confirmed from the validity, reliability and robustness of study findings.

Most of the literature such as Saleh, Iskanar and Rahmat (2007), Al-Ajmi (2009), Baxter and Cotter (2009), Amer and Abdelkarim (2011), Nosheen and Chonglertham (2013) and Soliman and Ragab (2014) have selected one and two years to describe the association between CG and EM practice. This approach may not provide a significant and valuable explanation. Therefore, using a longer period may offer a more in-depth explanation and accurate finding on the impact of CG on EM.

The methodology used in the analysis helps the study to control efficiently for several econometric problems that are observed in previous empirical literature, such as dynamic endogeneity problem, individual and time-invariant heterogeneity and autocorrelations in panel data. Hence, the study uses an appropriate and advanced empirical strategy to tackle these problems and thus can report a consistent and robust finding.

Most previous studies in CG and EM (e.g. Elsayed, 2007; Abdel-Fattah, 2008; Roodposhti and Chashmi, 2011; Wang and Campbell, 2012; Horvath and Spirollari, 2012; Issarawornrawanich, 2015; Khalil and Ozkan, 2016) used pooled regression analysis and static panel data analysis (GLS). These techniques are considered to be not appropriate due to dynamic endogeneity and unobserved firm heterogeneity that appeared in the relationship between CG and EM. Therefore, research that used advanced techniques to deal with dynamic endogeneity problems has certain

limitations. This present study employs one of the most advanced models, that is, a system generalized method of moments (GMM) estimator, to control dynamic endogeneity issues and unobserved firm heterogeneity and thus improve the validity and reliability of results. Therefore, this study investigates and compares whether methodological choice can potentially influence research findings and evaluates the influence of potential endogeneity issues on research findings.

To the best of my knowledge, after a literature review in this area, this study is considered as one of the few research on emerging economies that used a dynamic panel threshold regression model developed by Seo and Shin (2016). The model is utilised to obtain empirical evidence on the non-linear relationship between CG variables and discretionary accrual as a proxy for EM. Moreover, this technique investigates whether an optimal structure for the CG variables can achieve a lower level of EM in the Egyptian context. Furthermore, this study suggests a trial in EM and CG literature to find the optimal characteristics of the directors on the board and AC attributes that could diminish opportunistic EM practices. This study also suggests empirical evidence of the non-linear relationship of different types of ownership structure, board of directors and AC qualities with EM in the Egyptian context.

The diversity of ownership structure may influence the effectiveness of other CG mechanisms in the Egyptian capital market. Thus, a great awareness of the importance of ownership structure in firm performance could support policymakers in developing appropriate policies and guidelines for the CG system.

This thesis follows a more comprehensive and integrated perspective not only to analyze how CG attributes determine the discretionary behaviors of managers but also to moderate this argument by considering the institutional setting of the Egyptian context as determinants of the magnitude of managers' EM. The study outcomes could be beneficial for legislators, regulators and external auditors in mitigating the incidence of EM and promoting financial reporting quality. Furthermore, the current study encourages them to increase the significance and effectiveness of CG variables in reducing EM practice.

1.5. Research Methodology

This study aims to develop an explanatory model that can be used to explore whether the current Egyptian CG mechanisms and external auditing influence the quality of financial reporting. Figure 1.1 summarize the step-by step process for the present study.

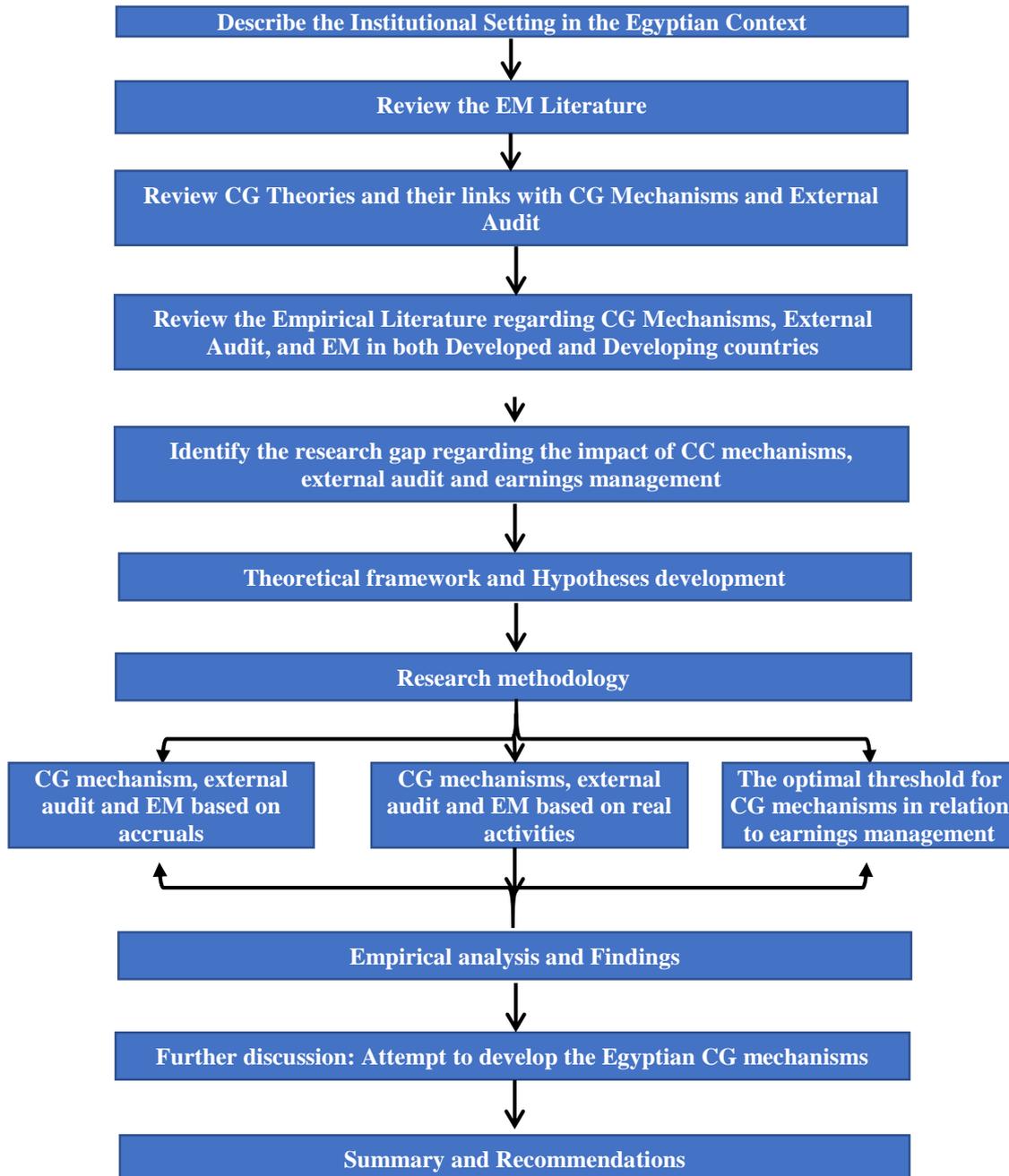


Figure 1.1: The Research Process

To achieve the research objectives, the researcher pursued the following steps:

1. Reviewing and explaining several theories of CG such as, Stakeholder Theory, Stewardship Theory, Agency Theory, Institutional Theory and Resource Dependence theory and linking them with ownership structure, the board of directors' characteristics and AC attributes to explore their relationship with practices of EM from theoretical perspectives.
2. Reviewing and analyzing preceding studies that addressed the impact of the internal governance mechanisms and external auditing on the practices of the EM to develop research hypotheses.
3. Conducting quantitative analysis focusing on a sample of 780 observations including the listed firms in the Egyptian stock market during the period 2006-2017.
4. Data about ownership structure, the board of director attributes, audit committee, external auditing, control variables, and EM are obtained from different sources including the annual report published by Egyptian stock market, DataStream, Egyptian Disclosure books, Coface Egypt finance yearbooks and the company's website provided to construct datasets.
5. Descriptive statistics, Correlation analysis, Dynamic System Generalized Method of Moment (SYSTEM GMM) estimator and Dynamic Panel threshold data analysis are the appropriate statistical tools to test the research hypothesis. Feasible generalized least square analysis, fixed/random panel data (GLS), and OLS using robust errors are used as robustness check using Stata version (14.1) and SPSS version (24).

1.6. Theoretical Model

The theoretical model of the current research (Explained in detail in chapter six) depicts the variables of the study that can be considered as the main description of the research problem and the overall research framework for the current study.

Figure 1.2 below presents the study's theoretical model, which depicts the direct relationship between two groups of determinants (CG mechanisms and external audit and earnings manipulation practices). The first dimension is CG mechanisms which consist of four types of ownership structure, five elements of the board of directors, and three mechanisms of the AC as well as external auditing. The second dimension includes different models used to measure accrual-based and real-based EM using ten different models (explained in detail in chapter Three and Six).

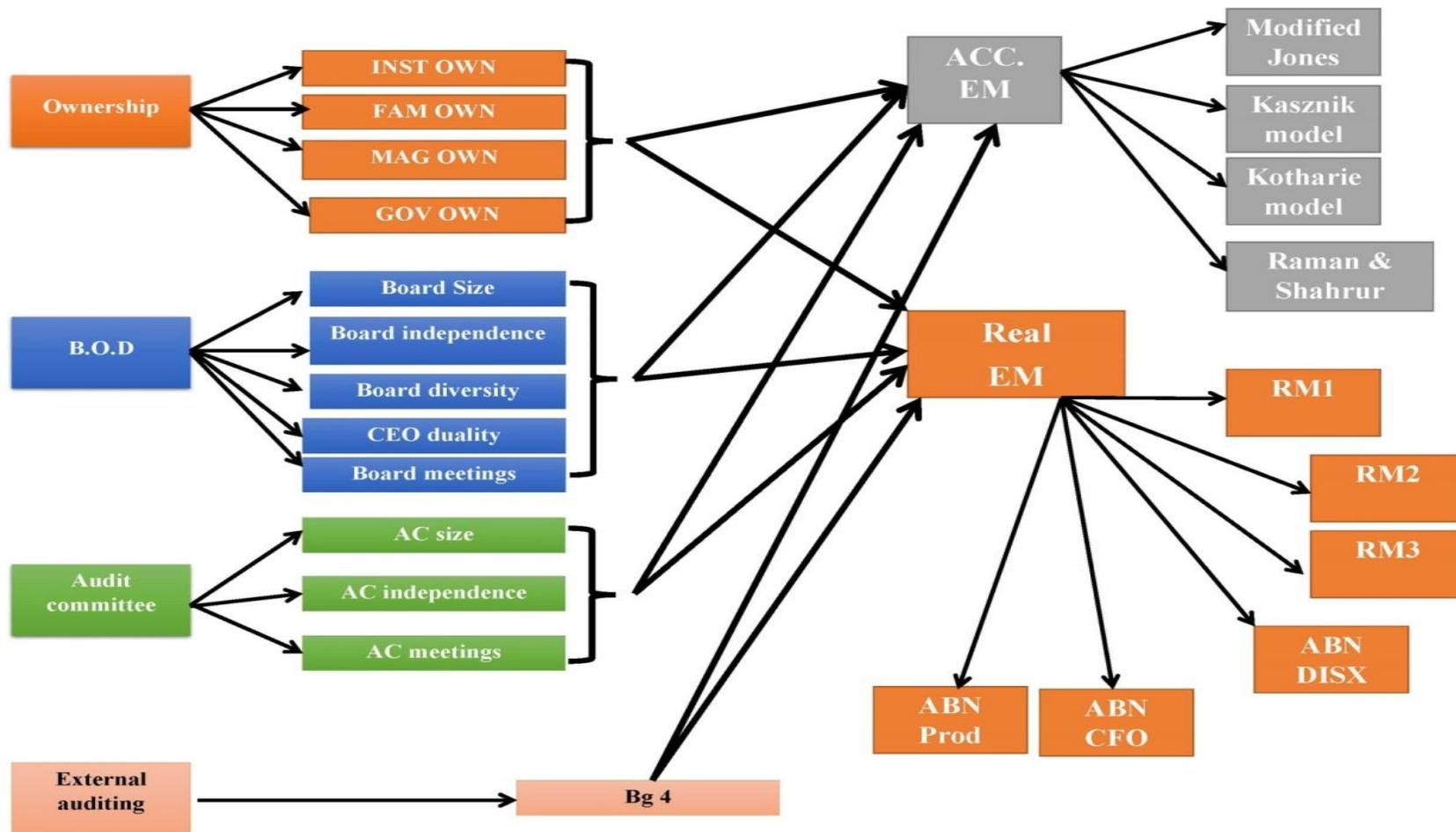


Figure 1.2: The Study's Theoretical Model

1.7. Thesis Structure and Chapter Content

This thesis consists of eight more chapters. Chapter Two covers essential aspects of the Egyptian context of the present study, in particular historical background, the development of the Egyptian stock market, the legal system applicable in the Egyptian context, the development of CG, the role of accounting and auditing profession, privatization program, the cultural value, business environment and the impact of the 25th January 2011 revolution. A good understanding of these aspects provides insights to the background of research, objectives and importance of research, hypotheses development.

Chapter Three addresses a general understanding of the nature of EM and the motivations behind the practices of earnings manipulations. Then, the chapter discusses the difference between accruals and real-based EM and the various techniques of measuring the accrual-based EM and real-based EM activities, justifying the techniques that are employed in the current study for detecting the practices of earnings manipulations. It presents to what extent CG mechanisms and external audit work as monitoring devices of opportunistic earnings manipulations.

Chapter Four presents briefly the most common theories of CG, such as Agency Theory, Stewardship Theory, Institutional Theory, Stakeholder Theory, and Resources Dependency theory, which are used to analyze theoretically the relationship between CG mechanisms, external audit and EM practice.

Chapter Five reviews the various accounting and finance studies that investigated the different conflicting and debate opinions regarding the relationship between different mechanisms of CG and latitude of EM practices to afford a critical and comprehensive review of the recent literature that helps the study identify the research gap and suggestions for how to fill that gap.

Chapter Six is dedicated to clarifying the adopted methodological approaches used in this study. It chapter introduces various methods of measuring the dependent variables (earnings management) and illustrating the operationalization of independent variables (CG mechanisms and external audit). Moreover, the chapter indicates the data sources which are mainly gathered, from the annual reports of the listed companies, financial statements, disclosure books and official websites along with describing the rationale behind the selection of study sample. The chapter also presents and justifies the analytical procedures and techniques choices.

Chapter Seven presents and discusses the statistical results and main findings. it demonstrates the empirical evidence obtained from the descriptive statistics, correlation matrix, Dynamic Generalized Method of Moment (SYSTEM GMM) estimator to analyze the relationship between CG, external audit with DAs as a proxy for accrual-based EM activity, along with the suggested justifications for these results. The study outcomes are compared with previous research outcomes in which differences and justifications are illustrated. In addition to the further analyses that are made to highlight the additional outcomes, some robustness checks are utilized to test the accuracy of the main outcomes.

Chapter Eight shows and discusses the research findings in which the descriptive statistics come at the beginning, followed by the correlation analysis and the demonstration of the results of system GMM about the relationship between the internal mechanisms of CG, external audit and REM using six models of Roychowdhury (2006). Also, the findings are compared with prior findings to explain the similarities and differences between the different contexts. Further analysis and robustness checks are also conducted to highlight extra findings and check the sensitivity of the analysis by implementing FGLS analysis and random/fixed effect panel data analysis.

Chapter Nine presents Dynamic panel threshold regression model developed by Seo and Shin (2016), which is an extension of the traditional least squared estimation method. This technique is used to determine the optimal threshold that can achieve the lowest-earning manipulations and to examine whether or not there is a non-linear relationship between each attribute of CG and EM-based on Kasznik model. This model is used due to the creditability of this measure as a proxy for the EM measurement, and the difficulty on using the other models at the same time.

Chapter Ten presents a synopsis of this research by drawing conclusions and implications. It also pinpoints the study limitations as well as provides future research recommendations and avenues. The next chapter presents a broad overview of the Egyptian business environment from social, economic and political perspectives.

Chapter Two

The Socio-Economic Context of Egypt: Institutional Setting

2.1. Introduction

The current study is applied in the context of Egypt, which is an important and influential country in the Middle East. That is, the country has a central role in politics in the region due to its influential culture, geographic location and economic development. Egypt has different characteristics and institutional contexts compared with common law countries, such as the UK and the US. This chapter presents Egypt's business environment by describing the micro- and macro-level factors that influence the accounting and auditing profession and CG implementation (Raafat, 2018)..

Globalisation leads to increasing competition, information transfer, international portfolio investment, human capital mobility, technological advancement and global foreign capital inflow. Foreign capital transfer into the emerging markets inspires stock market growth. However, these investments may bring additional challenges for corporations as they are accompanied by several risks, such as political, economic and structural problems, in addition to the difficulty in obtaining reliable and highly qualified financial reports (Shehata, Dahawy and Ismail, 2014; Almadani, 2014; Abbas, 2015; Raafat, 2018).

Moreover, corporate disruption, accounting flaws, corporate profiteering, remuneration and exaggerated and incompetent disclosure practice of big corporations, such as World.Com, Enron, Swissair, Arthur Andersen, Parmalat, Adecco, Yukos, Baring Bank and UBS, have led shareholders to be more suspicious of their global portfolio investments. On the heart of these scandals was the phenomenon of EM², which has received considerable attention among stock market regulators, practitioners, researchers and investors as a result of its considerable negative influence on financial reporting value and investor perception on firm performance (Ebaid, 2013).

Accordingly, inside and outside boardrooms, including government, regulators, investors' protection agencies, directors and stakeholders, strongly recommended

² EM practice is use of managers judgment in financial reporting and in structuring transactions to deliberately manipulate the company's financial reports to mislead some stakeholders about the company's underlying economic performance or to influence contractual outcomes based on the reported accounting judgments (Healy and Wahlen, 1999, p365)

enacting international standards, rules and regulations into law. These laws aim to protect the economy from these rapid changes and control the problems resulting from the differences in financial reporting practices. This approach can help reduce misunderstanding and uncertainty problems and promote capital market performance (Habbash, 2010; Ebaid, 2013). Consequently, the accounting and auditing profession's practicing environment needs to be improved, modernised and expanded to produce high-quality comparable financial information (Shehata et al., 2014).

Thus, several studies showed an urgency of developing financial reporting quality and described it as one of the central tools and sources that provide investors with the most critical information in making informed decisions; that is, financial reporting facilitates the transfer of information and reduces information asymmetry among managers and other stakeholders (Abd-Elsalam and Weetman, 2003, 2007; Dahawy and Conover, 2007; Dahawy, Shehata, and Ransopher, 2011; Shehata et al., 2014). Accordingly, the International Accounting Standards (IAS) has been utilised by the International Accounting Standard Board (IASB) to facilitate the development of equity markets and economic growth of corporations worldwide. However, IAS cannot be applied and enforced strictly in developing countries compared with developed countries due to environmental, cultural and legal and regulatory differences as each country conducts various levels of accounting and auditing development according to changes in environmental factors during particular periods (Larson, 1993). Consequently, applying IAS without modifications may be harmful to emerging economies (Dahawy and Conover, 2007; Shehata et al., 2014).

Many researchers examined the extent of the impact of environmental and contextual variables on the application of accounting practices and differences among countries. For instance, Adhikari and Tondkar (1992) and Larson and Kenny (1995) found that countries with solid economic growth (e.g. developed countries) promote financial reporting disclosure, transparency, creditability and accountability compared with developing countries. Abbas (2015) highlighted that contingency and institutional theories are the most convenient and important theories that explain the interrelationship between dominant national culture, legal system, regulatory body, capital market structure and other external influences as well as the implementation of international practicing standards. As cited in Abbas (2015, p. 8), Richardson (2009) stated, "The contingency organisational theory suggests that any organisation consists of a number of systems that are supported by subsystems and directed by specific

boundaries from its surrounding environmental subsystems. The theory analysis helped in understanding the interrelationships among the subsystems, the organisation's environmental patterns, and other related variables. The theory argued that organisation environmental structure is the major source for organisation management”(2015, p. 8). Consequently, any organisation needs to recognise, explore and interpret its surrounding environment to increase its strengths and lessen its weaknesses and thus reshape its framework. Countries should also consider their internal and external environmental factors to harmonise IAS and their respective national accounting and auditing systems.

ICAA (1998) supported the idea of standard harmonisation due to the importance of local and foreign regulators' cooperation with capital providers. This approach develops funding growth, facilitates cross-border capital flow and decreases the difficulties and complexity of the current globalised business environment. The process of international financial transactions needs fundamental unification to improve the competency of international capital markets through the utilisation of Generally Accepted Accounting Principles (GAAP) and Generally Accepted Auditing Standards (GAAS) (Samaha et al., 2010, 2012).

This chapter provides background information about the Egyptian context and highlights Egypt's regional (in the Arab World) and international status. The chapter also sheds light on the legal framework in Egypt and outlines several development stages in the Egyptian economy, thus showing how the Egyptian CG has been founded and developed. Moreover, this chapter presents the development stages of the Egyptian capital market. Then, it identifies the extent to which the comprehensive set of environmental and contextual factors influence the auditing and accounting profession and the implementation of CG in the Egyptian stock market. These factors include current laws and regulations, cultural and religious values, economic and political conditions, financial markets and privatisation programs.

This chapter presents an overview of Egypt's current CG environment in six sections. Section 2.2 shows the motivations of this research on the Egyptian context. Section 2.3 discusses an economic overview of the Egyptian context. Section 2.4 discusses the CG practices in the Egyptian context. Section 2.5 outlines the factors that influence Egypt's CG implementation. Finally, Section 2.6 summarises the chapter.

2.2. Motivations for Conducting the Study in Egyptian Context

Scrutinizing the interrelationship between CG and EM in the Egyptian context is interesting due to various reasons. First, Egypt has diverse characteristics and institutional contexts compared with common law countries³. Egypt is one of the emerging countries that targets politicizing its accounting system. In fact, Egypt has been characterized by a lower level of its regulatory system, inability to follow the requirements of the disclosure of Egyptian accounting standards (EASs), the increasingly high reconciliation of accounting profits for taxable income, the decreased usage of control mechanisms to validate compliance with accounting standards and the extraneous role in the stock market to raise capital (Fawzi, 2003; Samaha et al., 2010, 2012).

Second, as an evolving stock exchange, Egypt lacks substitutive information sources, except for published financial reports, such as profit forecasts, media releases, industry financial analyses and management conference calls. Therefore, financial statements can be considered as the primary source of information available for internal and external users (Al-Ajmi, 2009). The majority of the transactions that occur in the Egyptian capital market are conducted based on available accounting data, particularly profits. As a result, profits become crucial for market prices and investors at the expense of profits for valuation objectives (Ebaid, 2013). Consequently, financial reporting quality is more crucial to developing countries, particularly the Middle East and North Africa (MENA) region, than developed countries in minimising information asymmetry and enhancing decision making (Afify, 2009; Samaha and Hegazy, 2010; Sarhan, Ntim, and Al-Najjar, 2019). Accordingly, regulatory agencies enacted several reforms and regulations, such as issuing laws, CG codes and rules, to improve audit quality to enhance financial reporting integrity (Ebaid, 2013). However, reforms and regulations on audit quality will not work effectively unless firm- and country-level governance qualities are considered. For instance, the extent to which the legal system, level of family and governmental ownership, cultural features and social hierarchical structure influence organisations' drives to ensure audit quality needs to be determined (Sarhan et al., 2019). As a result, different factors such as political and legal structure,

³ Common law countries are characterized with the strongest legal system and are more concerned with protection of investors which have been influenced by the Anglo-Saxons tradition, such as UK, USA, Australia, India and Canada. While French-Civil law countries have the weakest legal system, and low investor protection with German and Scandinavian Civil-law countries located in the middle.

level of ownership concentration and social values may influence the audit profession and consequently impact negatively audit quality. Thus, corporations are not motivated to maintain high-level governance disclosure, transparency and audit quality (Samaha and Hegazy, 2010, Sarhan et al., 2019).

This result is evidenced in some studies conducted in the Egyptian context. For example, most firms in the Egyptian context depend more on auditing firms that do not belong to the Big 4 than on the Big 4 auditing firms. Mohamed, Basuony, and Badawi, (2013) reported that the majority of Egyptian firms are audited by non-Big 4 auditing firms. Their study revealed that 54.5% of Egyptian firms in the stock market are audited by non-Big 4 auditing firms whereas 45.5% are audited by the Big 4 auditing firms. Ezat (2015) covered the listed non-financial firms including 513 firm-year observations for 2011-2013. His study revealed that approximately 66% of the listed sample firms in the Egyptian context are audited by non-Big 4 auditing firms. Bassiouny (2016) revealed that 28% of its sample is audited by the Big 4 companies during 2007-2011. El-Dyasty (2017) revealed that 34% of Egyptian firms are audited by the Big 4 auditing firms, whereas 31% of private local auditing firms control the Egyptian market, and auditing firms affiliated with foreign companies (not involving the Big 4) represent approximately 35%.

The audit market and accounting and auditing professions have been underdeveloped. Thus, regulators and policymakers have recently gained interest in issuing governance codes and legislative rules to enhance the auditing practice and protect shareholder interest. Furthermore, most of the works of literature argued that existing or potential financial statement users in MENA countries are more concerned with engaging the Big 4 auditing firms as they have greater accounting and auditing expertise and professionalism, resources, skills, high reputation and ethical standards that make them more advantageous than their counterparts (Samaha and Hegazy, 2010; Sarhan et al., 2019). They find that audit quality can work as substitutive, particularly for countries with weak legal, judicial and bureaucratic systems and relatively low investor protection. In addition, audit quality can support the governance system in enhancing financial reporting quality and mitigating agency problems between management and shareholders. For instance, Khalil and Ozkan (2016) found that Egyptian firms that concentrate on the Big 4 auditing firms represent 59% of the study sample. This statistic results regarding the market share of the Big 4 auditing firms in the Egyptian context is coherent with Sarhan et al. (2019)'s findings. They confirmed

that firms audited by the Big 4 auditing firms are negatively related to EM due to the high-quality audit services provided. Therefore, this present study purposes to investigate the extent to which audit quality reduces opportunistic EM and enhances financial reporting quality.

Third, Egypt's CG code was originally introduced by the Ministry of Investment and International Cooperation in 2005 based on the CG principles adopted from the Organisation for Economic Cooperation and Development (OECD). However, the Egyptian financial market still experiences low-quality financial reporting and transparency. Nevertheless, the application of CG in Egypt as a model for emerging economies and its application in developed countries significantly differ. CG enforcement in Egypt is neither compulsory nor legally binding; rather, it aspires to be inspiring and motivating to corporations in directing and controlling their system under the best international practices; hence proving that sound management can direct firms in the best interest of stakeholders (Ebaid, 2013, Mostafa, 2017, Raafat, 2018).

Thus, the level of CG application is not adequate to control firms in the stock exchange in terms of board independence, external audit quality and ownership structure that may not control EM practices (Bremer and Ellias, 2007; Kamel and Elbanna, 2010). Some studies explained that prevalence of family and government ownership, lack of R&D potentials, intertwining connections, low level of institutional shareholding, weak investor protection, illiquid stock market, weak legal control and economic reservations may be the underlying reasons of weak CG application (Khalil and Ozkan, 2016; Sarhan, et al., 2019). Ownership concentration of family firms and government institutions can be considered as a critical challenge for CG application. This condition necessitates additional formalised policies and rules and independent, expert and professional directors, high audit quality and confirmation from succession planning. Contrary to the listing rules of EGX, listed companies still have free float less than 5%, which represents approximately one-third of EGX-listed firms. This phenomenon is considered a violation of the listing that requires at least 5% free float (World Bank, 2009; Khlif, Samaha, and Azzam, 2012). In response to its questionnaire, 'CMA estimated that families own about 30%, institutional shareholders 25%, individual 15% and foreign investors 25%' (MENA-OECD, 2010, p. 8). Bolbol et al. (2004) found that Egypt is characterised by high ownership concentration (major blockholders are represented by approximately 58%) with weak investor protection and low environmental disclosure. El-Sayed and Wahba (2013) reported in their study that

the ownership structure of the top 10 EGX-listed companies (25 most active) is 23.59% (21.455%), 21.92% (15.69%), 34.12% (39.02%) and 13.77% (12.95%) for state holding, managerial, institutional and foreign ownership, respectively. In a recent study of 292 firm-year observations, Khlif, Samaha and Azzam, (2015) found that the mean of state ownership in the Egyptian content is approximately 53%, which ranges from 0 to 0.880. The mean of managerial ownership is nearly 10%, which ranges from 0 to 0.78. This percentage is relatively consistent with the study of Khalil and Ozkan (2016), who found that executive ownership has a mean of 9.1%. On the contrary, ownership dispersion, which is measured by free float, has a mean of 0.227, ranging from 0 to 0.78. Subsequently, the Egyptian financial capital market is probably less efficient, which negatively impacts transparency level and value relevance in the financial market compared with those of the Western countries (Kamel and Elbanna, 2010; Raafat, 2018).

This research focuses on presenting an analytical evaluative account of CG in Egypt and recognizes the main driving forces and challenges of this reform. However, analysing the economic development stages in Egypt is crucial to determining the development of CG application. This analysis also helps determine how the legal system has been affected by economic, environmental, cultural and political surroundings and how it affects the development of CG implementation. This approach can influence not only the disclosure level but also the transparency level. Furthermore, the performance of EGX-listed companies is influenced. Thus, five major points can be determined: (1) the 1952 Egyptian revolution, (2) the October War in 1973, (3) the 1991 economic reform program, (4) the 2001 initiative tendency by the Ministry of Economy and Foreign Trade (now the Ministry of Investment and International Cooperation) to apply the best practices of CG for disclosure and transparency promotion of stock exchange and, finally, (5) the CG code development stages in Egypt from 2001 to the present.

For instance, such studies conducted in Egypt, such as Kamel and El-banna (2010), revealed that EM is a common malpractice in Egypt along with other various accounting and auditing manipulations. These practices have been recently discovered by the Egyptian CMA. Firms in Egypt purposely provided fraudulent financial position and operating results to gain additional investments, avoid being delisted and acquire the right to issue additional shares in addition to their existing shareholding (Egyptian Capital Market Authority, 2002). Hassab-Elnaby and Said (2003) acknowledged that

the Egyptian business environment has experienced three distinct phases of political development: (1) nationalisation and dictatorship from (1961-1973), (2) tendencies towards liberation and democracy (1974-1985) and (3) government economic and political reforms (1986-1997). The accounting and auditing profession reflects these changes to meet society's needs. Hence, as a developing country, Egypt is obliged to adhere to IAS to gain external capital, credibility and reliability in its financial reports. However, IAS matched the Anglo American culture; thus, some of these standards may contradict with the Egyptian culture. As a result, IAS adoption comprises a major change in Egypt as accounting was directed by the Egyptian Unified Accounting System (EUAS)⁴. IAS necessitates Egyptian accountants to exercise professional judgment and raise uncertainty and conflict, with risk revulsion deeply rooted in the Egyptian culture. Moreover, accounting should focus on more extensive disclosures than on taxes and EM (Abbas, 2015).

The current environment of Egyptian local auditing practice is categorised as an inactive, complex and uncertain environment that needs extensive alterations to increase its practice and organisational effectiveness (Abbas, 2015). Consequently, additional monitoring and controlling system, such as CG, is required. CG structure aims to harmonise an organisation's economic and social objectives. This goal comprises the effective utilisation of resources, responsible use of power and corporations' performance in a social environment.

As discussed above with regard to the importance of unifying IAS, most global capital markets require the need to increase the harmonisation of CG practices and thus enhance legitimacy in the global environment. Hence, concentrating on matching such guidelines with corresponding variations in the underlying institutional environment is crucial to escaping superficial changes to CG practices. Consequently, environmental changes should be consistent with dominant national culture. Therefore, such approach can help to avoid the separation between declared intention and actual practice (Westphal and Zajac, 2001; Crooke, 2002)

Several studies suggested that and convergence among the CG models and codes have a remarkable harmonization. However, CG applications, perspectives and outcomes still vary globally. This difference may be due to the variations in countries'

⁴ The EUAS offered detailed rules on how to record accounting transactions and prepare financial statements.

levels of institutional environment, which resulted from diverse historical, cultural, societal, economic and political contexts (Elbayoumi, et al., 2019). For instance, in 2009, former US Representative Michael Oxley reported that responses to CG may differ among countries due to variations in cultural and environmental context. Khanna, Kogan and Palepu (2006) also explained that CG systems differ across nations by may be similar among countries of higher geographical and political proximity and economic connection. CG merger across systems happens when two systems become increasingly interconnected; hence, proxies in these systems adopt the same laws and practices to achieve global governance⁵.

CG is influenced by the environment where it is implemented. This environment includes diverse accounting and non-accounting elements. These influencing elements may entail an improved awareness of current accounting exercises and their future upgrading trends that may advance the accounting and auditing sector. Daniel, Cieslewicz and Pourjalali (2012) supported the results of several researchers who have hypothesised that culture is considered as the most important factor that influences the institutional environment (North, 1990; Aoki, 2001; Amable, 2003). Subsequently, national economic culture affects CG implementation through the intervention of an institutional environment. Therefore, understanding the institutional environment impacts the health and performance of CG across countries. Furthermore, understanding a country's economic culture that influences the legal system is crucial; thereby, a sound realisation of the national economic culture can indirectly assist in developing the institutional environment. For example, in their study of transitional economies, Roth and Kostova (2003) stated that "it is critical to take into consideration cultural and contextual embeddedness when determining how the CG system transform" (2003, p. 314). Consequently, certain studies manifested that different national economic cultures lead to variations in legal systems, thereby resulting in different CG systems (Daniel et al., 2012).

This finding indicates that the absence of theory and evidence that can determine the best CG system. The elements that regulate the best CG structure have no global agreement, and a "one-size-fits-all structure does not exist" (Rubach and Sebora, 1998; Denis, 2001; Denis and McConnell, 2003; Habbash, 2010; Amer, 2016).

⁵ Aras and Crowther (2008) stated that global governance is a mixture of formal and informal institutions, mechanisms, relationships, and processes between countries, markets, citizens as well as organisations, both inter-and non-governmental authorities

Thus, each CG structure should be assessed and developed separately based on a legal system, economic, political, cultural and religious factors and historical and institutional environments. In compliance with this concept, assessing the effectiveness of the CG systems should be the main focus (Shleifer and Vishny, 1997; Habbash, 2010; Almadani, 2011; Elbayoumi, et al., 2019).

Accordingly, policymakers in the Egyptian context extensively focus on establishing CG reform as one of the most important priorities that should be pursued within a wider structural reform agenda to enhance the confidence and trust of the local and international communities (Dahawy, 2009). This reform affected accounting and financial reporting practices and is urgently required to address the likelihood of promoting the Egyptian capital market and the negative consequences of corporate scandals, such as that of Al-Rayan Group, as well as bank failures during the late 1990s and early 2000s (Sorour et al., 2012)

Accordingly, Egypt is regarded as an ideal example for the present study to examine the emerging capital markets due to several reasons. First, Egypt has an emerging economy with many foreign investment opportunities. Second, the Egyptian business environment has undergone a fundamental change in recent years. Third, the Egyptian situation has been dynamic and developing through many economic, financial, legal, cultural and political frameworks that have influenced CG implementation. Fourth, Egypt can be taken as a good example for similar countries experiencing economic and political reform and promising investment prospects (Hashim and Devi, 2008; Sorour et al. 2012).

2.3. Arab Republic of Egypt- An Overview

The Egyptian economy has been characterized by having stable and mixed economy and has experienced multiple stages of development (Dahawy and Kamel 2006). These stages are the Colonial Period, Central Planning, Slow Development, Moderate Development, and Rapid Development (HassabElnaby and Mosebach, 2005). Egypt is considered as one of the few developing countries that have altered from a capitalist economy to a planned one, and reverted back to the capitalist economy once more (Hassan, 2008). These fluctuations have been dynamic and progressing through numerous professional, legal, economic and political systems within the framework of government intervention (Hassan, 2008). The major economic sectors that contribute to the Egyptian economy are the banking sector, insurance and pension

sectors, Suez Canal Communications, and energy. During the twentieth century, Egypt went through four different economic stages (Abdelsalam and Weetman, 2007): 1) pre-1952 (large private ownership), 2) from 1952-1973 nationalization and socialist era, 3) from 1974-1991 (open door policy and foreign investment), 4) since 1991 (privatization and revitalizing capital market) as detailed next.

Before the Egyptian Revolution in 1952, Egypt was known as a country with great historical roots and civilized background and as a prominent figure in policy-making among the Middle-East countries, Africa and in the Arab World. The Egyptian Exchange (EGX) was ranked as the first stock market in the Middle East that was established in 1883 during the period of the British colony in Alexandria and later in 1903 in Cairo. However, it was neither activated nor developed until the 1940s. The two stock exchanges ranked fifth in the world (Bremer and Elias, 2007).

The period between 1952 and 1973, was the period when Central planning and nationalization were among the main features by which the Egyptian economy was recognized by. Because the Egyptian government, at that time, was involved in establishing a variety of massive industrial and agricultural projects, the public sector dominated over the private sector. Moreover, a radical reduction in the activity on the stock exchange was triggered by the socialist policies that were adopted and applied in the middle of the 1950s. It remained inactive from 1961 until 1992 (Samaha and Stapleton, 2009).

From 1973 to 1991: the government implemented the "open door policy" after the war of 1973, to support the flow of foreign and private capital and technology to Egypt. Besides, they issued some tax exemptions by giving space to private sector side by side with the public sector to contribute to the economic development. As a result, there had to be some laws and regulations that help and control the Egyptian Capital Market. So that several laws were enacted in that regard. Such as the 1974 investment Law No. 43 "Arab and Foreign Investment and Free Zones" which was issued with some tax exemptions. As a way to control the stock exchange, the Egyptian Capital Market (CMA) was founded by the presidential decree No. 520 of 1979. In addition, some laws were issued to boost the private sector in order to form and list companies on the stock exchange, such as the 1981 Tax Law No. 157 and the 1981 Companies Act No. 159. (Bremer and Elias, 2007). Unfortunately, these actions did not have a noteworthy impact on the stock exchange until the early 1990s due to the insufficiency in issuing many governmental security laws, the lack of financial disclosure, the

opposing effect of tax exemption, the weak legal system, the lack of protection to the minority shareholders, and the confrontational economic conditions (Ragab and Omran, 2006).

In the late 1990's, Egypt distinguished the necessity of gaining the confidence of the international community and foreign direct investment. Hence, An economic reform program was implemented by the World Bank (WB) and the International Monetary Fund (IMF) in Egypt. This program aspired to enhance privatization and boost the stock market, for the purpose of raising new foreign capital and encouraging more Egyptians to invest in the domestic markets rather than investing abroad. Therefore, the development program purposed at powerful financial principles, the presence of reliable corporate information, and the adoption of international accounting and auditing standards (Dahawy, Shehata, and Ransopher, 2011).

From 1991 to 2001, a legal and supervisory framework has been founded by Egypt that imposes all regulations that govern the Egyptian securities market and assigns supervisory agencies control over market activities. The Egyptian legal framework regulated its capital market by concentrating on the French civil law of companies and Anglo-American laws. Islamic Shari'ah (legislation) does not directly impact these laws (UNCTAD, 2007). On the one hand, the first group of laws that are affected by the French civil law that used to govern the incorporation of companies includes the following. (1) Companies Law No. 159 of 1981, which is the main source of Egypt`s corporate legal framework, governs joint-stock companies, limited liability companies and partnerships limited by shares. French civil law is the main source of this law. (2) Investment Law No. 8 of 1997 provided specific income tax exemptions and tax-free zones and organized national and international direct investments in approving investments in specific industrial locations in Egypt. (3) Public Business Sector Law No. 203 of 1991 regulates the incorporation of public business sector companies. On the other hand, the second group of laws that are influenced by Anglo-American laws used to govern public and private Cairo & Alexandria Stock Exchange (CASE)-listed organisations includes (1) Capital Market Law (No. 95 of 1992, which is the main law that regulates the EGX (Ragab and Omran, 2006) and (2) Central Depository Law No. 93 of 2000, which maintains all registration, clearance and settlement procedures associated with trading transactions to minimise risks associated with trading physical securities.

Although these different laws aimed at enhancing Egypt's entire capital market, they created confusion for all stakeholders, such as managers and shareholders. Consequently, the Egyptian government visualized the necessity to establish one unified common law rather than these laws and achieved various steps towards huge economic reforms and related initiatives implemented in recent years (Fawzy, 2003; World Bank, 2004). In 1991, the Egyptian government, along with the World Bank and the International Monetary Fund, launch the comprehensive Economic Reform and Structural Adjustment Program (World Bank, 2002). This economic reform aims to introduce a privatization program, moving gradually towards market economics, deregulating interest rates and foreign exchange and presenting a new capital market law (Rizk, 2006). As a result, CG started to gain its prominence in the Egyptian context. Subsequently, numerous supervisory and monitoring agencies, such as government agencies and quasi-governmental or self-regulatory agencies, were established to regulate the capital market and confirm an appropriate CG application.

In the middle of 1990s, the Egyptian government started to change the accounting system to enhance decision-making process, attract investment and raise foreign investor's confidence in the Egyptian capital market. The Egyptian government sought a policy of synchronization between EAS and IAS as a part of the reform process⁶. Since 1998, all listed Egyptian firms were required to abide by this new set of EAS. Late in 2006, a new set of EAS was issued which incorporates 35 EAS based on International Financial Reporting Standards IFRS (2005 version). All the listed Egyptian companies had to comply with this new set of EAS in preparing their financial statements since 2007 (Ebaid, 2013).

2.4. The CG Practices in Egypt

As a result of the regulatory environment, the economic reform, and privatization, Egypt begins to revive its capital market to improve its reputation nationally and internationally, to promote its degree of transparency and disclosure in their financial reporting and to regain the trust and confidence of the existing and potential investors (World Bank, 2001; Desoky and Mousa, 2012). Thus, CG has gained its power in the Egyptian capital market when several rules, regulations and ideas of CG have been arranged, developed and authorized (Desoky and Mousa, 2012).

⁶ 24 EAS based on IAS with much adaptation for local conditions were constituted through the issuance of Decree No.503 in October 1997.

The World Bank and international monetary fund (IMF) conducted their first study about the CG in Egypt in 2001 (first Arab country to undergo the report on the observance of standards and Codes-ROSC analysis). They investigated the CG practices in Egyptian environment against the OECD principles of the corporate. The evaluation revealed that 62% of the CG principles were actually conducted by the Egyptian firms in the stock exchange. The assessment also reported that the Egyptian accounting regulations guard the shareholders' investments (i.e dividends voting rights and confirming that the Egyptian accounting standards are in accordance with the international accounting standards (IASs) (World Bank, 2001, and Desoky and Mousa, 2012). However, the assessment found that there is a deficiency in segment reporting, lack of transparency and disclosure regarding related party transactions, absence of consolidation according to IASs, without full compliance with EASs, and there is insufficient disclosure form risk and non-performing loan by the banks.

Consequently, the Egyptian government realized the importance of developing its financial reporting to confirm the appropriate application of CG principles. In 2002, CMA issued new rules and regulations for listed companies as a transitional period (Abdel-Shahid, 2003). These rules were concentrating mainly on the transparency and disclosure requirements, comprehensive preparation and presentation for the financial statements, the importance of audit committee presence, and the penalties of non-compliance with CG principles (Fawzy, 2003, and UNCTAD, 2007).

As a result of the significant legislative reforms that occurred in the Egyptian financial reporting, the World Bank in March (2004) conducted its assessment about the CG principles and reported that the compliance level had risen from 62% in 2001 to 82% of the OECD principles (ROSC 2004). The report on the observance of standards and codes-CG country assessment mentioned that "implementation and enforcement of the rules remain central" in the process of implementing and enforcing CG practices in Egypt (World Bank, 2004 and UNCTAD, 2007). However, the assessment recognized some deficiencies on CG practices such as lack of disclosure about the business ethics, environment and other public policy commitments, forward-looking information, risk factors and governance structures and policies (World Bank, 2004). In addition, it reported that there is no in-depth management discussion and analysis section in the annual reports of several listed companies (Fawzy, 2003, World Bank, 2004, and Bremer and Elias, 2007). Accordingly, the report identified several important steps that focus on implementation, comprising: (1) establishing a Center for

Directors to develop CG Code on the board roles and functions, and enhance a director training capability; (2) enforce new listing rules and disclosure provisions, with constant focus on a review of content, and (3) implement legislative reform to make the policy framework more compliant with the OECD Principles (ROSC, 2004).

In response to the World Bank recommendations (2004) concerning the CG application, the Egyptian government is concerned mainly with establishing the Egyptian institute of directors (EIoD) under the supervision of the Ministry of Foreign Trade. This institute is considered as the first institute dealing with CG in Arab countries. It collaborated with several leading international organisations including the World Bank, International Finance Corporation (IFC), the United Nations (UN), and the Centre for International Private Enterprise (CIPE) to introduce the general framework of CG (Dahawy, 2007). One of the key objectives of EIoD is to raise the awareness regarding the need to apply CG practices not only in Egypt but also in the Middle East and North Africa (MENA) countries. The institute is responsible for presenting a diversified training and advocacy activities, such as providing information on promoting CG principles, codes and best practices. Besides, it is responsible for throwing the light on the importance of hosting both international and national conferences and seminars that aim at raising awareness and developing manuals and procedures to facilitate executing CG structure. These seminars and conferences are directed toward different categories including directors, auditors, accountants, and business men. As mentioned in the Presidential decree No. 231/2004, (Bremer and Elias, 2007). EIoD is considered as one of the most important institutions that took responsibility for introducing two governance codes; namely the Egyptian Code of CG for Listed Companies in 2005 and the Code of CG for instate Owned Enterprises in 2006. Both codes are formed dependent on OECD guidelines, the corporate amendments and the Capital Markets Laws and the tightening of the Listing Rules.

In 2005, the Ministry of Investment and International Cooperation, the EIoD and the General Authority For Investment and Free Zones introduced the ECCG. The ECCG presents CG guidelines and standards to be implemented in joint-stock EGX-listed companies (Desoky and Mousa, 2012). However, the ECCG lacks enforcement that negatively impacts its enactment, transparency and disclosure. ECGC⁷ is neither

⁷ The code itself states that: "These rules should be taken into account as an addition to the corporate-related provisions stated under various laws, the executive regulations and decrees concerning their application. Yet, these rules are considered as unique and different from all others stated under the

mandatory nor legally binding, as it is not legislatively mandated and compliance is voluntary, making the benefits from compliance limited (ROSC, 2009; Abdel-Fattah, 2008; Desoky and Mousa, 2012). The ECCG presents several rules on various CG aspects (board of directors, AC, external and internal audit and social and environmental policy disclosure). With regard to the board of directors, the ECCG presents the responsibilities, tasks and roles that should be dedicated to the board (Rule 3-7 and Rule 3-19). In terms of board composition and meetings, the ECCG determines that the board should be comprised of a majority of non-executive directors with an appropriate mix of technical and analytical skills and experience. The board meetings should be held at least once every three months (Rule 3-17), and independent directors can meet the management without the attendance of executive members at any time for consultation of any task (Rule 3-18). With regard to the AC's responsibilities, composition and meetings, Rule 6-1 states that the AC should include at least three non-executive members and that at least one of them should have financial and accounting expertise. If AC size is insufficient, one or more should be appointed from outside the firm. The code also identifies the tasks of AC directors, such as investigating internal controls, reviewing financial statements and accounting policies applicable in firms, evaluating the qualification of financial managers, external auditors and other financial staff and approving the external auditors' engagement in non-audit services and their remuneration) (Rule 6-2). Finally, the ECCG demonstrates that AC directors should meet at least four times annually with a specific agenda (Rule 6-3) (EGX, 2006; Samaha and Dahawy, 2011; Ebaid, 2011).

In July 2006, the EIoD issued and released its final version of guidelines of CG to structure the legal framework within which such organisations should operate for state-owned organisations (Salem et al., 2019). The implementation of the CG code described as critical support for the Egyptian companies to improve its transparency and accountability for the local and international investors. "ECGC mentioned four main principles which are the equitable treatments of all shareholders, conflict of interest issues, transparency and disclosure, and the board of directors' responsibilities" (UNCTAD, 2007; Abdel-Fattah, 2008; Desouky and Mousa, 2012;

abovementioned laws is that the rules governing CG are neither mandatory nor legally binding,' rather, they promote and regulate responsible and transparent behavior in managing corporations according to international best practices and means that strike equilibrium between various party interests" (UNCTAD, 2007, Samaha and Dahawy, 2011)

Hassouna, 2014). In a similar vein, CMA established the auditor registry to strengthen the quality of audit profession by supporting CG application.

Recently, Egypt has conducted substantial reforms in the new listing rules in the stock exchange to encourage the transparency, and integrity of financial reports provided to investors. These EGX listing rules encompass three criteria to start the process of differentiating and branding listed issuers such as profitability, minimum capital share, and size of the shareholders. However, the most important amendment is that presence of audit committee (Article No. 7) and the mandatory requirement from the directors in the listed organisation to prepare an annual report regarding whether the organisation is adhered and complied to standard practices of CG (Desouky and Mousa, 2012).

In 2007, the board of directors of the Capital Market Authority (CMA) issued Resolution No. (11) of 2007 on 11/3/2007 regarding the executive rules for the governance of organisations working in the field of securities but not listed on the stock market comprising companies obtaining the necessary licenses to get involved in brokerage activities in the Stock Exchange, the construction and management of securities portfolios, investment funds, custodian, liquidation and settlement of securities transactions. This resolution sought to enrich the stability and reliability of stock market, offer strong investor protection, and decrease the risks faced by the market. In addition to the previous efforts, (CMA) issued Resolution (No. 62 of 2007) in 18/4/2007 as a supplement for the above mentioned resolution which integrate the company's internal control system and internal audit department (Shehata and Dahawy, 2013).

Thus, the new listing rules led to a perceptible reduction in the number of listed companies (Mustafa, 2006) which is presented in the dramatic reduction in the number of listed companies in the EGX at the end of 2007, to 435 listed companies, down from 1,151 at the end of 2002. On the contrary, the market capitalization has been significantly raised dramatically from LE 122 billion to LE 768 billion during the same period. In 2004 and 2005 the CASE was labeled as the world's best performing evolving capital market in MENA region. According to the Standard and Poor and Morgan Stanley indices, the Egyptian capital market came on top of the emerging and global markets in 2004 and among the best 10 stock markets in the world in 2005. Likewise, according to the 2005 and 2007 Arab Monetary Fund (AMF) index, Egypt ranked first among all other Arab stock exchanges (Samaha and Dahawy, 2011). The EGX has

perceived a remarkable economic growth by an average of 5.3 percent from 2003 to 2008 according to the World Bank (2009) report. Moreover, the average growth was not affected by witnessing a market correction in 2005, instead the average growth increased from 3 percent between 2000 and 2002 to almost 50 percent between 2004 and 2007. Act No.123 which aimed at amending the 1992 capital market Act No.95 was approved in 2008. Table (2.1) portrays the main indicators of Egyptian stock exchange over the period from (2001 to 2009).

Table 2.1: Main Indicators of Egyptian Stock Exchange over the Period 2001-2009

Indicator	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total volume in (EGPs billion)	1.3	.9	1.4	2.4	5.3	9.1	15.1	25.5	36.6
Total value traded (EGPs billion)	31.8	34.2	27.8	42.3	160.6	28.7	363	529.6	448.2
Total number of transactions (EGPs million)	1.1	.8	1.2	1.7	4.2	6.8	9	13.5	14.6
Average daily value traded (EGPs million)	129	137	114	170	645	1176	1488	1,656	1,822
Number of trading days	246	249	244	249	249	244	244	244	249
Number of listed companies	1110	1151	978	795	744	595	435	373	306
Number of traded companies	643	671	540	503	441	407	337	322	289
Market capitalization end of year (EGPs billion)	112	122	172	234	456	534	768	474	500
Market capitalization (%of GDP)	30%	29%	35%	43%	74%	72%	86%	45	41

Source: CASE, Stock Market Annual Report (2010).

Egyptian Capital Market Authority (CMA), now working under the Egyptian financial supervisory-EFSA, provides a plan for the years starting from 2008 to 2012 for improving the capital market and enhancing the quality of CG and disclosure by including the following amendments;

First: Encouraging the primary market by the reduction of the minimum requirement to ten piasters instead of one pound thus causing market flexibility, in addition to giving companies and international institutions the right to issue securities that can be traded in the stock exchange. **Second:** The establishment of the auditor's registry list which lists the auditors working at the listed companies. This guarantees

transparency and requirements of CG disclosure. **Third:** Enhancing the regulatory role of the Egyptian financial supervisory authority-EFSA (previously named as Capital Market Authority-CMA) by aggregating the fine for violation commitment to be twenty million pounds. **Fourth:** Hiding the stock exchanges recent tables and changing its name to the Egyptian Exchange.

In 2009, the World Bank conducted its third study concerning the implementation of CG practices in Egypt and released the ROSC report for the Arab Republic of Egypt. This report projected several reforms to the laws, regulations, and institutions to develop and construct a modern CG framework for the qualified, professional directors and investors to comprehend the business case for good CG. In 2010, the World Bank and (EIoD) held a joined conference to present the central points and comments on ROSC report (2009) and incorporated the following:

1. "There is a significant enhancement in the quality of financial disclosure throughout the years, nevertheless some concerns remain regarding the quality of non-financial disclosure".
2. " There is strong tendency to modify (ECGC) to be on a basis of 'comply-or-explain' approach" (ROSC report, 2009)
3. " EIoD provide further support to roll-out its director training program, specifically family-owned businesses outside the EGX 30".
4. "EGX and CMA have developed and advanced Electronic filing systems".
5. "Few companies are thought to have robust risk management and internal control procedures in place" (ROSC report, 2009).
6. " Due to the governance policies, the total number of listed firms in capital market have been decreased from 1148 at the beginning of 2002 to 333 by the mid of 2009, then it reduced again to 240 organizations in 2010 to be less than 150 listed firm by mid of 2013" (ROSC report, 2009).
7. "several issues and problems are still exist in several companies regarding the implementation of the governance rules such as, the availability of accurate information on B.O.D of family companies" (ROSC report, 2009).
8. " Although the issuance of the ECGC is considered as a forward point and good practice in improving CG, and building more awareness, it loses some important opportunities due to its voluntary issuance in 2005".
9. "Significant institutional reforms were conducted, such as the formation of the Ministry of Investment (MOI), reorganisation of the CMA and EGX, and elaboration of new economic courts"(ROSC report, 2009)
10. "The CMA, has been given the responsibility to develop, regulate, and enforce the capital markets. It worked to support the implementation of CG practices such as assessing the company disclosure, enhancing its oversight upon the market and its follow-up proceedings" (ROSC report, 2009).

The year 2011 was termed as a challenging year in the history of the Egyptian market and the January 25 Revolution led to a considerable decline in several industrial, services and economic sectors due to internal and external political and economic

events. Nevertheless, on the internal level, Egypt underwent countless deficits and losses ranging between LE 55 million and LE 100 million. The EGX 30 Index reduced by almost 49%, whereas EGX 70 and EGX 100 declined by 42% and 45%, respectively. Accordingly, foreign investment was negatively affected and reached the lowest level in seven years at US 2.2 billion in fiscal year 2010-2011. In addition, the banking sector was closed for several days; stock exchange closed for approximately two months; and several international companies were closed after sending back their employees to their respective countries. In June 2011, the ECCG was modified and issued, focusing on listed companies and financial institutions, regardless if not listed. A decision on the guidelines and instructions of CG practice for banks has been issued by the Egyptian Central Bank to develop the Egyptian banking system. Despite the difficult circumstances, internal pressures and the intensification of the crisis in Egypt, Egypt remained as one of the most attractive markets in the MENA region according to Standard and Poor's Annual Report in 2011 (Shehata and Dahawy, 2013).

In 2012, the EGX was described as the only winner in the middle of all economic difficulties (CASE, 2012). Egypt witnessed tough economic circumstances due to political events reflected greatly on the Egyptian economic performance, investment climate and growth level.

In 2013, the Egyptian market faced several economic challenges and economic suspicions and inconsistent political stances, such as inflationary pressures exceeding 10%, devaluing Egyptian pound, sealing the year 2013 at LE 6.93 against the US dollar and budget deficit. EGX proved its success and prosperity compared using various investment tools as it rose by a cumulative return of over 87% during the past two years. During 2013, EGX succeeded in maintaining its position and trading records close to the prior year and exceeded 2011 by recording 29 billion securities valued at LE 162 billion as opposed to its trading volume with 34 billion shares worth LE 185 billion the previous year. Furthermore, EGX recorded 5 million transactions that year against 6 million transactions in 2012.

The year of 2014 witnessed a number of significant developments and improvements of the Egyptian stock exchange on the local and international levels. This year was labelled the black horse and was believed to be "The Egyptian Exchange Year". The World Bank and the International Finance Corporation (IFC) issued the annual Doing Business report which ratified an improvement in Egypt's ranking during 2014 as a consequence of moving on the track with proposed strategic plan in the last

year. Although, the world economy in year 2014 and in 2015 faced harsh economic and political challenges, Egypt reached its highest level in indices ranking and realized one of the highest returns in the world, in terms of the international ranking.

In 2015, according to Morgan Stanley Price Index (MSCI), all emerging economies suffered from strident declines in growth rates, military stiffness, reduction of their currencies, and significant terrorism except Hungary. Greece led the declines retreating by 62%, followed by Columbia that witnessed a decline of 44%, followed by Brazil and Turkey with a decline of 43% and 34%, respectively. The Egyptian Stock Exchange recorded an average performance of 25% as compared to other emerging markets. Despite the decline in EGX indices due to economic and political challenges, EGX maintained best performance over the last three years, according to MSCI.

EGX during this period was characterized by the following aspects; despite the challenges and difficulties witnessed in 2016, Egyptian market was ranked as second-best performance since the Egyptian revolution in 2011. The following table (2.2) highlights the development of the Egyptian stock exchange from 2010 to 2016 as follows; EGX recorded the highest trading value by 285 billion, which is considered as the highest level since 2010. The market capitalization in the Egyptian stock market achieved notable increase in 2016 as it reached EGP 601billion compared to EGP 488 billion in 2010, representing 25% of GDP. The bond market achieved the highest record figure in EGX history, recoding trading volume about EGP 78 billion compared to 89 billion during the last year. The Egyptian Exchange had a pivotal role in social responsibility practices. Since it is one of five pioneer exchanges that joined the United Nations' Sustainable Stock Exchanges initiative (SSE) in 2009, which is currently including more than 14 exchanges (EGX, 2016).

Table 2.2: Main indicators of Egyptian stock exchange over the period 2010-2016

Indicator	2010	2011	2012	2013	2014	2015	2016
Total volume traded in (EGP billion)	33	18.5	34	29	57	45	50
Total value traded (EGP billion)	321	148	185	162	291	248	285
Total number of transactions (EGP billion)	10	5.6	6.2	4.8	7.3	4.9	6
Average daily value traded (EGP million)	500	543	518	428	883	567	820
Number of trading days	247	207	245	243	244	244	245
Number of listed companies (Main market)	212	213	213	212	214	221	222
Number of traded companies	211	204	204	206	206	217	213
Market capitalization end of the year (EGP billion)	488	294	376	427	500	430	601
Market capitalization (%of GDP)	40	19	24	21	25	22	25
No of listed companies (NILEX)	16	19	22	24	33	31	32
No of traded companies (NILEX)	13	13	16	21	25	27	27
Market capitalization (NILEX)	1	1.04	1.05	1.4	1.1	1	1.4

Source: CASE, Stock Market Annual Report (2015, 2016)

In 2016, the EIoD modified and updated the ECCG. The ECCG was applied in listed and unlisted companies, commercial and service corporates and banking and non-banking financial institutions, regardless of their size and nature of activities (Salem et al., 2019). ECCG (2016) includes the following; it provides a general methodology for drafting an advanced CG manual, paying special attention to ‘comply or explain’ rule as a fundamental pillar for enforcing the application of CG principles. The general methodology also focuses on the role of the board of directors by determining their responsibilities in CG application (Rafat, 2018). Moreover, the general methodology illustrates the optimal board composition by explaining the different types of ACs that assist the board in performing its functions and duties. The factors of control environment are also explained as well as the role and responsibilities of the organisation’s board secretary by identifying the roles of an external auditor, compliance department, internal audit and risk management and recommending a CG department for each company. The new ECCG proposes certain manual, policies and codes that companies need to implement to develop their internal work. Additionally, different disclosure methods are explained in the ECCG, focusing on the disclosure of non-financial information and material information that should be disclosed periodically (Rafat, 2018).

2.5. Factors Affecting the CG Implementation, and Accounting and Auditing Profession

There are numerous factors that influence the CG implementation in the Egyptian stock market and the quality of audit and accounting profession. These factors include:

2.5.1. The Cairo and Alexandria Stock Exchanges

The EGX was previously known as the Cairo and Alexandria Stock Exchanges (CASE), a **quasi-self-regulatory** authority by virtue of law. The elected board of directors are delegated to manage (CASE) under the supervision of the Capital Market Authority (CMA). CASE has the responsibility for confirming commitment to listing rules, but they were not authorized for investigation or inquiries. The Capital Market Authority has the authority to contradict the decisions issued by CASE's board of directors. As a result of the economic reforms, privatization program, and the development of the regulatory environment, the EGX started to grow in the early 1990s (Afify, 2009).

2.5.2. The Regulatory Bodies

Before 2009, the Capital Market Authority (CMA), the Egyptian Insurance Supervisory Authority (EISA), the Central Bank of Egypt (CBE), and the Mortgage Finance Authority (MFA) are financial regulatory bodies in Egypt (Afify, 2009). Although CMA is a **government agency** that supervised by the Ministry of Foreign Trade, it is an independent agency and its board of directors is its supreme authority. The CMA is primarily supported by its revenues from accumulated fees and has the responsibility for the enforcement of the Capital Market Act, encouraging market transparency, reviewing and investigating the disclosure misconduct and supervising market development and regulating, and confirming timely financial reporting (UNCTAD, 2008). Moreover, the CMA took the responsibility to impose administrative sanctions such as issuing warnings, writing off from the tables, suspending licenses, canceling operations or bargains, conducting inspection operations and stopping the general assembly's decisions within fifteen days in the case of verified impairment to minority shareholders (World Bank, 2001; Fawzy, 2003).

The Central Bank of Egypt (CBE) is authorized to supervise the banking system and take suitable actions in case laws and regulations are violated, whereas EISA is authorized to take necessary actions in case of violation by any insurance company. In

2009, three former regulators, the CMA, the EISA, and the MFA, worked together and were unified into a single regulator, which was called the Egyptian Financial Supervisory Authority (EFSA). However, this authority did not provide any new changes to the legal roles (UNCTAD, 2008)

As well as two types of private institutions (the governmental and quasi-governmental supervisory bodies) operated in the market. The first type was **the non-profit or self-regulatory institutions** including Egyptian Association for Investment Management and the Egyptian Accountants and Auditors Association that helped to guarantee discipline in the capital market. The second encompassed profit-driven private institutions including accountants, law consultants and law offices, auditors, credit-rating companies, financial analysts and information dissemination companies, securities brokerage firms, promoters, underwriters and asset management firms to promote the transparency and quality of disclosure either mandatory or voluntary basis.

2.5.3. The Privatization Program

Over the past two decades, privatization has become an economic phenomenon and take the lead worldwide (Shirley, 1992, Dahawy, Merino, and Conover (2002), Elbayoumi, et al., 2019) where governments follow this path to raise national revenues, enhance economic democracy, promote the economic efficiency of these privatized firms, decrease their interference in the economy, develop the market competition, improve dynamic and operating efficiency, expand the share ownership throughout the world, and encourage capital market discipline (Shirley, 1992, and Nheri, 2012). The Egyptian government policy-makers and international donor agencies such as International Monetary Fund (IMF) or World Bank viewed the privatization as unavoidable step for the reforms needed for the economic development and structural adjustments. The government in the early stage of the economic development promoted the investment and capital intensive industry (Nheri, 2012; and Elbayoumi et al., 2019). This orientation requires that country to modify its legal, political, social environmental and economic conditions to accommodate private enterprises.

The privatization purposes to minimise the State activities and eliminate barriers to the entry of private ventures by transferring the property rights from the government to individuals and corporations. Developed countries follow the privatization reforms with the objective of reducing the politics interference in the business decisions and promoting the efficient assets utilization. Despite the fact that the redistribution of state

assets is the key objective of privatization, there is still a critical need to develop the capital market and restrictions on the privatization in the developing market economy (Kamel and Elbanna, 2010). However, the privatization required some rules to be performed effectively, for instance, Hassabelnaby, Epps, Said, (2003), P 278) stated as cited in Massoud, (1988) “the successful transformation of a command economy into a market economy based on private enterprises cannot be forced. Such a transformation necessitates the following basic conditions: (1) a stable political system, (2) a common fundamental acceptance of the economic policy, (3) a proven and uncomplicated legal system, (4) an efficient and flexible social welfare system, and above all, (5) a market-oriented accounting and reporting system” (2003, P278).

Several multinational studies have examined to what extent the privatization influences the firm performance in the developed and developing countries. For instance, Boubakri and Cosset (1998) revealed a meaningful and positive relationship between privatization and the firm performance (efficiency, profitability, capital investment, and dividends payout) by studying 204 privatized firms in 41 countries. In a similar vein, Nheri (2012) investigated the determinants of the post-privatization performance changes of newly privatized firms in some MENA countries covering a sample of 75 firms in Egypt, Morocco, Tunisia and Turkey. The study showed that significant post privatization leads to a decrease in the leverage and an improvement in output, productivity, efficiency, and profitability.

Within the period of Anwar Sadat`s presidency (1970-1981), Egyptian economic policy has been shifted from socialist structure to more mixed economy. In the early 1990s, due to the disappointed performance of the public sector, Egyptian government viewed the necessity to attract foreign direct investments, and to promote the trust of the international community. Thus, Egypt was moving from centralized economy (i.e secrecy orientation) towards market-oriented system (i.e full disclosure orientation) due to privatization and multiple restructuring programs. The World Bank and IMF enacted pressures on the government to impose these programs to create a new economic environment for the private sectors. Indeed, privatization was needed from businessmen and accountants to change their business conduct and to provide investors and stockholders with enough information about the firm performance as a major component of international standards' reporting requirements (Elbayoumi, et al., 2019).

Although, this process slowed down and grew more difficult after the government had finished selling off most of its industries. Afify (2009) argued that the

Egyptian privatization program improved and accelerated the growth of the market and that market capitalization expanded enormously in 1990 from LE 5 billion to LE 815 billion in 30 June 2008. Moreover, foreign portfolio investment has been raised and accounted for about 30 percent of the total market capitalization of \$20 billion in 1997, with foreign investors owning about 20 percent of negotiable shares on the exchange. This program targeted comprehensive financial development, building confidence and trust among investors, increasing transparency and reliability of corporate information, and adoption of international auditing and accounting standards. Thus, the government has a greater inclination to effectively implement CG practices to reach its aspired objectives. Table (2.3) below shows a list of privatized firms in the period from 1991 to 2004.

Table 2.3: The number of privatized firms from period of 1991 to 2004.

Year	Majority privatization	Partial privatization	Total privatization	Proceed (LE million)
1991	4	0	4	0
1992	1	0	1	0
1993	1	0	1	0
1994	12	1	13	664
1995	6	6	12	1216
1996	18	7	25	2791
1997	23	5	28	3148
1998	28	4	32	2358
1999	21	12	33	2785
2000	9	14	23	2476
2001	7	4	11	1093
2002	4	4	8	71
2003	0	9	9	110
2004	1	4	5	585
Total	135	70	205	17297

Source: Privatization Implementation Project (2004)

In spite of the fact that numerous studies indicated a meaningful relationship between the privatization and full disclosure (Dahawy, Shehata and Ransopher, 2011; Sukkar, 2017; Elbayoumi et al., 2019), they argued that it is important for the country to take into consideration the economic, legal, political, social environment factors to suit the privatized companies and to make the international accounting standards more convenient to the Egyptian environment. This means that the level of disclosure will not be developed or enhanced unless the organisation norms, culture, and attitudes, are changed to comply with the new changes and requirements of the international accountings standards (Abdel-Baki, 2013; Nheri, 2014). Accordingly, the Egyptian

government concentrated on coordinating between EAS and IFRS as part of the reform process. Thereby, in October 1997 the Ministry of Economics issued Decree No. 503 based on the IFRS taking into consideration the local environmental status to establish 24 EAS. All companies listed in the Egyptian stock market have been forced to comply with the new set of EAS, since 1998. However, a new set of EAS relevant to Decree No. 243 of the Minister of Investment came in the late 2006 to replace the old set issued under Decree No. 503/1997 . This new set of EAS comprised 35 EAS based on International Financial Reporting Standards IFRS (2005 version) and all companies listed in Egypt have become obliged to conform with this new set of EAS in making their financial statements (Ebaid, 2016).

2.5.4. The Compliance with Disclosure Requirements in Egypt

The disclosure level in Egyptian context as shown in several studies (Hassan, Giorgioni, and Romilly, 2006; Dahawy, 2008; Samaha and Dahawy, 2010) revealed that the non-compliance with disclosure requirements is common. Dahawy (2008) tested the level of CG disclosure for EGX 30 in 2006 and found low level of CG disclosure with low compliance rates. On the other hand, Hassan et al., (2006) reached the conclusion that the level of disclosure and the compliance rate for mandatory disclosure was high for non-financial companies, while the voluntary disclosure levels were low. In a similar vein, Samah and Dahawy (2011) documented that the overall disclosure level especially the voluntary disclosure is very low in the Egyptian context. Among their provided reasons for such non-compliance are the level of enforcement in Egypt, the high cost of compliance with disclosure requirements, and the conflict between disclosure and business environment in Egypt (Hofstede, 1980; Hassan et al., 2011; Sukkar, 2017).

First, Level of Enforcement in Egypt

The competence of a country's disclosure system is governed by the degree of enforcement in that country (Cooke and Wallace, 1990). Abdel Salam and Whitman, (2007) identified a number of costs for non-compliance such as: market pressures, administrative fines by the CMA, and the cancellation of listing on the stock market which makes the companies lose cheap source of financing and the damage of their reputation in the market as listed companies that take the advantages of tax-exemptions. However, many previous and recent studies pointed out to the fact that the emerging economies do not necessarily have strong enforcement mechanisms. For instance,

When Dahawy et al., (2002); Abd-ElSalam and Weetman (2003); Samaha and Stapleton (2008) explored the compliance degree with IFRS in financial reports in the Egyptian listed companies, they revealed that the level of enforcement with IFRS remains ineffective.

Hassan et al., (2009) reported that the costs of non-compliance with disclosure requirements in emerging countries are not significant and not important due to the following reasons: (1) The Egyptian Capital Market Authority does not have a proper tools to monitor compliance with IFRS; (2) Administrative fines are rarely applied and enforced by the CMA; (3) De-listing is rarely applicable because the number of listed companies is considered a measure of the success of the stock exchange, and the cancellation of the listing may be more damaging to the shareholders than the management; (4) Market pressure is not important because most investors are small and cannot form pressure groups like their counterparts in developed markets (Elsadik, 1990); and (5) there is an absence of clear regulations and rules that impose fines on the audit firms that do not comply with IFRS (Dahawy et al., 2002).

Second, the High Costs of Compliance with Disclosure Requirements in Egypt

The accounting disclosure is viewed to be vital for the accounting users to make decisions. Previous studies indicated that the increased disclosure and transparency helps in reducing the valuation risk, raising the inventory liquidity decreasing the cost of equity and enhancing the value of the company (Elliott and Jacobson, 1994). Other studies claimed that the benefit of the discourse might be less than the cost of complying with disclosure requirements (Hassan et al., 2009). The requirements of disclosure in Egypt may include:

1. The cost paid for gathering and producing information such as the cost of preparing information system to collect extra data, the cost paid to increased audit fees, and the cost of training preparers on the applied standards in addition to the growing costs of publication for annual reports.
2. Raising the disclosure level in Egypt may result in negative results, even if its production may be costless. This is due to the inclination toward secrecy in the Egyptian corporate culture that makes the investors suspect or misunderstand the real intentions of the company when it discloses more voluntary information than required (Hassan et al., 2009). This leads to increased uncertainty about the company's future prospects as investors may interpret this increased disclosure

as a negative sign concerning the company's future value based on internal information known to management (Hassan et al., 2009).

3. Litigation costs may increase due to insufficient or misleading disclosure (Elliott and Jacobson, 1994).
4. The disclosure of more voluntary information to the capital market may put the organization in unfavorable competitive position, as the competitors may benefit from the information disclosed to their interests such as information about strategies, plans, and tactics; information about technological and managerial innovations, and other operational information (Elliott and Jacobson, 1994).

Third, Disclosure, Culture, and the Egyptian Business Environment

Disclosure is similar to the CG in being either mandatory or voluntary. It is highly affected by the national culture and the contextual environment in which it works (Gray, 1989). The alterations in the economic reform and the tendency towards privatization make the investors and stockholders fully aware of the importance of increasing the disclosure level and the application of CG (Dahawy and Conover, 2007). However, the application of CG and disclosure are still fruitless and insufficient. This is because the business environment in Egypt is characterized by a high level of secrecy and high power distance which can have a negative impact on the institutional environment and CG practices (House et al., 2004, and Dahawy and Conover, 2007). Hegazy (1991) justified the high degree of secrecy in the Egyptian business environment by giving the following aspects: (1) information about the public sectors were described as sensitive information relevant to the national security, (2) publishing severe losses about the companies within the socialist era could create economic disturbance and may affect people's trust in their governmental leading potentials.

2.5.5. Egyptian Culture, Accounting System, and Business Environment

As mentioned above, there are different environmental factors that elucidate the reasons behind international differences in accounting practices and CG implementation such as legal system, economic status, political changes, representation by professional accounting bodies, taxation system, sources of external finance, and historical inflation. In addition, there is another environmental influencer on the accounting system and governance practices, namely culture.

Hofstede (1984, P.21) provides a definition of "Culture" to be a "collective

programming of the mind which distinguishes the members of one human group from another". He explained that this "collective programming" not only distinguishes "one human group from another" (1984, P21), it also helps to differentiate between nations' institutional environments. Hofstede (1997) described culture as "the software of the mind". He referred to both the process through which people are socialized or "programmed" to function in a society and to the logical consequence that culture impacts the institutional environment. He revealed four underlying value dimensions: (1) large versus small power distance (PDI); (2) individualism versus collectivism (IDV); (3) masculinity versus femininity (MAS); (4) and strong versus weak uncertainty avoidance (UAI). Sukkar (2017) mentioned two extra dimensions added by Hofstede in (2014), which are, (1) Pragmatism: "This dimension describes how every society has to maintain some links with its own past while dealing with the challenges of the present and future", and (2) Indulgence: "This dimension is defined as the extent to which people try to control their desires and impulses". Within these dimensions, Hofstede framework provided a quantitative measure for each sample of the countries and fascinated large number of academic researchers to investigate the cross cultural differences among countries.

This classification justified why different societies have different institutions with varied business transactions. Gray (1988) extended Hofstede`s model by combining the accounting values with social values and institutional norms and developed the accounting values to be used in the country cultures. He classified the accounting values into; (1) Statutory Control versus Professionalism; (2) Flexibility versus Uniformity; (3) Conservatism versus Optimism; (4) and Transparency versus Secrecy. He concluded that shared cultural values within the country results in the shared accounting values and different institutional environment, thus influencing the nature of the accounting system. Several studies supported the views of Hofstede and Gray concerning the impact of the culture and accounting values on the institutions environment. For instance, North, (1990) stated that culture has a long-term impact on institutions: "the cultural filter provides continuity so that the informal solution to exchange problems in the past carries over into the present and makes those informal constraints important sources of continuity in long-run societal change". Rodriguez (2009) combined the dimensions of Hofstede`s cultural values and accounting value of Gray (1988) as shown in Table (2.4) below:

Table 2.4: The Relationship between the Dimensions of Hofstede`s Cultural Values and Accounting

Value of Gray (1988)

Accounting values (Gray, 1988)				
Cultural values	professionalism	Uniformity	conservatism	Secrecy
Power Distance	-	+	?	+
Uncertainty Avoidance	-	+	+	+
Individualism	+	-	-	-
Masculinity	?	?	-	-

Source, (Dahawy and Conover, 2007, p9).

Accordingly, there is a consensus from the diverse theoretical literatures regarding the impact of cultures as one of the most powerful environmental dimensions that have a great role in shaping the institutional environment specifically the regulatory and legal systems.

Figure (2.1) below and Table (2.4) above exhibit Egypt’s score related to the basic dimensions of culture, how the interrelationship between the cultural dimensions can explain the role of management in shaping the company’s strategies, illustrating the relationship between top management and subordinates, and how these attributes influence the legal and regulatory system applicable in Egypt.

The following numbers, which are scores regarding Hofstede cultural dimensions in Egypt have revealed that: the score for the uncertainty avoidance has reached 80 while that for the individualism has reached 26. Besides, the power distance has scored 72, and the masculinity has scored 46. (Hofstede, 1983). Therefore, based on the previous results Egypt has been characterized with high uncertainty avoidance, large power distance and low individualism. This reflects that the Egyptian society is a highly collectivistic society and a masculine one where there is a clear separation between traditional. Similar findings have been reflected when the Hofstede’s cultural values have been examined for both Egyptian and Anglo-American managers (Brown and Humphreys, 1995; Humphreys, 1996).

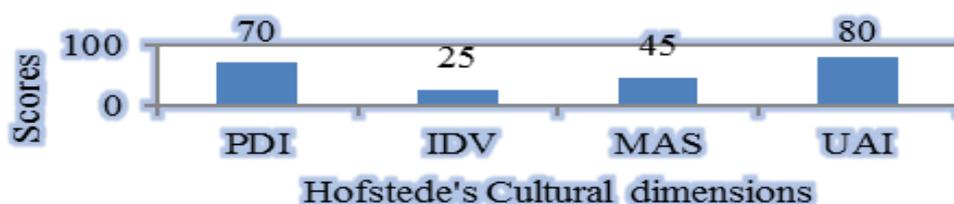


Figure 2.1: Hofstede’s Cultural Dimensions of Egypt (Elbayoumi, et al., 2019)

Furthermore, Dahawy, Shehata and Ransopher (2007), Sukkar (2017), and Elbayoumi et al., (2019) used a classification presented by Hofstede (1980, 2014) regarding the Arab speaking countries, including Egypt. They demonstrated that Arab countries are characterized with high power distance, low level of individualism, tendency to collectivism, high level of uncertainty avoidance, and low in pragmatism. Based on these findings and Gray's model, legislative control, uniformity, conservatism, and secrecy are reflected in the Egyptian accounting practices. Table (2.5) summarizes a comparison between the expected findings of Hofstede and Gray's models based on international standards regarding the Egyptian and the Anglo-American context (Dahawy and Conover, 2007).

Table 2.5: Economic Framework and Culture

Economics	Capitalistic and developed countries	Socialist, and Developing countries
	IAS Standards	Egyptian culture
Hofsted's Model	Individualism Small power distance Weak uncertainty avoidance	Collectivism Large power distance Strong uncertainty avoidance
Gray's Model	Professionalism Transparency Flexibility Optimism	Statutory control Secrecy Uniformity Conservatism

Source, (Dahawy and Conover, 2007, p11).

Studies manifested that societies with large power of distance and high level of uncertainty avoidance have weaker CG practices, due to multiple reasons (Dahawy et al., 2007). First, people (e.g top management, leaders, or controlling owners) who have more power distance, are more likely to strongly influence the practices and the firm strategies without considering the opinions of the less powerful individuals (minority shareholders). Gray (1988) argued that "the degree of secrecy preferred in an accounting subculture would influence the extent of the information disclosed in accounting reports. The higher the degree of secrecy, the lower the extent of disclosures." He asserted that there is a direct relationship between strong power of distance and preference for the secrecy. Second, the societies with strong power of distance have more tendencies to constrain information to keep the power inequalities (Dahawy and Conover, 2007). Also, preference for the secrecy is suitable for

collectivism rather than individualism as they are more concerned with those in the firm compared to the external parties.

Perera and Matthews (1990) completed the framework for accounting standards development by taking into account various global organisations such as the European Economic Union (EEU) and the United Nations (UN). The researchers stated that it is vital to standardize accounting systems to decrease any national effects in the reporting processes. They suggested that culture can be considered as a moderating factor between accounting sub-culture and accounting culture.

Gray's assessment has been supported by a study of Frechner and Killgore (1994) pointing out that the direct impact of economic and cultural factors on accounting practices should be taken into consideration. Societies with high uncertainty avoidance are more likely to abide by rules and regulations, and to be more secretive, thereby influencing negatively on the information disclosure practices. The justification behind this result is that the management might think that increased disclosure will force them to disclose some unfavorable information to competitors, tax authorities and shareholders, which may entail them to manipulate the earnings reports and present that consistent with international standards (Dahawy and Conover, 2007).

Salter and Niswander (1995) also examined Gray's hypotheses holding Hofstede's cultural dimensions as independent variables covering 29 countries. They found a significant and positive association between uncertainty avoidance and professionalism, uniformity and uncertainty avoidance, and secrecy and uncertainty avoidance. However, uniformity and masculinity, and secrecy and individualism are significantly and negatively related. Zarzeski (1996) supported the results of (Gray, 1988) theory and extended her investigation to include not only the culture but also the demands of international investors of the firm which may influence the accounting and auditing systems. Particularly, she found a direct and significant connection between the secretive nature of the culture and the level of accounting disclosure. Thus, the societies which are characterized by the culture of individualism and masculinity with less uncertainty avoidance have more tendencies towards disclosure and transparency.

Dahawy and Conover (2007) manifested that although studies tried to address issues relevant to the influence of IASs on the financial reporting in the developing countries at the national specific level, these studies could not generalize the results on the international level because of the following reasons; (1) the surrounding environment is strongly influencing the accounting practices; (2) environmental and

contextual factors differ radically between various countries; and emerging countries are homogeneous which makes it misleading to try and generalize.

Borker (2012) conducted a comparative analysis between Central and Eastern European countries (CEEC) in their implication of accounting perspectives using Hofstede`s six cultural dimensions and corresponding to accounting values based on Gray`s hypotheses. The study stated that internal and external factors such as the firm incentive level, political, economic, and social characteristics have significant impact on implementing IFRS and the quality of financial reporting. Shehata, Dahawy, and Ismail, (2014) stated that secretive culture remains prevalent characteristic in Egyptian business environment where the foreign audit firms complies with the companies to disclose more accurate and transparent information to the external users. These foreign audit firms as opposed to small Egyptian audit firms do not fear losing their clients trying to keep their corporate reputations.

Accordingly, it is crucial to understand the cultural and socioeconomic values to support the countries in making a proper harmonization for the accounting standards and principles. The socioeconomic factors can act as moderating factors between the adoption and implementation of any accounting practices to minimise the problems of a cross-cultural approach. According to (Amenkhienan, 1986; Larson, 1993; Dahawy et al., 2002), it is impossible and harmful for the emerging economies to make complete implementation of IASs because the international accounting standard committee mainly developed IASs according to the culture and the requirements of the developed countries i.e. (U.K and U.S) not according to the environmental and cultural of the emerging context (Dahawy et al., 2002; Abbas, 2015).

To conclude, the societies have more tendency to be secretive and conservative when they are characterized with more a masculine attitude, high uncertainty avoidance, large power of distance, and individualism preference. This secrecy preference would influence the level of transparency and integrity of information disclosed to the outsiders and on the quality of financial reporting released. Hence, regulatory agencies should be confirmed from the implementation of IFRS and the CG practice to ensure compliance with mandatory requirements. These economic reforms played a pivotal role to changing the Egyptian cultural values from secrecy attitude to transparency (Dahawy, Shehata and Ransopher, 2011).

2.5.6. Cultural Values, Business Environment, and Earnings Management

Cross sectional studies revealed that the national cultural values and institutional setting have a great explanatory impact on EM around the world. The power of the two factors on earnings manipulations practices is dependent on each other (Doupnik, 2008; Han, et al., 2010; Daniel et al., 2012). The association between the Hofstede`s cultural dimensions, legal environment and EM still accepts the empirical determinations. It was known that the Hofstede propositions, from which the cultural values, societal values and the accounting subcultural start, suggest that social and beliefs principles have a great institutional impact in the form of legal, economic, and political systems including the ownership structure, capital market and investor protection, which consequently influences the accounting outcomes greatly (Han et al., 2010). So, it is inferred that the cultural values affect not only the accounting system and the financial markets, but also the institutional and legal systems within countries.

The previous studies explained the main characteristics of the Egyptian context taking into consideration Hofstede`s four cultural dimensions and Gray`s accounting values. Hofstede (1980) and Grey (1988) found that the high uncertainty avoidance (more unambiguity preference) is considered as one of the main characteristics in the Egyptian system. Consequently, countries that share Egypt's characteristics and conditions are more likely to implement conservative approach to EM but operate in the dark. Managers have more likelihood to get involved in the opportunistic behavior through REM to avoid risks relevant to the potential negative influence of detecting accrual management, although they are afraid from its negative impact on the future performance (Paredes and Wheatley, (2017).

Other studies like (Nabar, and Thai, 2007) confirmed that the economies with uncertainty avoidance is positively related to the EM practices due to several reasons; (1) high uncertainty avoidance could require more earnings smoothing (likelihood to control future reported earnings) and earnings signaling, which lead to more earnings manipulations; (2) if the investors are more interested in the consistency and persistence in the earnings, and the rewards and penalties for achieving those targets is high in the countries with uncertainty avoidance, so that the managers have more likelihood to meet or beat earnings threshold (manage the earnings) even if it has negative impact on the firm value (Doupnik, 2008). This indicates the necessity of implementing the CG

mechanisms to avoid the accounting discretions made by the managers. In addition, Daniel et al., (2012) confirmed that the control of the corporation as found in the institutional environment should be used as a mediator between cultural value of uncertainty avoidance and CG practice. Thus, societies with high level of uncertainty avoidance should employ the enforcement mechanisms and legal systems that reduce business officials' tendency from using their position illegally for private benefits. This justifies the role of governance structure in promoting the the financial reporting standards.

In the context of the countries with high power distance, most of their organisations are characterized by centralized structure in the decision making where the authority is concentrated in the hands of top managers (Daniel et al., 2012). These countries suffer from the lack of leader communication, insufficient participative leadership, and lack of information sharing. Accordingly, the accounting system can be used frequently to justify the decision of a top manager who has the power to manage opportunistically the corporate earnings (Gray, 1988; Nabar and Thai, 2007; Douppnik, 2008). Furthermore, Daniel et al., (2012) asserted that societies with high power distance would suffer from lower voice and accountability in the institutional environment, thereby, weakening the application of CG practices because those with more power have more capability to effect the opportunistic behavior without giving any consideration to the less powerful individuals. Hence, there appears to be direct connection between power of distance, CG and EM practices.

Hofstede (2001, P.318) provides a definition for masculinity as to be the "societal preference for achievement, heroism, assertiveness, and material success as opposed to a preference for relationships" (2001, P.318). Countries with high masculinity are characterized by ego oriented, high preference for high pay and high economic growth, and low emphasis on external monitoring (Hofstede, 2001). Furthermore, Hofstede (1983) elaborated that the Egyptian context is high in terms of the cultural dimension of masculinity. The managers in high-masculinity societies have more tendencies to report more earnings that beat benchmark so that the accounting system may strongly concentrate on solely achieving financial goals. This indicates a positive relationship between all types of EMs, masculinity and attitude for greater aggressive behaviors as the people in these societies are more concerned with performance. However, the executive managers in these societies are hesitant to employ

REM rather than AEM to meet the performance benchmarks (Hofstede and Hofstede 2005; Doupnik, 2008; Paredes and Wheatley, 2017).

Several studies also suggested that societies with high level of collectivism, their stakeholders (e.g suppliers, employees, investors, customers, and creditors) are expecting their organisations' work to maximize their interest and look after them like a family (Hofstede, 1980; Hofstede and Hofstede 2005; Doupnik, 2008). Hence, these organisations are likely to avoid any earnings instability or variability that may be caused by debt covenant violations or meeting or exceeding expectation of analysts, management compensations agreements, and union negotiations. Therefore, managers in countries with high level of collectivism (low level of individualism) may use accounting decisions for safeguarding the welfare and interest of the collective group of the stakeholders (Nabar and Thai, 2007; Doupnik, 2008; Daniel et al., 2012).

The motivations of managers to opportunistically manipulate earnings can be minimised in countries with legal system that provide high level of investor protection (Leuz, Nanda and Wysocki, 2003; Doupnik, 2008; Han et al., 2010). Indeed, countries with strong legal enforcement and outside investors' rights have more tendencies to discipline the insiders' private control benefits as well as to moderate the managers' incentives for conducting accounting decisions. Therefore, the magnitude of earnings manipulations is negatively related with the level of investor protection (leuz et al., 2003)

Accordingly, the cultural values and its relationship with the magnitude of earnings discretions is controlled by the level of investor protections. Hence, societies with high uncertainty avoidance and strong investor protection may be more likely to compound the conservatism and unwillingness to manage the accounting discretions. However, these managers may seek some unregulated opportunities and act on some accounting discretions to reduce uncertainty even if they are characterized by strong legal system (Han et al., 2010). For example, some studies indicate that managers may behave opportunistically to manage the earnings through (REM) in environment with strong investor protection because REM as opposed to accounting discretions (AEM) is less constrained by investor protection and does not include direct violation for laws and regulations. Instead, it includes opportunistic behavior for operating decisions (Paredes and Wheatley, 2017).

To conclude, the accounting profession, auditors and regulators should not only consider the cultural values but also the nature of the legal system, political status and

strength of investor protection in different countries to identify the degree of scrutiny that should be conducted to determine which type of the EM is applicable. This indicates that international business and capital market participants should consider culture values and level of investor protection as important determinants of how the accounting discretion and managerial actions are likely to be conducted.

2.5.7. Legal System and Investor Protection

The legal system of any state influences the role of the accountants and method in which the accounting system is moderated. In civil-law countries, the accounting profession is likely to be regulated and controlled through detailed, prescriptive, and procedural guidelines developed by governmental (Quasi-governmental) bodies (Othman and Zeghal, 2006). In the common law countries, the government delegates the regulation of accounting profession to an independent authority (Roberts, Weetman and Gordon 2005; Ebaid 2016). For instance, La Porta et al., (1999) studied the government role in the economic activity of different countries and used several proxies such as the prevalence of corruption and of red tape, the bureaucratic delays, and the quality of regulations. The study concluded that civil law countries especially countries applying the French civil law are characterized as being more government interventionist than common law countries (La porta et al., 2000). These Code law economies provide the lowest level of protection for the outside investors as opposed to Common law countries.

Accordingly, many studies argued that the level of investor protection is determined according to the different legal rules of the jurisdiction where the securities are issued. The difference in legal rules across the countries will be attributed to the change according to difference in the legal origins. Indeed, empirical and theoretical studies found that common law countries (e.g, UK, USA) provide more protective laws than countries with civil laws (e.g France, Continental Europe, Italy). While Civil law countries (e.g France, Continental Europe and emerging countries) are characterized with ownership concentration, leading to the weakest investor protection. While, the Common law countries provide more protection to outside investors both creditors and shareholders and lead to higher market valuation and more developed financial markets (Graff, 2008). Countries with more protection of shareholder rights perform a critical responsibility in the development of financial markets, enhancing market breadth, promoting higher rates of IPO, and increased number of listed securities, as compared

to unprotected countries (La-Porta et al., 1997). However, German civil law and Scandinavian countries fall in between, although comparatively speaking; they have stronger protection of creditors, especially secured creditors (La Porta et al., 2000; Graff, 2008).

Furthermore, Othman and Zeghal, (2006) stated that the continental Europe (Civil law countries) describe financial accounting system as public sector activity, which is administrated by the governmental agencies and its primary role is to identify income tax owed to the government. Indeed, since 1960s taxable income and financial reporting system are strongly connected due to the long absence of specific accounting legislation. On the contrary, accounting rules and tax rules in Common law countries are kept separated as financial reports are kept based on the accounting standards and principles while the tax reports are prepared outside the accounting framework. Consequently, the relationship between accounting earnings and taxable income will differ according to the nature of the legal system and regulation practices.

The legal system established in Egypt⁸ is taken from the French legal system (Code law countries), which is basically the Roman law system. The financial system of Egypt remains bank-oriented, where companies are usually financed through banks and this gives them the authority to have access to financial and non-financial information (ROSC, 2004). The enforcement level in Common-law countries is stronger than the French-Civil law countries. These practices give motivations to prepare low-quality financial reports in spite of the mandate adoption of high-quality accounting standards (Ball, Kothari, and Robin, 2000; Leuz et al., 2003).

Consequently, the level of regulations and how they are enforced are central in understanding the patterns of ownership structure, investor protection, taxable earnings and CG around the world. The legal approach to CG assumes that its primary mechanism is to protect external investors (both shareholders and creditors) through the legal system, which means both laws and their enforcement (La Porta et al., 2000; Elbayoumi et al., 2019). In addition, the incentives for EM are linked to contractual debt cost, effective tax rate and issuing equity, which indicates that the relationship between tax law and financial reporting system are based on the nature of legal system that indirectly affect the attitude of conducting EM (Othman and Zeghal, 2006).

⁸ Egypt is a Civil-law country where accounting standards are established and enforced by government.

However, Roe (2003) argued that CG models and ownership structure cannot be explained only by the legal origins and the quality of laws but also by the politics.

Due to the recent growing attention of CG, Egypt modified the Code of CG in October 2005. Egypt's Code of CG is completely voluntary, and no obligations for the Egyptian firms to apply its practices or explain the reasons for CG failure in implementation. The CG and investor protection become the key determinants of market development. Organisations all over the globe share the same requirements such as; the need to issue new capital, the efficient utilization of resources, the growth of firm value, and the availability of information to all decision makers. These requirements drive the developed countries and economies to adopt the same and the most efficient rules, regulations and institutional structures.

2.5.8. Egyptian Revolution

Previous literature suggested that the political environment could influence directly and indirectly the development of accounting practices. Indeed, the political environment (government reform, political rights, civil liberties, dictatorship or democracy) could affect the culture and economy of the country, thereby affecting indirectly the accounting and auditing practices (Dahawy et al., 2002, Hassabelnaby et al., 2003, Ebaid 2016). Political environment that is characterized by stability in the currency and powerful legal system would affect the economic environment and in turn influences the accounting development (Larson and Kenny, 1995).

For instance, Pourjalali and Meek (1995) investigated how cultural values in Iran were affected by what happened after the revolution in 1979. Afterwards, they explored how the changes in the cultural dimensions influenced the accounting environment based on using Gray, (1988) accounting values. The findings of their study revealed; (1) lower professional power and more legislative control; (2) greater uniformity of the accounting practices between companies; (3) higher conservatism and cautious in the measurement; (4) higher secrecy and low level of disclosure. In the context of Spain, after the death of Franco in 1975 and the emergence of a democratic constitution in 1978, Amat et al., (2000) conducted their study to investigate to what extent these political transitions and cultural changes influence the financial and management accounting environment. The study found that both financial and managerial accounting suffer from lower conservatism, less confidentiality, and high degree of professional influence, as result of increased democracy. Regarding financial

accounting practices, there is a lower degree of uniformity in the accounting practices compared to the period of dictatorship which indicates the presence of a significant relationship between the political system and accounting development.

Within this context, it is important to take into consideration the changes in the political system after the Egyptian revolution on 25th of January 2011 as one of contextual factors that could influence the accounting and auditing profession and CG applications.

Before 25th of January revolution in Egypt, the performance of the economy as a whole was better. GDP growth rose rapidly from just below 5% in the mid 1990 to 7% in the period during 2006-2008. Despite the presence of global recession after the financial crisis, Egypt continued to grow at annual average rate of 5% in the period between 2009 and 2010. Although the global trading share of Egypt had been falling continuously for 40 years, it began to expand as exports were tripled, and foreign investments gushed in at record levels, reaching cumulative total of \$46 billion from 2004 to 2009. The Public debt decreased by third. Forging debt has fallen below the value of the foreign reserve for the first time in decades. The central bank of Egypt (CBE) doubled its holdings of international reserves from \$19 billion in 2005 to around \$36 billion by the end of 2010. Tourism also jumped by its receipts from \$7 billion in 2005 to \$12.5 billion in 2010. Within the 5 years before the revolution, the government exerted efforts to reduce the unemployment rate and created new opportunities by offering about 2.5 million jobs to the youth, which contributed in reducing the unemployment rate from 11.5 % in 2005 to 9.2 % in 2010.

Although the economic and social figures revealed a significant growth and development in the economy over the period 2005-2010, by the end of Prime Minister Nazif government, Egyptian labor market continued to accommodate the great number of unemployed people, young newcomers, and growing number of women looking for work under enormous pressures. In addition, Egypt continued to suffer from major structural flaws that were addressed. These inherent problems may be related to population explosion, rapid urbanization, risk of rising inflation, inefficient bureaucracy, crony capitalism, incompetent infrastructure, inequalities in income and wealth distribution, corruption and deteriorating socio-economic conditions. The high prices of basic goods and services also led to a loss of confidence, lack of free and fair elections, political instability and legitimacy crisis. All of these problems made the structural balance improper and posed great challenges to market development and

deprived the poor from participation in the macro economic growth (Abdou and Zaazou, 2013). Khan and Miller (2016) also documented that in addition to demographics, technology, foreign policy, legitimacy of the state, torture, corruption, the parliamentary crisis of 2010 was the fuel that caused Egyptians to revolt on the 25th of January and insisted on the termination of president Mubarak's of rule.

The macroeconomic picture has significantly exacerbated after the ouster of President Hosni Mubarak. Since, the Egyptian revolution had to go through a difficult transition phase and encounter a lot of serious problems, such as low foreign direct investments (FDI), a great budget deficit, a heavy debt rate, a high youth unemployment rate, a high poverty rate, and a decline in the standard of living. Moreover, the inflation rate has increased to reach 24.4% in 2016, compared to 13.6% in 2010 according to the reports from the Central Bank of Egypt (CBE), the International Monetary Fund (IMF), and Emirates NBD which have also stated that the unemployment rate reached 12.8% in 2016, compared to 9% in 2010, and the external debt raise to \$60 billion in 2016 compared to \$35 billion in 2010, and the Egyptian domestic debts reached EGP 2.7 Trillion in 2016 compared to EGP 875 billion in 2010. Which consequently led to the gross debt of growth domestic product reaching 100%, a negative and frustrating indicators since they point toward the fact that the Egyptian total debt became equivalent to the total local production of Egypt (World Bank and IMF).

Egyptian economic growth has declined from 5.3% in 2010 to 4% in 2016. The poverty rate has increased and extended 28% in 2016 compared to 25% in 2010. Exports decreased from \$24 billion in 2010 to 20 billion in 2016 while the Egyptian imports increased from \$49 billion in 2010 to \$57 billion in 2016. CBE lost over \$20 billions of its foreign exchange reserve. Three major credit rating agencies (Moody`s investor services, Fitch Ratings, and Standard & Poor`s) reacted to this sharp decline in the international reserve by downsizing the Egyptian`s sovereign credit rating. Standard & Poor`s credit rating for Egypt stands at B- with stable outlook in 2016 and BB in 2010. Moody`s credit rating for Egypt was last set at B3 with stable outlook in 2016 and Ba2 in 2010. Fitch`s credit rating for Egypt was last reported at B with stable outlook in 2016 and BB+ in 2010 (Abdou and Zaazou, 2013, and Khan and Miller, 2016).

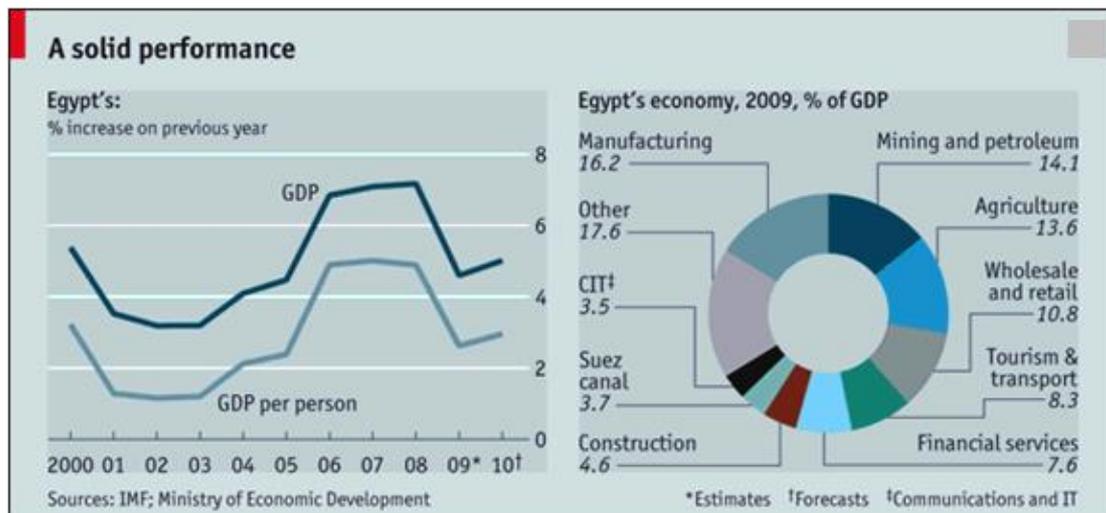


Figure 2.2: Performance of the Egyptian Economy Prior to the 25th of January Revolution.

Moreover, Table (2.6) below also shows the effect of the Egyptian Revolution on some influential factors by comparing these factors before the Revolution (years 2005–2010) and after revolution (years 2011–2015). The table (2.6) includes indicators of World Economic Forum, (2017) that represent five categories: accounting and auditing standards, legal, economics, financial markets and CG. It has been noticed that most of the indicators declined after the revolution. The dropping phase lasted for three years and then started to pick momentum again. As shown in Figure 2.2, before the revolution, the indicator that measures the strength of auditing and reporting standards started 4.6 in 2006 and increased to 5.1 in 2008 and reached 4.3 just before the revolution in 2010. After the revolution, it started from 4.1 year 2011, then decreased to reach 3.8 in 2013 and started again to increase to achieve 4.3 in 2014 and 2015.

Table 2.6: Influential Factors Before and After the Egyptian Revolution

Year	Before Revolution												After Revolution											
	2006 - 2007		2007 - 2008		2008 - 2009		2009 - 2010		2010 - 2011		2011 - 2012		2012 - 2013		2013 - 2014		2014 - 2015		2015 - 2016		2016 - 2017			
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025			
Number of Countries	125	134	131	133	139	142	144	148	144	140	138													
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank		
Auditing & Accounting Standards																								
Strength of auditing and reporting standards	4.5	69	4.6	70	4.8	66	5.1	50	4.8	58	4.3	99	4.1	104	3.8	122	3.8	117	4.3	88	4.3	84		
Legal																								
Judicial independence	4.8	38	4.9	41	5.0	42	3.9	64	3.9	63	4.8	41	4.1	53	3.5	82	4.0	57	4.5	45	4.5	47		
Efficiency of legal framework in settling disputes	NA	NA	NA	NA	NA	NA	4.3	39	4.3	40	3.9	60	3.4	86	3.2	106	3.3	105	3.4	82	3.4	81		
Effectiveness of anti-monopoly policy	3.5	79	3.5	80	3.3	98	3.4	95	3.5	106	3.2	124	3.2	133	3.2	132	3.5	111	3.6	92	3.6	78		
Total tax rate, % profits	59.6	88	50.4	78	47.9	80	46.1	79	43.0	78	42.6	83	43.6	87	42.6	92	42.6	90	45.0	98	45.0	96		
Education																								
Quality of the education system	2.7	101	2.5	119	2.4	126	2.6	123	2.5	131	2.3	135	2.3	139	2.2	145	2.2	141	2.1	139	2.1	135		
Quality of management schools	3.5	87	3.5	100	3.2	116	3.3	114	3.3	122	3.0	133	2.8	137	2.3	145	2.0	144	2.5	139	2.5	138		
Economic																								
General government debt, % GDP	104.3	106	101.2	116	105.8	124	85.9	121	80.1	119	73.8	119	76.4	122	80.2	129	89.2	125	90.5	124	87.7	117		
Exports as a percentage of GDP	31.0	80	31.3	88	31.5	87	45.8	65	37.8	68	23.0	115	21.0	129	19.7	134	17.4	134	16.5	131	11.2	132		
Financial Market																								
Availability of financial services	NA	NA	NA	NA	NA	NA	NA	NA	4.8	60	4.4	79	4.2	88	3.8	112	3.4	129	3.4	129	4.5	54		
Affordability of financial services	NA	NA	NA	NA	NA	NA	NA	NA	4.2	69	4.0	76	4.1	71	3.7	106	3.3	126	3.3	126	3.8	72		
Soundness of banks	4.6	99	4.7	106	4.7	111	5.0	86	5.3	61	4.6	102	4.3	123	4.0	125	4.2	110	4.8	70	4.8	70		
Corporate Governance																								
Efficacy of corporate boards	4.4	64	4.4	87	4.4	93	4.6	64	4.4	82	4.0	122	3.8	136	3.6	141	3.6	136	3.9	133	3.9	131		
Protection of minority shareholders' interests	4.4	60	4.5	61	4.5	68	4.6	60	4.6	46	4.4	61	4.1	75	3.8	97	3.5	109	3.9	82	3.9	83		
Strength of investor protection	4.3	78	4.3	87	5.0	67	5.3	55	5.3	59	5.3	60	5.3	65	5.3	69	3.7	117	4.4	113	4.5	101		
Reliance on professional management	4.0	82	4.0	94	3.5	124	3.7	106	4.1	86	3.5	121	3.3	134	3.1	137	3.1	134	3.1	133	3.1	133		

Sources, World Economic Forum (2017)

Consequently, it is clear that neither socialism nor capitalism can accomplish the economic growth and development or social justice for its public. This is because the changes in the economic system are designed to support the rich people without looking to the poor parties, disregarding the social and ethical responsibilities, unequal distribution of profits, and the absence of respectable political system. Hence, Egypt needs comprehensive and strong program, as a fundamental motivator to move forward to the capitalism, promote its economic democracy and enhance its widespread stock ownership.

2.6. Summary

The profession in accounting and auditing practices and CG practices in the Egyptian context have been influenced by several factors. These factors are analyzed to determine to what extent the accounting profession and CG practices have been affected in their implementation. The characteristics indicated that the Egyptian environment is classified as belonging to Civil-law countries. The Egyptian context was characterized by weak investor protection, lack of enforcement mechanisms, inadequate and inefficient legal system. The political system, economic status, cultural and societal values are considered as critical mechanisms in enhancing the profession of accounting and auditing practices and promoting the significant role of CG.

However, the economic reforms and privatization that have been conducted by the regulatory agencies in Egypt indicating the necessity to harmonize between Egyptian accounting standards and international financial reporting standards (IFRS) and to enforce the application of CG framework.

Notably, several points have been highlighted from the above discussion and are summarized as follows:

- A. The Egyptian governmental authority plays an ineffective role in the supervision and control of the Egyptian listed companies specially companies with low governmental ownership. Accordingly, this hinders the application of CG particularly if the CG requires the code of ethics.
- B. It has been observed that supervisory bodies in Egypt are governmental agencies who are more interested in applying rules and regulations in theoretical manner rather than adopting policies and procedures that motivate practical application of Egyptian CG guidelines, thereby, no observable impact was found on the listed Egyptian companies.
- C. In addition, the practical application of laws including tax-law, financial legislation, and law of work and social security appears to be rather inadequate.
- D. Many corporations are categorized into small and medium and majority is family-owned corporations, which makes the application of CG difficult.
- E. The absence of practical models and procedures to implement guidelines of Egyptian CG in the companies listed in the Egyptian market and relying heavily on theoretical perspectives and experiences create the problems regarding its proper application.
- F. There is a lack of awareness among employees in listed companies in the Egyptian stock market regarding the positive consequences of the implementation of CG. Most investments in Egyptian companies are short-term oriented which negatively affects the level of shareholder`s activism and the serious adoption of CG.
- G. The dominance of public sector in accounting and auditing profession, in the Egyptian context, delays the transformation to a more market oriented platform.
- H. The privatization program conducted in the Egyptian context revealed the absence of harmonization between international financial standards (IASs) and

Egyptian accounting standards (EAS). This created inconsistency and discrepancy in the evaluation of privatized companies. However, the increased in-flow of foreign investments in Egypt necessitates the promotion and revival of accounting and auditing profession and to develop the monitoring mechanisms on the accounting and auditing practices by the CG rules and practices. Therefore, it is crucial for policy makers and regulatory bodies to deeply consider the political, economic, social, and investment environment before improving the quality of accounting and enforce the various practices of CG mechanisms.

The next chapter is going to provide general overview of the nature of EM practices, and what inspires management to exercise it. Additionally, the following chapter explains the various methods that used to measure and detect the EM practices. After that, illustrating some of literatures that examined the influence of the monitoring devices of CG and external audit on the practice of earnings manipulation.

Chapter Three

Literature Review: Earnings Management

3.1. Introduction

This study examines the relationship between CG structure and the quality of financial reports published by companies listed in the Egyptian Stock Exchange between 2008 and 2017. This chapter presents a detailed review of the general understanding of EM. Definitions and motivations of EM practices are explored. This chapter also provides a comprehensive discussion of the different methods used to measure earnings manipulation either through accrual-based activities or real-based activities. Several studies are addressed to illustrate whether earnings manipulations, either through accrual-based activities or real-based activities, are affected by the corporate governance mechanisms and external audit.

This chapter is organized as follows. Section 3.2 discusses how EM was defined in different studies. Section 3.3 provides a discussion of the incentives (motives) regarding opportunistic EM. Section 3.4 addresses EM techniques. Section 3.5 deliberates on the methods of opportunistic earning management, both accruals and real-based activities EM. Section 3.6 explores the difference between Accrual-based activity and real-based activity EM. Section 3.7 discusses the most important models used to measure Accrual/real EM practices. Section 3.8 provides examples concerning the relationship between CG and EM in the MENA region. Section 3.9 presents a summary of the chapter.

3.2. Definitions of Earnings Management

Earnings are outlined as the profit of the organization, represented by the bottom line of the income statement and summary item in financial statements (Alghamdi, 2012) This determines the extent to which the organisation was involved in value-added activities. This item represents the most attractive value for investors and analysts when choosing the most profitable stock. Therefore, a firm stock's price can be related to future earnings (Alghamdi, 2012; Habbash, Sindezinue, and Salama 2013; Algharaballi, 2013).

EM has been defined and addressed in different forms such as income smoothing, window dressing, accounting magic, general EM, real EM, and accounting EM. Income smoothing was the most prevalent form until the beginning of the 1980s,

after which it was replaced by the more general term 'earnings management' (Schipper, 1989). A specific or clear definition of EM has not been identified. Schipper (1989)⁹ is among the first who defined EM practice as “purposefully intervening in the process of external financial reporting to obtain certain private gain”. Healy and Wahlen (1999) extensively defined EM as “the setting in which management judgementally adjust the financial reports and the structure of the transactions. This could be done with the purpose of misleading stakeholders about the organisation performance or influencing contractual outcomes that are based on the reported accounting values”(1999, P.6).

Managers are given considerable discretion in determining the actual revenue provided by the company at any given period by the Accrual-Based accounting's nature. This gives them significant control over the timing of actual expenditure items (such as advertising expenditures, maintenance or R&D expenditures). It may also allow them, to a certain extent, to change the timing of recognition of revenue and expenditure through credit sales or deferring the losses recognition by postponing the reserves for losses (Xie, Davidson and DaDalt, 2003). EM is defined as the relationship between cash flows and accruals (Dechow and Dichev, 2002). Therefore, management has the power to recognize the entitlement to limit information or exploit it to manipulate profits. According to Boakye (2016), EM occurs when managers use the chance to make accounting decisions that change reported income based on estimates and judgment.

Healy and Wahlen (1999) explained two methods that could be used in EM (accounting and economics). The first method is the managerial judgment in financial reporting represented by the flexibility in using the GAAP to alter the reported earnings without altering cash flows. The second method is structuring transactions represented by changing the operating decisions and managing the underlying cash flows that influence the income reported. Fields, Lys, and Vincent (2001) stated that managers exercise their discretion over accounting values. They may do that with or without restrictions to meet management objectives or shareholders' objectives. Thus, EM is classified into opportunistic EM and informative EM (Healy and Palepu, 1995; Watts and Zimmerman, 1986).

⁹ Schipper (1989) also provided an overview of the earning management literatures, but not from the perspectives of standard setters. He contributed in providing useful analysis for implications and trade-offs among choices of research design.

However, the above definitions do not differentiate between EM and fraud, Dechow and Skinner (2000) criticized them in the term of aggressive accounting decisions. They claimed that it is necessary to identify managerial incentives behind EM to be capable to distinguish between opportunistic EM and the legitimate practice of accounting discretion. Hence, the managers' motivations to manipulate firm's earnings will be discussed in the following section (Habbash, 2010).

All definitions of EM indicated that managerial intention is a prerequisite of EM practice. However, it is not clear whether this intention should be opportunistic (Dechow and Skinner, 2000; Scott, 2003). To classify EM practices as legitimate or illegitimate, the GAAP should be referred to. Such practices are considered legitimate if they comply with the GAAP. However, if the practices do not comply with the GAAP, they are considered illegitimate EM practices (Elkalla, 2017).

Several studies categorized EM definitions into three categories; efficient (white) EM, grey EM and opportunistic (black) EM (Scott, 2003, Siregar and Utama 2008, Habbash, 2010). The definitions of the three categories can be explained as follow: First, EM can be efficient if managers employ their discretion as a tool to facilitate management informativeness and to convey private information about firm profitability that has not yet been mirrored in historical cost-based profits (EL-Kalla, 2017). Second, the grey EM category means that EM is either opportunistic, aiming at widening management utility only or the economy's efficiency; it enhances the financial reporting's quality, leading to the efficient allocation of resources. The grey EM occurs when managers are enabled to exercise their discretion over accounting values whether there are any restrictions or not. Such discretion can be either firm value-maximizing or opportunistic (Watts and Zimmerman, 1990, Siregar and Utama, 2008). Third, EM is opportunistic if managers use intentionally the accounting choices to mislead stakeholders about firm performance and to maximize their utility and thus garbling earnings. This diminishes the transparency and quality of financial reporting (Siregar and Utama, 2008, and El Kalla, 2017).

The reasons for EM practices are diversified and ranged from intent to meet analysts' expectations to incentives to achieve rewards or to keep a competitive position within the financial market. EM is considered legal when financial statements are adjusted following the standards of financial reporting. EM becomes fraudulent when financial statements are prepared outside the boundaries of accepted accounting practices (Siregar and Utama 2008). Accordingly, organisations will only participate in

such EM practices when the benefits of this behavior are higher than the risks and costs involved. There are several motivational tools for managers to involve in earnings manipulations such as stable dividends or stable businesses or companies with high growth prospects to avoid unfavorable market reactions to negative earnings news. The Sarbanes Oxley Act (SOX) was passed by the US Congress to protect the interest of stakeholders and the public from any misstatement and fraudulent practices made by management to enhance the reliability of financial reporting. However, managers started to shift away from accounting-based earnings manipulations to real-based manipulations after the passage of this act (Alghamdi, 2012).

3.3. The Incentives (Motives) behind the Opportunistic Earnings Management

Detecting the malpractice of EM manipulation is a very difficult errand. Therefore, determining managers' motives behind EM can be used as an alternative way for scrutinizing EM (Healy and Wahlen, 1999). Previous accounting literature has identified multiple incentives that justify why managers exercise opportunistic EMs. The most commonly mentioned incentives supported by Watts and Zimmerman (1990); Healy and Wahlen (1999); Habbash (2010); Nwaeze (2011); Alghamdi (2012); Ghazali, Shafie, and Sanusi (2015), are discussed in the following subsections.

3.3.1. Management Compensation Contract Motivations

Based on the Executive Compensation Theory, it is suggested that the Bonus Plan Hypothesis creates motives for managers to manipulate earnings to raise the bonus pay-out (Perols and Lougee, 2011; Nwaeze, 2011). The bonus given to managers is often based on performance measures including share price and reported profits. Managers are likely to commit fraud if they benefit from fraud either by insider trading or through compensation agreements (Algharaballi, 2013). Several studies such as that of Watts and Zimmerman (1986) maintained that managers whose compensation agreements are based on earnings have a greater tendency to disclose accounting outcomes that can maximize their bonus compensation. The studies also reported a significant relationship between managers' incentive to manipulate earnings reports and accruals to achieve their bonus plans and maximize their wealth (Harris and Bromiley, 2007).

When managers cannot achieve profits to meet the target for bonus plans or when rewards reach their maximum levels, they defer income through accruals. Specifically, new managers usually perform income-decreasing accruals to apply what is called the 'Big Bath' to increase their bonus in the future (Man and Wong, 2013). However, when profits are recorded between the top and lower limits determined by performance-based contracts and when performance-based compensation is more sensitive to reported earnings, executives can push profits upwards instead of reducing earlier profits (Cornett, McNutt and Tehranian, 2009).

3.3.2. Declining Financial Performance

Low financial performance reflects recurrent episodes of poor financial results. Extant literatures explained the incentives behind EM when there is a decline in the financial results of the organization. For example, managers become more motivated to raise profit due to their concern regarding their job loss especially within the period of poor financial performance. Earnings distress may be used as a result of repeated losses to capture EM incentives. Investors have a likelihood to purchase stock during a company's period of loss expecting that the loss is temporary and that it will be followed by a period of profitability in the near future. In other cases, the firm will be liquidated. Subsequently, those expectations create motives for EM manipulations to enhance stakeholders' confidence or to reduce the risk of forced liquidation (Nwaeze, 2011; Alghamdi, 2012; Habbash, et al., 2013; Algharaballi, 2013)

3.3.3. Lending Contracts Motivations

Another major premise is the Debt-Convent Hypothesis. This hypothesis is dependent on the notion that firms seeking external funding have a higher incentive to manipulate earnings to reduce funding costs (Man and Wong, 2013). Furthermore, creditors often impose restrictions and pressures on fund-seeking firms such as payment of dividends, repurchase of shares, and issuance of additional debts in terms of figures and reported accounting ratios, to guarantee repayment of the company's loans (Alghamdi, 2012). Therefore, those organisations are most likely to push reported earnings upward to be consistent with their debt commitments and to relax restrictions imposed on them (Perols and Lougee, 2011; Nwaeze, 2011). For instance, Dechow, Sloan, and Sweeney (1996) found that the relationship between planned external funding and frauds (income increasing accruals), and between incentives to avoid debt convenient violations and

EM are positively related (Cornett, et al., 2009). On the contrary, other group of studies reported a contradicting result due to the conservatism of managers when preparing financial reports (DeAngelo, DeAngelo, and Skinner, 1994; Zhong, Gribbin, and Zheng, 2007)

3.3.4. Stock Market Incentives

The interface between accounting numbers and stock market reactions may drive management into the malpractice of EMs. Investors often depend on the opinions and expectations of analysts in the stock market to develop a range of potential successful companies. Meeting or beating analysts' expectations appears to give a significant motive for organisations to manipulate their earnings. Managers have more tendency to meet analysts' expectations to achieve higher returns for the organisation, even when this is likely to be achieved through EM practices or forecast management (Kamel and Elbanna, 2009). For example, DeGeorge, Patel, and Zeckhauser (1999) found that managers are more concerned with avoiding losses and devote more effort to enhance profitability. Once profits are increased, they strive to increase earnings more than required to meet analyst's earnings expectations.

In the literature of EM practices, the Capital Market Expectations Hypothesis is considered the base of one of the incentives for the occurrence of earnings manipulations. This hypothesis suggests that executives are likely to manipulate earnings to meet or beat analyst forecasts when these forecasts would not be met or exceeded. When firms suffer from low stock price performance, this may push managers to commit fraud or manipulate financial statements to avoid disappointing investors and to persuade potential investors about the optimistic future performance (Cohen and Zarowin, 2010; AlGharaballi, 2013).

The other motives for the companies to overstate earnings (income increasing accruals) before Seasoned Equity Offers (SEO), Initial Public Offerings (IPOs), and stock finance acquisition are the need to diversify the management holding and the desire of management to raise the firm's share price on which their reward is based (Kamel and Elbanna, 2009; AlGhamdi, 2012). Accordingly, investors fail to expect the direction, magnitude and types of managed reported earnings.

3.3.5. Political and Regulatory Motivations

Organisations may be induced to engage in EM practice due to several regulatory considerations such as industry regulations, tax planning purposes, and reducing the risk of investigation and intervention by antitrust regulators. This helps firms avoid government interference. For instance, Jones (1991) found that management has a great tendency to underestimate the earnings during the year of import relief investigation to benefit from this regulation. Besides, as accountings numbers in financial statements are used as a basis for calculating taxes, there may be substantial incentives for EM to avoid taxes (Healy and Wahlen, (1998); Siregar and Utama, (2008); Salah, (2010).

Regarding industry regulation, some industries especially banking, utility, and insurance industries, are monitored to confirm if they comply with rules and regulations related to accounting numbers and ratios (Healy and Wahlen, 1998). These sectors are compiled to have certain capital and assets limit to meet their obligations. For instance, banks are most likely to use EM techniques such as overstating loan losses, reducing loan cancellations, and realizing abnormal gains in their portfolios to avoid regulatory requirements (AlGharaballi, 2013). Moreover, Han and Wang (1998) found that oil companies, especially during the period of the Gulf War, were likely to report income-decreasing accruals to avoid any political changes resulting from the increased retail prices. Key (1997) also reported that the management of Cable TV firms has a greater tendency for income-decreasing accruals within the period of Congressional scrutiny given the relationship between accruals and firm financial characteristics. In general, firm managers were found to have incentives to manipulate earnings by changing accounting methods, estimates, and accruals, to be consistent with the political and regulatory requirements.

3.4. EM Techniques

There are several popular methods of performing EM practices, which can be achieved either by flexibility in the accounting choices or by operating decisions. Therefore, The most prevalent EM techniques have been explained briefly within the following categories (Rahman, Moniruzzaman and Sharif, 2013).

3.4.1. 'Cookie Jar Reserve' Technique

This technique is also called 'income smoothing'. It is used to create cash reserves in a profitable year to be used in the future to offset any losses during upcoming unprofitable periods. In that sense, firms overestimate expenses in the current period and the difference between the actual and estimated expenses is put into a 'cookie jar' to be used later in a period in which the firm needs to show an increase in future earnings. Some examples of estimates where a cookie jar is produced include sales returns and allowances, inventory write-downs estimates, estimates of warranty costs, pension plan terminations, estimates of pension expenditures, estimates of bad debt and write-downs, and estimates of the degree of completion for long-term contracts (Rahman et al., 2013).

3.4.2. 'Big Bath' Techniques

The 'Big Bath' techniques are also referred to as time event techniques. They are most suitable for events that are out of ordinary, non-recurring, and irregular such as debt restructuring, asset writes down or change, segment shut down, and operating division termination (Rahman et al., 2013). This method is likely to be used when managers need to report bad news (e.g. loss resulting from substantial restructuring), which they announce once, directly, and then get it off the way. It is considered an acceptable approach to avoid any possible earnings surprises in the future. Under this technique, expenses associated with that event are inflated within the boundaries of the GAAP guidelines. Managers attribute expenses not according to the correct accounts but according to the event's time (Nia, Huang, and Abdin, 2015).

3.4.3. 'Big Bet on the Future' Technique and 'Flushing' the Investment Portfolio

This technique is most suitably used in the term of an acquisition. EM may occur when a company acquires another company. The acquiring organisation expects that the acquisition will enhance and improve the investment, thereby, generating more earnings on that investment. This technique allows the acquiring organisation to receive a guaranteed increase either in current or future earnings by purchasing the other firm (Nia et al., 2015). The acquiring organisation may write off the acquired company's R&D costs, which helps reduce the burden for future earnings. Moreover, if the

performance of the acquired organisation is favorable, the integration of the acquired company's results to the parent company enhances future earnings.

However, this approach leads to EM for two causes. First, writing off the acquired company's in-process R&D costs allows a substantial amount of the purchase price to be written off against the current earnings in the acquisition year. This will lead the reported earnings to be higher than they would have been without the write-off. Second, the integration of the acquired company's earnings into the corporate consolidated earnings may provide automatic earnings increase if the subsidiary was purchased on favorable terms (Rahman et al., 2013).

Firms have another opportunity to manipulate earnings by making investments in other companies. This technique is called 'flushing' investment portfolio. Under this technique, insiders can manipulate earnings by timing the sale of securities that have lost or gained value. For instance, if managers desire to report lower income, they sell securities and report an unrealized loss. On the contrary, if managers desire to report higher earnings, they sell securities with unrealized gain. Accordingly, any loss or gain from the sale of marketable securities should be reported as operating income (Rahman et al., 2013).

3.4.4. Writing off Long-Term Operating Assets and 'Throw Out' a Problem Child Technique

Firms utilize the flexibility of accounting practices to improve or reduce the firm's earnings through unrealized gain or loss from the sale of assets. If the company cannot meet the expectations of analysts, they are likely to record higher profits by selling assets with unrealized gain. On the contrary, if the company's profits are higher than analysts' expectations, the management will drop the recorded profits to the desired level by selling loss-making assets. This is because the GAAP gives managers the discretion to select the methods of write off, salvage value estimation, and useful life estimation. Thus, they can overestimate or underestimate future expenses that will, in turn, affect future earnings (Nia et al., 2015).

Similarly, if the firm's objective for the future is to increase its profits, it may sell one of the subsidiaries that have not been performing well, exchange its stocks using the equity method, or spin it off (i.e. the subsidiary may be expelled by the child problem). Therefore, earnings can be managed through the sale of a subsidiary, the exchange of its shares using the equity method and the subsidiary's trading company. The current shareholders become the owners of the sold subsidiary through the

distribution or the exchange of the subsidiary shares with the existing shareholders. As a result, no gain or loss is normally reported on a spin-off (Rahman et al., 2013).

3.4.5. Shrink the Ship

This technique is largely used in the organisations that aim to develop its creditability, reliability, and its reputation in the capital market, to meet or exceed the earnings per share (EPS) forecasts of analysts, and to maintain/raise stock prices. Therefore, the company begins to repurchase its stock (stock buyback) from the market (Rahman et al., 2013) which in turn reduces the number of shares outstanding, which will positively affect EPS and price-to-earnings (P/E) ratio. Besides, (ROA), and (ROE) will be improved as a result of the less outstanding assets and equity resulting from the repurchase process. However, some states, such as the U.S. and the U.K., have forbidden this practice but permitted stock repurchase. In this stock repurchase, cash is distributed to existing shareholders in exchange for a portion of the company's outstanding equity (Graham, Harvey, and Rajgopal, 2005).

3.5. Methods of Opportunistic Earning Management

Managers have a variety of methods when they intend to use accrual discretions for opportunistic objectives. Some of these methods are based on management interventions in the financial reporting process, in the accounting rules and regulations, in the changes of estimates in accounting methods, and in the choice of accruals, which are considered categories of Accrual EM (AEM). On the other hand, some methods are based on management interventions in operating, investing, and financing activities of the firm, which are considered categories of REM (Rebai (2010); Karuntarat (2013); Emamgholipour et al., (2013).

3.5.1. EM through Accruals (AEM)

Managers are easily allowed to choose any permissible accounting methods and their estimates (Dechow and Skinner, 2000) due to their capability and power to use their judgment and discretion in accounting. The use of accruals is considered one of the methods of managers' discretions. Even though not all accruals are related to earnings, accruals are still closely related to EM practices. Accruals are classified into non-DAs (normal accruals) and DAs. Non-DAs are based on management's estimations according to the economic performance of companies. DAs is managed throughout the accounting principles constraints. Thereby, many organizations use DAs to manipulates

the information of their earnings. For example, Schipper (1989) and Habbash (2010) reported that firms inflate earnings by using several methods, one of which is using DAs and skew stock market valuations before an IPO to satisfy specific regulatory thresholds to maintain listing status, to qualify for IPOs and rights issues, or to avoid being delisted or trading limitations (special treatment). On the contrary, controlling investors might tunnel resources or bring up earnings for the sake of avoiding losses or exposing any reduction in reported earnings. Hence, related-party transactions, transfer pricing, corporate loans, and local government subsidies can be used as tools to beat regulatory benchmarks (Ghazali et al., 2015).

Thus, Dechow, Sloan, and Sweeney (1995), Rebai (2010), Karuntarat (2013), Emamgholipour et al., (2013) suggested that accounting/abnormal accruals are a more favored indicator of EM than cash earnings due to several reasons. Firstly, cash earnings cannot be easily managed and manipulated (Schipper, 1989). Secondly, accounting standards are sufficiently flexible to respond to demand. Although accruals present flexibility in financial reporting because they are not observable cash outcomes at the time of reporting and require estimates of future cash outcomes, estimation errors and their subsequent corrections create noise that reduces the benefits accruals. Thirdly, the difficulty to classify the accruals into managed and unmanaged components (Jones, 1991; Dechow et al., 1995; Habbash, 2010; Al Gahmadi, 2012).

3.5.2. EM through Real-based Activities (REM)

Recent studies revealed that organizations manipulate earnings not only through accrual but also through manipulating real activities with direct cash flow consequences to conceal their true economic performance. Although there is a growing interest and recognition of real earnings activities in practice, studies related to such activities are still rare in the finance and accounting literature (Roychowdhury, 2006; Al Gahmadi, 2012).

The manipulation of real activities differs from normal operating activities and occurs when the timing/structure of transactions and investment and allocation of resources have been changed by the managers to adjust accounting profits (such as R&D, advertising and selling expenditures). Such practices influence directly on operating activities and cash flows (Roychowdhury, 2006).

3.6. Differences between Real-based EM and Accrual-based EM Activities.

When managers make decisions regarding which type of EM could be suitably applicable in the organisation, they should conduct a cost-benefit analysis for the alternative EM mechanisms and analyze some critical differences between them. Potential benefits include many elements such as the managers' welfare enhancement and the concealing of the firm's underlying economic performance, while the potential costs include: (1) The drop in firm value as a result of the managers' suboptimal business decisions, (2) The fall in a firm's stock price as a result of discovering the accrual manipulation, (3) The damage of reputation in the labor market as a result of the aggressive EM (Zang, 2011).

Real and accrual-based activity EM methods can help managers achieve the same objectives. However, there are several differences between the two types of EM that motivate managers to prefer one type over another (Gunny, 2010). The thorough examination of these differences may help understand the reasons behind managers' tendency to use certain types and is expecting the types managers may use in certain circumstances (Roychowdhury, 2006; Cohen et al. 2008; Habbash, 2010; Zang, 2011; Achleitner, et al. 2014). These differences are classified into the following eight classes.

3.6.1. The Extent of EM

The EM literature presents that the extent of Accrual-based activity EM depends on the flexibility of accounting standards and past manipulations. By contrast, the extent of Real-based activity EM depends on the nature of business and variances of activities (Roychowdhury, 2006; Cohen et al. 2008).

3.6.2. Timing of EM Practice

Accruals manipulations could occur afterward at the end of the fiscal year. Managers implement the estimated discretionary accrual based on realized outcomes. On the contrary, although managers may handle profitability through real actions at any time during the fiscal year, they may face uncertainties when conducting real earnings manipulations. In this case, they fail to determine the exact amount of real earnings manipulations due to the difficulty to control the precise extent of real activities, which may be higher or lower than the expected amount. Consequently, they may offset an

unexpectedly high (low) impact by using less/more accruals manipulations (Zang, 2012).

3.6.3. EM and Tax Incentives

Due to tax incentives, real earnings manipulation is costlier than accruals earnings manipulation due to the high level of book-tax conformity. When the management manipulates earnings by real activities such as cutting R&D expenditures and/or over-production inventory, this directly and positively affects cash flows, thereby, increasing the taxable income that can be subject to a high tax expense during the current period. On the contrary, accrual manipulations can increase the taxable income without incurring tax expenses during the current period. For instance, incidences, like changing the estimated useful life of long-term assets, lowering bad debt expenses, reducing the write-down of impaired assets, and having aggressive unearned revenue are examples used to raise book income without affecting the current taxable income. Therefore, firms with high marginal tax rates are more likely to follow accrual manipulation than REM (Zang, 2012).

3.6.4. Detection of EM Practice

Accrual earnings manipulations are constrained by the flexibility of accounting practices, the quality of big 4 auditor, and governance guidelines. Consequently, managers expect that accrual manipulations can be easily detected if they were audited by high-quality auditors and if they were greatly inspected by outsiders and regulators. AEM can also be discovered due to the limited flexibility of firms' accounting systems. Therefore, according to the inferences of Roychowdhury (2006); Cohen et al., (2008); Habbash (2010), the enforcement of the Sarbanes–Oxley Act (SOX) after the publicized accounting scandals, managers are encouraged to shift away from accrual-based activities to REM to avoid the possibility of the detection of their accrual earnings manipulations (Graham et al., 2005).

3.6.5. Consequences of Earnings Management

Both accrual manipulations and REM impose costs on the organisation, however, they have different levels of constraints which influence the ability to use them. Managers choose between them according to their relative costliness, by which the firm's operational and accounting environment are identified. For instance, costs of detecting AEM can be earning restatements, shareholders' litigations, qualified audit

reports, loss of managers' reputations, and negative effects on stock performance. Costs of undiscovered AEM are audit costs, eventual reversal, and constraints on future reporting flexibility. On the other hand, the consequence of REM is the negative economic impact on the firm's future value (Gunny, 2010). Therefore, for a given level of desired earnings, if the discretion is more constrained by one of the EM methods, managers may make use of the other (Roychowdhury, 2006)

3.6.6. Cash Flows and EM

Although managers might favor REM over AEM because REM is less subject to auditing, regulators, and governance constraints compared to AEM. However, REM imposes more costs to organisations and their stakeholders. REM practice has a severe negative impact on the optimal business operations and future cash flows which may destroy the long-term value of the firm (Gunny, 2010; Cohen and Zarowin, 2010; El-Kalla, 2017). Consequently, from a rational perspective, managers have more tendency to get involved in REM after they have exhausted the choices of AEM because it is not logical to consider that REM is less costly both ex-ante and ex-post than AEM (Roychowdhury 2006; Cohen et al., 2008).

3.6.7. Investor Protection Rights, Ownership Structure, and EM

Investor protection rights place limits on management in the application of AEM. Previous studies identified that managers in common-law countries, which are characterized by diffused ownership and high investor protection rights, are likely to manipulate earnings through REM rather than AEM. Consequently, Roychowdhury (2006), and Hashim and Devi (2012) suggested that institutional ownership can be used as powerful monitoring mechanisms on the discretionary behavior of the management. When institutional investors are more sophisticated and long-term oriented, they reduce the likelihood of cutting R&D expenditures to avoid any losses and to maintain economic long-term performance. Therefore, they exert a great effort to control and monitor any manipulations especially through real activities more than accrual earnings (Koh, 2007)

On the other hand, managers of Civil law countries which are characterized by low investor protection rights and more ownership concentration and, find it attractive to conceal their earnings through AEM. For instance, Achleitner et al., (2014) in German context concluded that family firms rather than non-family firm have less

tendency to engage in REM due to their large ownership stakes, and their fear from the negative impact on the firm's long-term value. However, their study showed that family firms strategically engage in AEM practices, to help families, retain trans-generational control (i.e. to avoid the breach of agreement sections or influencing dividends). Based on the Agency Theory, family-owned firms especially if they are long-term oriented, are more concerned with aligning the interest of shareholders with management objectives more than widely-held firms. On one hand, family firms intend to use accounting discretion to meet debt-related earnings targets, i.e. debt agreements or earnings smoothing to level dividend pay-outs, which can be achieved by AEM. Since REM is associated with negative economic performance consequences, there is no need to engage in it (Gunny, 2010). On the other hand, it is more likely for managers in a widely-held firm to engage in REM rather than AEM because they have strong incentives to manage earnings for both compensation and reputation purposes. Since, AEM could be easily detected by the market (Wang, 2006).

3.6.8. GAAP and Earnings Management

AEM is found to be more attractive and favorable to be exercised by organisations because it can be done within the boundaries of GAAP, and its detection cost is relatively low. However, the ambiguity of GAAP allows managers to make judgments that can directly affect earnings, and due to accruals' reversing nature, the firm's ability to continue to engage in AEM becomes restricted. This reversing nature of AEM can make the firm face the problem of overcoming the potential reversal of last year's AEM to influence the current year's earnings (Xie et al. 2003). This downside shifts firm management to utilize what is called 'Non-GAAP' EM as it is likely to go undetected, less costly than REM, and enables the management of earnings by large amounts to achieve specific benchmarks to sustain overvalued equity.

However, Desai, Hogan, and Wilkins, (2006) claimed that despite the advantages of Non-GAAP, it is the costliest form of EM in terms of the capital market consequences and the reputational costs that managers incur in managerial labor markets. Therefore, the trade-off between the two methods is based on the relative costs to the firm and the timing of conducting the manipulations. Many factors should be taken into consideration while choosing between them such as the financial health of the organisation, the level of scrutiny from institutional ownership, the competitive status in the industry, the higher level of scrutiny of accounting practices after the

passage of the SOX, accounting flexibility, audit quality, the cultural, legal, and regulatory system, and contingency environment surrounding the organisation.

3.7. Models Used to Measure Accounting/Real EM Practices

When managers perform EM manipulations, they are trying to make it as invisible and undetected as possible. This makes EM measurement a challenging task for researchers, stakeholders, and especially investors. Investors find it difficult to discover these manipulations by studying separate cases. However, detection itself is not going to be problematic for researchers if they studied this practice by focusing on a large data set for discovering systematic patterns.

3.7.1. Accruals EM Measurement Models

Accrual-based EM cannot be directly measured and detected. As a result, various models were developed to estimate and detect potential EM practices based on accruals. The first generations of earlier studies focused on measuring EM based on a specific accounting method choice (a single accrual approach). The second generation of EM studies focused on total accruals such as those of Healy (1985) and DeAngelo (1986) who focused on estimates of non-DAs (Habbash et al., 2013).

Several methods can be applied for detecting EM. However, three of which are the most commonly used, and they were explained by Habbash (2010), Alghamdi (2012) and Algharaballi (2013). These methods are Specific Accruals, the Distribution Frequency of Earnings, and Aggregate Accruals. However, no existing method is considered the optimal method to measure EM, the aggregate accrual method is considered as the most commonly used method for detecting EMs. In the following section, techniques and methodologies for detecting opportunistic EM are highlighted in general, with more emphasis on the Aggregate Accruals method.

3.7.1.1. The Specific Accrual Method

The empirical and theoretical literature that focus on a specific accrual method for detecting earnings manipulations is uncommon (Healy and Wahlen, 1999). Discretionary accruals are based on single accruals such as loan loss provisions, deferred tax expenses, bad debt provisions, depreciation estimates, and revenues (Algharaballi, 2013). This method is useful for specific industries where they can determine and model the behaviors of each specific accrual to distinguish between DAs and non-DAs. This method can be used by banking and insurance sectors and within a

specific transaction context to help set standards and determine points of weakness and deficiencies in standards (Habbash, 2010; Cohen and Zarowin, 2010).

Stubben (2010) developed the discretionary revenue model and used sales revenues to measure accounting discretion rather than aggregate accruals. He proposed the discretionary revenue model rather than accounting discretion to measure EM. He suggested that revenue is the only component that is more likely to be manipulated. He proposed that the revenue model is less biased, more well developed, and more specific than other common methods of DAs. The discretionary revenue model is represented by the following equation:

$$(1) \Delta \text{REC} = \alpha + \beta \Delta \text{REV} + \varepsilon$$

The estimate from the revenue model is useful as a measure for uncovering revenue management as a proxy for earnings manipulation. The linear regression between reported revenue and accounts receivable is the basis for this model. It concentrates on discretionary revenues acquired from 'premature revenue recognition', which is a common type of accounting discretion over revenues. Prior studies such as Stubben (2010) preferred to decrease the reliance on aggregate accruals and to focus more on specific accruals. However, several studies stated that the specific accrual method has some limitations; first, the model can fail to detect EM if the specific accrual represents a small portion of DAs, where other DAs are manipulated. Second, the construct validity for the specific accrual method is low compared to total accruals since a single accrual may be affected by other factors. Third, this method requires each accrual to have a separate model to be influenced by the other hypothesized factors. Therefore, this approach has not the flexibility in investigating multiple relationships between additional variables such as CG mechanisms and EMs. Fourth, there is a limitation from generalizing the study findings because the number of organisations that are likely to manipulate earnings through specific accruals is very low. Fifth, specific accruals may be effective in detecting manipulation in some circumstances and may fail to be effective in other situations (Habbash, 2010; AlGharaballi, 2013).

3.7.1.2. The Distribution Method

This approach is based on investigating the statistical properties of earnings to demonstrate the behavior of earnings around a specific criterion (threshold) to predict earnings manipulation. This method concentrates on studying the cross-sectional

distribution and variations of the reported earnings to find evidence that firms use EM to avoid slight earnings decreases (Habbash, 2010; Algharaballi, 2013).

This approach is described as more effective and objective than other methods of detecting/predicting EM because it can capture the effect of EM without estimating noise created by abnormal accruals (Habbash, 2010; Algharaballi, 2013). However, this approach fails to detect the magnitude of EM or to reveal the methods used to manage earnings (Healy and Wahlen, 1999). This method cannot identify exactly what the management incentives for managing earnings are, because it cannot distinguish between DA and non-DA (Algharaballi, 2013). Other scholars also revealed that this approach is not enough effective because the distribution pattern does not specify adequate evidence for the existence of EM. The shape of frequency distribution may be affected by some factors such as sample selection criteria, deflation, and variation between the features of observations to the right and the left of zero (Durtschi and Easton, 2005; Algharaballi, 2013).

3.7.1.3. The Aggregate Accruals Method

The aggregate accruals models are developed to include more comprehensive methods in detecting discretionary components, due to the above-mentioned limitations for the previous two methods. It is important to calculate total net accruals to facilitate the estimation of DAs. The absolute value of DAs is used to estimate the expected level of earnings manipulations and misleading reporting decisions (Xie et al., 2003; Habbash, 2010; Algharaballi, 2013).

Healy (1985) classified accounting accruals into DAs (managed determined) and non-DAs (non-managed determined). On one hand, non-DAs is economically determined, over which managers have little control. On the other hand, DAs can be used as a proxy for EM practice which is driven by managers .

The Aggregate Accruals method faces the difficulty to classify accruals into DAs and non-DAs. As a result, previous research was concerned with setting assumptions in estimating non-DAs. Then, non-DAs is excluded from total accruals to calculate DAs (Bartov, Gul, and Tsui, 2001). The traditional balance sheet approach and the cash flow statement approach are the two approaches used to calculate total accruals. According to Hribar and Collins (2002), the total accruals is calculated using balance sheet approach as follows:

$$(2) \text{ TAC}_t = \Delta \text{CA}_t - \Delta \text{Cash}_t - \Delta \text{CL}_t + \Delta \text{Debt}_t - \text{DEP}_t$$

Where:

ΔCA_t : Difference in current assets in year t .

$\Delta Cash_t$: Difference in cash and cash equivalents in year t .

ΔCL_t : Difference in current liabilities in year t .

$\Delta Debt_t$: Difference in debt included in current liabilities in year t .

DEP_t : Depreciation and amortization expense in year t .

Under the cash-flow approach, it is more straightforward to calculate net accruals because net income is stated explicitly on the reports, total accruals can be calculated as follows:

$$(3) TAC_t = NI_{it} - OC_{it}$$

Where:

NI_{it} : Earnings before extraordinary and abnormal items for the firm i in year t

OC_{it} : Operating cash flow for the firm i in year t .

Although the balance sheet approach is used extensively in previous studies. As the balance sheets are more available than cash flow statements, particularly before the period in which the preparation of cash flow statements was enforced by the US government according to SFAS 95 in November 1987.

After that, Hribar and Collins (2002) advocated to use the cash-flow approach to calculate total accruals rather than the balance sheet method due to several reasons. First, the balance sheet does not directly provide detailed information about accrual earnings or cash earnings. Therefore, it is critical to conduct several calculations to get this information. Similar specific classifications of the balance sheet items are also not available among firms. Second, the non-current accruals does not be taken into consideration using balance sheet method except for amortization and depreciation, while both current and non-current accruals are taken into account using the cash flow approach. Accruals from the current profit are converted into future profit by omitted non-current accruals. They are also rendered uncaptured by the balance sheet approach. Third, the balance sheet approach may include some measurement errors, which may lead to a faulty conclusion regarding the presence of EM when no EM was performed. Fourth, the balance sheet approach is highly misleading in detecting earnings manipulations especially in some non-articulation events such as mergers and acquisitions and firms with discounting operations (Algharaballi, 2013).

The most commonly discretionary accrual models that are developed for detecting EM are Healy (1985) model, the DeAngelo (1986) model, the industry model, the Jones (1991) model, the Modified Jones model, the Kang and Sivaramakrishnan (1995) model, the Cashflow model, and the performance-matched discretionary accruals model (Habbash, 2010; Algharaballi, 2013).

Previous and recent studies are more inclined to use the Jones (1991) model due to its popularity in the accounting research. For instance, Dechow et al., (1995) developed the model by replacing changes in revenues by changes in trade receivables. They referred to this model as the Modified Jones model.

Although, Jones and modified Jones model are the most popular method for detecting EM (Jones, 1991 and Dechow et al., 1995). Defond and Jiambalvo (1994) recommended the use of cross-sectional approach for Jones and Modified Jones model rather than the time-series approach to permit industry-wide economic conditions. The total accruals were categorized into four components by Teoh, Welch, and Wong (1998): discretionary and non-discretionary long-term accruals; and discretionary and non-discretionary current accruals. Then, that model which was called the Jones model was extended by Kasznik (1999) and Kothari, et al. (2005) by looking at the changes in operating cash flow and lagged current accruals in a bid to control the misspecification problem in addition to enhancing the reliability of measuring discretionary accruals when it comes to its application to organisations with extreme financial performance. Another major development suggested by Kothari et al., (2005) was the importance of including the adjusted performance discretionary accruals to control for performance (ROA) when measuring discretionary accruals. The following section presents briefly an explanation for the suppositions and restrictions of each model followed by a discussion of the reasons for their usage or elimination.

1. The Healy Model (1985)

According to the Healy Model (1985), managers have more tendency to increase the firm's earnings to raise their bonus. This model suggests that non-DAs is constant in every period, while DAs is changing over time. The model uses the average aggregate accruals (TA_{τ}) scaled by lagged total assets ($A_{\tau-1}$) over the estimation period prior to the event period to estimate non-DAs. Thus, non-DAs in the event year t (NDA_t) is calculated as follows:

$$(4) NDA_t = 1/n \sum_{\tau} (TA_{\tau}/A_{\tau-1})$$

Where,

NDA_t : Nondiscretionary accruals in year t scaled by lagged total assets;

TA_{τ} : Aggregate accruals;

n : The number of years in the estimation period;

τ : A year subscript for years (t-n, t-n+1, ..., t-1) included in the estimation period.

Although this model is easy to use, it has limitations. First, Healy (1985) assumed that non-DAs are constant over time which is not consistent with what actually occurs in real life because non-DAs change according to variations in business activities or economic conditions (Dechow et al., 1995). Second, the model assumes that EM does not take place in the event period. Third, when non-DAs is relatively high compared to DAs, total accruals cannot be taken as a good measure for DAs (Habbash, 2010; AlGhamdi, 2012; AlGaraballi, 2013).

2. The DeAngelo Model (1986)

This model looked forward to avoiding the drawbacks of the Healy (1985) model by disregarding the benchmark of what the estimated accruals may be. The DeAngelo (1986) model used the last year as the estimation period, the Healy (1985) used several years as estimation periods. DeAngelo (1986) suggested to get the difference between total accruals in the current period and in the prior period scaled by lagged total assets to calculate DAs. Thus, the model for discretionary accruals (DA_t) is:

$$(5) DA_t = (TA_{it} - TA_{it-1})/A_{it-1}$$

Both Healy (1985) and DeAngelo (1986) suggested that there are no fluctuations in business activities so accruals will not be influenced or changed over time. This model is easy to be applied. However, this model suggests that non-DAs is constant over time and average DAs in the predicted period is equal to zero. Therefore, both models will not have non-DAs error (Dechow et al., 1995).

3. The Industry Model (Dechow and Sloan, 1991)

In contrast to the Healy (1985) and the DeAngelo (1986) models, Dechow and Sloan (1991) designed and developed the Industry model, which does not assume that DAs is fixed over time (AlGharaballi, 2013) This model discriminates between different industries, based on 2-digit SIC codes. The model is as follows:

$$(6) NDA_t = \beta_1 + \beta_2 median_j(TA_t/A_{t-1})$$

Where,

$median_j(TA_t/A_{t-1})$: The median of total accruals, scaled by total assets at the end of year $t-1$, for firms in a specific industry.

The median of total accruals is measured every industry year. The effect of the medians of total accruals per industry on non-DAs is then identified. DAs is calculated as the deviation from the industry median of total accruals. However, there are several

disadvantages mentioned by Dechow et al., (1995). First, the model supposes that there is no change in non-DAs among firms in the same industry. Second, the change of correlation of non-DAs among firms within an industry doesn't be taken into consideration. Third, the median is less exposed to the variations in specific observations compared to the mean. Therefore, there is a chance that the industry median will change even if non-DAs changes over time as a result of the changes in business activities (Karuntarat, 2013).

4. The Jones Model (1991)

Kaplan (1985) suggested that total accruals might result partly from changes in economic conditions and partly from managerial discretion. According to the Jones (1991) model, Kaplan's suggestion regarding the impact of changes in economic conditions and business activities is taken into consideration. To calculate non-DAs, Jones (1991) proposed a regression model taking into consideration changes in revenues and the plant, property and equipment variable, which are affected by economic conditions to control for changes resulting from depreciation and any variations in the firm's business activities. The Jones model was found by earlier studies to be more influential than both the DeAngelo model and the Healy model. Since, it identifies DAs that is consistent with the opportunistic accruals as well as the performance measures hypotheses (Karuntarat, 2013). The first step in this model calculates total accruals using financial statements as follows:

$$(7) \quad TAC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \beta_1(\Delta REV_{it}/TA_{it-1}) + \beta_2(PPE_{it}/TA_{it-1}) + \varepsilon_{it}$$

Where,

TAC_{it} : Aggregate accruals;

TA_{it-1} : Book value of total assets of firm i at the end of year $t-1$;

$\Delta REV_{it}/TA_{it-1}$: change of Sales revenues scaled by TA_{it-1} ;

PPE_{it}/TA_{it-1} : Gross property, plant, and equipment scaled by TA_{it-1} ;

$\alpha_1, \beta_1, \beta_2$: Estimated parameters;

ε_{it} : The residual, which represents the firm-specific discretionary portion of total accruals.

Then, the estimated coefficients α , β_1 and β_2 are calculated from the above equation (7) with the residuals representing the discretionary portion. DAs is then calculated as follows:

$$(8) \quad NDA_{it} = (TAC_{it}/TA_{it-1}) - \alpha_1(1/TA_{it-1}) + \alpha_2(\Delta REV_{it}/TA_{it-1}) + \alpha_3(PPE_{it}/TA_{it-1})$$

NDA_{it} : Expected nondiscretionary accruals for sample firm i in year t ;

$\alpha_1, \alpha_2, \alpha_3$: Coefficient estimates.

Jones (1991) regresses total accruals on the change in revenues and the historical costs of property, plant, and equipment. DAs is represented by the error term. The Jones model can be considered as one of the most widely used models in the detection of earnings manipulations. However, this model has two drawbacks suggested by Dechow et al. (1995). First, although this method considers revenues as part of non-discretionary accruals, Dechow et al. (1995) suggested that a portion of revenues, namely accounts receivable, should be attributed to discretionary accruals. Second, this model may provide biased accruals because it omits some expenses (Habbash, 2010).

5. The Modified Jones Model (Dechow, Sloan, and Sweeney, 1995)

Dechow et al., (1995) proposed a modification to the original Jones model to develop the capability and effectiveness in detecting sales-based manipulations. The Jones model does not take into account the fact that there is a part of the earnings directly under the control of the management, which is accounts receivable. Consequently, it was assumed by Dechow et al. (1995) that the source of earnings manipulation might be the revenues and changes in credit sales. Hence, revenue changes should be adjusted for a change in receivables in the event period, taking into consideration that all the changes in the uncollected credit sales at the end of an event period result from EM (Habbash, 2010; AlGharaballi, 2013). The coefficient is estimated by regressing total accruals on gross property, plant, and equipment, changes in cash revenues and change in receivables. Afterwards, these coefficients are used to measure unmanaged accruals as follows:

$$(9) \quad NDA = \alpha_1 \left(1/TA_{it-1} \right) + \beta_1 \left(\Delta REV_{it} / \Delta REC_{it} \right) / TA_{it-1} + \beta_2 \left(PPE_{it} / TA_{it-1} \right)$$

Where,

NDA: Non-discretionary accruals;

TA_{it-1} : Book value of total assets of firm *i* at the end of year *t-1*;

$\Delta REV_{it}/TA_{it-1}$: Change in sales revenue scaled by TA_{it-1} ;

$\Delta REC_{it}/TA_{it-1}$: Change in the net receivables scaled by TA_{it-1} ;

PPE_{it}/TA_{it-1} : Gross property, plant, and equipment scaled by TA_{it-1} ;

$\alpha_1, \beta_1, \beta_2$: Estimated parameters.

Dechow et al., (1995) proposed the Modified Jones model and favoured its application in detecting EM more than the Healy model, the DeAngelo model, the Industry model, and the Jones model. The Jones model cannot detect earnings manipulations if they are done through the account receivables. However, the Modified Jones model is more likely to result in a type II error than the other models.

For instance, Habbash (2010) was conducted to examine the efficiency and effectiveness of discretionary accruals methods in detecting the magnitude of EM. The Jones model and the Modified Jones model were revealed by the study to be the most effective models in discovering opportunistic earnings practices. Subramanyam (1996) and Bartov et al. (2001) compared between the Jones model and the modified Jones model using two different regression approaches when predicting DAs. They found that the cross-sectional Jones and Modified Jones model are more effective and powerful than the times-series Jones model (DeFond and Jiambalvo, 1994). The cross-sectional model is driven by industry and year and is illustrated by having a large sample and more observations. In addition, it does not postulate the stationarity of DAs (AlGhamdi, 2012; Spinos, 2013).

6. The DeFond and Jiambalvo Model (1994)

From the previous discussion, it is noted that the Jones (1991) and the Modified Jones (1995) models were originated as time series models. However, two similar models have been proposed by DeFond and Jiambalvo, (1994) based on cross-sectional analysis instead of time series analysis (the cross-sectional Jones model and the cross-sectional Modified Jones model).

The cross-sectional approach is based on using the firms that have similar characteristics within the same industry to estimate the models' coefficients. Accordingly, Jones/Modified model based on cross sectional approach allow to controls for the specific effects of the year and the industry. Therefore, this model allows for the inclusion of short history firms which produces greater samples and more observations, and it does not assume the stationarity assumed in DAs models.

Based on the cross-sectional Jones and Modified Jones models, the formulation of the industry portfolio is required to predict their initial regression. The normal level of non-DAs is represented by these estimates based on the industry average. Cross-sectional regression is developed separately in every year for each portfolio to estimate the coefficients α_1 , β_1 , and β_2 as in the following equation:

$$(10) \quad TAC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \beta_1(\Delta REV_{it}/TA_{it-1}) + \beta_2(PPE_{it}/TA_{it-1}) + \epsilon_{it}$$

The coefficients are estimated in the regression model in the first equation and are used as benchmarks to forecast non-discretionary accruals among firms in each portfolio. Non-DAs is then calculated based on the Modified Jones model as follows:

$$(11) \quad NDA = \alpha_1 \left(1/TA_{it-1} \right) + \alpha_2 \left(\Delta REV_{it} / \Delta REC_{it} \right) / TA_{it-1} + \alpha_3 \left(PPE_{it} / TA_{it-1} \right)$$

Finally, The DAs is calculated by getting the difference between the sample firm's reported total accruals and non-DAs (fitted values) estimated from equation (2). In case non-zero DAs was found, it can be automatically inferred to the existence of EM during the year. Positive DAs can be represented as income-increasing EM, and vice versa. While the expected DAs is defined in equation (3) as follows:

$$(12) \quad DA_{it} = (TAC_{it} / TA_{it-1}) - NDA$$

Several studies such as those of Habbash (2010) and AlGharaballi (2013) favoured to implement the cross-sectional approach rather than the time series approach for detecting earnings manipulations due to several reasons; first, better-specified parameters and lower standards of error for the coefficients can be provided; second, outliers in cross-sectional approach can be reduced in comparison to the time series approach; third, problems of survivorship bias related to the time-series approach can be avoided. Fourth, in most IPO settings, the cross-sectional approach is more effective compared with the time series approach especially in case of the scarcity of data; fifth, cross sectional approach can obtain a reasonable number of observations more than time-series approach. However, the cross-sectional jones model may have some measurement errors if the firms in the same industry are not homogeneous because this model is based on the assumption that companies in every industry are similar regardless of their operating strategies and product life cycle (Dechow et al. 1995; Cohen and Zarowin, 2010; Habbash, 2010; AlGharaballi, 2013).

7. Performance-Adjusted Discretionary Accruals (Kothari, Leone, and Wasley, 2005)

Recently, EM literature emphasized on taking into the consideration the performance when selecting EM manipulations. Studies such as those of Dechow et al. (1995), Kasznik (1999) as well as Kothari et al., (2005) expected that DAs and IPOs' performance (ROA) are positively and directly correlated. Organisations within IPOs have more tendency to have high performance and favourable stock market conditions. Due to the problem of heteroskedasticity and misspecification issues that appeared in other aggregate models when estimating accruals, the influence of firms' performance using lagged ROA is supposed to be excluded to overcome the sever measurement

errors in DAs that may appear in the Jones and the Modified Jones models (Habbash, 2010).

Subsequently, two techniques called performance matched-firm approach and portfolio (adjusted performance approach) technique were proposed to control for the problem of performance related misspecification (Kothari et al., 2005). As result, the correlation between DAs and performance can be removed by those techniques to adjust DAs (Kothari et al., 2005).

The performance matched approach matches each firm's year observations with another firm's observations from a similar industry, year, with the closest ROA. However, this method is not feasible in case of a small size of the sample. In addition, The adjusted performance approach or the linear regression-based approach are proposed as alternative models by Kothari et al., (2005). However, Kothari et al., (2005) stated that performance discretionary accruals model is more specific in testing DAs rather than the linear regression-based approach due to the non-linear relationship between accruals and performance.

Similarly, this model employs the OLS regression to estimate the coefficients $\alpha_1, \beta_1, \beta_2,$ and β_3 for each industry in each year to extract non-DAs. The model is as follows:

$$(13) \quad TAC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \beta_1(\Delta REV_{it}/TA_{it-1}) + \beta_2(PPE_{it}/TA_{it-1}) + \beta_3ROA_{it} + \varepsilon_{it}$$

Where,

TAC_{ijt} : Total accruals

TA_{ijt-1} : Total book value of assets;

ROA_{ijt-1} : ROA for the company in the current year;

ΔREV_{ijt} : Change in revenues scaled by total assets;

ΔREC_{ijt} : Change in account receivable scaled by TA;

PPE_{ijt} : Gross property plant and equipment for sample firm i in industry j for year t ;

$\alpha_1, \beta_1, \beta_2, \beta_3$: Regression parameters;

ε_{ijt} : Error term for sample firm i in industry j for year t .

All variables are scaled by lagged total assets. The discretionary component of accruals is then represented by the error terms which are estimated based on the difference between total accruals and non-DAs.

8. The Cash Flow Model Employed by Kasznik (1999)

The cash flow model is an extended model from the Jones model. It was proposed by Dechow (1994) as accruals and cash flows were found to have a strong negative correlation, and thus, Dechow (1994) recommended to involve cash flows in models used in future research. Hence, Kasznik (1999), DuCharme, Malatesta and Sefcik, (2001) and Lara, Osma, and Neophytou, (2009) extended modified Jones model by including operating cash flow as an explanatory variable.

$$(14) \quad TAC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \beta_1(\Delta REV_{it}/TA_{it-1}) + \beta_2(PPE_{it}/TA_{it-1}) + \beta_3CFO_{it-1} + \varepsilon_{it}$$

Where,

TAC_{ijt} : Total accruals

TA_{ijt-1} : Total assets of the company i at the end of year $t-1$;

CFO_{it-1} : Cash flow from operating activities for sample firm i in industry j for year $t-1$;

ΔREV_{ijt} : Change in revenues;

ΔREC_{ijt} : Change in account receivable;

PPE_{ijt} : Gross property, plant, and equipment for sample firm i in industry j for year t ;

$\alpha_1, \beta_1, \beta_2, \beta_3$: Regression parameters;

ε_{ijt} : Error term for sample firm i in industry j for year t .

The coefficients are estimated in the regression model in the first equation and are used as benchmarks to forecast non-DAs among firms in each portfolio. Non-DAs is then calculated as follows:

$$(15) \quad NDA = \alpha_1(1/TA_{it-1}) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{it-1}} \right) + \alpha_4 CFO_{it-1} + \varepsilon_{it}$$

After that, error terms are estimated by taking the difference between total accruals and non-DAs which represents the components of DAs.

9. Raman and Shahrur Model (2008)

An expansion of the Modified Jones Model was proposed by Raman and Shahrur (2008) by controlling for performance based on Kothari *et al.*'s performance matching and growth. Prior studies such as (Cohen *et al.*, 2008) suggested that firms with higher growth opportunities have more tendency to have higher accruals. Thus, growth was added to the model and total accruals were estimated as follows:

$$(16) \quad TACC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \alpha_2((\Delta REV_{it} - \Delta REC_{it})/TA_{it-1}) + \alpha_3(PPE_{it}/TA_{it-1}) + ROA + GO + e$$

Where,
 $TACC_{it}$: Total accruals;
 TA_{it-1} : Lagged total asset;
 ΔREV_{it} : Change in operating revenues;
 ΔREC_{it} : Change in net receivables;
 PPE_{it} : Gross property, plant, and equipment;
 GO : Growth opportunities;
 $\alpha_1, \alpha_2, \alpha_3$: Regression parameters;
 e : Error term.

From the above discussion regarding the different techniques used in measuring EM manipulations based on accounting discretion, it can be theoretically and empirically concluded that aggregate accruals models compared with other model have significant advantages over other models. Furthermore, a great number of studies concentrated on the aggregate accruals approach as a proxy for EM due to its great advantages over other methods (Algharaballi, 2012; Elkalla 2017).

It can be concluded at this stage that if the objective of this research is to investigate the magnitude of DAs as proxy for EM practices, it is more favourable to use the aggregate accrual approach rather than the specific accruals or frequency distribution approach. The specific accrual approach is more relevant for examining the correlations between specific accrual and hypothesized factors, which requires modelling for each component of accruals according to the hypothesized factors. The findings from specific accrual method cannot be generalized especially if the specific accruals are not sensitive enough. Regarding the distribution frequency method, it cannot identify accurately the magnitude of opportunistic earnings manipulations (Habbash, 2010; Algharaballi, 2012; Elkalla 2017). Within this context, the aggregate accrual approach is best utilized as determining the level of opportunistic behaviours. The main objective of this study is to investigate how the compliance with CG could reduce the magnitude of earnings manipulations. Therefore, for the purposes of this study, this study employee the following four models of aggregate accruals based on cross sectional approach: the Modified Jones model, the performance adjusted discretionary accruals model, kasznik model and Raman and Shahrur model.

3.7.2. Real EM Measurement Models

REM is conducted by manipulating real-earnings based activities throughout the year. Roychowdhury (2006, p.3) defined REM as: “A departure from normal operational practices, motivated by managers’ desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the

normal course of operations. These departures do not necessarily contribute to firm value even though they enable managers to meet reporting goals”.

According to Roychowdhury (2006), REM may stem from various operating decisions. Three metrics (Proxies) were proposed to examine the level of real earnings manipulations: the abnormal levels of cash flows from operations (ABCFO), production costs (ABPROD), and discretionary expenses (ABDISCX). Subsequent studies, such as those of Gunny (2010) and Zang (2012) provided evidence of the construct validity of these proxies. The normal/expected level of manipulations is first estimated using regression analysis as the residual from the corresponding estimation model. The actual values are determined from information provided in financial statements or from online databases. Then the proxies are calculated by deducting normal values from actual values. The deviations from normal values can be considered as manipulations of real activities performed by the management to mislead the firm’s stockholders.

1. Real EM through Operating Cash Flows (Roychowdhury, 2006)

When managers attempt to raise earnings by manipulating sales, they offer some discount prices and more flexible credit terms to customers to raise the volume of sales temporarily especially at the end of the year. As a result, the reported profit at the end of the year will increase, and at the same time, this sales manipulation leads to abnormal cash flows from operations. Cash flows from operations for the given level of sales become lower especially during the period of discounts and extended credit terms. The normal level of cash flow from operations is estimated based on the cross-sectional regression for every industry and year:

$$(17) \quad CFO_{it}/A_{it-1} = \beta_1[1/A_{it-1}] + \beta_2[Sales_{it}/A_{it-1}] + \beta_3[\Delta Sales_{it}/A_{it-1}] + \varepsilon_{it}$$

Where,

CFO_{it} : Cash flow from the operation of firm i in period t ;

A_{it-1} : Total assets of the previous year;

$Sales_{it}$: Sales in the current year;

$\Delta Sales_{it}$: changes in Sales;

ε_{it} : A residual terms.

2. Real EM through Production Costs (Roychowdhury, 2006)

Another type of REM is to accelerate production more than necessary to meet expected demand. After that, the organisation distributes fixed costs over production, thereby lowering fixed costs per unit and total production cost, supposing that the marginal cost is still the same. Accordingly, the cost of goods sold per unit decrease and the profit margin increase due to the production acceleration. However, the

organisation may incur other costs such as storage costs and inventory costs that will be expensed during the current period, thereby resulting in unusual production expenses at the given level of sales. The cost of goods sold and changes in inventory are sum up together to calculate production expenses . The following cross-sectional regression is run for every industry and year to determine the estimated value of abnormal production costs:

$$(18) \quad \mathbf{PROD}_{it}/A_{it-1} = \beta_1[1/A_{it-1}] + \beta_2[\mathbf{Sales}_{it}/A_{it-1}] + \beta_3[\Delta\mathbf{Sales}_{it}/A_{it-1}] + \beta_4[\Delta\mathbf{Sales}_{it-1}/A_{it-1}] + \epsilon_{it}$$

Where,

\mathbf{PROD}_{it} : The sum of the cost of goods sold and change in inventory of firm i in year t ;

A_{it-1} : Total assets of the previous year;

\mathbf{Sales}_{it} : Sales of firm i in year t ;

$\Delta\mathbf{Sales}_{it}$: Sales of firm i in year t less sales of firm i in year $t-1$;

$\Delta\mathbf{Sales}_{it-1}$: Sales of firm i in year $t-1$ less sales of firm i in year $t-2$;

ϵ_{it} : A residual terms.

3. Real EM through Discretionary Expenses (Roychowdhury, 2006)

REM is also performed through the reduction of discretionary expenditures such as selling and marketing expenses, advertising expenses, R&D expenses, and general and administrative expenses to rise the firm`s earnings. Therefore, earnings within the current period is improved as a result of diminishing such discretionary expenses. This leads to higher cash flows during the current period, which lower future cash flows, if these expenses were generally paid in cash. Roychowdhury's (2006) model is used to estimate normal discretionary expenses as follows:

$$(19) \quad \mathbf{DISEXP}_{it}/A_{it-1} = \beta_1[1/A_{it-1}] + \beta_2[\mathbf{Sales}_{it-1}/A_{it-1}] + \epsilon_{it}$$

Where,

\mathbf{DISEXP}_{it} : The sum of selling and marketing expenses, general and administrative expenses, advertising expenses, and research and development expenses of a firm I in year t ;

A_{it-1} : Total assets of previous year;

\mathbf{Sales}_{it-1} : Sales of firm in the prior year ;

ϵ_{it} : A residual term.

In addition, the current study measures REM by three aggregate proxies of REM in consistent with several studies such as Cohen and Zarowin (2010), Zang (2012), and Braam et al., (2015). First, an aggregate proxy of REM (REM_CD) is calculated as the summation of the standardized variables of REM-CFO and REM-DISX multiplied by negative one. Second, an aggregate proxy of (REM_PD) is computed by adding the standardized variable of REM-PROD and REM-DISX together multiplied by negative one. Third, an aggregate proxy of REM_CPD is figured as the sum of the standardized variable of REM-PROD, REM-CFO and REM-DISX, then multiplied by negative one.

The higher the value of each of the three aggregate proxies, the more likely the firm is engaged in real-based activity management.

To conclude, due to the corporate collapse and accounting scandals such as WorldCom, Enron, Ahold, and Rite Aid, the public confidence in US companies and the quality of financial reporting was demolished, which negatively influenced their accounting decisions. Several trials were developed to control the practices of EM manipulation. One of these techniques is applying to sever accounting standards with an attempt to enhance the integrity of the information provided to investors to increase shareholders' confidence. Therefore, in 2002, the Sarbanes Oxley Act was introduced to increase the quality, accuracy, and integrity of financial reporting to restore investors' confidence and protect their interest. International accounting standards applied in the market helped develop liquidity in the market, reduce transaction costs, and enhance the quality of accounting information released to the public. Several countries worldwide tried to harmonize their accounting standards and to even implement a common set of reporting standards. However, accounting standards, as well as governmental scrutiny do not completely eliminate earnings manipulations. CG as a monitoring mechanism was then introduced with attempts to alter financial reporting and to restrain managerial opportunism, therefore, a firm with good CG is likely to face the problems of managerial opportunism (Ghazali et al., 2015).

3.8. Summary

There is no general consensus regarding the EM definition in the academic literature. The motives that drive management to manipulate earnings may be divided into these main categories: stock market incentives, signaling or concealing private information, political costs, personal incentives, internal motives, regulatory motives, merger or takeover settings, management compensation contract motives, and lending contracts motives.

Furthermore, the most three common EM models used in the literature are: those based on specific accruals, those based on the distribution method and those based on aggregate accruals. This study focuses on using aggregate accruals. Moreover, previous literature classified EM into real-based activities manipulations and accruals accrual-based activity management. This study employs both the accrual-based approach and the real-based approach in measuring EMs. The study aims to measure the extent to which CG mechanisms can reduce earnings manipulations to the minimum level.

This chapter discusses the most common techniques used to measure accrual-based EM for instance, the Healy model (1985), the DeAngelo model (1986), the industry model (1991), the Jones model (1991), the DeFond and Jiambalvo, (1994), the Dechow et al., (1995) model, the Kothari model (2005), the Raman and Shahrur Model, and the Cash Flow model employed by Kasznik (1999). In addition, the discussion in this chapter presented six models that were developed by Roychowdhury (2006) to measure real-based activities earnings manipulation. Based on the literature review, the Modified Jones model is the one used more extensively and is considered to provide the most powerful tests of EM (Dechow et al., 1995; Habbash, 2010; Elkalla, 2017). Therefore, this study primarily uses this model and uses three other models; the Kasznik (1999) model, the Kothari et al., (2005), and the Raman and Shahrur model as a test for the robustness of the results. The study also uses the six models of Roychowdhury (2006) to measure the extent to which firms engage in REM. The following chapter commences a further review of CG theories and how the CG mechanisms and external audits are related to earnings manipulations from a theoretical perspective.

Chapter Four

Theoretical Perspectives: CG Mechanisms, External Auditing, and Earnings Management

4.1. Introduction

The previous chapters discussed the institutional settings within the Egyptian context as well as the reasons behind corporate failures and economic crisis, namely, EM practices. It is essential to understand the theoretical basis of CG to provide an in-depth analysis of its complexities in context. There is no general consensus regarding the theoretical bases for researches on CG, however, the literature referred to the use of five major theoretical frameworks to explain the relationship between CG mechanisms, external auditing and EM practices. The most common theories are the Agency Theory, Stakeholders Theory, Stewardship Theory, Resources dependency Theory, and Institutional Theory (Habbash, 2010; Amer, 2016). This chapter provides a relevant analysis for CG theories and their applicability to the research.

The rest of this chapter is organized as follows; Section 4.2 presents a brief review of concepts and theories related to CG. Then, a review of the theoretical links between the types of ownership structure and EM based on CG theories is illustrated in Section 4.3. The theoretical reviews regarding the association between a board of director attributes and EM are explained in Section 4.4. The following section 4.5 presents the relationship between attributes of the audit committee and EM from different CG theoretical perspectives. The theoretical explanation regarding the association between external auditing and EM is addressed in Section 4.6. Finally, Section 4.7 will present a summary of the chapter.

4.2. CG Theories

The structure of CG has been greatly influenced from theories that revealed from number of disciplines such as accounting, law, finance, management, and organizational behaviour. These theories have been developed to illustrate and analyse the CG from various points of view to determine how CG mechanisms can influence performance, shareholder interest, and the relationship between agent and principles and earnings quality (Amer, 2016). Extant literature studies suggested the relevance of several theories that are related to the CG issues such as Agency Theory, Transaction Cost Theory, Market Myopia Theory, and Stakeholder Theory, Stewardship Theory,

Institutional Theory, and Resource Dependence Theory (RDT) (Blair, 1995). These theories cannot be applicable and convenient to all countries due to differences in legal systems, socioeconomic factors, cultural values, laws and regulations, ownership structures, government roles, and other structural differences. Within the same context, many theories may be relevant for some context compared to others.

The increased complexity of environments and the high profile of unexpected collapses makes investors sceptical towards the quality of financial information released to them. Complex environments focus mainly on CG system to increase the opportunities of attracting external fund from investors and to provide them with the assurance regarding the reliability and accountability of the firm`s performance. CG has gained its reputation within management and corporate finance since the rise of the potential conflicts between investors, stakeholders, and managers. However, there is no specific definition that incorporates all the different situations of CG. There are many authors, institutions and even countries that have given combined definitions that sum up the set of codes, rules, and tools that can control the conflicts of interests among managers, the board of directors, shareholders and stakeholders (Amer, 2016).

For instance, the Cadbury Report (1992) defined it as "the whole system of controls, both financial and otherwise, by which a company is directed and controlled." Rezaee, Olibe, and Minmier (2003) defined CG as the process of enhancing the relationship between shareholders and management that can help the operations and the functions of capital markets to develop the investors' trust regarding the quality of financial reporting. According to (OECD, 2004, P11), CG is defined as "A set of relationships between a company's board, its shareholders and other stakeholders. It also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined" (2004, P11). Whereas, the National Association of Corporate Directors (NACD, 2006) outlined CG as the procedures and attitudes by which the organisation is supervised and governed. Tsifora and Eleftheriadou (2007) stated the CG as a group of restrictions that the organisations should follow in order to reach the best performance. Imam and Malik (2007) mentioned that the theoretical framework of CG is the most vital controlling mechanism of control to best utilize the corporate resources in an efficient and effective way that will align the interest of the stakeholders with that of corporations. Therefore, there is no general consensus on the definition of CG structure.

CG has become a crucial issue for all participants on the market positively that influence the stability and competitiveness of the economy of the countries in such an era of severe competition and capital mobility. Nevertheless, modern corporate governance research focuses on a few central theoretical frameworks including Agency Theory, Stakeholder Theory, Institutional Theory, Resource Dependency Theory, Transaction Costs Theory, and Stewardship Theory. This study is focused on several theories that are the most relevant in understanding and explaining the effects of including board of directors, ownership structure, and AC characteristics in CG on enhancing the quality of financial reporting. Subsequently, these theories are going to be presented individually and then followed by an understanding of how they are linked to the CG mechanisms and EM practices.

4.2.1. Agency Theory

Resolving the potential conflict of interest between principles and agent is considered as a major issue in CG. Agency theory is concerned with analysing and resolving "agency problem" that arose from the fundamental difference between the shareholders who own the organisation and delegate some decision-making authority to managers who control the assets of the company. This agency problem which is also known as the "principal-agent" problem provokes suboptimal usage of resources when risk-averse managers expropriate the wealth and reduce their exposure at the expense of the principles' interests (Jensen and Meckling, 1976). The Theory rests on the assumption that the role of the chairman and CEO should be split up to minimise the agency cost such as the costs of structuring, monitoring expenses, bonding expenditures and the remaining loss that incurred from sub-optimal decisions taken by the agents (Young et al., 2008; Akeem, Terer, Kiyanjui and Kayode 2014).

Civil (Code) law countries and Common law countries have different agency problems due to the ownership structure type. Dispersed ownership is one of the features in the Common law countries (e.g. the UK). These countries are characterized with where the ownership is separated from the control in which the agent can maximize their interest at the expense of the shareholders' interest. On the other hand, Concentrated ownership is one of the features in the Civil law countries (e.g. Japan, continental countries, other OECD countries, and emerging countries). They are characterised with where the management is controlled by large dominant shareholders

who seize the interest of minority shareholders. This creates the ‘‘principle-principle’’¹⁰ problem between the large block-holders and minority shareholders (Habbash, 2010). The Agency Theory has also mentioned many internal and external mechanisms to be basically used in governing and controlling the firm operations and agents' behaviour, reducing agency costs, eliminating EM manipulations, and enhancing firm performance (Akeem et al., 2014).

4.2.2. Stakeholder Theory

Freeman's (1984) stakeholder theory was implemented in the management discipline in 1970 and gradually includes corporate accountability to various stakeholder groups¹¹. This Theory suggests that corporations can be judged successful and superior if they have the ability to allocate the firm's wealth not only to shareholders but also to employees, creditors, communities, owners, clients, societies, and the environment (Abid et al., 2014). It is hypothesized that corporate performance is not determined by shedding light only on gains realized by its shareholders but also from the interests of all parties together. Accordingly, organisations with low stakeholders' satisfaction have more tendency to face difficulties regarding acquiring critical support and resources for their organisations (Abdel-Fattah, 2008).

Moreover, Agency Theory sheds light on the relationship between agent and shareholders only. Earlier studies set the Stakeholder Theory against the Agency Theory due to the main differences between them (Mohiuddin, 2012; Abid et al., 2014; Amer, 2016). Recently, many practitioners and theorists have recommended that the Stakeholder Theory is rather an extension of the Agency Theory and they should be potential compatibility and combined together. There is a growing perception that these two approaches are no longer seen as mutually exclusive clarification. Nevertheless, they can be explained and included in one model (Mohiuddin, 2012; Amer, 2016). Recently, almost of organisations worldwide become so concerned with maximising their long-term profits and sustainable wealth not only the interest of shareholders but

¹⁰ Principle-principle problem (Agency problem II) is more common in Civil law countries which happens between majority shareholders and minority shareholders as a result of the ownership concentration and weak legal system.

¹¹ Freeman (1984, p. 52 cited in Habbash, 2010 p.21) defined stakeholders as a party that has an interest in a company and can either affect or be affected by the business. The primary stakeholders in a typical corporation are its investors, employees, customers and suppliers. However, the modern theory of the idea goes beyond this original notion to include additional stakeholders such as a community, business partners, civil society, government or trade association (Abid, et al., 2014)

also those of different stakeholder groups¹² (Solomon, 2005). The Stakeholder Theory is described by Nicholson and Kiel, (2003) as an interdependent relationship between companies and the society, and hence, the corporate serves not only for shareholders responsibilities but also for social purpose.

This Theory illustrates and analyses the relationship between characteristics and behaviour of the firm with the stakeholders; it also tries to link the stakeholder and management with corporate objectives; it is used to explain how the organisational functions are related to moral and ethical guidelines (Abdel-Fattah, 2008; Abid et al., 2014). These functions has been explained by Donaldson and Preston (1995, p65) who stated that “ Stakeholder Theory has been advanced and justified in the management literature on the basis of its descriptive accuracy, instrumental power, and normative validity”. Although, these three aspects of the Theory are interrelated, they are quite audible; in which they involve different evidences and argument and have diverse consequences.

For instance, the board of directors can be considered as a good mechanism in employing the Stakeholder Theory. The board of directors considers all rights and claims of their stakeholders from the start in formulating strategy and through conducting the firm's decisions (Mohiuddin, 2012). In accordance with this Theory, the boards try to prevent the deficiency of Agency Theory by adopting a proactive perspective and establishing a strong relationship among stakeholders rather than focusing on an owner-manager-employee relationship (Alessandro, 2013). Accordingly, executive and non-executive directors can minimise the conflicts and improve efficiency and effectiveness of decision-making. As result, this can enhance the functions of managers in controlling any opportunistic behaviours, avoiding problems of underinvestment, and encouraging stakeholders to cooperate for developing long-term profitability for the corporation (Mohiuddin, 2012; Alessandro, 2013; Maher and Andersson, 2002).

Nonetheless, there is a common criticism of the Stakeholder Theory regarding the way of how the management can align the conflicting interests of all stakeholders and how to satisfy the different needs of all stakeholders. Sternberg (1997) stated that there is a contradiction between the Stakeholder Theory and the fundamental goals of

¹² Stakeholders can be the interest group related to economic, regulatory, technological, social, political, managerial and ethical considerations.

the organisation as the trial to balance among stakeholders' interest is hard to be achieved. The enhancement of the stakeholder value requires extending the performance evaluation to include not only traditional measures of performance but also, other measures relating to the groups of stakeholders. Hence, this requires the explanation of all the types of stakeholders and their different needs as the managers consider them as unrealistic tasks (Habbash, 2010). Furthermore, Maher and Anderson (2002) mentioned that this may give the managers the justifications for the low performance of the organisation. It does not support the managers with clear guidance on setting priorities and mechanisms that help them evaluate the efficiency and the effectiveness of the firm. Hence, the stakeholders' interest cannot be effectively represented in CG structure if the organization welfare can be undermined (Mohiuddin, 2012).

There are several trials to make reconciliation between agency theory and stakeholder theory in one paradigm, referred to as agency–stakeholder theory. This permits synergy between market efficiency and differential power between managers and stakeholders; that is, the management's (agent) behaviours should be in the interest of the stakeholders (principal) (Mohiuddin, 2012). When Hoque (2006) discovered that managers are likely to manipulate earnings for their interest at the expense of stakeholders' interest, he proposed that agency–stakeholder theory should provide stakeholders rights to monitor managers by offering their resources. In addition, Culpan and Trussel (2005) shed light on the impact of agency theory in illustrating different measurements of the unethical practices in accounting and financial issues, whereas stakeholder theory clarifies unethical exercises that harm creditors, employees, investors, governments and society. Table 4.1 below summarises the difference between agency theory and stakeholder theory.

Table 4.1: Comparison between Agency Theory and Stakeholder Theory

	Agency Theory	Stakeholder Theory
Purpose	Promoting the shareholder' wealth.	Multiple goals with different interest
Governance structure	Managers as the agent of principles	Team production model
Governance	Monitoring	Coordination, cooperation, and conflict resolution
Performance Metrics	Shareholder value enough to maintain investors' commitment	Fair distribution of value created to maintain the commitment of multiple stakeholders.
Residual Hazard holder	Shareholders	All stakeholders

Source, (Mohiuddin, 2012, P 95)

4.2.3. Resource Dependency Theory (RDT)

This Theory enhanced the interdependence between organisations and their environment, proposing the main aim of the success of a firm is owing to their linkage with the external environment for survival by receiving crucial and rare resources. It is mainly depending on the premises that external resources affect the behaviour of the firm and its strategic management. Firms acquire their resources from the environment which rely on each other and on the exchange of resources (Hillman, Withers, and Collins, 2009). It is for this reason that resources are considered as the ground to the firms' power as they are valuable, costly and not substitutable, hence the organisation's keen interest in allocating the most critical resources for their long-term success and survival. Organisations should make sure the availability and security of vital and seldom resources (i.e. information, capital, advice and counsel, expertise) (Amer, 2016). Most importantly, they should have the capacity to easily access key constituents such as shareholders, suppliers, social groups, and buyers, as well as provide legitimacy/bolstering the public image of the firm, and interrelate and cooperate with the important stakeholders and other important entities to support its external relations (Abid et al., 2014; Amer, 2016).

Resource Dependence Theory advocates that CG mechanisms perform a crucial role to link the organisation with its needed resources to promote corporate performance (Pfeffer, 1973). For example, extant literature such as Hillman and Dalziel (2003), pointed out that the diversity of board characteristics plays a critical role in this Theory, (e.g. age, size, professionalism, education, tenure, and their outside representation) can, for instance, lead to wider corporate networks, and better decision-making process

(Haniffa and Cooke, 2002; Nicholson and Kiel, 2007). This is because of the following reasons. First, the board especially the independent non-executive, supports the organisation with the required vital resources like expertise, knowledge, information, and experience. Second, directors facilitate to set up a strong relationship with significant stakeholders such as creditors, suppliers, customers, and institutional investors. Third, directors can establish a reputation for the organisation and can use their personal relationship and business contacts to provide the firm with the necessary business network. Fourth, the board can allow greater access to business/political elite, information and capital (Nicholson and Kiel, 2003). Accordingly, the directors promote the firm performance due to the access to resources and the strong link with the external environment.

B.O.D can provide very beneficial value to organisations such as information, advice and consultation, easy access to channels between the firm and its environmental contingencies, legitimacy, and preferential access to resources. They can present various types of resources to the organisation and facilitate the capability to manage the environmental dependencies and reflect the environmental needs because of various classifications of the board of directors as a business expert, support specialists, or community influential that facilitate the capability to manage the environmental dependencies and reflect the environmental needs (Hillman et al., 2009; Abid et al., 2014; Amer, 2016)

4.2.4. Stewardship Theory

Unlike the theories that take the managerial opportunism and monitoring as their main focus such as the agency, signalling, and information asymmetric theories, the “Stewardship Theory” gives the managers the authority to act as independent stewards or trustworthy people on the company affairs. This theory (1991 and 1994) was originally evolved as a modern way to reframe the relationship between management (agent) and shareholders and directors (principles) together by Donaldson and Davis. He suggested that Stewardship Theory as : “the manager far from being an opportunistic shirker essentially wants to do a good job, to be a good steward of the corporate assets” (1991, p.51). Unlike the "Agency Theory" and most of the other theories that take an economic approach to management and suppose that they work for their self-interest, not for the shareholders' interest (Donaldson and Davis, 1991; Cornelius, 2005; Nicholson and Kiel, 2007; Abid et al., 2014).

The “Stewardship Theory” is influenced by sociological and psychological approaches (Davis, Schoorman, and Donaldson, 1997) and puts more emphasis on facilitation and empowerment than monitoring and controlling of the organisational functions. This Theory holds on the notion that when the executives are trustworthy and take higher positions in the hierarchy of the organisation, the inside directors are supposed to be given support, power, and authority, to achieve the firm objectives and to act as a CG mechanism in enhancing the organisational performance (Letza et al., 2004, Abid et al., 2014).

According to shareholders` perspective, there is a tendency towards executive directors when compared to non-executive directors based on several assumptions regarding the behaviour of managers (Habbash, 2010; Alzoubi and Selamat, 2012; Mohiuddin, 2012). First, they assume that executive directors own formal and informal information and have the required skills compared to the outside directors. Second, managers spend most of their working hours in the firm they oversee, thereby, getting rid of manipulated practices. Therefore, those executive directors have the awareness, knowledge of the existing operations and technical expertise that give them more opportunities to understand the business very well and to develop decisions more effectively than outside directors. Third, they are concerned and committed to maintaining the human capital and the company's reputation on the market. Fourth, they tend to minimise the agency costs and problems due to the fear of harming their future managerial capital (Mohiuddin, 2012; El-Faitouri, 2014; Abid et al., 2014).

To conclude, this theory recommended for the dual leadership by both chairman and CEO for the aim of improving economic performance. This Theory can be identified as a substituting model for the behaviour of management and incentive that emerges from psychological and sociological patterns and claims that managers are way beyond being opportunistic. Instead, they could act as stewards for the assets of the company since they are motivated based on their own achievements and responsibility needs (Mohiuddin, 2012). The Agency Theory and Stewardship Theory are different due to several dimensions, which are all presented in the Table 4.2 below by Clark (2004).

Table 4.2: Differences Between the Agency Theory and Stewardship Theory

	Agency Theory	Stewardship Theory
Behaviour	Individualism	Collectivism
Motivation	Extrinsic value	Intrinsic value
Governance	Monitoring	Confidence
Time frame	Short-term	Long-term
Power	High power	Low power

Source, (Mohiuddin, 2012, p 92)

4.2.5. Institutional Theory

The institutional governance concept represents a wide view of CG system. It relies on the concept that the company is part of the larger society in which it operates. Hence, this premise is concerned to the broader concept of social responsibility towards stakeholders including employees, suppliers, customers, labour unions, and environmental protection agencies. Therefore, CG can be best described to be more of a social-relationship rather than (market) orientated structure (Hendry and Kiel, 2004). The social-institutional concept could be considered as a comprehensive term comprising agent-principle relationship as well as external relationship with interested parties reflecting social dimensions. Thus, CG can be identified as a combination of structures, mechanisms, and procedures providing control and accountability, with the objective of enhancing economic and corporate performance. Recently, the Institutional Theory become one of the most interesting theories which has been widely applicable in social sciences generally and in accounting studies particularly (Abid et al., 2014).

The Institutional Theory highlights normative aspects of the context in which organisations operate. This means that organisations should adopt a structure that is consistent with the needs of institutions taking into considerations the social, regulative and professional norms, to evolve the legitimacy for their operations (Habbash, 2010; and Abid et al., 2014). Regulative, normative and cognitive social system have been determined by theorists to be the central dimensions of institutional theory (Scott, 1995).

Within this context, each corporate firm should take into considerations internal and external environmental dynamics to adopt corporate governance to the changing societal and institutional pressures. This is because corporate governance around the

world are constantly changing and evolving according to the internal environment conditions and the external environment circumstances such as the breakup of large conglomerates, advanced technology, globalization, new start-up, cultural values, political cases, rules and regulations, and social norms (Abid et al., 2014; Taljaard, Ward, and Muller 2015).

Therefore, some theories appear to be more applicable and relevant to some countries rather than the others, despite the fact that the concept of CG relies on encompassing a number of theories; it is critical to illustrate the approach of each Theory in terms of the CG mechanisms and then find the most suitable Theory that can be best applicable to the developing countries and Egypt in particular. Indeed, outsider systems are one of the main features of developed countries like USA and UK, these systems suffer greatly from the manager-shareholder agency problem. Based on this concern, Jensen and Meckling (1976), developed the Agency Theory, to solve the agency conflict interest between the agents and principles interests. They proposed several ways to the management to behave in favour of shareholders` interest such as bonding them contractually, monitoring their actions by an independent board, and providing them with certain incentives. On the contrary, most of the emerging economies, such as Egypt are mainly characterized by insider systems. This system is more inflicted with the majority-minority agency problem (principle-principle problem) due to the concentration of corporate ownership. Hence, as a result of the differences between the two systems, mechanisms that are designed to deal with problems of both systems may be different. Indeed, it suggests that the mechanisms of CG characteristics that can deal with the manager-shareholder agency problem would not get the same results in dealing with the majority-minority agency problems that are dominant in Egypt.

Therefore, analysing the theoretical perspectives that investigate the relationship between CG mechanisms, external audit, and EM, in relation to different CG theories is very critical. In the following sections, a discussion is presented to explain the main theories encountered in the literature to establish whether CG mechanisms (board of directors` characteristics, ownership structure, and audit committee characteristics) can be associated with improved financial reporting. The main objective is to describe the theoretical blocks on which the study is based.

4.3. Ownership Structure and Earnings Management: Theoretical Perspective

In the last two decades, theoretical and empirical academic types of researches have been attracted widely toward the importance of ownership structure as CG mechanism. The key purpose of modern CG is how to design an optimal ownership structure that assists firms to reduce either (agency problem) raised between owners and management or (principle-principle problem) raised among majority and minority shareholders to appropriately maximize the firm performance.

Design an appropriate ownership structure usually involves testing the association between ownership structures, EM, other firm factors, CG characteristics and operations. The Egyptian CG system is characterized by an insider-dominated system in which publicly listed companies are controlled by a few major blockholders, which include family firms and a small group of shareholders, such as lending banks, other companies and government.

Although family-owned firms perform an important role in dealing with the agency problem, they usually do not consider the interest of minority shareholders, managers, employees and other stakeholders (Samaha et al., 2012). Hence, large controlling block-holders in a family firm can gain positions higher than those of minority shareholders by paying special dividends for their shares and exploiting business relationships for their interest (Shleifer and Vishny, 1997; Samaha et al., 2012). Accordingly, current literature highlighted the crucial role of institutional shareholders in protecting minority shareholders' interest. Certain major capital markets worldwide have played a pivotal role in providing means of channelling savings into the capital markets with medium to long-term investment horizons and low to medium risk to investors by shifting from a single controlling investor towards institutional investors.

The 'institutionalisation of savings' is regarded as one of the most bizarre amendments to financial markets. It marks the shift of responsibility for equity holding from individuals to intermediaries. Consequently, the number of individuals holding equities significantly decreased (Christine, 2006, 2007). That is, they were replaced by the growing share of banking and financial firms, pension funds, life insurance companies and collective investment funds that demonstrate the most rapid growth in many countries. For example, in the United States, in 1966 individual ownership of equity has fallen from 79% to approximately 50% in 1993, whereas corresponding

numbers in Japan were 53% in 1953 and approximately 20% in 1993. In the UK, individual shareholding has fallen steadily from almost 54% of shares to only approximately 21% in 1989. Several challenges in the UK, such as large privatisation and demutualisation of large building societies, improved individuals' ownership in the early 1990s. However, the shareholding volume had dropped to 14% in 2004. In contrast, insurance companies and pension funds' ownership has increased dramatically over the same period from 7% in 1963 to 32% in 2004 (Christine, 2006, 2007).

Having a certain ownership structure as the best combination of co-ownership is not necessary for all companies, as manifested by several financial and theoretical studies. Institutional owners perform an significant role in CG quality given their predominance in financial markets. However, ownership structures and other CG features still vary across markets. These variations are mainly attributed to legal and regulatory systems, social value, cultural system, legal obligations, and the markets' evolution. Furthermore, ownership structures may vary due to different reasons, such as pension system establishment, financial sector liberalisation, foreign institutional investors' investment policies, privatization initiatives, development of a stronger shareholder protections and other environmental, legal and regulatory changes (Rashid, 2009; Omran et al., 2008).

Research had to address questions about the trade-off between ownership concentration and dispersion across countries. First, to which extent are diversified equities (e.g. institutional investors, large blockholders, managerial ownership and public ownership) allowed to participate in corporate ownership? Second, how does investors' interaction affect CG structures? Third, are more efficiently managed firms considered one of the results of dispersed ownership? Fourth, does the absence of large blockholders with incentives to monitor amplify agency problems? The following section theoretically illustrates in detail the link between different ownership types and financial reporting quality to demonstrate the extent to which ownership structure can decrease the negative impact of DA-based EM and improve firm performance.

4.3.1. Family Ownership

The family-owned firms represent the majority of businesses in most countries (Siregar and Utama 2008; Usman and Yero, 2012; karuntarat, 2013; Alessandro, 2013; Amer, 2016). They are described to be unique and complex form of ownership because of the mutual effect of the family and the firm.

The academics and practitioners are more interested and concerned in studying family-owned firms. They find the importance to identify and explain different behaviour of family firms and the manner in which these differences influence the quality of reporting and firm value. Recently, a growing body of research from various disciplines, such as entrepreneurship, organisation studies, finance, and economics, has contributed to this endeavour (Brenes, Madrigal, and Requena, 2011) to examine to what extent family ownership can act as a CG mechanism in eliminating the opportunistic behaviour of management and in promoting the firm performance.

The empirical literature in the developed and developing countries extensively examined the impact of ownership structure on the firm value taking into consideration the agency costs between managers and outside shareholders, or among majority and minority shareholders (Shleifer and Vishny, 1997). Hence, developed countries suffer seriously from agency problem I¹³ due to the highly diffused ownership, On the contrary, agency problem II¹⁴ is more prevalent in developing countries due to highly concentrated ownership in the hand of small numbers of major shareholders such as individuals, or government (Omran et al., 2008). Accordingly, ownership concentration can be considered as a justification for the relationship between family ownership and agency problem. If family firms' performance is good or bad, it will be a practical matter that relies on various aspects entrenched in the local context of each country that effects on ownership structure. For instance, Silva and Majluf (2008) and Audretsch and Lehmann (2014) argued that the legal system operating in each country or shareholders' rights can be the determinant of ownership structure. They suggested that shareholders should accept less protection where the positive influence of entrepreneurial cash flow rights on firm value should be greater than shareholders in countries. Accordingly, Audretsch and Lehmann (2014) stated that civil law countries

¹³ It is more common in the developed countries where occurs between management and shareholders

¹⁴ Agency problem II is called also principle-principle problem and more common in the developing countries due to ownership concentration and weak investor protection and legal system, it is likely to occurs between major shareholders and minority shareholders.

such as Egypt with low protection granted to shareholders have a flow towards the concentration of a greater ownership, which is increasing the number of family firms. On the other hand, the primary purpose of common law countries, who are authorizing more protection to shareholders, is to grant greater ownership dispersion.

According to the Agency Theory perspective, large controlling shareholders proposed to mitigate managerial entrenchment and expropriation because of their integration between ownership and control. Large block-holders and managers are considered as the owners and residual claimants who control firms belonging to their own families. Therefore, concentrated shareholding may be described as an ideal organisational form where the interest of the controlling, minority shareholders, stakeholders, and the firm are aligned (Villalonga and Amit, 2010). Consequently, family-owned firms face hazard problems lower than non-family firms because they have strong inducements to oversight the firm's management, and to mitigate the principle-agent conflict (Jensen and Meckling, 1976; Anderson and Reeb, 2003; Young et al., 2008; Audretsch and Lehmann, 2014).

The Agency Theory is consistent with the investment efficiency perspective, regarding the prominent role of family shareholding. Several studies stated contra-view to Fama and Jensen (1983), who claimed that the controlling shareholder in a family firm is more interested towards undiversified investments and exhibits excessive risk aversion and fails to implement growth strategies or profitable expansion strategies and mergers. Founding families are more concerned with passing the business to their future generations not just their wealth. The survival and persistence are major concerns for families, who are interested to improve the firm's value. They have more tendency to invest in long-term projects relative to shorter managerial horizons to avoid any ex-ante losses for its investors. Thus, family owners have the incentives to invest in terms of the marketing rules and to invest in a superior fashion, to pass down the firm to future generations (Siregar and Utama, 2008; Ghabdian, Attaran and Froutan, 2012; karuntarat, 2013).

Family ownership has a solid motivation to dynamically observe and control the firm's management in order to safeguard their investments (the efficient monitoring hypothesis or alignment effect). They have more tendency to minimise agency costs through better monitoring functions and elimination of free-riders and adverse selection problems (Wang, 2006; Huafang and Jianguo, 2007; Siregar and Utama, 2008). They empower managers to concentrate largely on long-run earnings prospects rather than

short-term focus. Accordingly, ownership concentration can limit the management discretionary attitudes (Wang, 2006; Huafang and Jianguo, 2007; Siregar and Utama, 2008; Usman and Yero, 2012; Reyna and Duran-Encalada, 2012; karuntarat, 2013).

However, there is a contra view regarding the impact of family ownership on the quality of reporting. As the large block-holders enjoy certain control rights over the firm's assets and use these rights and powers to exert influence over decision-making, they consequently be in favour of their interest rather than the interest of minority shareholders (Young et al., 2008). Indeed, managers in family firm may be especially apt to make business decisions that favour offspring and enhance family socio-emotional wealth at the expense of (minority) investors. They may be tempted to hire incompetent relatives for key positions, avoid useful strategic initiatives, and diversify family wealth via inappropriate acquisitions. All of these tendencies can negatively influence firm performance and the financial reporting quality as a result of expropriation hypothesis (Ibrahim and Abdul-Samad 2011; Halioui and Jerbi, 2012). Correspondingly, families could expropriate shareholder`s interest through overconsumption, internal transactions, and special dividends (Wang, 2006; Siregar and Utama, 2008). Thus, acting family owners toward their own advantage generate a negative effect on the effort and productivity of employees, even to the point of taking possession of income intended for employees (Usman and Yero, 2012)

From the perspectives of the resource-dependency and stakeholder-theory, concentrated shareholding in the family firms can be widely viewed as a major source of entrepreneurship and technological innovation by utilizing R&D investment more efficiently than non-family firm. They could invest largely in the firm's operations and pursue promising entrepreneurial and create opportunities that enhance competitive advantage and organisational growth (Villalonga and Amitt, 2010; Audretsch and Lehmann, 2014).

Furthermore, the controlling block-holder as opposed to other shareholders can control, monitor, and discipline any opportunistic behaviour in their family firm easier than non-family firms, they have better knowledge, superior information, due to their direct control with business from childhood, and their long presence. As result, family owned firm can diminish the free rider issues with the minor shareholders and to support the firm competitive advantage (Habbershon, Williams, and MacMillan 2003). The sustained presence of controlling shareholders is described as an intangible and specific resource that allow evolving long-term relations with stakeholders or external

operators in firms, such as buyers, employees, suppliers, banks, and other transactional parties. The concentrated ownership structure with long-term orientation have more flexible access to the debt at a lower cost and to create trust between transactional parties that enhance long-term economic benefits for family firms comparable to non-family firms (Habbershon, et al., 2003).

Although ultimate controlling owners can act as controlling mechanisms especially in the developing countries, with weak enforcement practice and low level of investor protection. Extant literature claimed that these owners have control rights more than of their ownership rights due to the control-enhancing devices such as dual-class shares, pyramiding, and cross-holdings (Morck, Wolfenzon, and Yeung, 2005; Gonzlaez et al., 2012). This facilitates the expropriation of wealth at the expense of non-family shareholders (Claessens et al., 2000; Gonzalez et al., 2012). For example, the controlling owner in pyramidal groups can tunnel wealth between pyramid firms to generate greater private benefits through related transactions with artificial prices (Morck et al., 2005). This leads to inefficient resource allocation at the firm level and might use their equity positions to attain perks that decrease the residual claims of other shareholders (Young et al., 2008; Gonzalez et al., 2012).

Strong enforcement environment in developed countries, that are characterized with dispersed ownership structures, found that the concentrated ownership may be a solution for corporate governance problems such as a conflict between controlling shareholder and management, external financing issues, limited risk diversification, liquidity costs (Berglof and Classens, 2006). Nevertheless, ownership concentration creates problems between majority and minority shareholders (principle-principle problem). Indeed, large controlling owners are concerned more with their own interest, and they usually improve firm growth, reputation, technological innovations and firm survival for themselves rather than for shareholder's/stakeholder's value (Young et al., 2008). Dominant family shareholder exploited minority shareholders, for example, through dividend payments, underinvestment, excessive compensation, related party transactions or tunnelling (Berglof and Classens, 2006). This may affect negatively on the firm performance, productivity, employee effort, stakeholder interest, and quality of earnings (Wang, 2006). As a result, there are arguments that family ownership concentration may not only enhance the transparency and disclosure, but also the quality of financial reporting in countries with strong investor protection (Fama and Jensen, 1983). The ownership concentration in the developed countries (e.g. the UK

and the US) may be beneficial to give the controlling shareholder an adequate motive to monitor and control the firm performance, at the same time, external CG mechanism can protect the rights of the minority shareholders (Habbash, 2010; Achleitner, et al., 2014).

4.3.2. Managerial ownership

The Agency Theory presumes that owing to the separation between management and control, managers (agents) act to achieve their personal motives and incentives at the expense of the shareholder`s interests (Jensen and Meckling, 1976). Management has many objectives to manipulate the earnings to meet earnings targets, beat analysts and market expectations or when compensations and bonuses are related to the reported profit and firm performance. As a result, managers opportunistically manipulate the firm`s earnings through accounting accruals or real-based activities manipulations. This directly influences the reliability and accuracy of financial reports, thereby increasing information asymmetry. Subsequently, opportunistic behaviour by management for the organisation's earnings presents the EM as a type of agency costs (Leuz et al., 2003).

The shareholders lose confidence and trust regarding the information provided by the management because of the divergence between a shareholder`s interest and management`s interest. Consequently, the principles (shareholders) employ several monitoring mechanisms to protect their interest and to limit irregular activities of agents (Leuz et al., 2003; Habbash, 2010). These mechanisms can be either internal CG mechanisms or external mechanism such as external audit to oversight and control the illegal management behaviours and to constrain the effects of the managerial ownership on EM practices. Nevertheless, these monitoring mechanisms which are designed to control and monitor the management behaviour, may make the organisations incur some agency costs which come from control systems and monitoring, cost of consultation, moral risks, bonding costs, earnings management, monitoring costs, compensation and incentives schemes, and employment costs (Young et al., 2008).

Agency Theory proposed such monitoring mechanisms to align the agent and principal interest and to resolve the agency conflicts, thereby enhancing financial reporting processes. For instance, Davis et al. (1997, P23) are prominent supports of the governance mechanisms` notion who suggested that these mechanisms are designed to confirm the alignment of the agent-principles interest, to protect shareholder

interests, and thus decrease agency costs. Evidence about the fact that corporate governance reduces agency costs have been provided by McKnight and Weir (2009). Thus, “minimise loss of value that results from the separation of ownership and control” (Denis and McConell, 2003, P1)

Non-executive directors should be in charge of a large percentage of the managerial ownership structure as recommended by the Agency Theory. Since, the managerial entrenchment may be the main reason for the absence of the effectiveness of internal CG. Hence, the organisational arrangement protects them from the market for corporate control or from the shareholder intervention. Therefore, this can enhance how independent the board is, promote a monitoring judgment that is fair and unbiased, which consequently, reduces the conflicts between managers and shareholders (Amer, 2016). This indicates that Agency Theory does not prefer to give the director the authority and power to act as chairman and manager at the same time. Hence, it does not support CEO duality. Furthermore, another way to minimise the opportunistic behaviour of management is to increase the external shareholding (the public) to act as substitute agency mitigating mechanism (karuntarat, 2013; Alessandro, 2013).

Stewardship Theory considers that management or the firm director acts as a firm steward, looking at the best interest of principles, thereby promoting the shareholders' wealth. The Theory holds on the notion that managers work with the purpose of developing firm performance as a way for maximizing the shareholders' wealth. The Theory suggests that the executives achieve greater satisfaction from attaining the organisational goals and from enhancing non-financial incentives such as, reputation, organisation loyalty and commitment, the respect for authority and work ethics, and real approval of success (Donaldson and Davis 1994; Davis et al., 1997).

The Stewardship Theory supports the executive directors role, opposing outside ones. It implies that the executives own more an in-depth understanding of the business, more and easy access to operating information, having technical and operational expertise and organizational dedication more than non-executive directors (Coleman et al., 2007). Inside directors are better suited to govern and control the board and make better decisions as compared to the external ones (Habbash, 2010). This Theory suggests that CG should consider the managers as good stewards for the corporate assets on behalf of the shareholders and stakeholders. Furthermore, the board should be considered as an assistant mechanism to the management's role rather than as a controlling mechanism. Consequently, the Theory assumes no conflicts of interest

between shareholders and management, thereby reducing manipulative behaviours and enhancing firm performance. The Theory suggests increasing the managerial shareholding as a compensation for their effort since they have the loyalty, awareness and an explicit understanding of the business in enhancing the firm performance and keeping the shareholder's interest at the expense of their interests.

4.3.3. Institutional Ownership

Institutional investors with high standards and principles for compliance, disclosure and financial information oversight play a pivotal role in supporting CG market participants (Gillan and Starks, 2003). Moreover, the importance of institutional investors in capital market development was supported by cross-country empirical research. For example, earlier literature, such as Bhattacharya and Graham (2009), highlighted the positive impact of the development of contractual savings institutions (pension funds and life insurance companies) on equity market development in countries with capital market-based financial systems. By contrast, the development of the contractual savings sector greatly contributed to the bond market in countries with a bank-based financial system (Bushee et al., 2013; Aygun, et al. 2014).

Furthermore, institutional ownership plays a major role in CG practices. Institutional ownership is preferred for organisations with better CG due to the following reasons as indicated by recent accounting research, such as Bhattacharya and Graham (2009) and Bushee, Carter and Gerakos (2013):

1. Institutional investors offset monitoring costs by promoting the quality of disclosure and transparency due to the large portfolios they hold with high external monitoring costs.
2. Institutions have stringent fiduciary responsibilities. Thus, they are strongly motivated to apply the best CG mechanisms based on surrounding organisational circumstances. As a result, undesirable outcomes, such as managerial fraud and negligence, are minimized.
3. Large institutions that hold high positions, strategies follow indexing or have large equity stakes prefer CG mechanisms to reduce governance failures because liquidating their positions rapidly during a governance failure entails high costs for them.

4. Institutions that follow different investment styles and prefer small (riskier) firms could aspire 'better' CG mechanisms to reduce the risk of their selected undiversified sector.
5. Finally, political motivations and regulated system may be considered as incentives for the institutional investors to increase their focus on CG mechanisms (Smith, 1996; Woidtke, 2002).

By associating these motives together, institutional investors, as a whole, could exhibit preferences for CG mechanisms in their operating and controlling decisions. However, despite the above arguments, it is crucial to recognise the features of institutional investors and the aim of their business when analysing the effect of their involvement in the application of corporate governance on EMs and on organisational performance. In addition, it is important to explain the principle factors that impact the classification of these institutions to better understand the relationship among ownership structure mechanism, the quality of CG, EMs, and firm value (Bushee et al., 2013; Aygun, et al. 2014).

The interrelationship between the institutional owners and corporate performance has been subject to mixed results. Because the prior studies considered the institutional investors as a homogeneous group with the same targets and similar actions. To deal with these conflicting results, extant studies, such as Brickely et al., (1988); and Bushee et al., (2013) become so interested to analyse the characteristics of institutional owners and identified them as heterogeneous groups with different orientation, and varied investment behaviours owing to the different constraints and the surrounding environments where they operate. The preceding studies of Yang, Chun, and Ramadili (2009) and Bushee et al., (2013) manifested that the most influential and indicative factors that may influence the behaviour of the institutional shareholders are monitoring cost, investment stability, their independence, the investment time horizon, the size of institutional shareholdings, the business relationship with the investee firm, the sensitivity of shareholding, and activism of shareholders.

Agency Theory provided the rationale behind the importance of including institutional shareholders. The institutional shareholders play a significant role in reducing agency costs and solving agency problems. They can work as fiduciaries assigned to monitor functions, to minimise the potential for managerial self-interest, monitor the CEO, plan CEO succession and evaluate and reward CEO/ top managers of the firm to deliver superior performance to organisations that are able to optimally

manage their agency costs (Hadani, Goranova, and Khan, (2011); Bushee, et al., (2013); Yang et al., 2009).

Consistent within this respect, some studies claimed that due to differences in institutional behaviour and characteristics (e.g. passive/active, large shareholding/small shareholding), it couldn't be guaranteed that institutions could enhance firm performance all the time. For example, on one hand, Hadani, et al., (2011) and Aygun, Suleyman and Sayim, (2014) revealed that active institutions could exert more effort, spend substantial resources on information search, and perform more efficient monitoring tasks to reduce information asymmetry and agency problems making it difficult for managers to manipulate earnings. Accordingly, this supports them to safeguard their investment and the interest of other shareholders and to raise the firm value by actively participating in CG (Yang et al., 2009). However, other studies such as Gaspar, Massa, and Matos (2005) and Bushee et al. (2013) argued that institutions can act as traders rather than owners which discourages to actively participate in CG. Thus, those passive investors have more likelihood to sell their holdings in poorly performing firms rather than expend their resources in monitoring firms (Burns, Kedia, and Lipson, 2010; Bushee et al., 2013; Aygun, et al. 2014).

A firm that is largely owned by institutional shareholdings, as proposed by the Resource dependency Theory (RDT), play a central role in securing not only the necessary resources but also the scarce ones (i.e. information, capital, advice, counsel, expertise, access to key constituents such as suppliers, social groups, buyers, providing legitimacy, bolstering the public image of the firm, interrelating the firm to important stakeholders or other important entities, supporting external relations, diffusing innovation, as well as aiding in the formulation of strategy or other important firm decisions. This gives an opportunity for institutional shareholders to help their firms to achieve success, growth, and long-term survival (Sahut and Othmani-Gharbi, 2010; Aygun et al., 2014; Pucheta-Martínez, Bel-Oms, and Olcina-Sempere, 2018).

Consequently, as the institutional ownership cannot directly monitor the activities of managers, they demand more voluntary disclosure such as earnings forecasts and desire more transparency in information released to the public. Institutional owners have a greater tendency to reduce information asymmetric and earnings manipulations (Aygun et al., 2014). When the institution size is large, they can promote their external linkages which raise their potential for securing needed resources. Greater diversity of institutions may provide wider ranges of expertise,

which in turn could result in better decision-making (Pucheta-Martínez et al. 2016). On the contrary, when substantial institutional shareholding is high, they negotiate with the firm to have direct access to private information, which reduces the organisations need to disseminate more voluntary information to the general public (Pucheta-Martínez et al., 2016).

The Stakeholder Theory proposed the idea that institutions should largely consider all the rights and claims of their stakeholders from the beginning in formulating their strategies until they actually conduct the firm's decisions. According to this Theory, they exert significant efforts to avoid the drawbacks of Agency Theory by adopting proactive perspective and eager in establishing a strong relationship among stakeholders rather than owner-manager-employee relationship (Fazlzadeh et al., (2011). Consequently, institutions can be best described as an information system for stakeholders who monitor executive's behaviour, minimise the conflict between executive and non-executive directors, ensure their focus on long-term value creation, ensure legal and ethical conduct, and enhance the effectiveness of the decision-making process (Fazlzadeh, Hendi, and Mahboubi, 2011; Abdullah and Valentine, 2009).

4.3.4. Government Ownership

There is no general consensus on theoretical predictions regarding the relationship between governmental ownership, and the quality of earnings. The Resource Dependence Theory reckons that organisations can minimise their dependence on the environmental factors through several methods such as; mergers and vertical integration, political action, executive succession, and joint ventures and other inter-organisational relationship (Hillman et al., 2009). The existence of the government as a major shareholder reduces uncertainty and the external dependence on the environmental contingencies. However, an organisation with a high percentage of governmental shareholding can use the techniques to change the conditions of external economic environment and to create a new environment by producing governmental regulations. This can serve their interest and produce more favourable environment according to their needs (Nguyen, 2016). Consequently, enterprises with government shareholding have low tendency to make a voluntary disclosure and to provide more transparent information as a result of expropriation activities. In addition, managers in governmental enterprises have fewer motives to improve the corporate profitability and

promote financial reporting (Wang, Wong, and Xia, 2008; Nguyen, 2016; Hoang, Abeyssekera, and Ma, 2018)

Regarding the Stakeholder Theory, it recognizes that when the enterprise has high governmental ownership, the government works to coordinate the socio-political and economic systems of the country together to help the organisation release the social and environmental information that meet the stakeholders' expectations. Furthermore, the government may pressure organizations (through board members appointed by the governmental) to not only focus on financial disclosure but also on the voluntary disclosure (e.g, non-financial, social, and environmental information) to promote the social perception of the organisation toward the public (Heath and Norman, 2004). They require from the board not only to achieve a high return on investment to their shareholders but also to ensure that the firm respect the legal and contractual obligations to other stakeholders (Naser et al., 2006). This leads to a reduction in the monitoring costs and agency costs that may be incurred due to the conflict of interest between stakeholders and managers.

The organisation with more governmental shareholding have more tendency to encourage their firms to promote the level of training to their personnel, enhance security in work, develop a clean environment, and enhance the individual welfare (Naser et al. (2006); Capalbo, et al., (2014); Alnabsha, et al., (2018). As a result, the investors will appreciate these companies that consider the environmental and social issues and play an effective role in society. This is consistent with the view of Stakeholder Theory (Liu and Lu 2007; Wang and Yung, 2011; Capalbo et al. 2014; Alnabsha et al., 2018).

4.4. Board of Directors Characteristics and Earnings Management: Theoretical Perspectives

The board of directors is described as one of the most essential mechanisms in a corporation. It holds the responsibility for monitoring, supervising and advising top management as well as leading and directing organisational affairs to safeguard the interests of the shareholders (Akpan and Amran, 2014; Abdul Rahman and Ali, 2006). More specifically, the board of directors has assigned several responsibilities and tasks; such as shaping and choosing the most appropriate strategy for the organisation and evaluating the progress in its implementation (Agrawal and Chadha, 2005); directing and monitoring the manager performance; hiring and firing underperformed managers;

linking the organisation to the internal and external environment circumstances; accountable for whether the firm manager followed the formal procedures and policies; hiring and compensating senior managers; designing and overseeing organisational internal control, transmitting critical information to the managers and enhancing firm legitimacy and fairness in the business (Habbash, 2010; Amer, 2016). For instance, both the Sarbanes-Oxley Act and the recent stock market rules on CG assumed that board with more independent members have a lower incidence of accounting fraud and EM (Agrawal and Chadha, 2005). On the contrary, other literature suggested that the board of director may be the reason for the corporate failure and scandals worldwide, as a result of ineffective decision making and monitoring, lack of accountability regarding the stakeholders in the society, ineffective direction and control functions, leading to greater information asymmetry and a general erosion of confidence in the firm (Alessandro, 2013; AlGhamdi, 2012; Amador, 2012; Amer, 2016).

Therefore, investigating the board of directors' attributes such as independent board, CEO duality, the board size, and board diversity bring new approaches and perspectives for researchers and regulators on the relationship between the board directors characteristics and earning quality (Fama and Jensen, 1983). Despite the proliferation of studies, there is still much debate/inconclusive results concerning the relationship between the directors, EM practices, and firm performance, which are arguably the main components of CG. A stream of researchers found that BOD characteristics have positive and negative impacts on financial reporting quality (Akpan and Amran, 2014; Abdul Rahman and Ali, 2006). On the contrary, another stream of researchers found that BOD characteristics, firm performance and financial reporting quality are not related (Machuga and Teitel, 2009; Carretta et al., 2006; Basiruddin, 2011; Uwuigbe, Peter and Oyeniya, 2014). To reconcile these inconsistencies, this study purposes to analyse the relationship between BOD characteristics and financial reporting quality from theoretical perspectives.

According to Alessandro (2013), AlGhamdi (2012), Amador (2012) and Amer (2016), the literature suggested that BOD characteristics (size, CEO duality, composition and diversity) have different influences on BOD's involvement in strategic direction, monitoring and advising potential, CG implementation and enhancing organisational performance. Most prior studies, such as Basiruddin (2011) and Fama and Jensen (1983), noted that various BOD characteristics may contribute to influencing their effectiveness in their monitoring role. These characteristics include

BOD size, the duality of the CEO, BOD structure, the directors composition, financial expertise and meeting frequency. The classification of boards is under different theoretical perspectives: (1) Agency Theory (2) Stewardship Theory, (3) Resource Dependence, (4) Stakeholder Theory, and 5) Institutional Theory.

4.4.1. The Board of Director Dimension/ Board Size

Board size is the magnitude of the directors serving on the board of a company. Although board size is viewed as the most crucial dimension of board attributes, there is a debatable issue and conflicting views in the CG literature regarding the impact of the board size on the firm performance.

One issue, that has been always debatable among renowned scholars such as (Jensen, 1993; Yermack, 1996; Dalton, et al., 1999; Hemalin and Weisbach, 2003), was about how to determine the appropriate board size for a firm in order to function effectively. Accordingly, Some studies, that aspired to enhance earning quality, firm value, disclosure and transparency advocated for the small size of boards (Lipton and Lorsch, 1992; Jensen, 1993; Abdul Rahman, and Ali, 2006; Santiago and Brown, 2009; Dharmadasa, Gamage, and Herath, 2014). Whereas others suggested that larger boards would better aid in improving firm performance and eliminating opportunistic behaviour (Pfeffer, 1972; Coles, Daniel, and Naveen, 2008; Akpan and Amran, 2014; Samaha, Khlif, and Hussainey, 2015; Amer, 2016; Al-Najjar and Clark, 2017; and Singn, Aggarwal, Anand, 2017). It is observed from the previous studies that there is no specified code used to identify the exact numbers of directors within board due to the different institutional environment around the world. Not all theories completely agree with codes (Peasnell, Pope, and Young, 2005; Emile, Ragab and Kyaw, 2014; Gonzalez and Garcìa-Meca, 2014; Fadzilah, 2017).

Agency and Stewardship theories recommended that a number of members within the board should not be numerous, which is consistent with English code due to different reasons (such as increased scope for malfeasance and empire-building). In this perspective, all directors are regarded as trustworthy members of the firm who should, consequently, be motivated as well as committed to its values. Agency Theory reckons that large board size increase the information cost, and disturb the decision-making process which results in less effective decisions due to the increased conflicting opinions, reduced coordination, and communication among the members, managers, and shareholders and more incidence of severe free rider problems. This perspective is

consistent with resources wasting Theory (Chugh, Meador and Meador, 2010; Habbash, 2010; Alessandro, 2013; Amer, 2016).

Smaller boards develop the decision-making process as a result of the increased accountability of individual directors and a reduction of the possibility of free riding. In this respect, firms with smaller boards have been proved by Eisenberg, Sundgren, and Wells (1998) to have higher market values. Since, the good governance has been linked to the small board size. on the contrary, large board has been claimed by Adebayo, Olusola, and Abiodun (2013); Dharmadasa et al. (2014); and Akbar (2014) to be incoherent with poor communication which might lead to the inefficiency of monitoring and controlling the management functions by the board members. This consequently affects the agency problems and costs which may later on lead to lower earnings quality and poor performance. Talbi et al., (2015) did not support large board sizes because large sizes result in increasing the magnitude of REM in 7,481 US firms. The empirical results revealed that only independent board of directors can mitigate the level of REM.

On the contrary, Stakeholder and Resource Dependence theories support the idea of having large board sizes. The Stakeholder Theory argued that increasing the number of directors on the board increases its capabilities and interests in interacting with the environment and in satisfying all stakeholders` needs. Thus, CG can be implemented in an effective way that enhance the firm performance (Akpan and Amran, 2014; Uwuigbe et al., 2014). Moreover, large board sizes do not provide an opportunity for the CEO dominance, thereby reducing agency costs and problems and a great room for the different stakeholders to be represented in the firm and to enhance the effectiveness of oversight over management (Amer, 2016).

Regarding to Resource Dependence Theory, the survival and growth of companies depends on the acquisition of external resources and minimise input supply uncertainty (Emile et al., 2014), it suggests that larger boards for their wider diversity of backgrounds, visions, opinions, communication skills, experience, and business contacts outside the firm, help organisations develop and improve decision making and support managers in reducing the agency problem. On the contrary, small board sizes have fewer tendencies to make strategic changes as a result of their inefficiency in providing more alternatives for firm growth. Small board sizes are not supported by this Theory due to their limited director capacity and capabilities, which affect negatively on an exceptional level of high-quality advice and counsel to the CEO

(Amer, 2016). Therefore, this Theory supports large and diverse board sizes, it holds on the notion that large size can expand and develop the channels of connection and interaction within the external environment, hence, economic performance can be advanced, and a company can grow and survive. This Theory is consistent with the Resource Enrichment Theory that reckons that large board sizes have a significant and positive impact on the firm performance; large board sizes can create more opportunities and resources for better financial performance. They have more capability to direct and control the affairs of the organisation, which can enhance their potential alliance with stakeholders and interest group (Chugh et al., 2010). Furthermore, Uwuigbe, et al. (2014) concluded that firms with larger board sizes and diverse qualifications and knowledge are more likely to be effective in constraining EM than smaller boards because the probability of having more independent directors with more financial and corporate expertise is increased in large sizes. However, certain empirical studies did not find any significant relationship between the board's size, reporting quality, transparency and disclosure and firm performance (Fooladi, 2012; Issarawornrawanich, 2015; Horváth, and Spirollari, 2012; Aljifri and Moustafa, 2007; Topak, 2011)

4.4.2. The Board of Directors' Composition (Board Independence)

Independent members on the board are mostly used in the literature to reflect the board's composition (Al-Najjar and Hussainey, 2009; Samaha et al., 2015). Traditionally, board composition indicates the number of non-executive/outside directors on the board. However, other definitions of independent directors have been proposed (Pfeffer, 1972). In the United States, most BOD members comprise of internal executive members until the 1960s. Since then, firms are concerned about changing their BOD composition to mostly consist of external directors (Bhagat and Black, 2002).

The board should consist of internal executives (insiders) and affiliated and independent directors (outsiders) to achieve organisational objectives that are consistent with the shareholders' interests. Insider is the term used to describe members of the firm who have a better understanding of the firm's operations. They may include directors, who are firm employees, retired employees and family members. Furthermore, they usually aim at enhancing the effectiveness and efficiency of the BOD's decision making. By contrast, outside directors can be affiliate and independent

directors. Affiliate members refer to former members of the firm and may include the CEO's relatives and non-employee board members with existing or potential business ties to the firm. Hence, they may impair their capability to monitor, control and discipline due to the conflicts of interest that come from their existing or potential future business relationship with the firm. (Anderson and Reeb, 2004). Independent directors are not connected to the firm, except for being board members. They have the professionalism and expertise in business operations and thus can more easily be delegated with supervision. Moreover, they significantly reduce the possibility of top executive collusion and prevent abuse of firm resources, thereby enhancing firm performance (Klein, 2002; Anderson and Reeb, 2004).

BOD's composition involves a collective body that works in the best interest of shareholders. Board independence refers to a corporate board with a majority of non-executive directors entrusted by the shareholders to represent them in decision making and to provide unbiased judgments. The domination of independent directors is more vigilant in monitoring behaviours and decision making of the company (Fama and Jensen, 1993).

Most CG codes recommended to balance between the executive and non-executive directors on the board to shed light on independent members (Fuji, Abdul-Halim, and Julizaerma, 2016). However, CG codes do not provide any specific number of executive and non-executive directors. CG theories do not support an agreement regarding the importance of including independent directors on the board (Kakanda et al., 2016).

Agency theory reinforces the crucial role of independent non-executive directors on the board. Independent directors play a significant role in avoiding the opportunistic behaviour of the management as they devote their capacity to minimise agency cost, either moral hazard or adverse selection, to resolve any conflict between the management and shareholders' interest (Lim, Matolcsy, and Chow, 2007; Uwuigbe et al., 2014). Earlier studies on CG-EM relationship are consistent with agency theory (Bedard, Chtourou, and Courteau, 2004; Klein, 2002; Xie et al., 2003; Talbi et al., 2015; Roodposhti and Chashmi, 2011; Osmo, 2008). Various scholars discovered that the role of independent directors is strictly important in countries characterized by dispersed and concentrated ownership. In dispersed ownership, the management and shareholders may have agency conflicts as the management maximises its interests at the expense of the shareholders' interests as shareholders are capable of controlling the management

(Fama and Jensen, 1983). Consequently, assuming that independent directors have the authority to perform monitoring functions on behalf of the shareholders, any opportunistic behaviour of the management is avoided (Karuntarat, 2013).

Although concentrated ownership may decrease the agency problem between the management and shareholders, where there is weak investor protection, it creates the principal-principal problem between the majority and minority shareholders. Hence, independent directors help limit the power of controlling shareholders and support the monitoring functions that may be impaired by the majority shareholders. Therefore, non-executive directors can control blockholders' intention of expropriating the firm's wealth at the expense of the minority shareholders' interest (Kakanda et al., 2016; Claessens et al., 2000; Karuntarat, 2013; Amer, 2016). Nonetheless, Ararat, Orbay and Yurtoglu (2010) in Turkey discovered that (1) equity issues are not related to board independence; (2) independent directors do not implement certain restrictions on the extent of related party transactions; and (3) board independence and firm performance are negatively correlated. These results may be justified by examining the different features of the Turkish market, including the weak protection of minority shareholders, highly concentrated ownership, predominance of family control, abundance of pyramidal groups and cross-holdings in other emerging markets (La Porta et al., 1999; Claessens et al., 2000).

Resource dependence theory is consistent with agency theory as it holds that outside directors provide the board with external resources, such as skills, expertise, and links to external network relationships. This condition protects the firm from the external environment by choosing suitable resources, minimising the uncertainty of external influence and confirming the availability of resources for firm survival and development (Karuntarat, 2013; Amer, 2016). Amer (2016) proposed that outside directors support four major types of resources, namely, (1) advice, counselling and know-how; (2) validity, legitimacy and reputation; (3) linked information between external organisations and the firm; and (4) preferential access to commitments and support from important external factors.

Moreover, these directors have idiosyncratic, immobile, inimitable, inseparable, synergistic, and sometimes-intangible bundle of resources giving the firm opportunities to utilize these resources to compete and increase innovative development thereby, performing in a superior manner (Pfeffer, 1972). They can improve business development and enhance business prospects by using their social context of external

ties and revealing boundaries. According to (Hillman et al., 2000, P 283), “it was stated that from the resource dependence perspective, outside directors "bring resources to the firm, such as information, skills, access to key constituents (e.g. suppliers, buyers, public policy decision-makers, social groups) and legitimacy”(2000, P283).

In contrast, stewardship theory takes an opposite perspective suggesting that monitoring is unnecessary because the agents are credible and good stewards of the resources delegated to them (Donaldson and Davis, 1994; Davis et al., 1997). Moreover, managers’ main objective is to act in the best interest of shareholders and establish the organisational objectives at a higher status than that of their interests. Stewardship theory supports the idea of giving managers excessive autonomy based on trust to reduce high monitoring costs that may be incurred by external directors and control their manners.

It advocates that the inside directors can understand the business better than outsiders, they have the technical expertise, information, accessibility to critical information, commitment, trustee, confidentiality to protect the shareholder wealth. While the outsiders lack the information, work as part-time and do not devote the required time and effort in applying the organisational functions effectively (Donaldson, 1990; Donaldson and Davis, 1994). Therefore, the theory expects that outside director may worsen the firm performance due to the increased agency costs and high costs of protecting the proprietary position of the firm (Bala and Gugong, 2015). The theory proposes that the responsibility and authorization should be given to managers make them as best employed to achieve firm objectives and to develop the CG system (Donaldson and Davis, 1994).

However, there are studies (Donaldson and Davis, 1994; Choo and Tan, 2007) have a strong resistance to the Stewardship Theory. They argued that managers cannot be work to align their interests with the shareholders' interests, and the dominance of independent directors on the board is very critical for the organisation to prevent managers from committing any frauds. CG codes, current professional directors, and the Council of Institutional Investors in the UK and the US paid more attention and to the critical role of independent directors (Habbash, 2010). Therefore, there is mixed and inconclusive evidence on the effectiveness of board compositions for monitoring managers, protecting the interest of stakeholders and enhancing organisational performance.

4.4.3. CEO Duality

Jensen and Meckling (1976) stated that duality occurs when an individual is holding two top positions (CEO and chairperson). The CEO is a full-time position that bears the responsibility for overseeing the company's daily operations and setting and implementing corporate strategies. On the contrary, the chairperson post is a part-time position that has the responsibility to ensure that the board works effectively (i.e. monitoring and evaluating the performance of the executive directors, hiring and firing CEOs, designing the board structure and identifying compensation contracts) (Weir and Laing, 2001). The BOD acts as a monitoring device that aligns CEOs' interests with those of shareholders and ensures that they perform their duties to satisfy organisational needs.

Some studies support the impact of duality on performance, whereas others prefer separation of the two positions. For instance, Cadbury and Hampel's report recommended CEO non-duality, justifying that a non-executive chairperson should be separated from the post of a CEO to be more effective in decision making, providing more objective opinions on firm plans and potential proposals, enhancing the monitoring functions, evaluating systems and supporting shareholders' interests (Adebayo et al. 2013; Samaha et al., 2012; Butt and Hasan, 2009). All CG codes (except American and German Codes, which do not address the duality issue) recommend the separation of the chairperson and CEO's roles and division of their responsibilities (i.e. CEO non-duality). On the contrary, others studies favoured CEO duality because it provides executives unified authority and power in planning, directing, controlling and coordinating the organisational affairs in a timely and effective manner, thereby improving firm performance (Akabr, 2015).

The Agency Theory advocates the idea of splitting the leadership position (CEO non-duality) due to the following disadvantages of CEO duality. First, the unified leadership (duality) provides more power and authority to CEOs to pursue their personal benefits and to impair the shareholders' and stakeholders' interests. Second, duality makes chairmen not capable to perform their duties and responsibilities of monitoring and supervising functions over the management effectively as required. Third, due to the combined roles, the chairman is likely to make decisions that are in preference of management interests. Fourth, the process of nominating directors on the board may be impaired by promoting personal friends and other individuals with whom

they have close social ties with CEOs. Fifth, it is difficult for those who evaluate the firm performance to also evaluate the effectiveness of themselves. In other words, as Alchian and Demsetz (1972, p.782) stated, "*who monitors the monitor?*". Sixth, the CEO may lead to additional CEO compensations and higher levels of performance-based incentives. The leadership duality influences the control of the information flow to shareholders and the development of corporate strategies that may affect negatively the process of decision making (Uwuigbe, et al. 2014; Samaha et al., 2012). Consequently, CEOs are more likely to perform an opportunistic earnings behaviour due to their dominance on the board and tend to withhold information from shareholders which will affect negatively on the shareholders' wealth. For example, Companies with CEO duality have more tendency to manipulate earnings via transfer pricing decisions. Here, the joint CEO and chairman have more power and the board is less able to restrain transfer pricing manipulations (Lo, Wong, Firth, 2010)

Stewardship Theory reckons that as the power and authority are concentrated in the hands of one individual (i.e. CEO duality), this can increase their commitment and motivation towards economic purposes achievement. Hence, combined leadership structure is favourable for managing firm (Lin, 2011). It suggests that managers have more tendency to pursue the organisational objectives at the expense of their interest. Indeed, the Theory recommends unifying the role of CEO and chairman to reduce agency cost (bonding cost and monitoring cost) and to act as a steward for the affairs of the company (Davis et al., 1997). According to the Stewardship Theory, duality directs and encourages CEOs to devote their time, effort, knowledge, technical expertise, resources to enhance the running of business operations. Duality reduces the tendency of CEOs and chairmen turnover which enhances organisational stability thereby, promoting the implementation of long-term missions and objectives (Lin, 2011; Salihi and Kamardin, 2015). CEOs duality avoids the confusion that may happen among the top management team by developing a clear, unified, unambiguous authority and responsibility. CEO duality is fundamental because Baliga, Moyer, and Rao (1996) stated that non-duality is not beneficial for strengthening the power of Chairman and CEO in making effective decisions as there is a likelihood of conflict between managers and chairman. Duality does not require the monitoring by the board, and they can perform the monitoring functions by themselves because they are more concerned with keeping their reputation and financial capital in the job market and to develop financial reporting quality and firm value.

Regarding the Institutional Contingency Theory, it suggests that there is no optimal leadership structure as the CEO non-duality and combined leadership structure may have relevant costs and benefits. Brickley, Coles, and Jarrell, (1997) stated that the impact of leadership structure changes according to the surrounding circumstances around the organisations and countries. According to (Boyd, 1995, P 304), Contingency Theory suggests that “ the agency model of the CEO-chair as the opportunistic, self-maximization, shirker is an as extreme model as stewardship`s depiction of the CEO-Chair as the altruistic, self-sacrificing steward of corporate assets" (1995, P304). Previous studies found that the relationship between CEO duality and performance is contingent upon the organisational complexity, industry, and the business environment (Al-Shammari, and Al-Sultan, 2010; Alessandro, 2013; Bouaziz, 2014). For instance, studies revealed a positive relationship between CEO duality and performance in the cases of dispersed ownership, scarcity of resources, ambiguity, turbulent, dynamic, and complex environment such IPO, SEO, and bankruptcy (Lin, 2011). On the other hand, others suggested that duality diminishes the monitoring function of the board of directors over management, thereby, affecting negatively on the firm performance. Therefore, duality may be negative in some situations and positive in others (Elsayed, 2007; Shukeri, Shin and Shaari, 2012)

Resources Dependency Theory advocates that unified (combined) authority of CEO allows executives to have easy access to scarce resources through external linkages and connections with the external environment. Dual leadership leads to cost savings in terms eliminating information transferring, processing costs, agency cost, information asymmetries connected with the non-CEO chairman (Al-Matari, et al., 2012; Akabr, 2015). Studies such as (Omran et al., 2008) found that firms with CEO duality have higher Tobin's Q, ROA, and operating profit because non-duality dilutes top management power and raise the probability of conflicts between the board of directors and management. Hence, management may be more efficient with the CEO-Chairman duality due to less bureaucracy and reduction in information asymmetry (Akabr, 2015). This external linkage facilitates the reduction of uncertainty in corporate decisions and promotes the directors to be easily involved in strategic activities.

From the organisational behaviour perspective, other scholars, such as Boivie et al. (2011), claimed that CEO duality and firm performance are not significantly related. They found that some elements such as CEO personality, beliefs, values

priorities, personal characteristics and principles that may influence the association between CEO duality and firm performance are difficult to measure.

The discussion of CEO duality from a theoretical perspective has been noted that different and opposing results about the relationship between CEO, firm performance and EM can be summarized as follows: (1) CEO duality positive influence EM; (2) CEO non-duality and EM are positively related; and (3) neither CEO duality nor non-duality significantly influences firm performance (ROE, market value added, ROA and return on investment) and EM (Singhchawla, Evans, and Evans, 2011; Abdel-Fattah, 2008).

4.4.4. Board Gender Diversity

Board diversity is considered one of the most critical and integral parts of CG mechanisms in recent years. However, to date, research investigating directly BOD diversity with Ems is limited. Board diversity has many elements, such as ethnicity, culture and religion, educational and professional background, knowledge, commercial and industry experience and career and life experience, that form its dimensions, for example gender and age. The elements have since represented the directors in the boardroom (Marinova, Plantenga, and Remery, 2016). Due to corporate scandals, such as those of Enron, Parmalat, Tyco and WorldCom, numerous practitioners have called for the importance of examining the impact of gender diversity on firm value and EM (Randøy, Thomsen, and Oxelheim, 2006; Carter, D'Souza, Simkins, and Simpson, 2010). In the United States, the Blue Ribbon Committee (BRC) and the National Association of Corporate Directors recommended that age, gender, race and nationality should be taken into account during the BOD election, whereas in the UK, CG code does not consider the BOD selection as a CG practice (Habbash, 2010; Collins, 2009).

Gender diversity attracted tremendous attention from different parties such as government, stakeholders, academicians, the corporate firms and the public, due to its importance from the ethical and economic concerns. For instance, it is unethical to exclude female directors from the boardrooms as their underrepresentation of female can be regarded as unethical and discriminatory (Kılıç and Kuzey, 2016). Within this context, it is very critical to investigate theoretical perspectives to determine to what extent gender diversity has an impact on financial reporting and organisational performance in developed and emerging countries. The theoretical propositions concerning the impact of gender diversity on shareholder value are a little bit mixed; in

which some raised arguments about the importance of a more diversified boardrooms, while others argued in the boardroom uniformity and corporate monoculture. The arguments on Agency, Resource Dependence, Stewardship, Institutional and Stakeholder theories are usually used by the advocates of diversity in corporate (Carter et al., 2010; Liu, Wei, and Xie, 2013).

Due to conflicts between the managers and shareholders' interests, Agency Theory supports the importance of fiduciary responsibility to counter the problem of misaligned interests between principals and agent. As a result, this perspective proposed gender diversity amongst directors in the boardroom is very critical to enhance the independence of the board and to support the function of monitoring and controlling over management, thereby mitigating the conflict of interest (Kılıç and Kuzey, 2016). The Theory justified that the diversity brings to the organisation new ideas, qualifications, knowledge, expertise and information that raise the capability of the organisation to deal with complexities and problems appearing in the external market environment. These different qualifications, backgrounds and opinions support the female to provide different and valuable perspectives and approaches during the board discussions, thereby promoting the effectiveness of the decision-making process (Gavious, Segev and Yosef, 2012).

Furthermore, studies such as Adams and Ferreira, 2009; Gul, Hutchinson, and Lai, 2013; Gull et al., 2018) indicated that gender-diverse boards encourage more audit efforts and managerial accountability to reduce the agency and domination problems. Female directors are more concerned with attending the board meetings than male directors and are trying to concentrate largely on the ethical standards and risk aversion projects compared with males. They are more driven by moral considerations rather than self-achievements. Females devote more efforts to complement the male directors not to substitute them to be capable in promoting open discussions, bringing new dynamics to the board deliberations, and creating good and healthy environment for the organisation to support the monitoring and oversight functions and to promote the quality of financial reporting (Taljaard et al., 2015). Therefore, it is expected that female may have less tendency to incur earnings management, especially if the opportunistic manipulations may include the risk of losing the reputation, litigation risk, current and potential investors, and jobs. Subsequently, female directors are less willing to conduct unethical behaviour compared to their male counterparts (Gull et al., 2018).

However, Institutional Theory suggests that board gender diversity is not beneficial to organisations all times and under all circumstances. The significance of gender diversity differs according to the firm's governance quality, the applicable accounting standards, the level of the investor protection, the quality of government, the legal system and culture. For instance, organisations with strong governed structure find unfavourable to have board gender diversity due to unnecessary over monitoring. On the other hand, the inclusion of gender diversity may be beneficial and urgent to the firm performance especially for the weakly governed firms (Gull et al., 2018). They explained that gender diversity brings skills, knowledge, information, education, expertise to the organisation which supports its members to cope with the changing environmental, social and institutional requirements. Resulting in minimizing the complexity, uncertainty, corruption and ambiguity, thereby enhancing firm performance. UK studies argued that results from the relationship between diversity, independence and earnings quality cannot be generalized over cross-national countries due to the changing economic environments, quality of governance, the size of capital markets, cultural differences, investor protection and different regulatory systems (Pucheta-Martinez, et al. 2016).

From Resource Dependency Theory perspective, more gender diversity may bring more access to the linkage, channels of communication and networks from different resources. This safeguards critical resources such as knowledge, skills, experience, prestige, different cultural backgrounds, legitimacy, different gender, and business contacts for the corporations. Most organisations favour the assignment of the responsibilities to female directors to assist enhancing the legitimacy of the firm by signalling that the firm improves gender equality in the external environment (Reguera-Alvarado, de Fuentes and Laffarga, 2017). Gender diversity supports its board members to adhere and respond rapidly to uncertainty problems and to control problems of limited resources for their entities (Kılıç and Kuzey, 2016). Diversity enhances the recruitment process of highly qualified applicants either from inside or outside the organisation to generate healthy competition atmosphere in internal labor markets (Taljaard et al., 2015). Therefore, board diversity helps organisations maintain its independence and sustainability over relevant resources and raise its competitive advantage (Gull et al., 2018; Luo, Xiang and Huang, 2017; Adams and Ferreira, 2009)

Stakeholder Theory carries the approaches that organisations are part of the social system. It assumes that gender diversity can support the interrelationship among

the stakeholders such as consumers, employees, local community and suppliers. The gender diversity supports the capability of the board members to analyse, and understand the societal requirements, thereby developing their awareness of social responsibility regarding the community (Kılıç and Kuzey, 2016). This reflects a positive image of the firm and strengthens social capital and cohesion, which in turn improves the wealth of the stakeholders and maximize the effectiveness of representation for different stakeholders. Organisations become more capable on developing the reputation and commercial opportunities through its broad linkage with diverse stakeholders (Gavious, et al., 2012; Taljaard, et al., 2015; Kılıç and Kuzey, 2016). Furthermore, the firm can raise its capability to increase its market share and to penetrate the market more easily, and also give the opportunity for their board to sponsor their functional ability, engage in complex problem solving situations, and take strategic decisions in favour of their stakeholders (Adams and Ferreira, 2009; Abbott, Parker and Presley, 2012).

Although, Agency Theory, Resources Dependency Theory, and Stakeholder Theory, work in favour of the diversity of the board members, however, there are arguments against board diversity as it may affect negatively on the earnings quality. For instance, the organisation may suffer from agency problems owing to more opinions, debates, discussions, and critical evaluations resulted from increased internal diversity. Many authors (e.g Abbott et al., 2012; Waweru and Prot, 2018) manifested that gender diversity in the board room may make them less cooperative and experience more conflicts, which affect negatively on the quality of decision making. Furthermore, the board effectiveness may be compromised if the board members do not work as an effective functioning team which may slow down the decision-making process which may impede the firm performance. Gender diversity may affect negatively on group cohesion and cooperation in the board room that make the decision-making process time consuming and ineffective especially in highly competitive markets. This constrains board ability to react quickly to market shocks, responses, and requirements (Nguyen and Eaff, 2007; Adams and Ferreira, 2009; Habbash, 2010; Kilic and Kuzey, 2016; Gull et al., 2018).

To conclude, examining the BOD characteristics that are best suited to the organisation according to CG theories, applicable national system and the contextual environment surrounding the organisation is a crucial action. Most CG theories find that the job assignments of the managing director and BOD chairperson need to be

segregated and that to independent directors must be included in the board room. This concept emerges from the underlying assumption that the chairperson, who is responsible for the decision-making system in terms of control (BOD), should not be controlled by the CEO, who makes executive decisions. Additionally, these theories suggested that a special committee must be included in the BOD to remain uninfluenced by the CEO in addressing any potential operational problems among the top executives. By contrast, most theories claim that if board size is excessively large, then the BOD members would lack coordination. Thus, these theories suggest that the board size should be small to allow for a greater exchange of ideas. At this juncture, the CG theories suggested some further justifications and recommendations related to the BOD, including the need for assessment procedures for the BOD and its members, the frequency of BOD meetings and compensations of non-executive members, the CEO and executive managers.

4.5. Audit Committee Attributes and Earning Management: Theoretical Perspectives

The AC is considered as one of the critical milestones of CG practice implementation. The increased attention paid to the importance of CG and ACs have gained increased attention from stakeholders. This is due to the earnings restatements problems in publicly traded companies accompanied with claims of financial statement fraud and the absence of responsible CG of high-profile companies (e.g. Enron, Global Crossing, WorldCom and Adelphia) (Al-Ajmi, 2009; Bhasin, 2012). AC has been described worldwide by most government authorities, regulators and international bodies as a potentially powerful tool in developing financial information reliability and transparency (Al-Ajmi, 2009; Bhasin, 2012). ACs play an important role in CG as an oversight function of the financial reporting process and internal control structure. Thus, Rezaee et al. (2003) mentioned that the AC's function has developed over the years through the recommendations of the Treadway Report (1987), the BRC (BRC, 1999), the Securities and Exchange Commission (SEC, 1999) rules, the Sarbanes-Oxley Act of 2002, the UK's combined CG codes (2003), organized stock exchanges, including New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and National Association of Securities Dealers Automated Quotation (NASDAQ).

Several studies such as Rezaee et al., (2003); OECD, (2004); Chen, Lu, and Sougiannis, (2008); Beasley et al., (2009); Collins, (2009); Mohiuddin, (2012); Lary and Taylor, (2012); Ilaboya and Obaretin, (2015) manifested that AC performs several

critical responsibilities such as; confirming the quality of the financial reporting process, evaluating the effectiveness of the internal control system and risk management, and monitoring and assessing the external auditing process. The role of AC role is not restricted to aligning the efficiency and effectiveness of the external auditing process but extends to include internal audit functions. Furthermore, AC is not only considered as a beneficial tool for increasing the level of assurance against catastrophic failure and gross malfeasance but also provides improvements on a wider front and raising the overall standard of CG for all companies that establish ACs (Ilaboya, and Obaretin, 2015).

Furthermore, ACs play prominent roles on the board such as; setting up a continuous interconnection between external auditors and the board, supervising CG application, enhancing the functions of financial accounting systems and reporting, supporting the structure of internal control and performing internal and external audit services. Due to the rules imposed by the SEC, the structure, composition, functions, and responsibilities of ACs are affected significantly. Accordingly, ACs should be characterized with independence, competency, professionalism, expertise, financially literally, adequately resourced and properly compensated to perform oversight and monitoring functions effectively (Rezaee, et al., 2003; Mohiuddin, 2012).

The supervision of financial statement quality can possibly be promoted if both the audit committee members along with the external auditors and management cooperated together. Investigating the attributes of audit committees more closely, comes as one of the main objectives of this study. Which enables them to determine what influences the quality of earnings the most. These characteristics can be classified into three categories (Al-Ajmi, 2009; Bhasin, 2012):

- A. The AC director's independence;
- B. The AC's meeting frequency;
- C. AC size.

There is a growing number of studies on the attributes of ACs, mainly focusing on the significance of committee member' size, experience, diligence, the frequency of meetings and independence. AC members should have personal characteristics such as qualifications and competence (Mohiuddin, 2012). Much of research on ACs examined the impact of AC inputs (AC meeting, AC size, AC independence, and AC expertise)

on financial and market performance, earnings quality, fraudulent financial reporting, voluntary disclosure, going-concern reports, stock price reactions, auditor changes, restatements, internal control quality of the firm and financial reporting outputs (Carcello and Neal, 2000; Klein 2002; Rezaee et al., 2003; Bedard et al., 2004; OECD, 2004; DeFond, Hann and Hu, 2005; Chen et al., 2008; Beasley et al., 2009; Mohiuddin, 2012; Ilaboya, and Obaretin, 2015; Wang, Lee and Chuang, 2016). These studies generally revealed that independence, expertise, diligence, meeting and the size of AC can be positively, or negatively, or non-associated with higher quality financial reporting and auditing. The relevant literature on these attributes of ACs is discussed below.

4.5.1. Audit-Committee Independence

CG can be defined as the system through which firms are directed and controlled (Cadbury, 1992). According to the CG principles formulated by the Organisation for Economic Cooperation and Development, ‘An annual audit should be conducted by an independent, competent and qualified auditor to provide an external and objective assurance to the board and shareholders that the financial statements fairly represent the financial position and performance of the company in all material respects’ (OECD, 2004). Furthermore, as mentioned by KPMG (2006) and the U.S. SEC (2003), ACs primarily aims to oversee the company’s financial reporting process, including certain relevant risks and controls, and ensuring high-quality financial reporting. The BRC (BRC, 1999, p. 20) has addressed the role of ACs in CG as ‘ Good governance is the reason behind promoting accountability in the relationships among the primary corporate participants which subsequently enhances the corporate performance. It preserves the image of the management by making it accountable to the board. It also keeps the board’s image accountable to shareholders. Working with management to reach significant levels of both corporate legal and ethical compliance can be the key element of board oversight. It should be mentioned that such oversight basically relies on ensuring that the policies of quality accounting, as well as the internal controls and the independent and objective outside auditors are ready to hinder fraud, foreshadow financial risks, and promote accurate, high quality, and timely disclosure of financial and other material information to the board, to the public markets, and to the shareholders’.

AC independence is a prerequisite for audit effectiveness for several reasons (Mohiuddin, 2012) such as; (1) the quality of audit process can be promoted due to the inclusion of highly independent and expert auditors; (2) the independent AC members have strong attitude and commitment in applying corporate governance rules to frighten the management from any financial and operating manipulations; (3) the independent members have greater likelihood to protect the shareholders interest by increasing the oversight responsibilities regarding financial reporting process, thereby, enhancing the creditability and reliability of financial reporting. Therefore, there should be a separation between independent members in AC and management and owners of the organisation. Moreover, they should have a non-business relationship or personal relationship or economic ties with executive managers in the organisation (BRC, 1999) which can minimise the likelihood of financial fraudulent activities and ensure a fair assessment of auditing and reporting processes.

Independent members suggested to dominate the industry specialists as an external auditor to enhance the quality of audit services provided and to control the integrity of financial statements. Nevertheless, the organisation may charge more audit fees to take superior audit services. Moreover, literature such as (Lary and Taylor, 2012) revealed that the more independent auditors, the less likely to experience a restatement in their financial statements and less likelihood for a failure to maintain the integrity of external financial statements

AC can be considered a good tool for reducing information asymmetry especially if independent auditors provide reliable, sufficient, trustworthy information about business operations and management activities to the shareholders. Thus, the AC should not only include inside executive directors but also independent directors in order not to jeopardize the main aim of assembling the committee and not to interfere in carrying out the committee responsibilities. For example, Aldamen, et al., (2012) and Vlamincx and Sarens, (2015) reported a positive association between the number of independent auditors in AC and going concern of the company and value creation. Organisations usually go for adding independent auditors in AC to improve their reputation and exposure in this area and to have complied effectively to the accounting principles and standards. Most empirical results (Aldamen et al., 2012) highlighted that AC is 'cornerstones of corporate governance' and it should be composed of external and independent directors that improve transparency and accountability.

All CG international theories, except stewardship theory, agree that ACs are a fundamental unit for organisations. Agency theory finds the importance of including ACs in CG in solving conflicts between shareholders and the management, thus enhancing tactical and strategic decisions (Collins, 2009; Mohiuddin, 2012). ACs develop firms' capability to alleviate the agency problem and diminish information asymmetry between insiders and outsiders. Hence, it is argued that a proper and well-functioning CG system exists when the three main groups (i.e. the BOD, the management and ACs, including the internal and the external auditors) collaborate and coordinate in providing transparent financial reports (Collins, 2009).

Agency Theory gives more priority to the monitoring function of the board committee more than the operating board. this Theory justifies this argument by stating the following reasons; First, most monitoring committee, as opposed to operating committees, is composed of independent members who devote their efforts in analysing and inspecting managerial actions to protect the shareholders' interests. Second, they can bring their skills, knowledge and expertise to their business to effectively take the best decision-making. Third, they can enhance and improve the organisation's accountability, reliability, legitimacy and creditability of financial reports. Fourth, the members of the AC can minimise the agency costs by providing more reliable and objective accounting information to the shareholders. Fifth, they can minimise the financial fraud by regularly reviewing the financial statements, audit process and internal accounting control (e.g. Jensen and Meckling, 1976; Fama and Jensen, 1983; Cadbury Report, 1992; UK Combined Code, 1998, 2006; King Reports, 1994, 2002; and Sarbanes-Oxley Act, 2002)

According to Stakeholder and Resource Dependence theories, ACs should be composed of outside directors or independent ones because they have the expertise, qualifications and experience to manage unexpected events and circumstances surrounding the organisation and to deal with resources uncertainties (Basiruddin, 2011; Alessandro, 2013). AC can be considered as a means for enhancing the network and connections among directors, shareholders and stakeholders. This network facilitates the acquisition of financial, technical, human and critical resources for the organisation within the environment (Alessandro, 2013).

There are several studies supporting the Stakeholder and Resources Dependency theories regarding the positive impact of independent members in AC and the firm value. Martinov-Bennie, Soh and Tweedie (2015) argued that members of ACs

usually have the qualifications and best understanding of risk appetite of firms that allow them to deal with technical aspects of the corporations (such as risk assessment and management, or conflict of interest situations). Furthermore, several studies are concerned with examining the relationship between AC characteristics (financial experience, independence and size) and the quality of financial information, came up with the following findings: first, the absolute independence of AC can eliminate the occurrence of financial deviations. Second, the large size of AC and more expertise and qualifications of its members can enhance the quality of financial reporting (Klien, 2002; Qinghua, Pingxin, Junming, 2007; Basiruddin, 2011).

These theories are consistent with the result of studies such as Cadbury Committee (1992), BRC, (1999) and Al-Najjar and Clark (2017). They reported certain benefits of including AC in CG, such as raising the financial reporting quality, promoting public confidence regarding the creditability and objectivity of financial statements and supporting the independence of directors and internal and external auditors and minimizing information asymmetries and opportunistic behaviour by reviewing accounting methods and their changes. Additionally, they found that AC members experienced and skilled in detecting and reducing errors, irregularities and fraudulent practices, thus providing additional protection to debtholders and shareholders and strengthening the position of external auditors and their independence role by providing communication channel and forum for certain issues (Inaam and Khamoussi, 2016).

Conversely, the Stewardship Theory finds that ACs limit the growth opportunities for the firm and may be an obstacle for developing long-term performance or preventing any opportunistic behaviours due to several reasons (Guthrie and Turnbull, 1995; Rainsbury, Bradbury and Cahan, 2008). First, ACs may dilute the executive authority. Second, they may divert the functions of non-executive directors from the strategic role to the routine job of auditing and financial reporting. Third, they may limit the communication and interaction between auditors and the board. Fourth, they can be described as a rubber stamp to confirm management decisions. Fifth, they may drive management to misconduct fearing from having access to knowledgeable lower level employees.

4.5.2. Audit Committee Size

AC size can be another influential and relevant factor to the effectiveness of audit committee duty. As the size of AC increases, more skills, expertise, knowledge, information can be devoted by the AC to enhance the functions of controlling and monitoring (Chen et al., 2008; Mohiuddin, 2012). This can help in reducing agency conflicts that make managers have the motives to signal more private information to the investors and have fewer incentives to manage earnings, which is consistent with Resources Dependency Theory (Saleh et al., 2007). For instance, market regulators in the US and the UK proposed in their CG reports that minimum number of directors in AC should be comprised of at least three members (Cadbury Committee, 1992; Carcello and Neal, 2000; Davidson, Goodwin-Stewart and Kent, 2005 and Capital Market Authority, 2006).

4.5.3. Audit Committee Meeting/Audit Committee Diligence

The main objective of the AC is assuring the reliability and accountability of the accounting information released. This can be done by evaluating the internal audit system, controlling the CG process, enhancing the information transparency and eliminating the conflicts among shareholders and managers to mitigate agency problems, to reduce information asymmetries and to promote the independence of the external auditor. Therefore, AC should meet regularly with external auditors to monitor and regularly review the financial reports, audit process and internal control mechanisms to perform these tasks effectively (Sharma, Naiker and Lee, 2009).

Until now, CG codes have no agreement on the number of AC meetings required to achieve effective audit work and SEC does not identify the exact number of audit meetings per year and does not make them mandatory. However, the BRC (1999) recommended that AC should hold meeting at least four times per year to improve the quality of financial reporting with external auditors. Whilst, UK Cadbury report recommended a minimum of two meetings per year. Beasley (1996) indicated a negative relationship between AC meetings and fraudulent financial reporting. Similarly, Abbott, Parker, Peters, (2004) found that AC that meets at least four times a year is not likely to restate their financial statement and have more likelihood to enhance the integrity of external financial statements.

Audit meetings mechanism is considered one of the essential aspects that has an impact on AC effectiveness and control. The frequency of AC meetings is described as a signal for the board diligence as it encourages the external auditors to raise the

potential troubles-issues at an early stage and to deal with the serious circumstances that arise during the financial year (Saleh et al., 2007). Previous studies such as Carcello et al., (2002), Gul et al., (2003), and Lary and Taylor, (2012) recommended increasing the meeting frequency to enhance the performance of AC control, to raise the quality of firm accounting information and to reduce the agency conflicts. This makes the managers interested to release the private information to investors.

4.6.Audit Quality (External Auditing)

At the end of the 1990s and in recent decades, the rising number of scandals and bankruptcies (e.g. Enron, Xerox, WorldCom, Flowtex, Rite-Aid, Royal Ahold, and Tyco) led to the deterioration of the reported earnings as well as the investor confidence and trust on the accounting information have been impaired. In addition, the investor's contractual outcomes and the controlling of managerial opportunistic behaviours have decreased (Lin and Hawang, 2010). Owing to frequent fraudulent financial reporting and problems resulting from asymmetric information between the agents and principles, regulatory agencies, shareholders, stakeholders and other contracting parties are more interested in having an effective audit process to ensure the integrity of financial reporting. Independent and qualified audit help provide the external parties with more accurate, reliable, timely and credible information included in the financial reports for purpose of reducing the level of risk misstatement (Armstrong, Guay and Weber 2010; and Habbash, 2010).

Agency theory emphasises that CG is one of the possible solutions to agency problems as it serves as an internal mechanism in aligning the interests and objectives of shareholders and management to reduce agency costs. External audit enhances the confidence and trust of the public in financial reporting and strengthens information accountability and reliability (Habbash, 2010). Furthermore, agency theory proposes that, as an external mechanism, an external audit has a vital role in decreasing the agency problems that result from managers' self-interest behaviour at the expense of the principals' interest. The theory identifies that external audits act as a crucial mechanism of monitoring that controls the conflict of interest between managers and shareholders and decreases information asymmetry. External auditing plays a critical role in effective CG implementation through audit reports that ensure all shareholders of fair financial statements. An efficient and effective CG system depends on the auditor's significant role. In addition, an effective system of reporting and control that

is associated with the external auditors influences CG with better functionality of the organisation and in protecting shareholders' interests (Alessandro, 2013).

According to generally accepted auditing standards, external audits should be conducted to ensure the level of transparency and disclosure. The auditing quality of the Big 4 auditing firms greatly impacts reliable and objective information provided to external users because they have greater qualifications, skills, expertise and professionalism in detecting fraud EM practices. Moreover, they are more concerned about maintaining their reputation in the labour market. Audit quality is another factor that identifies aggressive EM. High-quality auditors maintain excellent financial reporting quality to protect their brand and reputation against risks that may result from clients' inaccurate financial reports, (Francis and Wang, 2008). Furthermore, high-quality auditors exert a great effort to discover any aggressive EM and material misreporting to keep their clients, brand audit fees and reduce litigation risks of an improper audit. Therefore, large auditing firms gain significantly higher fees to improve their technological capabilities and hire skilled professionals to design and employ effective tools for detecting misreporting (Khalil and Ozkan, 2016). Thus, agency theory proposes that external auditors' quality and independence are a vital aspect of supporting a satisfactory level of supervising management behaviours.

Stakeholder's Theory is supposed to be derived from the Agency Theory. In any modern business, the agency theory is known to be an interaction between principles and their agents who are responsible for controlling the firm's operations. This interaction as found by the analysts creates the problem of information asymmetry as a result of information advantage for the managers. Accordingly, the Agency Theory suggests a greater tendency to have a proper monitoring mechanism (external audit) to provide an independent, and fair examination of the affairs of the organisation and for the quality of financial reports submitted to the shareholder (Habbash, 2010).

The Stakeholder Theory is considered to be a natural extension of the Agency Theory as it involves the interaction between the agents and stakeholders such as the host community, government, suppliers, bankers, creditors, customers, bondholders, and others. Subsequently, there is a greater information demand from all people on the entity affairs and operations, thereby, having a greater need for independent auditors to confirm from the representative of the financial statements. The Stakeholders Theory, suggests that CG and the quality of audit could act as effective monitoring systems that

safeguard the interest and rights of all stakeholders. The task of the external auditing should be devoted toward the interest of both shareholders and stakeholders. This Theory holds that enhancing the shareholder values should not be necessarily the top priority of the business (Freeman, Wicks, and Parmar, 2004; and Habbash, 2010).

4.7. Summary and Conclusion

After reviewing contradictory and changing theories and approaches, the study concludes that it is preferable to adopt an integrated approach to recognize the impact of CG and external auditing on EM rather than adhering to a particular Theory. The thesis is interested in providing a comprehensive and detailed review for CG theories, Almost of academics and practitioners are interested and relevant in their studies regarding to the Agency Theory. As they suggested that this theory plays a prominent role in developing the CG principle, standards, mechanisms, and codes taking into the consideration the different surroundings of the structural environment, cultural, and legal system (Sah, Butt, and Hasan, 2009; Habbash, 2010; Yasser and Soliman, 2018; El-Moslemany and Nathan, 2019). It is also vital in providing a comprehensive explanation for the CG. However, Stewardship Theory, Institutional Theory, and Stakeholder Theory have recently gained more attention.

As discussed above, Agency Theory concentrates on the interests of shareholders and how to deal with solving the conflict between shareholders and management using different CG mechanisms to develop the monitoring functions over managerial decision making and performance. In contrast, Stewardship Theory provides an optimistic view regarding the relationship between managers and shareholders and suggests that management works as good stewards for the corporate assets. It proposes the alignment between management interests, shareholders' interests, and organisational objectives as managers are concerned with the recognition for their achievements and performance.

While, the Stakeholders Theory confirms the interests of shareholders as well as the interests of all stakeholders, it does not only work around the board monitoring and value maximization of shareholder's wealth, but also around all stakeholders' interests, social responsibilities, and ethical considerations. However, this Theory has been criticized for being unaccountable and incompatible with CG objectives and for its incapacity to identify the appropriate information needed for various stakeholders.

Within the same line, Jensen, (2001) proposes an enlightened value-maximization, “which utilizes much of enlightened Stakeholder Theory but accepts maximization of the long-run value of the firm as the criterion for making the requisite trade-offs among its stakeholders ... and therefore solves the problems that arise from multiple objectives that accompany traditional Stakeholder Theory” (p. 298).

As it is known, CG practices play a critical role in enhancing the quality of financial reporting system and corporate communication. The financial reporting system is important for strategic stakeholders helping them identify and determine the flow of information about corporate activities. Stakeholders include insiders and outsiders who have different roles and different needs inside and outside the corporation. For instance, the financial reporting is vital for shareholders who need to identify the organisation’s capacity to remunerate its shares (e.g. dividends, capital gain in the stock market). Employees are also interested in knowing the organisation’s capability to help them sustain their positions. Moreover, the creditors are interested in knowing whether the corporation is able to pay back its debts and interests. Consequently, identifying the different interests and needs of different stakeholders can support the CG system to perform its role effectively in preparing financial reporting system and in promoting the quality of corporate communication to all stakeholders (Sah et al., 2009).

In terms of EM practices, several theories are used to explore the relating incentives and techniques such as the Agency Theory, Institutional Theory, Stakeholder Theory, and the Positive Theory and capital market efficiency. Despite the use of Agency Theory in most of the literature to investigate the earnings manipulation practice, this Theory is not sufficient to justify the relationship between CG and earnings management. Subsequently, the convergence between two or three theories may be useful in providing precise interpretation for the relationship between CG and earnings management.

The theories discussed above provide significant insights into their role in CG. However, we should not solely depend on a distinctive theory but rather integrate them to better understand the board process and dynamics. This approach has been followed by several authors, such as Stiles (2001), Roberts et al. (2005) and Amer (2016), who recommended theoretical pluralism. For example, it was argued that although agency and supervisory theories may have contradicting perspectives, they may be correct. Particularly, Boyd (1995) argued that using contingency approaches make the use of

these theories more applicable and justifiable if they are implemented in different environmental contexts. Thus, Hendry and Kiel (2004) stated that contextual and environmental factors, including the enforcement level, cultural variation, environmental uncertainty, social values and information inconsistency can help determine the choice of theoretical approach. Therefore, each theory is indispensable for clarifying the efficiency and effectiveness of CG control and monitoring functions. However, some studies suggest that different theories may work as complementary rather than a substitute for agency theory. For instance, Culpan and Trussel (2005) suggested that agency theory and stakeholder theory are important in determining unethical accounting behaviours, financial issues and different stakeholders. Habbash (2010) argued that institutional theory and agency theory complement each other to promote the CG effectiveness. Therefore, using both theories as a framework may help expand the understanding of CG and board functions. Therefore, this study adopts the agency theory in formulating its hypotheses. Institutional theory is also useful in the process of determining whether they are essential as complementary factors. The following chapter discusses further literature review on the association between several CG attributes and external audit with EM practice.

Chapter Five

Empirical Literature and Hypotheses Development: CG Mechanisms, External Audit, and EM Practices

5.1 Introduction

This chapter aims to discuss and analyse the significant preceding literatures related to CG structures especially ownership structure, board of director characteristics, AC characteristics and external audit with EMs. The comprehensive review of the literature shows conflicting and debatable results which helps find the research gap and determine the research variables. Accordingly, it traces the extant CG-EM manipulations relationship literature to develop hypotheses among the variables examined in this study. Therefore, the study examines the relationship between each of CG mechanism and two types of EM (accrual-based activity management and Real-based Activity management). The study classifies the hypotheses into three categories; the first category of hypotheses (**HA**) is related at examining the relationship between CG mechanism and Accrual-based EM. The second category of hypotheses (**HB**) is concerned with relationship between each CG mechanism and Real-based EM. The third category of hypotheses (**HC**) is concerned with examining if there is a non-linearity between CG mechanisms and earnings management practice taking into consideration that CEO duality and audit quality are not logically to be tested as they are dummy variables and the threshold technique cannot measure the non-linearity relationship regarding dummy variables.¹⁵

This chapter is organized into six sections. Section 5.2 reviews the studies discussing the empirical links between ownership structure and EMs. The second group discussing the relation between the board of director's attributes and EMs is presented in Section 5.3. The third group that examines the association between Audit Committee (AC) characteristics and EMs is discussed in Section 5.4. Whilst, the association

¹⁵ The first category of hypotheses is going to be tested in chapter seven, the second category of the study hypotheses are going to be tested in chapter eight and the third category that is concerned with testing non-linearity is going to be tested in chapter nine.

between external auditing and EMs is illustrated in Section 5.5 and finally Section 5.6 summarizes the chapter.

5.2 Ownership Structure and EMs

The first group of the empirical studies address the relationship between the ownership structure and EMs practices. The ownership structure represents an independent variable (i.e, Exogenous variable) including the family ownership, managerial ownership, institutional ownership, and governmental ownership. While, EMs represents the dependent variable (i.e., Endogenous variable) and includes the accruals and real-based EMs. Although the relationship between the ownership structure and earnings management has been the subject of several research, specifically, this issue is strongly addressed in the well-developed capital markets, in particular UK and US in which ownership structure is dispersed among investor and have strong investor protection. On the contrast, few studies in the emerging countries and developing economies have directly addressed this issue regarding the relationship between ownership and earnings manipulation practice (Khalil and Ozkan, 2016) . The relationship between two variables is indicated in figure (5.1).

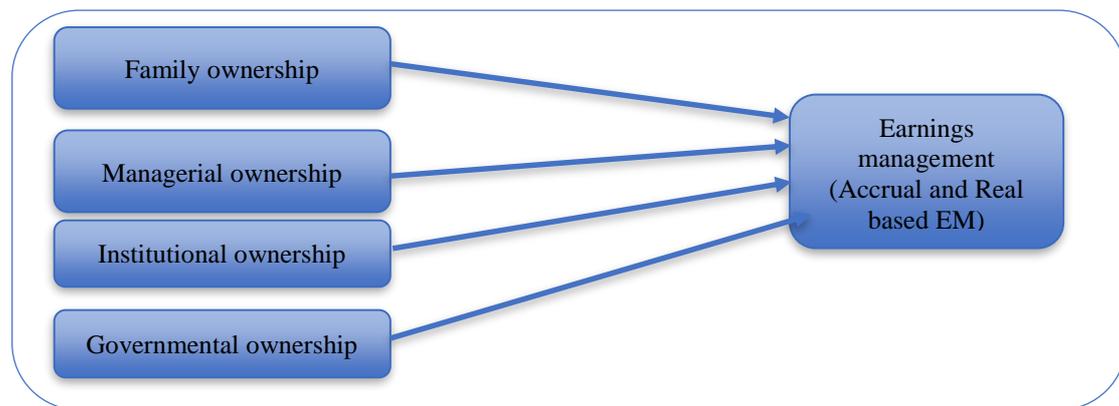


Figure 5.1: The Link between Ownership Structure and EMs

5.2.1 Managerial Ownership

The literature investigating the relationship between managerial ownership, performance, and EMs practices is mixed either in the developed or in the developing and emerging market. Consistent with the Agency Theory, the low level of managerial ownership provides managers more incentives to manipulate financial information and earnings to increase their compensation plans, relax contractual constraints, and reduce debt restrictions (Jensen and Meckling, 1976), thereby influencing negatively on the quality of financial reporting (Entrenchment hypothesis). Consequently, the theory suggested providing managers a certain proportion of wealth in the form of shares,

aiming to maximize the firm value and to align their interest with shareholder interest. This is coherent with the (Alignment of interest hypothesis). However, excessive internal shareholding may be destructive to the organisation as this large shareholding gives the managers more power, authority, and control over firm decisions. Higher executive shareholding may give managers opportunities to manipulate earnings to keep the stock prices high. Hence, this increases the value of shares and having an adverse effect on the quality of financial reporting and this is consistent with the Entrenchment hypothesis (Fama and Jensen, 1983; Denis and McConnell, 2003; Cheng and Warfield, 2005; Mitani, 2010; Al-Fayoumi, Abuzayed and Alexander, 2010).

In the Developed countries, a group of researchers reported a positive relationship between managerial ownership and earnings manipulations (Ayadi and Boujelbene, 2014); another found a negative association, while a third group revealed a non-linear relationship between them (Teshima and Shuto, 2008; Gonza'lez and Garcí'a-Meca (2014).

Several works of the literature revealed that managerial ownership has a negative impact on the quality of financial reporting such as Ayadi and Boujelbene, (2014) in France who found that managerial ownership and EMs are positively and significantly related. This is consistent with the entrenchment hypothesis (Al-Fayoumi et al., 2010; Charfeddine et al., 2013). Therefore, this research advised the policymakers in France to control the managerial ownership to reduce the manager's opportunistic behaviors toward firm earnings. Moreover, there is non-significant relationship between managerial ownership and earnings informativeness either in linear and quadratic terms. Bos, Pendleton, and Toms, (2013) in the UK argued that increased shareholding in managerial structure may provide managers with an incentive to more opportunistic manipulation and greater scope for opportunistic behavior.

Consequently, the managerial shareholding in the whole world begins to steadily decrease since the 1990s but still the vital mechanisms because the managers are considered the second-largest shareholder class in the UK. The Greenbury Report (1995) intended to decrease agency problems and moral hazard between the managers and shareholders. Therefore, it encourages the managers to own some shares in their company to support the shareholders' interest with their interests. Hence, managers should be motivated by several compensation plans to improve firm performance. The researchers suggested that the positive relationship between managerial shareholding and integrity of reporting is suggested when the managers own low and high equity

shares, while intermediate ownership may lead to expropriation or entrenchment by managers (Teshima and Shuto, 2008). Accordingly, an insignificant association between managerial ownership and EMs has been found in the literature.

For instance, Iqbal and Strong, (2010) in UK found an insignificant association between EMs (DAs using the Modified Jones Model) and managerial ownership based on 100 publicly traded companies from 1991 to 1995. This result is consistent with Yang et al., (2009). According to Spinos (2013) research is conducted on 235 U.S. listed firms from 2004 to 2009 to test the impact of managerial ownership on the DAs before and after economic depression (financial crisis). The study revealed a negative but non-significant linkage between managerial ownership and the absolute level of DAs during the whole period. However, the findings after the financial crisis in 2006 showed a significant and negative relationship between the level of managerial shareholding and DAs. Similarly, Koh (2003) in Australia found a negative but non-significant association between managerial ownership and income increasing DAs from 1993 to 1997.

In the Japanese context, Teshima and Shuto (2008) study documented that there is a non-linear relationship between managerial ownership and DAs. Indeed, the study found a negative association between them within a high and low level of equity shares. In contrast, managerial ownership influences positively on EMs within the intermediate level of ownership. They found the level of shareholding is influential factor that influence on the relationship between managerial ownership and performance. The study revealed that when the ownership level is intermediate (above 5% and below 15%), managers have more opportunities to keep their position by weakening the internal and external CG market. This intermediate level of ownership provides them with control over decision making, power and authority over the shareholders. On the other hand, when the shareholding level does not exceed 5% therefore, the investors can decrease the managerial actions that conflict with their interest. Therefore, the incentive alignment hypothesis is maintained, and performance is enhanced. Furthermore, when executive shareholding is above 15%, the firm performance is enhanced, and they are unlikely to expropriate the shareholding wealth. A high level of ownership offers managers extra voting power and control over the firm operations without the need for internal control by the board so that effectively reduces any opportunistic behavior. These findings maintain alignment-interests and the entrenchment hypotheses in different ownership intervals.

In Latin America, whereas there is weak legal investor protection and family ownership concentration, Gonza'lez and Garci'a-Meca (2014) manifested that relationship between managerial shareholding and earnings manipulations is non-linear . This finding supports both the convergence-of-interests and the entrenchment hypotheses in different ownership intervals. The study recommended that managerial ownership is a good mechanism to limit any manipulation when the shareholding level is not very high. Also, Sanchez-Ballesta and Garsa-Meca (2007) found similar results in Spain when the shares held by insider ownership are not high. Although, when executive managers own a large percentage of shareholding equity, the relation between insider's ownership and discretionary accruals reverses.

Managerial ownership in the Developing countries, as mentioned in the previous chapters that most of developing countries are characterized with the weak regulatory system, weak investor protection of minority shareholders and more ownership concentration (Afify, 2009; Samaha and Hegazy, 2010; Ebaid, 2013, Khlif, Samaha, and Azzam, 2015; Mostafa, 2017; Raafat, 2018; Sarhan, et al., 2019). Therefore, one of the objectives of this thesis is to examine to what extent the managerial ownership influences the reliability of financial reporting.

On one hand, several literature found a positive association between managerial shareholding and EMs. For example, Al-Fayoumi et al., (2010) in Jordan revealed that managers are not efficient in constraining the accrual-based manipulations. When managerial ownership concentration increases, there is a greater chance for entrenchment and opportunistic EMs. Aygun et al., (2014) in Istanbul Stock Exchange (ISE) found out that managerial ownership increases the DAs (modified Jones model) which reduces the quality of financial reporting. This result contradicts the Stewardship Theory and interest alignment hypothesis which suggested that managers act as a steward of firm assets and are more accountable towards the resources of the organisation. This result is consistent with Ogbonnaya, Ekwe, and Ihendinihu (2016) and Obigbemi (2017) in Nigeria.

In the Tehran Stock Exchange, Sepasi, Kazempour, and Mansourlakoraj (2016) found that firms with high managerial ownership influences negatively and significantly on the quality of disclosure. Managers have more tendency to capitalize on their wealth at the expense of shareholder's interest; therefore, they hide information and do not disclose it properly and comprehensively. Thus, they intend to increase the information asymmetry and reduce the confidence and trust of the present and potential

investors. This finding is consistent with the Agency Theory. Furthermore, Waweru and Prot (2018) found a significant and positive association between managerial ownership and EMs in Eastern Africa (Kenya and Tanzania). Indeed, the managers have more tendency to entrench themselves at the expense of shareholders' interest. The study result is consistent with the convergence of interest hypothesis but contradicts Alves (2012) in Portugal who found a significant and negative association between managerial ownership and EMs.

On the other hand, several studies reported a negative relationship between managerial shareholding and the opportunistic behavior of manipulations. For instance, Butt and Hasan (2009) in Pakistan found that high management ownership concentration increases the manager's motives to lessen gearing levels (debt to equity ratio). The managers are more concerned to reduce the size of the debt to lower the costs and risks of bankruptcy. This result is consistent with Jensen and Mekling (1976) that managerial shareholding reduces agency conflict between managers and shareholders; thus, to improve the alignment of interest hypothesis. Conversely, this analysis contradicted Fama and Jensen (1983) who stated that managers prefer to maximize their wealth and extend the firm beyond its size for their benefit and interest, hence, they may increase the gearing level which affects negatively the firm effectiveness.

Another example for one country which has been characterized by the weak financial market and inefficient capital market (Palestine Stock Exchange), Daraghma and Alsinawi (2010) investigated the effect of CG mechanisms on firm performance in. They stated that their study is the second study that investigates CG in Palestine after the research conducted by Awad and Daraghma, (2009). The results revealed that managerial ownership has a positive impact on firm performance (ROA and ROS). This research is significant to the investors to make decisions concerning selling or holding their investment in Palestinian Stock Exchange.

Alves (2012) revealed that EMs practice is lower in the firm with high managerial ownership and higher ownership concentration in Portugal. They suggested that managers have fewer motives to manipulate AEM when they own large equity shares. Thus, improves the quality and value relevance of accounting information published to shareholders. This finding is consistent with the alignment of interest hypothesis. Farouk and Bashir (2017) in Nigeria from 2008 to 2014 revealed that the ownership structure has a significant influence on EMs except for institutional

shareholding. There is a significant and negative association between managerial ownership and accrual-based manipulations. They suggested managers should invest more equity in the firm to decrease their opportunistic behaviors and ownership concentration maybe 61% or more to improve the long term performance for the organisation. These findings disagree with Aygun et al., (2014).

However, another group of studies found a non-significant/ non-linear relationship between managerial ownership and EM practice which may be due to the unique cultural environmental settings, the degree of economic development, political situations, and the problems related to the voluntary disclosure and CG reform. For example, Lin (2011) in Taiwan Stock Exchange employed panel smooth transition regression analysis to determine the optimal level of managerial ownership that achieve the lowest level of DAs. The results showed that there is a greater likelihood of engaging in opportunistic EMs when the managerial ownership is less than 9.67%. However, managers engage in efficient EMs when the managerial ownership increased above 9.67%. Consequently, these findings are consistent with the entrenchment effect in low managerial shareholding and alignment effect in high managerial ownership. Hence, there is a curved association between managerial ownership and DAs is describes as curved shape. A few kinds of research revealed that high managerial ownership is a valuable governance device in decreasing EMs.

Huafang and Jianguo (2007) in the Shanghai Stock Exchange investigated the impact of firm characteristics and managerial own on the voluntary disclosure. The study found a non-significant association for the following reasons; first, the low percentage of managerial ownership gives them low motivation to control the firm effectively, reduce agency cost, and disclose proper comprehensive information. Second, the motivations and incentives given to the managers depend on their qualifications and experience, not on their ethical and behavioral manners.

In the Egyptian context, there is a scarcity in the researches that investigated the relationship between managerial ownership and EM practices in the Egyptian context. The evidence on the relationship between managerial ownership and the practice of earnings manipulation is not clear-cut. For instance, Khalil and Ozkan (2016) found that the influence of CG mechanisms on the EMs differs according to the changes in the level of controlling and managerial ownership. Hence, at a high level of managerial shareholding, they have more tendency to enhance a firm's long-term performance and promote the creditability and reliability of the information provided

to outside shareholders specifically when adding more independent directors and appointing highly qualified auditors. At the low level of ownership, adding more directors makes firms suffer from communication and coordination problems which leads to less effective monitoring and more earnings manipulations. El-Moslemany and Nathan (2019) explored the influence of ownership structure on DAs (based on modified Jones model) for a sample of 50 companies listed in Egyptian stock exchange from 2004-2015. The regression analysis revealed that there is a non-significant relationship between managerial ownership and the degree to which companies exercise earnings manipulations.

In light of the above discussion, the relationship between managerial ownership and EMs practices is mixed. Specifically, a group of researchers reported positive association; another found a negative association, while a third group revealed a non-linear relationship between managerial ownership, EMs, and firm performance. Almost of studies such as (Huafang and Jianguo, (2007); Iqbal and Strong (2010); Daraghma and Alsinawi (2010); Alves, (2012); Aygun, et al., (2014) used OLS regression more than GLS regression to investigate the association between managerial own and DAs as a proxy for EMs. Almost of studies used the Modified Jones model to detect earnings manipulations and investigate theoretically the relation between managerial own and EMs based on Agency Theory (Entrenchment and Alignment effect).

Several studies found that there is a positive association between managerial ownership and EMs such as (e.g., Fama and Jensen, (1983); Ayadi and Boujelbene, (2014); Aygun et al., (2014); Obigbemi, (2017). Those studies found that when the level of managerial ownership increases, their discretionary power and authority increases, therefore, they entrench themselves and maximize their interest at the expense of the shareholders' interest. This is consistent with the entrenchment hypothesis (Al-Fayoumi et al., (2010); Charfeddine et al., (2013); Sepasi et al., (2016); Ogbonnaya et al., (2016); Waweru and Prot (2018). This contradicts with the perspective of Stewardship Theory and interest alignment hypothesis that revealed that manager's act as a steward of firm assets and are responsible for the organisation. On the contrary, other studies (e.g., Jensen and Mekling, (1976); Butt and Hasan, (2009); Daraghma and Alsinawi, (2010); Alves, (2012); Farouk and Bashir, (2017) revealed a significant and negative association between the managerial ownership and earnings manipulations. The increased level of managerial shareholding reduces the management incentives to expropriate the shareholder interest and reduces agency conflict between managers and

shareholders thus, enhance the alignment of interest hypothesis. However, this view contradicted with Fama and Jensen, (1983) who argued that managers prefer to maximize their wealth and expand the firm beyond its size for their benefits and interest.

Surprisingly, several studies found a non-linearity and curved association between managerial ownership and EMs (Sanchez-Ballesta and Garsa-Meca, 2007; Teshima and Shuto, 2008; Lin, 2011; Bos et al., 2013; Gonzalez and Garcia-Meca, 2014). This supports both the alignment-of-interests and the entrenchment hypotheses in different ownership levels. Additionally, Huafang and Jianguo, (2007); Yang et al., (2009); Iqbal and Strong, (2010); Spinos, (2013) suggested a non-significant association between managerial ownership and EMs due to the difference in cultural and environmental settings between countries, the complexity of voluntary disclosure and applying of CG reform. Subsequently, this research proposes the following hypotheses:

HA1: There is a significant and positive association between managerial ownership and Accrual-based earnings management (AEM).

HB1: There is a significant and positive association between managerial ownership and Real-based earnings management (REM).

HC1: There is a non-linear relationship between managerial ownership and earnings management

5.2.2 Family Ownership

Family-owned firms represent the majority of businesses in most countries and are considered to be unique and complex because of the family and the firm reciprocal impact. The primary concern of family firm's studies is to recognize and clarify differences in their behavior and how these differences influence on firm performance (Maury, 2006; An and Naughton, 2009; San Martin-Reyna and Duran-Encalada, 2012). In the past few years, researchers used various disciplines to analyze family firms. Some of these disciplines included entrepreneurship, organisation studies, finance, and economics. This enabled researchers to investigate to what extent the ownership structure influence firm performance in both developed and developing countries, focusing on agency costs between managers and outside shareholders, or between majority and minority shareholders (Shleifer and Vishny, 1997). The studies revealed

that developed countries suffer seriously from (agency problem I)¹⁶ due to the highly diffused ownership. While, (agency problem II)¹⁷ is more common in developing countries due to highly concentrated ownership (Omran et al., 2008).

According to the concentrated ownership, there is no agreement on whether the existence of family ownership reduces or increases engagement in opportunistic EMs. There are two conflicting opinions regarding the impact of block-holder ownership on EMs: entrenchment effect and alignment effect. On one hand, the entrenchment effect (expropriation hypothesis) means that controlling shareholders expropriate the wealthy at the expense of minority shareholders' interest. Large block-holders give the managers the opportunities to manipulate the firm earnings to avoid the negative consequence of low earnings (Morck, Shleifer, and Vishny, (1988); Fan and Wong (2002). This is due to the assumption that family ownership is short term oriented, so that management works in favor of the controlling shareholder at the expense of the minority shareholders' interest. This is the agency problem II. On the other hand, the alignment hypothesis (the efficient monitoring hypothesis) is based on the argument that family/controlling shareholders are long term oriented and try to maximize the firm value rather than short-term earnings prospects. As a result, they work to align the interest of controlling shareholders, family owners, with minority investors to minimise EMs (Demsetz and Lehn (1985); DeAngelo and DeAngelo (1985). Consequently, they have strong incentives to monitor the management and reduce any free-riding problems and agency costs. According to the efficient monitoring hypothesis, ownership concentration restricts the managers' discretionary attitudes.

In the Developed countries, there is no consensus regarding the relationship between family owned and the quality of earnings. On one hand, several kinds of the literature revealed a significant and negative relationship between family ownership and earnings manipulations. For instance, Maury (2006) examined in the West of Europe to investigate whether family-owned and controlled firms surpassed non-family monitoring shareholders. The results showed that the performance of family firms is better than non-family firms. Moreover, active family-controlled firms achieved higher

¹⁶ Agency problem I is the conflict that occurs between managers and shareholders specifically in the organisations with dispersed ownership structure.

¹⁷ Agency problem II (principle-principle problem) is the conflict that occurs between majority (controlling) shareholders and minority shareholders in the firms that are characterized with ownership concentration

profitability than non-family controlled firms in different legal regimes. While family firm control decreases the conflict and agency problems between the shareholders and managers. But it raises the conflict between minority and controlling shareholders particularly when investor protection is low, and control is high. Saito (2008) in Japan classified the family firms based on the characteristics of management and ownership. He found that the family firm's performance is better than non-family firms. However, the family firm premium has primarily arisen from active founders. As soon as, founders retire the findings are mixed.

An and Naughton (2009) revealed a positive relationship between the family and pure family ownership with firm value and accruals quality in the Korean listed firms from 2000 to 2005. While there is a non-significant relationship between ownership-control disparity with firm value and accruals quality. Although, the findings stated that family ownership decreases severe agency problems. The East-Asian studies stated that family ownership reduces the firm value and quality of earning when the controlling shareholder has power over the company's decisions (Fan and Wong 2002; Claessen et al., 2000). Similarly, Cascino et al., (2010) in Italy found out that the quality of financial reporting in family firms is greater than the non-family firms. Besides, Karuntarat (2013) in Thailand presented a negative association between family ownership concentration and the magnitudes of EMs practices (use of managers' accounting discretion over accruals and/or revenues). Moreover, dominant shareholders in family firms had superior performance in comparison to firms without dominant shareholders based on accounting and market measures.

Interestingly, several extant pieces of the literature revealed a non-linear relationship between family ownership, firm value, and EM practices because of different regimes of the ownership concentration, family generation and whether they are long-term oriented or short-term oriented. For instance, using threshold analysis by Akimova and Schwodiauer (2004) to examine 202 medium and large firms from 1998 to 2000 of Ukraine taking into consideration the level of ownership concentration. The study reported a non-linear significant association between insider ownership and performance, positive within a lower range but negative from a threshold close to majority ownership onwards. Moreover, Ukrainian outside owners didn't have a significant impact on performance. Wang (2006) used the same way of analysis and found a non-linear and U-curved relationship between family ownership and earning quality due to the alignment and entrenchment effect. The study concluded a significant

and positive relationship between founding family ownership and the quality of financial reporting. More specifically, the more family ownership concentration, the lower abnormal accruals, greater earnings informativeness and less persistence of transitory loss components in earnings. This is following the alignment hypothesis. While, when family ownership increases beyond certain levels (about 58–67%), the quality of reporting begins to decrease which shows that high family ownership will have an entrenchment outcome on the earnings quality.

Arosa, Iturralde, and Maseda, (2010) based their research on monitoring hypothesis and expropriation hypothesis. The results revealed that the association between the concentration of ownership and profitability of non-listed Spanish family companies can be best described as an Inverted-U-shaped association. According to the Agency Theory, the relationship between the ownership concentration and the performance relies on which generation of the family runs the firms, and that is why this kind of relationship can vary. For example, by examining the results of the first-generation family firms, it was revealed that there was a positive relationship between ownership concentration and performance at a low level of control rights, which results from the monitoring hypothesis. While a high level of ownership concentration affects negatively firm performance as a consequence of the expropriation hypothesis. The study outcomes are consistent with Akimova and Schwodiauer's (2004) findings. Amador (2012) in the Netherlands also justified his results based on the entrenchment and the alignment effects theories of ownership concentration and the supply of earnings quality. He examined the effect of ownership concentration on the quality of accounting information. He examined which of the accruals' quality (innate or discretionary accruals¹⁸) may strengthen the quality of earnings. The study found that firms with high ownership concentration have higher abnormal accruals than those firms with lower levels of ownership concentration (Fama and Jensen, 1983; Wang, 2006; Cascino, et al., 2010).

Mazzi (2011) and Navarro, Gómez-Ansón and Cabeza-García, (2011b) have described the association between family ownership concentration and performance as an inverted U-shaped relationship. This relationship is positive at low levels of

¹⁸The 'discretionary' component of accruals quality measures intentional manipulation of discretionary accruals. The 'innate' component measures unintentional estimation errors arising from the company's operating environment and related environmental uncertainty (Kent, Routledge, and Stewart, 2010).

ownership as a result of the prevalence of agency problem I and negative at high levels of ownership due to agency problem II. Mazzi (2011) revealed that family involvement in management has a negative quadratic relationship with performance (U-shaped). This means that performance decrease as family involvement increase. In the Mexican context, San Martin-Reyna and Duran-Encalada (2012) found that family-owned firms have better performance than non-family firms. Because controlling shareholders have the motivation to supervise and improve the firm performance to increase the shareholder's profit. Constantly, Achleintner, Gunther, Kaserer, and Siciliano, (2014) revealed that family firms engage less in REM practices because family firms want to increase firm value and investments for their future generations.

In Developing countries, reviewing the role of family ownership structure is vital to the effectiveness of CG employed by the firms especially in the developing and emerging economies. Emerging markets (such as Thai, Belgian, Turkey, Egypt, Indonesian, and Iran) are still largely controlled by founding families (Sarhan et al., 2019). While developed countries such as the UK and U.S are characterized by dispersed ownership structure have only 10% and 20% family ownership (Setia-Atmaja, Haman, and Tanewski, 2011).

The empirical evidence on the relationship between family ownership and earnings management is not clear cut. On one hand, several studies revealed a negative relationship between family ownership and opportunistic EMs. For instance, Siregar and Utama (2008) examined 144 large publicly-traded companies on the Jakarta Stock Exchange (JSE) in Indonesia for the years 1995 to 1996 and 1999 to 2002¹⁹. The research revealed a significant and positive association between family ownership, non-business group, and efficient EMs practice²⁰. Thus, there is a negative relationship between family ownership and opportunistic EM²¹. In Tehran Security Exchange, Ghabdian et al., (2012) also revealed a significant correlation between EMs and ownership structure. Moreover, firms (non-family firms) engage more in EMs than family firms. In the Nigerian context, Usman and Yero (2012) tested whether the ownership concentration affects the EMs in an emerging economy. Panel regression

¹⁹ The researcher excludes the years 1997 and 1998 the Asian financial crisis period.

²⁰ Efficient EM improves earnings firm informativeness in communicating private information about the profitability of the firm (Siregar and Utama, 2008).

²¹ Opportunistic EM occurs when managers maximize their utility which distorts earnings by using discretions (Subramanyam, 1996).

analysis showed that ownership concentration is valuable in stopping EMs, and consequently increased the reliability of the reported earnings. This negative association is consistent with the Agency Theory of Jensen and Mecklings (1976). Moreover, the study results are in accordance with Ramsey and Blair's (1993) findings which revealed that large shareholders of family firm disburse for the fixed cost of monitoring the firm's managers to safeguard their investments.

On the other hand, there is literature that revealed a positive relationship between family ownership and opportunistic EM practice. For instance, Halioui and Jerbi (2012) examined whether the presence of block-holders in the family firm affects the magnitude and direction of EMs of 31 Tunisian listed companies. The study stated a positive relationship between block-holders and DAs (a proxy of EM) especially in case of declining pre-managed earnings. Therefore, the block-holders are not effective monitors of EMs within the GAAP. These results are consistent with Zhong et al. (2007) and Guthrie and Sokolowsky (2009). Ibrahim and Abdul-Samad's (2011) study who revealed a negative association between the family firm and Tobin's Q and ROA in the Malaysian context. This result is consistent with Lin and Wu (2010). However, there is a positive association between family ownership and ROE due to the greater tendency of family firms to invest more in the assets as there are low risk- low return businesses.

The third stream of extant literature revealed a non-linear relationship between family ownership and firm value and earnings manipulations due to the variation and different regimes of the ownership concentration, family generation and whether they are long-term oriented or short-term oriented. Lin and Wu (2010) used the Agency Theory perspective as the basis for investigating the non-linear impact of family shareholding on risk-taking actions in the financial industry by testing 629 Taiwan companies. The research manifested a negative, significant and non-linear relationship between family ownership and risk-taking in the financial industry. But, when the securities and insurance industry was the major family-controlled shareholders, the increasing proportion of its shareholding was unpredicted to have a positive impact on risk-taking. These findings were consistent with the "convergence-of-interest hypothesis". Moreover, the results stated that when the ownership is concentrated extensively in the hand of controlling family, managers, and external controlling shareholding, the lower the risk-taking by managers of financial institutions.

Furthermore, Lin and Tsangyao (2010) examined 242 Taiwan listed companies using a panel threshold regression test. The study illustrated a non-linear correlation between family ownership and firm value. Therefore, the ideal level of ownership concentration was between 31.76% and 33.61% where the value of the firm is at its maximum²². Jameson, Prevost, Puthenpurackal, (2014) examined the association between the CG mechanisms²³, concentrated ownership and firm performance for 1796 Indian firms in 2011. The study found a negative association between controlling shareholder presence in the governance of Indian firms and Tobin's Q. This finding is consistent with Burkart et al., (1997) and Faccio et al., (2001) who revealed a negative relationship between controlling shareholder presence and firm performance, but it is in contrast with Anderson and Reeb (2003).

The studies that investigated the impact of the effectiveness of CG on REM is very limited. One study in the South Korean context conducted by Kang and Kim (2012) revealed a negative relationship between CG attributes and REM. Razzaque, Ali, and Mather, (2016) found a curvilinear relationship between family ownership and several measures of the REM using AB-CFO, AB-DISC, REM-1, AB-PROD, and REM-2²⁴ in Bangladesh. The study showed that family firms achieve a higher level of REM based on the level of equity. There is a positive and significant association between family ownership and REM when the equity ownership shares range from 25% to 30%. Although, the level of REM begins to decrease when the ownership shares begin to increase above 30%.

In the Egyptian context, most of the Egyptian firms are dominated by high family ownership (Samah and Hegazy, 2010, Moahmed and Habin, 2013; Khelif et al., 2015) where there is no separation between ownership and control. Omran et al., (2008) found a non-significant relationship between ownership concentration and firm value. Samaha and Dahawy (2011) revealed that the voluntary disclosure in the Egyptian

²² When ownership concentration is less than 0.075%, the Tobin Q decreases by 257.71% with a 1% increases in ownership. But, when the ownership concentration was between 0.075% and 31.76%, the Tobin's Q enlarged by 0.78% with every 1% increase in the ownership concentration. Tobin's Q increased by 1.67% when the family ownership concentration was between 31.76% and 33.61%. Though, more than 33.61%, the Tobin Q raise level declined to 0.51%.

²³ CG mechanisms (board size, board independence, incidence of combined board chair and CEO positions, number of directorships held by directors, age of directors, and incidence of families, founders, women directors and "busy" directors).

²⁴ AB-CFO, AB-DISC, REM-1, AB-PROD, and REM-2 are the proxies of REM developed by Roychowdhury, (2006) as mentioned and explained in details in Chapter 3.

context is enhanced and promoted with a decrease in the blockholder ownership. Shahwan (2015) found that ownership concentration is unrelated to financial performance and financial distress in the Egyptian context. He claimed from the low quality of corporate governance application. Khlif et al., (2015) found that ownership dispersion plays a significant and complementary role in reducing the cost of equity with voluntary disclosure. While, they revealed that as the highly concentrated ownership has direct access to the private information, they have a low tendency to enhance the voluntary disclosure which may affect significantly on the cost of capital, El-Moslmany and Nathan (2019) using a sample of 50 listed companies on the Egyptian stock exchange for 12 years. They found that the blocker-holder cannot minimise the practice of earnings manipulations.

In light of the above analyses for prior literature, there is no consensus on the relationship between family ownership and EMs practices. Furthermore, it is noted that there is a lack of studies in the developing countries specifically in the Egyptian context that focused on investigating the relationship between family ownership and EMs, especially on REM. The influence of family ownership on the EM practice is theoretically complicated and empirically unclear. Family ownership is under type I agency problem and types II principle-principle problem due to the different levels of ownership concentration. Under type I agency problem, family ownership plays a controlling role over the management in improving the firm value and declining earnings manipulations. While, under type II principle-principle problem, family owners use their controlling position to use the firm assets to raise their earnings at the expense of minority shareholders' interest, thus decreasing firm performance and earning quality. Consequently, there is difficulty in aligning the controlling shareholders' interest with the minority shareholders' interest.

According to the concentrated ownership, there is no agreement on whether the existence of family ownership reduces or enhances engagement in opportunistic EMs. The studies are largely based on Agency theory (entrenchment and alignment effect). First, the entrenchment effect/expropriation hypothesis is dependent on the idea that increased ownership concentration provides shareholders the motive to increase their wealth at the expense of minority shareholders' interest. Large block-holders give the managers the opportunities to manipulate the firm earnings for their benefits (Fama and Jensen, 1983; Morck et al., 1988; Shleifer and Vishny, 1997; Fan and Wong, 2002). This is based on the assumption that family ownership is short-term oriented and engage

in the EMs to avoid negative effects of low earnings (Amador, 2012; Halioui and Jerbi, 2012; Jameson et al., 2014). This may lead to the principle-principle problem due to the conflicts of interest between majority and minority shareholders.

Second, the alignment/efficient monitoring hypothesis is based on the argument that family/controlling shareholders are long-term oriented and try to maximize the firm value. Therefore, they work to align the interest of controlling shareholders, family owners, with minority investors to minimise the probability of any earnings manipulations (Demsetz and Lehn, 1985; DeAngelo and DeAngelo, 1985; Maury, 2006; Siregar and Utama, 2008; Saito, 2008; An and Naughton, 2009; Cascino et al., 2010; San Martin-Reyna and Duran-Encalada, 2012; Ghabdian, et al., 2012; Usman and Yero, 2012; karuntarat, 2013). As a result, family-owned firms have a strong incentive to monitor management and decrease any free-riding problems and agency costs. Thus, an efficient monitoring hypothesis stated that ownership concentration limits the managers' discretionary attitudes. Interestingly, several studies revealed a non-linear relationship between family own and EMs or the firm value as a result of the different level of ownership regimes such as Akimova and Schwodiauer (2004) in Ukraine, Wang (2006) in the USA, Arosa et al., (2010) in Spain, Lin and Wu (2010) and Lin and Tsangyao (2010) in Taiwan, and Amador (2012) in the Netherlands. Subsequently, this research proposes the following hypotheses:

HA2: There is a significant and negative association between family ownership and Accrual-based activity management (AEM).

HB2: There is a significant and negative association between family ownership and Real-based activity management (REM).

HC2: There is a non-linear relationship between family ownership and earnings management.

5.2.3 Institutional Ownership

The manner in which EMs practice is associated with institutional ownership is an empirical issue. Extant literature found several challenging analyses on the effect of institutional investors on the quality of financial reporting. At a low level of institutional ownership, managers have incentives to manipulate earnings upward as institutions are short-term oriented and not concentrating on enhancing the long term performance of the organisations (Lin and Manowan, 2012; Ajinkya, Bhojraj, and Sengupta, 2005) . On the other hand, if the institutions are long-term oriented, they have a great chance to mitigate any aggressive EMs and to have control over the firm portfolio.

Consequently, this helps to improve the quality and integrity of accounting information (Richardson, and Tuna, 2007; Song, 2013; Farooq and El-Jai, 2012). In addition, the level of institutional ownership concentration has a significant role on whether the organisation can effectively mitigate the earnings manipulations or not. Consequently, this supports the idea of non-linear association (the entrenchment hypothesis and monitoring alignment hypothesis) due to the different regimes of institutional ownership and different types of institutions.

In developed countries, there is a growing debate regarding whether institutional ownership has an impact on the exercise of EM in developed countries. The institutional ownership in the developed countries is growing rapidly due to their significant impact on firm performance and becomes an interesting issue in the international business literature. However, the ownership concentration in the hands of institutions is not raised as much as the growth in the institutions specifically, in the US due to their tendency to diversify the investment portfolio and the restrictions imposed by the USA legal structure (El-Ghouty and El-Masry, 2017). For instance, Bhojraj and Sengupta (2003) examined 1,005 industrial bond issues in the USA from 1991 to 1996 and found that institutional shareholding is associated with lower interest rates and higher credit rating. This means that institutions perform a critical role in monitoring the information environment and managers' self-interest. However, the increase in institutional ownership concentration leads to a higher borrowing rating as managers ignore their responsibility and concentrate on their self-interest. This result is consistent with Ajinkya et al., (2005) who found a negative association between institutional ownership concentration and information transparency.

In a similar vein, Larcker, Richardson, and Tuna (2007) in the USA revealed the important role of institutional structure and its characteristics (e.g., age, professionalism, education, tenure and outside representation) in supporting wider corporate networks. Besides, it helps in developing a decision-making process that can improve financial performance. Large shareholders of institutions lead to an increase in the percentage of external linkages and thus raise the potential for securing needed resources. Moreover, a greater variety of institutions may provide a wide range of proficiency, which in turn result in better decision-making (Sahut and Othmani-Gharbi, 2010). Zouari and Rebai (2009) used the neural network to examine the association between various features and performances of institutional investors (pension fund, banks, investment fund) and EMs practices in 121 US firms. The research revealed that

institutions investors as a uniform cluster encourage managers to reduce income accruals for tax motivation. More specifically, EMs practices are controlled and restricted by pension funds and banks. However, the investment fund is described as short-term oriented investors who motivate managers to income growing accruals. In Latin America, Mellado and Saona (2019) found that institutional ownership and the highly regulated system are described as an effective system for minimizing the practice of REM. They proposed that firms that are established in a more efficient regulatory system with strong institutional setting and they have a balance in the level of ownership concentration, they are more concerned with enhancing the integrity of reporting.

However, several studies found a non-significant relationship between institutional ownership and EMs due to the different characteristics of institutions, various cultural issues and changes in economic development. For example, Iqbal and Strong (2010) revealed a non-significant association between EMs and institutional ownership in the UK. However, having a Big-6 auditor plays an important role in constraining firms from using discretionary accruals to manage earnings. Abdul-Jalil and Abdul-Rahman (2010) in the Malaysian Stock Exchange investigated the association between the institutional ownership categories (pressure sensitive, pressure-insensitive, and Malaysia Shareholders Watchdog Group (MSWG) and opportunistic EMs. The study found that only MSWG institutional shareholdings are efficient in mitigating EMs behavior of their portfolio firms. Moreover, there is a non-significant association between either sensitive institutional investors or pressure in-sensitive investors with DAs. However, the research revealed that ownership structure only is not enough and needs the involvement of institutional ownership in shareholder activism to be a successful mechanism in CG. Furthermore, it is essential to increase the size of institutional shareholding as powerful motivation to control the firm performance. Moreover, Lin and Manowan (2012) in the U.S. found a significant positive association between short-term institutions (those having different portfolios and high turnovers) and the DAs. On contrast, there is a non-significant negative interaction between dedicated institutions (those having intensive portfolios with little turnovers) and the DAs. Thus, it is better not to deal with institutions as constant groups due to the diverse influence of external block-holders on EMs.

In the Developing countries, some studies argued based on Resources Dependency Theory and Stewardship Theory, institutional ownership has resources, expertise, experiences and strategic innovation that positively influence the corporate performance and the quality of financial reporting (e.g, Farooq and El-Jai, 2012; Song, 2013; Aygun, et al., 2014; Pucheta-Martínez, et al., 2016). For example, Mitra (2002) and Koh (2003) in the Indonesian context found that concentrated institutional ownership perform a critical role in mitigating the opportunistic behaviors of EMs. The findings that Gürbüz, Aybars, and Kutlu (2010) discovered after examining the CG Index in the listed turkey companies revealed that CG's practices had many benefits, such as promoting the financial performance during the observation period after controlling the firm size, age, debt level, dividend policy, capital intensity, and liquidity. Moreover, improving the financial performance of all firms is one of the institutional investors' concerns. Since the impact on firms listed on the index is more than those not listed on it.

Moreover, Song (2013) based on data from the Chinese listed firms, an indirect association between the mutual fund ownership and the performance was discovered. In particular, the better firm performance and the lower level of EM have resulted from the greater level of mutual fund ownership. This indicates that it is possible that the mutual funds' managers could serve as active and controlling investors to provide useful accounting information to outsiders (in line with efficient monitoring hypothesis). However, a negative association between mutual fund ownership and the firm's performance might exist when the mutual fund ownership reaches a certain level which implies that that interest if minority shareholders might be expropriated by the mutual fund managers if they were given a dominant controlling power which has a positive impact on tunneling behavior. This is consistent with the passive hand-off hypothesis. Therefore, researchers tried to explore the optimal level of institutional ownership concentration to get the highest value for a firm. An investigation by Aygun et al., (2014) on 230 firms in Turkey listed in ISE from (2009 to 2012) revealed a negative association between institutional ownership and EMs. In Morocco, Farooq and El-Jai (2012) found a negative association between the institutions whether local or not with EMs. This ensures that institutional ownership can operate as a controlling device where institutional owners have experience, resources, and capability than individual investors thereby, reducing the manager's ability to manipulate earnings. This is consistent with the efficient monitoring hypothesis.

These studies are consistent with the Resource Dependency Theory (RDT). This Theory suggested that large institutional shareholders perform a great role in securing a necessary and scarce resource (i.e., information, capital, advice, counsel, expertise, access to key constituents such as suppliers, social groups, buyers), providing legality, support the public image of the firm, interrelating the firm to important stakeholders, supporting external relations, diffusing innovation, as well as helping in the strategy formulation and important firm decisions. This allows institutional shareholders to succeed, grow and survive their firms for a long time (Pucheta-Martínez, et al., 2016).

On the contrary, several studies reported a positive relationship between institutional ownership and opportunistic EMs. For example, Latif and Abdullah (2015) argued that DAs as a proxy for EM is positively and significantly associated with institutional ownership only for low-growth firms and irrelevant for high-growth firms for 120 non-financial firms listed on the Karachi Stock Exchange in Pakistan from 2003 to 2012. Issarawornrawanich (2011) investigated the impact of internal CG (institutional and family) and external CG (market competition and media coverage) on EMs in Thailand in 2007. The study revealed a positive association between institutional ownership and EMs. The research support that short-term institutional investors have more trend to increase EMs to prevent earnings' decreases, as their sensitivity to current earnings' news. This finding is consistent with Lin and Manowan (2012).

Several studies failed to provide consistent results regarding the relationship between institutional ownership and EMs due to the different characteristics of institutions, various cultural issues and changes in economic development. Yang et al., (2009) for 613 listed companies in Bursa Malaysia revealed a non-significant association between EMs and the institution's investors in the industrial and consumer products sectors due to their inefficient controlling and a lack of the financial capability required to discover EMs. The findings are Consistent with Iqbal and Strong (2010). Al-Fayoumi et al., (2010) anticipated two competing hypotheses (an active monitoring role and a passive hand hypothesis) concerning the association between block-holders and institutions with EMs in the Amman Stock Exchange from 2001 to 2005. They found a non-significant association between the institutions, block-holders, and DAs because institutions and block holders might either lack the capability and experience. Later, Farouk and Bashir (2017) in the Nigerian Stock Exchange from 2008 to 2014 found a non-significant and negative association between institutional ownership and

EMs. Thus, the research supports increasing the ownership percentage of institutional shareholding as the negative sign is an indicator that institutional investors might help in mitigating EMs.

Other studies reported a non-linear/non-monotonic relationship between institutional ownership and EM practice. For instance, Lin (2010) investigated to what extent institutional ownership affects the firm value based on Tobin's Q using a panel threshold regression test in Taiwan. He found a single threshold between institutional ownership and firm value. When the institutional ownership is below 81.2%, there is a non-significant association between institutional own and Tobin's Q. When threshold value is above 81.2%, Tobin's Q grows by 1.248% with a 1% increase in the institutional ownership. Applying a panel data regression analysis method, Fazlzadeh et al., (2011) findings are consistent with Koh's (2003) study. Fazlzadeh et al., (2011) in the Tehran Stock Exchange from 2001 to 2006 demonstrated a positive correlation between institutional ownership and performance justifying that institutions are major shareholders and have the resources and abilities to control management decisions to be in favour of all stakeholders. At the same time, the study revealed a negative association between institutional ownership concentration and performance. Therefore, the relation between institutional ownership and performance can be described as a U-Curved association. This conclusion is based on the alignment and entrenchment hypothesis that suggested that the ownership concentration may be valuable to a certain level and after this level, it has a negative impact.

In the Egyptian context, institutional ownership becomes very dominant and plays a critical role in the financial market. Regarding the EGX Quarterly report, the institutions are accounted for more than 66.14% of the total value traded, and they become net buyers with net equity of 361.80 million pounds in the first quarter of 2010 (El-Ghouty and El-Masry, 2017). According to the statistics of their study that was conducted from 2005-2011, they revealed that the proportion of institutional ownership with several decompositions (banks, investment fund, public and private companies, insurance, individuals and holdings) is up to 52.4% with high percentage dominated by public and private corporates (18.3%) and the lowest by investment fund (.02%). This proportion of institutional ownership is also quite consistent with the study of El-Diftar and Jones, and Soliman (2016) who revealed that mean of institutional ownership in Egyptian context is about 47.97% for a sample of the most active 50 firms from 2007 through 2011. However, there are very limited researches in emerging markets like

Egypt that ignored the literature of institutional ownership and earnings management. For instance, the study of El-Diftar et al., (2016) found that the low level and high level of institutional ownership concentration are positively associated with voluntary disclosure due to their concern to improve their image and reputation in front of the public. They are so interested to get all information about the firm to enhance the transparency and integrity of financial reporting. On the other hand, the study found that the model level of ownership is negatively associated with the voluntary associated with voluntary disclosure.

To conclude, a consensus regarding the impact of institutional ownership structure on real and accruals EM has not been approved. Therefore, this study purposes to investigate the determinants of EM activities and extends the very limited research on the association between institutional ownership and EMs in the emerging economy. One group of the kinds of literature such as Habbershon and Williams (1999); Habbershon et al., (2003); Sirmon and Hitt (2003); Siregar and Utama (2008); Gürbüz et al., (2010); Hadani et al., (2011); Farooq and El-Jai (2012); Alves (2012); Aygun et al., (2014); Farouk and Bashir (2017) provided evidence that institutions conduct a critical and active role in monitoring, disciplining, and controlling managerial discretion. The results revealed a negative association between institutional investors especially long-term institutions (holding concentrated portfolios with low turnover) and DAs. On the other hand, the second group of studies such as Bushee (1998); Agnes-Cheng and Reitenga (2009); Abdul Jalil and Abdul Rahman (2010); Salajeghe et al., (2012) supposed that when institutions are characterized with frequent trading and fragmented ownership, they are discouraged to be actively involved in the CG of their portfolio firms. Thus, there is a significant positive association between transient institutional investors (holding diversified portfolios with high turnover) and DAs.

However, several studies proposed two competing hypotheses (an active monitoring role and a passive hand hypothesis) about the association between institutions' own with EMs. Bhojraj and Sengupta (2003); Koh (2003); Ding et al., (2007); Lin (2010); Fazlzadeh et al., (2011); Lin and Manowan (2012); Song (2013) supposed that the relation between the institutional ownership and earnings quality can be described as a U-Curved relationship. This conclusion is based on the alignment and entrenchment hypothesis that suggested that the ownership concentration may be useful to a certain extent and after this level; it begins to have a negative impact. Yang et al., (2009), Iqbal and Strong (2010), Abdul-Jalil and Abdul-Rahman (2010), Al-Fayoumi

et al., (2010) verified that there is a non-significant association between the EMs and the institution's investors due to their inefficient controlling and the lack of financial experience needed to detect the EMs. Following these arguments, this thesis proposes the following hypotheses:

HA3: There is a significant and negative association between institutional ownership and Accruals-based activity management (AEM).

HB3: There is a significant and negative association between institutional ownership and Real-based activity management (REM).

HC3: There is a non-linear relationship between institutional ownership and earnings management.

5.2.4 Governmental Ownership

Prior literature that concentrated on examining the relationship between companies that are held by states, governmental agencies, local authorities, and governmental departments and the EM practices are very limited (Chen and Yuan 2004; Ding, Zhang and Zhang, 2007; Liu and Lu, 2007; Huafang and Jianguo, 2007; Wang and Yung, 2011; Capalbo et al., 2014; Alnabsha et al., 2018)

The existing studies provided a mixed argument concerning the association between the states owned organisations and EMs. Several studies indicated that there is a negative association between the public ownership and EMs practices because the government provides great protection and different incentive structures for state-owned firms to minimise the level of earnings manipulations (Chen and Yuan (2004); Wang and Yung (2011). On the contrary, other studies showed a positive association between State-owned organisations and EMs (Chen et al., 2008; Poli, 2015). They found that public sectors are not concerned with developing the level of CG and audit quality. Also, public-owned firms are characterized by wider and longer accountability chain as opposed to the privately-owned organisations, thereby raising the incentives to manipulate earnings

Governmental ownership in the Developed countries; the empirical evidence regarding the governmental ownership and earnings manipulations in the developed countries is inconclusive and limited. For instance, Poli (2015) conducted a study on 13,724 unlisted Italian²⁵ private companies from 2012-2014. The research applied the earnings frequency distribution method developed by Burgstahler and Dichev (1997)

²⁵ Italy is an example of code law countries.

to measure EMs practices. The findings revealed a positive and significant association between the publicly held organisations and practices of EMs. This result is due to the lower efficiency and effectiveness of Italian SOEs and the tendency to prevent too positive or negative levels of earnings in front of the public. This result disagrees with those of Capalbo et al., (2014) who found that SOEs manage the earnings less frequently than POEs.

In Italy, Capalbo et al., (2014) investigated the association between the ownership by public services companies and private-organisations with EMs practices. EMs practice is detected using the revenue variations based on a model developed by Stubben (2010). The researchers examined 5349 unlisted Italian public services companies from 2009 to 2012 and classified the sample into 1457 State Owned Entities (SOE) and 3892 Private Owned Organisations (POE) using the annual budget sheets. The study findings revealed a negative association between the SOE and EMs. Specifically, the study found that EM decrease as the ownership concentration of the state increases.

Governmental ownership in the developing countries; a lot of debate has been going on regarding the relationship between government ownership and the quality of reporting. In publicly listed firms in Vietnam, Nguyen (2016) investigated 570 non-financial listed firms from 2010 to 2014 and revealed that there is a negative and significant association between state ownership and EMs. The finding is consistent with Wang and Yung (2011), Wang and Campbell (2012) and Hoang et al. (2018).

Several studies sustained a negative association between the state-owned firms and EMs. For instance, Ding et al. (2007) in China compared the practices of earnings manipulations in public-owned organisations with privately-owned organisations using a sample of 142 listed firms for each group. The study used two proxies of EM: discretionary accruals using the Jones Model (1991) and non-operating income/sales to measure the impact of non-market based non-operating related party transactions. The study revealed that those privately owned firms have more probability to develop the budgetary policies to overstate their final results in comparison to the publicly held organisations. Especially, publicly owned organisations manipulate the earnings less than private-owned organisations. Wang and Campbell, (2012) in China found a negative relationship between State ownership and DAs. However, several studies found a positive association between public-owned companies and earnings manipulations. For example, Guo and MA (2015) analyzed the association between

different types of ownership structure (e.g., family, Institutional, tradable ownership concentration, state, foreign investment) and the quality of accruals of 1176 Chinese listed firms from 2004 to 2010. The study found a positive and direct association between the SOEs and earnings manipulations especially if the SOEs are largely managed by the representatives of public companies at different levels of ownership structures. Ji et al. (2015) in China from 2000 to 2010 before and after CG reforms reported the effectiveness of CG and ownership structure reforms on the earnings quality in the Chinese corporate sector. Specifically, the study found that the Chinese government implemented several reforms such as the promulgation of the Code of CG (CCG) in 2002 and the Split Share Structure Reform (SSR) in 2005 to transfer the state ownership to the general public to enhance the quality of CG and financial reporting. There is a great tendency to transfer state ownership to the general public to enhance the quality of CG and financial reporting.

Surprisingly, Alnabsha et al. (2018) reported a non-linear relationship between the ownership structure (foreign, government, institution, directors) and mandatory and voluntary disclosure from 2006 to 2010 in the Libyan context. Additionally, Hoang et al. (2018) found a negative association between the public-owned organisation and earnings manipulations in Vietnam. The researchers performed a comparison between a total of 71 SOE and a total of 79 POE and taking 30% as a threshold point that differentiates between the publicly and privately held companies. However, Huafang and Jianguo, (2007) in China found a non-significant relationship between state ownership and the quality of disclosure. In the Iran context, Sepasi et al., (2016) found a non-significant relationship between state ownership and disclosure quality.

In the Egyptian context, there is little research that examined the association between public ownership and opportunistic EMs in Egypt. For instance, El-Moslemany and Nathan (2019) used a sample of 50 companies listed in the stock market over 12 years from (2004-2015) to examine to what extent the public ownership, managerial ownership, and block holder ownership influence the DAs. The study found a non-significant relationship between public ownership and earnings management. They justified the results by stating that the global financial crisis may be the reason that gives the managers the incentives to exercise the manipulations despite the composition of ownership structure. Samaha and Dahawy (2011) also found that non-relationship between governmental ownership and voluntary disclosure in the Egyptian context. It is noted that there is a scarcity regarding the relationship between state

ownership and EM either in the developed countries or the merging market such as Egypt. Hence, this gives more opportunity to provide more evidence regarding the governance, financial quality of reporting, and EM literature. Following these arguments, this thesis states the hypotheses as follow:

HA4: There is a significant and positive relationship between government ownership and Accrual-based activity management (AEM).

HB4: There is a significant and positive relationship between government ownership and Real-based activity management (REM).

HC4: There is a non-linear relationship between government ownership and earnings management.

5.3 Board of Director Characteristics and Earnings Management

The second group of the literature address the relationship between the board of directors' characteristics and EMs based on Accrual-based EM activities and real based EM activities. The board of directors' characteristics represent an independent variable includes (board size, board independence, CEO duality, board meetings, and board diversity). While, the EMs represents the dependent variable which is proxied by discretionary accruals and real-based activities management. The relationship between the variables can be expressed in figure (5.2) as follow:

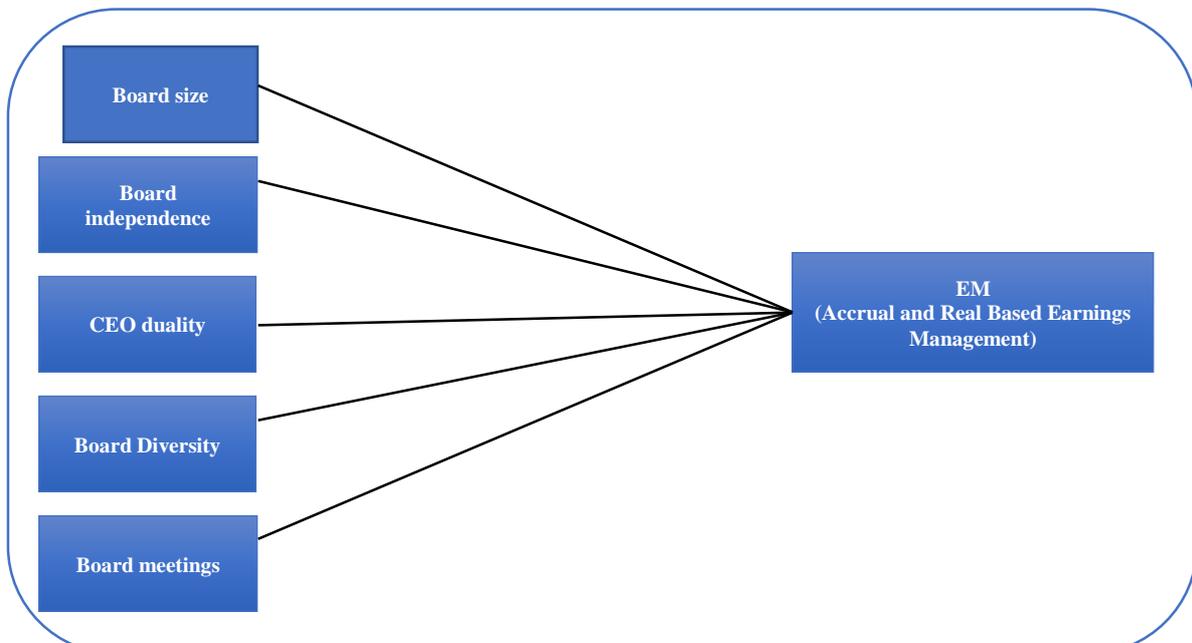


Figure 5.2-Link between Board of Directors of Attributes and Earnings Management

5.3.1 Board of Directors Size

Board size is described as the total number of directors serving on the board of a company. Although, board size is viewed as the most critical dimension of board attributes, there are conflicting views in the literature concerning the importance of the board size. There is a debatable issue in the CG literature regarding the impact of the board size on EMs. Some studies found a positive relation such as (Beasley, 1996; Kao and Chen, 2004). While, other findings revealed a negative relation (Xie et al., 2003; Anderson, Mansi, and Reeb, 2004). Moreover, some researchers showed no relation as (Bardard et al., 2004; Peasnell et al., 2005) contingent upon practical situations.

In Developed countries, empirical literature examining the board size concerning the quality of financial reporting does not provide consistent results. For instance, Santiago and Brown (2009) in Latin America used a sample of 97 companies included in Brazil, Chile, and Mexico and found a positive association between the board size and EMs practice. Latin America is characterized by a low separation between ownership and control. Hence, the large board size becomes not successful in performing their monitoring and controlling functions and thus, increases the probability of expropriation by controlling shareholders. Additionally, increased board size increases their tendency to raise the level of remuneration without considering the shareholder's interest. Talbi et al., (2015) did not favor having large board size as their study found a positive association between board size and REM in sample panel composed of companies listed on NASDAQ, AMEX, and NYSE from 2000 to 2009. Furthermore, Dharmadasa et al. (2014) in Sri-Lanka documented that firms with a small board size are more efficient in limiting board processes due to the potential problems associated with large groups. As the board size is increased, the more dynamic problems of social loafing, non-cooperation, less communication and motivation happen. Consequently, these dynamic problems may hinder the board of directors in attainment important decisions and put barriers on the capabilities to control management. Therefore, there is a negative association between board size and performance.

On the other side, Fauzi and Locke (2012) in the New Zealand context, supported the large board size on the board structure from the perspective of RDT and Agency Theory. RDT suggested that large board size increases the possibility of the organisations to secure and maximize the critical resources, such as collective information, external funding, experienced professionalism, or specialists from various

functional areas. Also, a large board size gives more opportunities to CEO to obtain quality advice from non-executive directors (who might themselves be the CEO of other companies) who would be able to provide more expertise than other executives (Akpan and Amran, 2014). From an agency perspective, large board size eliminates the dominance of the CEO on the board, which improves the effectiveness of monitoring management. Similarly, Shukeri et al., (2012) pointed out that large board size with more independent directors performs the control and monitoring functions due to their experience and varied professionalism, thereby can enhance the financial and non-financial performance.

Surprisingly, some studies (e.g., Peasnell, 2005; Gonza'lez and Garci'a-Meca, 2014; Emile et al., 2014; and Fadzilah, 2017) found a non-significant relationship between the board size, firm performance and EMs. The following studies found that the board size does not have any impact on the earnings manipulation, cost of debts, or firm performance. The existing literature provides no consensus about the effect of board size on firm performance (Dalton et al., 1999) thus, requires further investigation. For instance, Peasnell et al., (2005) in the UK revealed that there is a non-significant association between board size and EMs either before or after the issuance of Cadbury reports. According to Gonza'lez and Garci'a-Meca, (2014) study that conducted in Latin American Markets specifically in the markets of Argentina, Brazil, Chile, and Mexico Regression analysis revealed a non-significant association between board size and EM due to the weakness of CG regimes and the dominance of controlling ownership and the difference in institutional settings between those countries and the whole system of US.

In developing countries, the identification of the optimal board size to effectively function and perform effectively has been debatable among scholars. Several works of literature favored having a small board size to enhance the quality of financial reporting and firm performance. For instance, Abdul-Rahman and Ali (2006) found a significant positive correlation between board size and EMs (DAs). Adebayo et al. (2013) examined 30 listed firms in the Nigerian Stock Exchange (NSE) and revealed a negative correlation between board size and firm performance (EPS and ROE). They favored having a small board size because small board size is effective in the oversight and monitoring functions and they more concerned with dealing processing problems and potential conflicts among directors. Similarly, Kao, Hodgkinson, and Jaafar (2019) found a negative association between the board size and

firm performance using a sample of 6137 firms' year observations listed on the Taiwan Stock Exchange from 1997 to 2008. Small board size has a greater capability to speak together, organize and communicate in the decision-making process and is fair in managerial performance evaluations. While large board size may lead to agency problems due to the conflict between large members trying to represent their various interests. Additionally, some of the directors may shift their roles and duties to other directors on the board which delays the process of decision-making and communication (Kakanda et al., 2016). These studies justified that smaller boards are more capable, efficient and faster in the decision-making process and in governing the organisation's affairs effectively. Additionally, they exert less time and effort to reach consistent agreements concerning company affairs such as meeting arrangements. This will raise group dynamics, communication gaps, and coordination costs.

On the other hand, other studies preferred to have large board sizes such as Abed et al., (2012) who found a negative relationship between board size and DAs for the non-financial firms listed on the Amman Stock Exchange from 2006 to 2009. Singn et al., (2017) examined a sample of 50 listed companies in the Indian Stock Exchange from 10 different sectors from the year 2005–2006 and 2015–2016²⁶. The findings revealed that when the size of the board increase, the firm has more tendency to a reduction in EMs. Al-Najjar and Clark (2017) in MENA countries examined the impact of internal and external CG practices on the decision to hold cash. The study results documented a negative association between board size and cash holdings. In other words, the large board size is more capable of reducing debt in the capital structure of the firm. This is due to eliminating the manager's discretionary powers thereby reducing the agency costs and conflicts especially in the firm that holds large levels of cash. Therefore, CG tools such as board structure and board size can be seen as important tools to mitigate agency costs.

However, some studies such as Lipton and Lorsch, (1992) recommended that board size should not exceed eight or nine members, while others suggested that when board size is beyond seven or eight directors may be ineffective in performing their role (Jensen, 1993). Furthermore, Coles et al. (2008) examined the ideal number for a board by classifying firms into a complex or simple firm. The researchers found that complex

²⁶ The period which started just after SEBI introduced revised Clause 49 of the Listing Agreement.

firms have larger boards than simple firms because complexity in firm operation requires a large number of board members to deal with such complex activities. Yasser, Entebang, and Abu-Mansor (2011) observed to what extent the CG attributes (i.e., the board size, board independence, CEO/Chairman duality, and AC) influences the firm performance of top 30 companies in Karachi Stock Exchange from 2008 to 2009. The study found a positive significant association between three CG mechanisms (board size, board composition, and AC) and ROE and PM. However, the researchers recommended that the board size should be limited to a sizeable limit and the board should have an optimal mixture of executive and non-executive directors. In a similar vein, another study from Pakistan perspective was conducted by Akbar (2014) favored for firms to have a small board size due to the positive impact on firm performance. However, he claimed that the board size should be limited to a sizeable number to avoid any delays in important corporate decisions in case of a larger board size. Descriptive statistics showed that the average board size is approximately eight quite small members.

Meanwhile, Abdul Rauf et al., (2012) in 214 Malaysian public listed firms in 2008 showed a non-significant association between board characteristics (board size and board race) and EM practices. Fadzilah (2017) focused on the Malaysian context and found that the board of director's characteristics (CEO duality, the board size, and multiple directorships) has no significant results. But, there is a positive association only between a board meeting and board independence and EM.

In the Egyptian context, the empirical evidence in the Egyptian context regarding the optimal board size that can achieve the highest performance of Egyptian firms and enhance the effectiveness of the CG application is mixed. For instance, Emile et al., (2014) compared the impact of CG dimensions (board size, board composition, block holders, CEO-duality) on the firm performance of 30 listed companies in the Egyptian Stock Exchange from 2004 to 2010 totaling 210 observations. The regression analysis revealed a non-significant relationship between board independence, CEO duality, board size, and firm performance. This result can be explained by the following; the dominance of family ownership structure in Egypt, weak laws and regulatory system, low protection of minority investors, great influence from the external environment rather than internal environment and finally the weakness of the CG system. Using meta-analysis methodology by Samaha et al. (2015) to analyze the impact of board size, board composition, CEO duality, AC, on the voluntary disclosure.

The study took into consideration the differences in the construction of disclosure index, the type and method of voluntary disclosure, investor protection and country geographic location. The meta-analysis revealed a significant and positive relationship among board size, board composition, AC and voluntary disclosure. The study recommended considering the country's geographic location when analyzing the association between board characteristics and voluntary disclosure. Large board size is favored because it helps the firm to have diverse expertise, skills, competence, experience, the pool of resources that enhance the corporate transparency and board supervisor capacity, thus implying more voluntary disclosure.

Amer (2016) conducted his study using 56 firms listed on the Egyptian Stock Exchange from 2004 to 2012. The study revealed a positive and significant relationship between the board size, meetings frequency, and CEO duality with firm performance. Accordingly, there is no consensus on the exact number of board members that should be included in the BOD committee. For example, the Egyptian Corporate governance code (2011 and 2016) identified that the board size should not be less than 5 members in the committee. The majority of the board should be independent or at least two-third of the board should be independent and have technical and analytical skills.

In summary, there is no agreement regarding the optimal board size either in developing or developed countries that can achieve the lowest level of earnings manipulation. Some studies indicated that the association between board size and EMs is a non-significant relationship as both large and small board size may be ineffective in their functions. On one hand, group of studies preferred to have small board size as the large board may not be effective monitor due to problems of communication and bureaucracy, free-riding problems, or inefficiencies (Beasley, 1996; Vafeas, 2005; Santiago and Brown, 2009; Akbar, 2014; Talbi, et al., 2015; Adebayo, et al., 2013). On the other hand, another group of studies favored large board size and suggest that small size may be dominated by the managers, thereby making them less effective and professional in reducing the opportunistic earnings (such as Xie et al., 2003; Abdul Rahman and Ali, 2006; Yasser et al., 2011; Abed, et al., 2012; Fauzi and Locke, 2012; Dharmadasa, et al., 2014; Uwuigbe, et al., 2014; Samaha et al., 2015; Abata, and Migiro, 2016; Singn et al., 2017; Kao et al., 2019). While, others (Nguyen and Faff 2007; Akbar, 2014) suggested that the association between board size and EM is a U-Curved relationship.

Based on the mentioned empirical studies on board size, this study proposes the following hypothesis;

HA5: There is a significant and negative association between board size and Accruals-based activity management (AEM).

HB5: There is a significant and negative association between board size and Real-based activity management (REM).

HC5: There is a non-linear relationship between board size and earnings management.

5.3.2 Board of Directors' Composition (Board Independence)

Independent directors are mostly used in the literature to reflect board composition or independence (Al-Najjar and Hussainey, 2009). The board of director's composition is the collective body that should work in the best interest of shareholders. The board should consist of the executive (insiders), affiliated, and independent directors (outsiders) to achieve the firm objectives that should be consistent with the shareholder's interest (Fan and Wong, 2002).

Board independence refers to a corporate board with a majority of outside/non-executive directors who are trusted by shareholders to represent them in making appropriate decisions. Outsider/non-executive directors are more observant in monitoring behaviors and decision making of the company (Fama and Jensen, 1993). Hence, independent directors should be separated from management to perform their duties effectively and to provide unbiased judgments. The UK CG Code (2010: p11) highlights that one of the main responsibilities of non-executive directors is to “enhance the integrity of financial reports and that financial controls and systems of risk management are robust and defensible”.

Empirical researches did not specify and agree on the optimal board of directors' composition. There are inconclusive results whether the existence of outsiders directors on the board plays a significant role to gain such competitive advantages either in the developed or the developing countries. On one hand, some researchers stated that the boards with more independent directors have more capability to control the opportunistic behavior and protect the shareholders' interests in comparison to the boards with insider members (Jensen and Meckling, 1976; Klein, 2002; Qinghua et al., 2007; Issarawornrawanich, 2015; Fuzi et al., 2016). On the other hand, another group of literature argued that insider/executive directors have a greater understanding of the company's operations (Horváth and Spirollari, 2012). Therefore,

they have a positive impact on firm performance and the quality of reporting. While, others suggested that there is neither a positive nor negative correlation between board composition, earnings manipulations and performance (Akpan and Amran, 2014).

Board independence in the developed countries; The following group of empirical studies showed that organisations with a more independent board are likely to perform better than others and are considered as an important element that could enhance the firm value. From the perspective of solving the Berle-Means agency problem, they suggested that appointing independent directors seems to be the natural solution for agency conflict. For instance, Klein (2002) who analyzed 692 publicly traded U.S. firms, found that high proportions of non-executive directors and AC enhance the level of performance and reduce EMs actions. The organisation may suffer from high raise in Adjusted Abnormal Accruals (AAC) if it changed from more majority independent directors to minority independent directors' structure in the year of the change compared to their counterparts. Independent directors offer a great effort and time to support accountability and reliability toward shareholders and stakeholders as a result of their responsibility in monitoring and evaluating the management. Independent directors are free from any management pressure which increases their capability to reduce agency problems (Fooladi, 2012). Following this study, Xie et al., (2003) revealed that the addition of more independent/outside director and directors with experience on the board increase their probability to reduce the level of EM manipulations based on DAs.

In the Australian context, The relationship between board composition and voluntary disclosure and its components was examined by Lim et al., (2007). The study revealed that board composition influences positively on the voluntary disclosure. Particularly, board independence has a positive influence on voluntary disclosure of both strategic and forward-looking information. However, there is no association between board composition and voluntary disclosure of (financial, non-financial, and historical information). Furthermore, Anderson et al., (2004) showed that board independence is inversely related to the cost of debt as a proxy by bond yield. Consistent with this result, Düztas (2008) indicated a significant and positive association between board independence and firm valuation. This is because of their capability of challenging the decisions of the management as a means of protecting the interests of shareholders and other stakeholders.

In the UK context, Osma (2008) consider another point of view when measuring EMs. His study aimed to measure the impact of director independence on REM based on R&D expenditures from 1990 until the end of 2002. It documented that board independence plays a significant role in identifying, detecting and constraining R&D Cuts. Therefore, the inclusion of independent directors on R&D intensive firms may improve their long term performance by reducing the frequency of short term oriented R&D decisions. Consistently, in the American context, Talbi et al., (2015) examined the impact of the board attributes and the AC in sample panel composed of companies listed on NASDAQ, AMEX, and NYSE from 2000 to 2009. The study followed Roychowdhury (2006) model using operating activities manipulations to calculate REM. The results revealed a significant and negative association between board independence and REM suggesting that an independent committee might not be vital if the board of directors is independent enough.

In the same vein, Iqbal and Strong (2010) in the UK revealed that firms with majority non-executive directors/outside directors with small debt to equity ratio and have large block-holder are less likely to manipulate around the right issues. Also, Armstrong, Core, and Guay, (2014) found a positive association between the independent directors, accounting quality and earnings informativeness respectively. Consequently, timely recognition for losses (a commonly used measure of earnings quality) may be increased which influence positively the quality of earnings. Furthermore, Issarawornrawanich (2015) implied that the board composition has a positive influence on the firm's ROA in Thailand during 2010 and 2011. This implied that the existence of independent directors improves the firm capability to reduce agency costs and enhance the effectiveness of decision making by improving board deliberation and judgment (Brickley et al., 1994).

While, other researchers found that there is non-correlation neither positive nor negative between board composition, EMs, and performance. For example, Lawrence and Stapledon (1999) analyzed the annual reports of the top 100 Australian listed firms over 10 years. The study reported a non-significant association between independent directors and firm performance. This finding may due to the complexity of the different structures of companies Also, board composition may contain a varying mix of independent directors as affiliated non-executive directors and executive directors. Besides, all independent directors maybe not value added to the organisations. The personal and social ties with CEO decrease their effectiveness, as well as their lower

turnover rate, which reduces their independence. Moreover, the non-executive director cannot assign all their effort and time to the business due to other commitments or the lack of knowledge about the firm operations (Iwu-Egwuonwu, 2010).

The findings from Klein, Shapiro, and Young (2005) contradicted with findings of Klein's (2002) study in the U.S. Their study focused on 263 Canadian firms to measure the relationship between CG indices and firm value measured by Tobin's Q. The research found that not all elements of the CG index have an effective impact on firm value. For instance, board independence does not have a positive effect on firm value. Indeed, board independence has a negative impact on firm performance, especially for family firm ownership. This result is not consistent with the Agency Theory. This indicates the importance of the upcoming studies to consider different sub-indices of CG and type of ownership structure while analyzing the association between CG mechanisms and firm performance.

Park and Shin (2004) found non-significant association between the percentage of outside members and accrual manipulation in both pre and post-guideline periods. The study found that independent directors cannot be the only guarantee to reduce the earnings manipulations. They may do not have enough qualifications and financial expertise and experience to detect and hinder the opportunistic management behaviors. Furthermore, the independent directors are not interested and keen to protect the shareholders' interest due to a lack of their shareholding in the firm. Another possibility for this result is due to the presence of dominance of CEOs. This argument is consistent with the results of Xie et al., 2003.

However, Singhchawla et al., (2011) contradicted with the point of view of park and shin (2004) justification. Indeed, although they found a positive association between the independent director and performance and firm value in the Australian Stock Exchange (ASX), they found that the independence of the director may be impaired and impacted due to their large ownership. When directors hold a major investment (salary and shareholding) therefore, they become so interested to keep their investment by focusing on risk-averse projects and take decisions in favor of their interest which at the expense of shareholders' interest. Thus, this will have a negative impact on firm performance and earning quality and informativeness. From another point of view, Duchin, Matsusaka, and Ozbas, (2008) revealed that the effectiveness and independence of the director on the board are based on the cost of information. When the cost of information is low, the outsiders added on the board can add value to

the organisation. On the other hand, when the cost of acquiring information is high, the outside directors added to the board decrease the performance. This is because directors are not capable of performing their functions effectively.

Surprisingly, several studies provided no evidence regarding the relation between board composition and the quality of earnings. For example, Fooladi (2012) and Bos et al., (2013) found an insignificant association between the percentage of outside directors and various performance measures. Their findings contradict CG recommendations in the UK which recommended with a crucial role of independent directors in monitoring, mitigating any opportunistic behavior, enhancing transparency and quality of financial reporting. However, this result may be due to the lack of financial incentives given to them or due to ineffective UK rules and regulations in implementing CG on the UK Stock Exchange.

Board independence in the developing countries ; Developing countries are characterized by weak investor protection and less developed capital markets (Samaha and Hegazy, 2010; Al-Ajmi, 2009). Hence, board independence is likely to be perceived as a crucial and effective CG mechanism that helps reduce information asymmetries and enhance the quality of financial reporting (Khalil and Ozkan, 2016). However, there are several arguments and debates regarding the role of independent directors in controlling the malpractices in the organisations. Several studies supported the role of independent directors such as Qinghua et al. (2007) in China Stock Exchange who confirmed that a higher percentage of independent directors, having AC and highly independent financial directors on the board increases the possibility to reduce financial fraud. Additionally, when the non-executive directors are experts and qualified in finance and accounting, they have a great tendency to supervise and control EMs. This study found also that 28% of listed companies had exactly one-third independent directors on the board. These companies try to follow the requirements of government regulations only and these directors do not perform their required duties. Therefore, this study suggested that when the board has more than one-third of independent directors, the probability of producing high-quality financial reports at high increases.

In similar vein, Gillette, Noe, and Rebello (2007) favored to adopt a single-tiered board with a majority of outside directors. As the presence of non-executive directors promotes the decision-making process and improve its quality and effectiveness even when the directors are not in the majority. Lo et al., (2010) used transfer pricing manipulations as proxy for earnings malpractice and focused on 266

companies listed on the Shanghai Stock Exchange. They found that when organisations have a greater number of independent directors, lower percentage of parent directors, CEO non-duality, and AC with financial experts, they have fewer tendencies to engage in transfer pricing manipulations in related party transactions.

Consistently, Roodposhti and Chashmi (2011) in Iran found that adding more outside directors help the organisation to effectively decrease the opportunistic behavior of EM by improving monitoring functions over management. Thus, this enhances the present and potential investor's confidence in financial information reliability. Wang and Campbell (2012) examined the relationship between state ownership, IFRS and independent board of directors and EMs of 1329 publicly Chinese listed companies from 1998 to 2009. The study found that when the number of independent director is increased, the behavior of earnings manipulations is controlled. Hence, the rules require at least 1/3 of the members of the Board to be outside directors to be effective for private companies.

In Nigeria, Uwuigbe et al., (2014) explored a negative association between the board independence (more non-executive directors), board size and EMs as they are more concerned with improving their reputation as a strong and expert decision-maker. Based on 26 Malaysian Public Listed Companies (PLCs) from 2005 to 2010, Jamaludin, Sanusi and Kamaluddin, (2015) supported the effectiveness of board structure in eliminating EMs actions. The inclusion of independent directors expands the firm experience and expertise, accordingly, improves the monitoring and supervising functions that lessen the magnitude of EM. Recently, a study in the Middle East and North African Countries (MENA)²⁷ was conducted by Al-Najjar and Clark (2017) showed a negative significant association between independent directors and cash holdings as independent directors are providing better monitoring activities in the MENA countries. The researchers' recommendation to policymakers is to enhance and support the role of independent directors by motivating the firms to select highly experienced and qualified non-executive directors. Besides, they recommend to specify the duties and tasks of independent directors and apply the rules and regulations that provide better compliance with these requirements. Additionally, Kao et al., (2019) using 6,137 firm-year observations in Taiwan from 1997 to 2008 found a significant

²⁷ MENA countries include Bahrain, Egypt, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Tunisia, and UAE

and positive association between the percentage of independent directors and firm performance confirming that independent directors play a vital role in monitoring directors behavior and audit reports released from audit firms and in investigating the firm operations at any time especially in countries with weak CG systems.

As contended by (Roodposhti and Chashmi, 2011; Uwuigbe et al., 2014; Kao et al., 2019), independent board members provide management with better advice and higher quality of management decision due to their experiences, expertise, knowledge, industry contacts, interpersonal relationship at top management and communication skills. These features can help them to make effective strategic planning and implementation, address all legal demands, and ensure integrity and transparency for corporate disclosure, report, and communication. Therefore, the independent director has a large tendency to improve the transparency of financial reporting and disclosure practices, thereby reducing information asymmetry and reduce agency conflicts. The more independent directors on the board increase the capabilities and skills in the forecasting and analyzing functions. Additionally, some organisations have a high tendency to pay more audit fees as a proxy for commitment to strong internal controls and higher quality financial reporting to increase the board independence and AC (Talbi et al., 2015; Issarawornrawanich, 2015; Al-Najjar and Clark, 2017)

Some studies found that independent directors were not effective in improving firm performance and in mitigating EMs as hypothesized. Another strand of literature argued that insider/executive directors rather than outsiders generally have an in-depth understanding of the company's operations. Which facilitates the efficiency of the board of directors and the accuracy of their decisions. For illustration, Amer and Abdelkarim (2011) in Palestine, Siam, Laili, Khairi (2014) in Jordan, Salihi, and Kamardin (2015) and Abata and Migiro (2016) in Nigeria found unexpected findings regarding the relationship between board independence and the quality of reporting and firm performance. They revealed a positive and insignificant relationship between board independence and EMs. The resulted association is inconsistent with the evidence reported in the literature, which supported the hypotheses that board independence and DAs have either a negative or no significant association. This result is in contrast with the findings found by Klein (2002), Peasnell et al., (2005) and Xie et al., (2003) where independent directors are negatively related to DAs.

Abdul-Rahman and Ali (2006) reported a positive but non-significant association between board independence and opportunistic manipulations in the

Malaysian context. The possible justification of this finding is due to the lack of required skills, experience and knowledge of the board of directors that allow them to monitor and supervise the firm operations effectively. Also, the top manager's dominance and control give the authority to elect the desired directors without considering the level of qualifications. This justification is based on managerial hegemony theory which contradicts Agency Theory. Furthermore, Shukeri et al., (2012) revealed that outside directors have a negative impact on the performance because the directors owe their position to management who recommended them. The directors want to leave a good image in the management's mind to be re-elected and maintained their fees. These possible reasons may possible justifications for mixed evidence on the effectiveness of board composition for monitoring managers and protecting the interest of stakeholders.

Also, Bala and Gugong (2015) revealed a positive association between board independence and DAs in Nigeria. They suggested that the independent board does not guarantee to prevent management from acting an opportunistic behavior. Even though, independent directors are more professional in business operations and can easily attain the supervising functions, reduce the possibility of top management involvement and prevent the misuse of company resources thus improve operating performance (Awan, 2012). On contrast, Dada and Ghazali (2016) found a negative and significant association between independent board and accounting and market performance of Nigerian listed firms from 2005 to 2015. However, they argued that a large percentage of outsiders on the board may bring disadvantageous conditions to the firm. Some independent directors did not have essential technical and operational information about the company because they work part-time. Accordingly, they cannot perform the monitoring and controlling activities of the management effectively and efficiently. Besides, they fulfill only the minimum regulatory requirements (Weir and Laing, 2001). Moreover, some of the directors lose their independence due to their close relationship with top management during the working period on the board thus; those directors lose control of achieving a strong CG system. Similarly, Akpan and Amran (2014) conducted their study on 90 listed firms in Nigerian Stock Exchange from 2010 to 2012. The multiple regression analysis revealed a negative but non-significant association between board composition and performance. Moreover, Johl et al., (2015) research results of Malaysia are consistent with Fooladi (2012) and Akpan and Amran's (2014) findings. This is due to the characteristics of many developing countries such as

Malaysia, the selection of the independent directors is not based on their expertise and experience but depend more on political reasons to have legal business activities and contracts. Evidence from the African context, Waweru, and Prot (2018) reported a positive association between board independence and DAs. This result may be due to the voluntary application of CG (comply or explain principle) in the developing countries. This finding contradicts with Agency Theory. However, this finding is in line with the managerial hegemony theory (Abdul Rahman and Ali, 2006).

In the Egyptian context, Soliman and Ragab (2013) found that independent director on the board does not have a significant impact on the earnings manipulations. They recommended the regulatory agencies and authorities to reinforce and strengthen the application of CG code regarding board attributes that best serve the shareholder interest. Atty, Moustafasoliman, and Youssef, (2018) also revealed a non-significant relationship between board independence and firm performance (ROA, ROE, and Tobins`q). They indicated that non-executive directors do not have any influence on the Egyptian firms in the capital market due to the dominance of family-controlled firms and weak governance regimes. While Salem et al., (2019) stated that the board independence in the Egyptian and American context is positively and significantly associated with firm value. Khalil and ozkan, (2016) found that the influence of the board independence on the earnings management is contingent upon the level of ownership and the composition of AC. Until 2016, there was no legal requirement for the board to include independent director, and recently all listed companies according to the Egyptian listing rules should include at least two independent members on the board. Egyptian corporate governance code (ECCG) 2005, 2011, 2016 recommended the inclusion of majority independent (non-executive) directors with an appropriate mix of technical, analytical and financial expertise in the corporate board to enhance and promote the monitoring and controlling functions over executives. The Egyptian listing rules require from all listed companies to include at least two independent members on the board (Khalil and Ozkan, 2016).

There is no specific and uniform number of independent directors on the board. The organisation's goal is considered another important factor for constituting the number of independent directors on the board. If the objective of the board was to maximize value so it is useful to increase the board size. While, if the objective of the management is to minimise the monitoring functions, it would be better to raise the number of independent directors on the board to enhance oversight in such firms.

Therefore, it is unlikely that an increase in independent directors would have a uniform impact on firm performance. This means that there is no consistent agreement on the impact of independent directors on the organisational performance across firms. The CG codes recommend making a balance between the executive and non-executive directors on the board with a special focus on independent members (Azim 2012; Fuzi et al., 2016). Furthermore, CG codes do not provide any specific number of executives, non-executive and non-independent directors.

Collectively, reviewing the empirical results concerning the association between board independence and EMs are mixed. Some studies (i.e., Xie et al., (2003); Osma (2008); Lo et al., (2010); Roodposhti and Chashmi (2011); Talbi et al., (2015); Issarawornrawanich (2015); Waweru and Prot (2018); Kao et al., (2019) revealed that independence director is a significant monitoring mechanism that helps the firm to control opportunistic behavior particularly if the directors did not have any financial interest in the organisation. However, other groups of studies (Lawrence and Stapledon, 1999; Singhchawla et al., 2011; Fooladi, 2012; Bos et al., 2013) found that independent directors failed to have a significant impact on the quality of financial reporting and firm performance. Subsequently, given the above empirical and theoretical literature, this thesis proposes the following hypothesis:

HA6: There is a significant and negative association between board independence and Accruals-based activity management (AEM).

HB6: There is a significant and negative association between board independence and Real-based activity management (REM).

HC6: There is a non-linear relationship between board independence and earnings management.

5.3.3 CEO Duality

There are two conflicting views regarding the separation of powers between the chairman and the CEO based on the Agency Theory and the Stewardship Theory (Abdul Rahman and Haniffa, 2005). The Agency Theory suggests that the separation between the two roles of CEO and chairman is vital to ensure the efficiency and effectiveness of tasks performed by the board over management. As well as, this separation can prohibit him from pursuing strategies that may advance their interest over the company interest. For instance, Cadbury and Hampel's report recommended CEO non-duality because the separation between the non-executive chairman and the

CEO make them more capable in making effective decisions, and proposing objective opinions on firm plans and potentials proposals. Hence, this improves the functions of monitoring, evaluating systems and support shareholders' interest (Samaha et al., 2012; Adebayo et al., 2013).

The Cadbury Committee supposes the duality practice as needless because it potentially provides one person with too much power in decision-making (Cadbury, 1992). According to SEC Code of CG (2003), it is very important to have a separation of positions of the chairman and CEO which gives a great chance to provide essential checks and balances over management performance. According to literature such as Yang and Zhao (2014), Merendino (2014) and Issarawornrawanich (2015) argued against consolidated leadership. The justification for their arguments based on three points which are closely connected control system, independence of the board, decision making.

On the contrary, proponents of Stewardship Theory and RDT support the idea that CEO duality or combination between the two roles is very important for the organisation in enhancing the decision-making process. As well as, it allows the CEO to perform the company strategic vision with minimum interference from the board. Therefore, CEO duality enhances the firm performance as it allows the CEO to have unified authority and power in planning, directing and controlling, coordinating the organisation operations in a timely and effective manner (Habbash, 2010; Amer, 2016).

Some studies stated that CEO duality as a leadership structure has many advantages in terms of leadership, cost savings, and decision-making processes. Certainly, splitting leadership between CEO and chairman may create confusion which harms firm performance when making corporate decisions. This has a direct and positive impact on strategic planning and implementation, and indirectly on enhancing firm value and performance (Eng and Mak, 2003; Omran et al., 2008). There is some evidence that companies with a duality system perform better than those with separate leadership. All codes of CG²⁸ advised that the roles of chairman and CEO should be split with the division of responsibility between them (i.e., CEO non-duality) (Samaha et al., 2012).

²⁸ All CG Code except from American and German ones which do not specify anything regarding to Chairman and CEO roles.

However, several studies recommended any organisation to have a non-duality system to promote controlling and monitoring functions because merging between two roles have a negative effect on the firm capability to monitor its management (Samaha et al., 2012; Adebayo et al., 2013). Some studies found that it is better for a corporation to separate the role of CEO between decision and control rights to align the management interest with shareholders' interest that has a positive impact on the maximization of the firm value (Bayrakdaroglu, Ersoy, and Citak 2012; Samaha et al., 2015). Surprisingly, the third stream of empirical studies such as (Duztas, 2008; Abdel-Fattah, 2008; Yasser et al., 2011; Singhchawla et al., 2011) suggested that CEO duality/non-duality on the board does not necessarily associate with better firm performance and failed to find definite evidence supporting the separation of CEO and chairman duties.

Prior research regarding the association between CEO duality and quality of financial reporting is mixed in developed countries. For instance, Singhchawla et al., (2011) argued that there is insignificant association between CEOs duality and performance for 250 Australian listed companies from 2004 to 2005. Correspondingly, Shukeri et al., (2012) conducted their study in Malaysian context and found a non-significant association between CEO duality and firm performance. The difficulty to evaluate whether CEO duality is uniformly good or bad, may be due to challenges in determining contingencies around the organisation such as country laws and regulations, country characteristics, models of CG, firm structures, personal skills and expertise (Al-Matari et al., 2012). Accordingly, the researchers' results are consistent with the Institutional Theory.

Most of the developing countries are characterized by weak legal investor protection and dominance of controlling ownership which influences the quality of disclosure and transparency. Therefore, Nosheen and Chonglertham (2013) are interested to examine how the dominance of governance practices impacts the disclosure quality in Pakistan. The study reported a negative association between CEO duality and disclosure quality thereby, raising the information asymmetry and agency costs. Although, the research found that ownership concentration improves the quality of disclosure to increase the public trust and confidence especially in the case of weak legal and regulatory systems. The study revealed that CEO duality combined with ownership concentration has a negative impact on the disclosure quality and distort the flow of information to investors. The findings are consistent with Agency Theory. Also,

Sarkar, Sarkar, and Sen, (2008) found a positive association between CEO duality, the board size, and absolute DAs for 500 large Indian firms from 2002-2003. They claimed that CEO serves as chairman has more tendencies for income increasing accruals, not necessarily smoothing them. However, board independence does not have any significant impact on the DAs.

Furthermore, Roodposhti and Chashmi (2011) in Iran found that CEO duality reduce the board capability to perform the control and monitoring functions effectively. Combined leadership structure also minimises the effectiveness of the board that leads to conflict between manager and board and provide more opportunities to conduct earnings manipulations. This result supported the importance of Agency Theory that support the separation of duties to enhance financial performance. This result is consistent with the Cadbury Report (1992) and Higgs Report (2003) in the UK. Amer and Abdelkarim (2011) investigated the relationship between CG characteristics (board size, directors' independence, CEO duality, among others) and DAs for 22 Palestine listed companies between 2009 and 2010. The result showed a positive and insignificant association between CEO duality and EMs.

Adebayo et al., (2013) in Nigeria found that CEO duality has a significant and negative impact on financial performance. The researchers justified the findings as if the CEO and chairman of the board is the same person, accordingly, there is no monitoring on their action and the duality gives CEO more power and authority and may maximize their interest at the expense of the shareholders. The study recommended the separation of duties between the chairman and CEO to enhance the decision-making process, ensure the balance of power of them to avoid increasing the conflict of interest. Another study conducted in Nigeria, by Uwuigbe et al., (2014) and Salihi and Kamardin (2015) and focused on the role of CG in limiting EMs malpractice. The study found a positive association between CEO duality and EMs practices. The CEO duality merges the decision management and decision control functions that obstruct their monitoring role which leads to more EMs manipulations.

However, some studies revealed that the relationship between CEO duality and performance depends on some internal and external factors surrounding the organisation. For instance, Al-Shammari and Al-Sultan (2010), Alessandro (2013), and Bouaziz (2014) suggested that the potential benefits and costs are to be assessed ex-ante as a result of the conflicting results concerning the potential costs (information asymmetry, inconsistent decisions, and extra compensation in maintaining two

directors) and benefits (separation of management and control) of non-duality system. Consequently, the namely organisational and ownership structure, the board size, firm size, industry and business environment, and decision environment are the several factors on which the board leadership structure depends. Also, Boyd (1995) discovered that the conditions of environmental uncertainty determine the importance of CEO duality in improving the quality and the speed of the decision-making process and firm performance.

Extant literatures such as (Abdul Rahman and Ali (2006); Al-Shammari, and Al-Sultan (2010); Chugh et al., (2010); Shukeri et al., (2012); Velnampy and Nimalthasan (2013); Akbar (2015); Kao et al., (2019) revealed non-significant association between CEO duality and firm performance as result of the external factors (such as economic and political instability) and internal factors (such as expertise, experience, professional and educational background). From an organisational behavior perspective, Boivie et al., (2011) claimed insignificant association between CEO duality and performance as a result of the difficulty in measuring some elements such as CEO personality, beliefs, values priorities, personal characteristics, and principles. Furthermore, Duztas (2008) in Turkey did not find any evidence support the claim that boards having non-duality CEO outperform the CEO/chairman duality based on the performance measured by Tobin's Q and ROA. The researcher defended that Turkey as an emerging country has different commercial law, CG principles, and different ownership structures. Moreover, an emerging market cannot be easily compared with developed countries such as the US and UK.

In the Egyptian context, combining the roles of chair and board is common practice. Several studies conducted in Egypt revealed that most of Egyptian companies are dominated by CEO duality. For instance, Samaha et al., (2012) who focused on EGX (100) in (2009), reported that 61% of Egyptian companies is dominated by CEO duality specifically 55% of the sample is related to manufacturing industry. Wahba (2014) also found that 63% of the study sample do not split the roles of CEO and chairman. Statistics about CEO duality applicable in Egypt is consistent with the findings in the US such as 62% in Boone et al., (2007) and 58.3% in Linck et al., (2008).

Elsayed (2007) investigated the impact of CEO duality on corporate performance using ROA and return to shareholders. The study tested 92 Egyptian public limited firms from (2000 to 2004) in nineteen different industrial sectors. The

results revealed that the duality of CEO has no direct impact on firm performance. He concluded that the association between CEO duality and corporate performance differs according to the firm performance and industry. Therefore, CEO duality may be advantageous for many firms while non-duality might be worthy for others. There is no optimal leadership structure and it is important to consider the industrial activity and firm structure before evaluating the impact of CG on performance or EM. This result is consistent with the findings of Brickely et al., (1997), Rhoades, Rechner and Sundaramurthy (2001), and Finkelstein and D'Aveni (1994). Furthermore, Abdel-Fattah (2008) examined the degree of total voluntary disclosure and its categories in the annual reports of 182 Egyptian non-financial listed companies from 2003 to 2006 and tested its relationship with CEO duality. According to the results, there is a non-significant association between CEO duality and voluntary disclosure.

Samaha et al., (2012) found that the disclosure level for mandatory items under the Egyptian Accounting Standards is high in comparison to the other items while the level of voluntary disclosures in Egypt is low which indicates the weakness of the regulatory framework in Egypt. Furthermore, the level of CG disclosure is low when the organisation has CEO duality and when there is a high degree of family ownership concentration in the hand of block-holders. Wahba (2014) on sample of the 50 most active firms listed in the Egyptian stock exchange from (2008-2012) found that combined leadership structure has a negative impact on the firm performance. Soliman and Ragab (2013) selected the most active companies listed in the Egyptian stock exchange over the period of 2007-2010 and found that CEO duality is positively and significantly related with discretionary accruals. Metwally, Fadaly and Abdelrazak, (2016) investigated the Egyptian companies from (2011-2013) and found that CEO duality has a negative but insignificant impact on the earnings management. Their findings support the need to strengthen the compliance with Egyptian code that is concerned with duality status of board.

It is noted that studies conducted in Egypt that there are so far been relatively little research on corporate governance and earnings management practice in Egypt (Soliman and Ragab, 2013; Kamal and Elbana, 2012). The prior studies do not conclude consistent results regarding the relationship between CEO duality, earnings manipulations and performance. Recently, Egyptian governance codes (2011) and (2016) recommended to separate between CEO and chair role to confirm that the board will perform his duties and tasks effectively. In case of non-compliance, the Egyptian

governance code recommend to disclose the reasons for non-compliance on its annual reports and on websites.

To sum up, current empirical analyses provide mixed evidences regarding the impact of role duality on the quality of financial reporting. On one hand, there is limited results that companies with a duality system perform better than those with separate leadership. On the other hand, several studies and all codes of CG recommended that the roles of chairman and CEO should be split with the division of responsibility between them (i.e., CEO non-duality) (Amer and Abdelkarim, 2011; Roodposhti and Chashmi, 2011; Nosheen, and chonglertham, 2013; Adebayo et al., 2013; Uwuigbe et al., 2014; Issarawornrawanich, 2015; Thailand, Salihi and Kamardin, 2015). While third stream of studies such as Yasser, et al., 2011; Singhchawla, et al., 2011; Shukeri, et al., 2012; Nosheen and chonglertham, 2013; kao et al., 2019; Fadzilah, 2017) suggested non-significant relationship between CEO duality and the quality of financial reporting due to different characteristics of CEO, and different external factors such as voluntary disclosure, and economic and political issues. Subsequently, the seventh research hypothesis to be tested is:

HA7: There is a significant and positive association between CEO duality and Accrual-based activity management (AEM).

HB7: There is a significant and positive association between CEO duality and Real-based activity management (REM).

5.3.4 Board Gender Diversity

There are two competing views regarding the relationship between gender diversity and the quality of reporting. On one hand, several studies suggested that female directors on the boardroom have a positive impact on the earnings quality and sustainability due to several reasons such as; gender diversity facilitate the problem-solving capabilities by providing different perspectives and thoughts; female directors can maintain a good and long-term relationship with female clients or customers (Kılıç and Kuzey, 2016; Liu et al., 2013). Furthermore, board diversity can add more skills, knowledge, talents, cultural backgrounds that improve the flow of strategic resources to the organisation (Nguyen and Faff, 2007). Female directors have higher attendance rates and demand more audit efforts than male directors and devote more time, skills and effort in the monitoring related committees (Adams and Ferreira, 2009; and Liu et al., (2013). Moreover, female members can provide a positive signal to stakeholders to

build a good image and maintain a good competitive advantage. On the other hand, several kinds of the literature revealed the board diversity cannot minimise the malpractices of earnings manipulations (Gull et al., 2018; Al-Shaer and Zaman, 2016) .

In Developed countries, there are several works of literature that support the role of gender diversity in promoting the quality of the decision-making process and in providing different alternatives and non-traditional approaches to board discussion taking into consideration all circumstances and changes in the market place (Marinova et al., 2016). Thus, there is a strong motive to include female directors in the boardrooms to communicate with female laborers and female customers in the society due to their expertise and professionalism (Gul, Srinidhi and Ng, 2011). For instance, using 832 observations of publicly listed Australian firms by Nguyen and Faff (2007), the study found a significant and positive association between gender diversity and firm value. The diversity allows a better understanding of market place, more effective problem solving, supporting the creativity and innovation practices, developing a more effective global relationship, and corporate leadership. In the USA, Adams and Ferreira (2009) revealed a positive association between women directors and performance in case of weak shareholder rights. However, board diversity may have a negative impact on the firm value due to too much monitoring as a result of strong shareholder rights.

Al-Shaer and Zaman (2016) examined all companies listed in the UK FTSE35 in 2012 and found a positive and significant association between gender diversity and sustainability reporting quality. Specifically, independent female directors have a greater impact on the quality of sustainability reporting than female directors and are effective in reducing agency costs. In a similar context, Lara et al., (2017) in the UK examined the association between the effectiveness of female directors and the accounting quality considering the gender discrimination of 4785 firm-year observations from 2003 to 2012. The study found a positive and significant association between the percentage of women directors and accounting quality in case of discrimination. However, the existence of a woman director would not affect monitoring functions and EM if the females and males behave similarly in high profile jobs under no discrimination.

Recently, Gull et al., (2018) investigated the association between female directors and earnings manipulations and whether this relationship is moderated by the role of statutory and demographic attributes using 394 French listed firms. Initial findings revealed a negative association between female directors and EMs. However,

the results revealed a positive association when the statutory and demographic attributes were taken into consideration in the regression models. Therefore, the researchers concluded that specific (statutory and demographic) attributes such as (AC membership and business expertise) are important features that should be considered when appointing the female directors. This can enhance their effectiveness in monitoring and supervising functions, thereby mitigating the opportunistic behaviors of management. In line with those findings, Zalata et al., (2019) suggested that female directors should be appointed and involved in monitoring roles rather than advisory role only on the board to develop the integrity and reliability of the financial reporting process. Their study recommended the importance and necessity of including female on the board structure to make good contributions for shareholders and to have an effective role in restraining managerial opportunism.

On the other hand, in the UK, Arun, Almahrog and Aribi (2015) revealed that a firm with more female and independent female directors on the board are more likely to apply conservative financial reporting rules and standards. In other words, females tend to engage in income decreasing rather than income increasing EMs. While in high debt firms there is no association between the female directors and EM. In low debt firms, there is a positive association between female directors and female independent directors and EM. These findings are consistent with the study of Gavius et al., (2012) who stated that female and independent directors on board are less likely to engage in income increasing EM manipulations due to their conservatism.

In France, Lakhali et al., (2015) stated that women on the board play a vital role in monitoring and supervising management behavior. The females act as CG mechanisms to eliminate the opportunistic EMs effectively. A negative association between the presence of at least three women on the board and DAs in French listed firms is revealed. Political bodies try to equalize the numbers of females and males on the board hopefully to eliminate the practice of EM in France. However, the woman on the board should have the qualifications, experience, background, and expertise to eliminate the DAs effectively. Imposing rules and regulations regarding the quota of the woman on the board may be harmful to the organisation if they are taking into consideration the qualifications and financial literacy of females chosen. For example, some countries like Norway, Iceland and Spain imposed a quota of 40% female directors in the boardroom, their firm value is decreased due to the enforcement of the law to hire younger and less experienced women as directors.

Chen and Gavius (2016) in Israel determined the necessity of considering the impact of the financial literacy of a female director while the relationship between diversity and EM is investigated. The results are inconclusive, at the first stage, there is a negative association between the female director and EMs in the pre-IFRS period while the opposite result found for the post-IFRS period. Specifically, both measures of EM are significantly larger when female representation is higher. In the second stage, when the financially literate of the woman is considered in the investigation, the results showed that the presence of female directors is beneficial in other aspects related to the characteristics of the woman in the business. Explicitly, it is necessary for female directors to be financially literate to contribute effectively in monitoring the opportunistic behavior of EM either before or after IFRS periods.

In the developing countries, prior literature stated contradictory results regarding the relationship between board diversity and corporate performance. This may be due to the difference in the time frame, lack of control variables, non-harmonized performance measures, the endogeneity problem between gender diversity and performance and different institutional contexts as regulatory and legislative (Rose, 2007; Carter et al., 2010).

Several works of literature are consistent with RDT, which suggested that board diversity brings significant and critical information to the manager to help them for better decision making. The female brings more opinions and viewpoints to the discussions due to their different socialization and exposure to varied experiences. The female is well prepared for the board meeting as well as attending them more than men. Additionally, the studies that link between gender and ethics revealed that females are more ethical in their judgments and decisions than men and put aggressive monitoring rules to detect fraud in the financial reports (Waweru and Prot, 2017). Therefore, women are interested to be assigned to the audit, nominating and CG committee rather than the compensation committee. For instance, In China, Luo et al., (2017) revealed that female directors perform a critical role in reducing REM. This negative association between female directors and REM is stronger especially with a high percentage of their shareholding. Female directors are keen to supervise and monitor the earnings manipulations due to their stock ownership. On the contrast, Adamu, Ishak and Chandren (2017) in Nigeria a positive association between REM, board meetings and board expertise.

On the other hand, other literature revealed that gender diversity couldn't hinder the earnings manipulations or improve firm performance. For instance, Hassan and Ibrahim (2014) in Nigeria reported a positive association between REM and the woman on the board. The female directors are not effective in hindering the bad practice of management. In the same view, Akpan and Amran (2014) in the Nigerian context presented a significant negative relationship between gender diversity and performance. Therefore, women on the board have a negative impact on performance. The feasible cause of the negative results can be attributed to different performance measures.

Bala and Gugong (2015) revealed that the female directors on the board increase the practice of opportunistic EMs. This may be the result of the widespread belief that women are weak in questioning and verifying the activities of managers. Later, Waweru and Prot (2018) investigated whether the fulfillment of the CG structure mitigated the EMs manipulation in Kenya and Tanzania. The cross-country analysis revealed a positive association between board diversity and DAs. The justification of this finding is due to the more conservative and risk-averse for the female when making investment decisions. Therefore, it has a negative impact on monitoring functions. Furthermore, the application of CG is not mandatory for all listed companies in Eastern African.

Interestingly, Sun, Liu, and Lan, (2011) concluded that there is a non-significant association between the percentage of female directors on ACs and the level of EMs. The possible justifications for these findings are i.e., many female directors did not consider all EMs as unethical and bad mainly if it is used to create a stable financial environment. Moreover, female directors may be more ethical than their male counterparts but are not able to influence the remainder of the committee. Also, there is no uniformity concerning the decisions of women in AC.

In the Egyptian context, there is a dearth of studies that investigated the relationship between gender diversity and the quality of reporting. Salem et al., (2019) found that board independence, board meetings, and gender diversity are positively and significantly related to firm value both in the Egyptian and American context. They recommended the authorities of CG to have more proportion of women on the board because they are interested to enhance the economic value of the firm and to devote more resources for investment projects rather than building economic empires. It seems that there is a relatively little focus of evidence regarding the relationship between gender diversity and earnings management in the developing countries in general and even less concentration on the Middle East such as the Egyptian context in particular.

Specifically, the REM practice has remained a largely unexplored area. Egyptian laws and corporate governance are silent regarding the role of gender diversity at the board. This is proved from the statistics that reflected by the Egyptian country report (2017) which revealed that the average female representation on the boards of the ten largest listed firms is 6.13% which represents a weakness in the strategies of Egyptian stock exchange. This result is relatively similar to Salem et al (2019) also revealed that mean of gender diversity over the listed Egyptian firms is 5.6 % which is relatively lower than average ratio of gender diversity in the US with mean of 19.8% (minimum value of 6% and maximum value of 50%). Recently, laws and codes work to devote more attention to gender diversity and to include this issue within the broader context of sustainability and stock exchange strategies.

To sum up and consistent with the mixed nature of the extant board diversity theoretical literature, the empirical studies provided conflicting results. These studies include those that report (1) significant positive such as (Bala and Gugong, 2015; Waweru, and Prot, 2018); (2) significant negative (Nguyen and Faff, 2007; Adams and Ferreira, 2009; Lakhal et al., 2015; Al-Shaer and Zaman, 2016; Kılıç and Kuzey, 2016; Lara et al., 2017; Luo et al., 2017; Adamu, et al., 2017; Gull et al., 2018) and (3) non-significant relationship between board diversity and EMs such as (Habbash, 2010; Dang et al., 2012; Hassan and Ibrahim, 2014). The conflicting international evidence may be explained by the fact that prior studies use different board diversity, EM techniques, performance proxies, sample periods, estimation techniques, and country and contextual differences. Based on the above-mentioned empirical results, this study proposes the following hypotheses:

HA8: There is a significant and negative association between board diversity and Accrual-based activity management (AEM).

HB8: There is a significant and negative association between board diversity and Real-based activity management (REM).

HC7: There is a non-linear relationship between board diversity and earnings management.

5.3.5 Board Meetings

Another characteristic related to the board of directors is the board activity (number of a board meeting), since the other factors size, independence and duality are necessary but not sufficient. Several studies supported the importance of board

meetings in monitoring the management and in safeguarding the quality of accounting information although few studies concentrated on examining the impact between board meetings and DAs.

Empirical studies in developed countries regarding the relationship between board meetings and the quality of financial reporting is mixed. For instance, Xie et al., (2003) used 282 firm years-observations to examine to what extent the board meetings influence the DAs. The study revealed the importance of board activity in enhancing the monitoring functions and in reducing the magnitude of the discretionary accruals. In Latin American Market, Gonzalez and Garcia-Meca (2014) found that active board that meets frequently are likely to enhance monitoring functions and to minimise the manipulative practice of management. On the other hand, several studies revealed non-significant relationship between board meetings and the quality of financial reporting. For instance, Basiruddin (2011) examined the role of board meetings in constraining the earnings manipulations from 2005-2008 applicable to FTSE 350 in the UK. The study found non-significant association between the number of board meetings and the magnitude of EM. Chemweno, (2016) examined the relationship between the board meetings and financial performance based ROA using 42 listed companies in the Nairobi securities exchange. The GLS regression revealed a non-significant relationship between the board meetings and ROA.

Using the evidence from developing countries, Qinghua, et al., (2007) examined the impact of board meetings on the quality of financial reporting in both Shenzhen and Shanghai stock markets in the year 2002. The regression analysis revealed that increasing the number of board meetings reduce the quality of financial reporting. Kassim and Noordin (2015) in Malaysian showed that the number of board meetings is not significantly related to Tobin's. This result is not consistent with Agency and resources dependency theory because the increase in the number of board meetings allows more monitoring on the performance of top-level management and reduces agency costs. Abbadi et al., (2016) investigated the impact of CG equality (board meetings) on the EMs in Jordan during the period from 2009-2013. The study revealed a negative relationship between board meetings and DAs. In Tunisian context, Chouaibi, Harres, and Brahim (2018) reported a negative relationship between board meetings and REM, thereby, ensuring the reliability of financial information provided to company stakeholders. While, Kankanamage (2015) used the performance adjusted discretionary accrual model to measure the EMs in Sri-Lankan listed companies and

revealed that there is an opposing view regarding the role of board meetings in constraining the earnings manipulations.

In the Egyptian context, Amer (2016) found a non-significant and positive relationship between board meetings and Tobins'Q as a proxy for firm value. While Salem et al., (2019) for 84 listed firms in the Egyptian stock market from (2012-2017) revealed a positive and significant relationship between board meetings and firm value both in Egypt and the US. They suggested that frequent meetings provide more opportunities for directors to discuss and deliberate firm strategies between directors and to reduce misunderstanding issues that may arise between directors. This can enhance monitoring and controlling functions over the management which indirectly improve the degree of transparency and integrity of financial reporting. This result is consistent with the Egyptian governance code (ECCG) in 2016 that recommends that the board members should be met once every three months. The descriptive statics reported that the average number of the board meeting is about 10 times per year, which is more than the minimum number of meetings that recommended by ECCG (4 times). The ECCG code recommends also to include in the annual reports the number of meetings, and members who do not attend the board or audit meetings. There is a lack of studies that tested the relationship between board characteristics and EM either accruals or management of real activities in the developing countries. The studies that focused on REM are very limited due to the difficulty in methods and tools for detecting it (Visvanathan, 2008; Talbi et al., 2015). In particular, the studies conducted in the Egyptian context regarding the attributes of board of director and EM practice is very rare. Based on the above discussion, the thesis formulated the following hypotheses:

HA9: There is a significant and negative relationship between board meetings and Accruals-based activity management (AEM).

HB9: There is a significant and negative relationship between board meetings and Real-based activity management (REM).

HC8: There is a non-linear relationship between board meetings and earnings management.

5.4 Audit Committee Characteristics and Earnings Management

The third group of the literatures address the association between the AC mechanisms and EMs practices. The AC characteristics represent an independent variable and include the AC size, AC independence and AC meetings. While, EMs represents the dependent variable and includes the accruals and REM. The association between two variables can be indicated in figure (5.3):

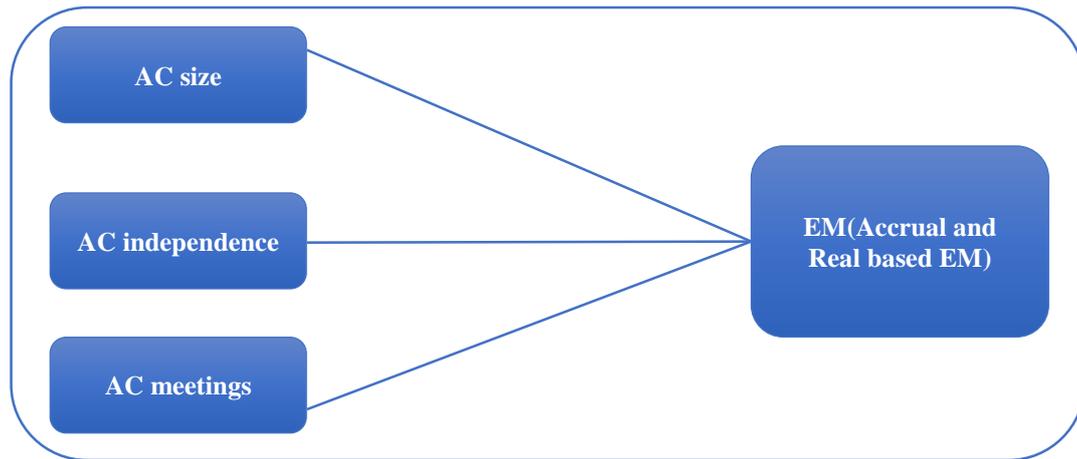


Figure 5.3: The Link between Audit Committee Characteristic and EM

Monitoring and supervising the financial process comes as the main objectives of the AC. The increasing number of earnings restatements by publicly traded companies accompanied with the accusation of financial statement fraud and the absence of responsible CG of high profile companies (e.g., Enron, Global Crossing, World Com, and Adelphia) contributed to the increasing importance of CG in general and ACs, in particular. Therefore, there are greater imputes to improve the quality of AC and the board of directors questioning (Zalata, and Roberts, 2016). Most of the government authorities, regulators and international bodies around the world described AC as a potentially powerful tool that increases the reliability and transparency of information provided to shareholders. Thus, reducing information asymmetry as well as mitigating agency problems between managers and shareholders and between shareholders and creditors (Al-Ajmi, 2009; Bhasin, 2012; Zalata, and Roberts, 2016).

AC is one of the critical essentials for applying CG practices. AC performs several vital responsibilities such as enhancing the quality of financial reporting, evaluating the effectiveness of the internal control system and risk management. Furthermore, AC is responsible for monitoring and assessing the internal and external auditing processes. AC is not considered only as a beneficial tool for increasing the

level of assurance against catastrophic failure but also provides improvements of the CG standard for all companies that establish ACs (Rezaee et al., (2003); OECD (2004); Chen, et al., (2008); Beasley et al., (2009); Mohiuddin (2012); Hamdan, Mushtaha, and Al-Sartawi (2013); Ilaboya and Obaretin (2015).

Previous literature classified the AC into operating (supporting) committee and monitoring (oversight) committees. The operating board is responsible for advising and recommending the management and the board regarding the business decisions while, oversight committees are dedicated to reviewing, evaluating, controlling the management, and executive functions to protect the shareholder's interest (Zalata, and Roberts, 2016). Agency Theory gives more priority to the monitoring function of the board committee more than the operating board. The theory justifies this argument by stating the following reasons (Jensen and Meckling, 1976; Fama and Jensen, 1983). Firstly, most of the monitoring committee rather than the operating committee is composed of independent members who assign their efforts in analyzing and inspecting the managerial actions. Second, the board skills, knowledge and expertise are used to effectively make the best decision making. Third, the members of AC can reduce agency costs and information asymmetry by providing more reliable and objective accounting information to the shareholders. Moreover, AC can minimise the financial fraud by regularly reviewing the financial statements, audit process and internal accounting control (e.g., Cadbury Report (1992); UK Combined Code (1998); (2006); King Reports (1994), (2002); Sarbanes Oxley Act (2002).

AC members are concerned with safeguarding the company's assets, reviewing financial statements, and assessing the quarterly and annual financial statements of the company before the board of directors' approval. Furthermore, they facilitate external auditing and coordinating between internal and external auditors, ensure the adequacy and the effectiveness of internal control system including financial and operational control, follow up whether the organisations comply with the best practices of CG and examine the compliance with relevant statutory requirements (Rezaee et al., 2003; Yasser et al., 2011; Mohiuddin, 2012). When the association between AC characteristics and voluntary disclosure is investigated by Samaha et al., (2015). They revealed that there is a positive and significant association among board size, board composition, AC and voluntary disclosure. Most of the literature stated that independent directors or AC existing have a positive impact on information transparency and corporate disclosure. Accordingly, the ACs should be characterized

by independence, competency, professionalism, financially literally and adequately resourced and properly compensated to perform controlling and monitoring functions effectively (Mohiuddin, 2012).

There are conflicting opinions and arguments regarding the association between the AC and the quality of reporting. On one hand, the extant literature suggested several advantages and positive points regarding the AC. They perform good role in reviewing the financial statements on behalf of the directors to confirm the quality of financial reporting, reduce the possibility of fraud by improving the control functions, and support the role of non-executive directors in their independent judgment. Moreover, they support the internal audit function, better communication with external auditing, increase the public confidence and trust toward the transparency and objectivity of the financial statements (Kunitake (1983); McDonald Report (1988); Pincus, Rusbarsky and Wong, (1989); Luecke and Westfall (1990); Cadbury Committee (1992); DeFond and Jiambalvo (1994); Porter and Gendall (1998); Guthrie and Turnbull (1995); Chen et al., (2008); Sarens, De Beelde, and Everaert, (2009); FRC (2010). On the other hand, some literature argued that AC has a negative impact on the quality of earnings and firm performance. Their arguments can be justified for the following reasons; the AC can make duplication for the corporate duties and responsibilities which increase the costs of implications. The existence of AC may make the firm encounter extra costs such as transportation costs, remuneration expenses and managerial time. Additionally, the excessive managerial monitoring and oversight may reduce their initiatives for innovation and creativity thereby, reducing the firm value and quality of financial reporting (Bedard, et al., 2004, and Habbash, 2010).

Most of the research on ACs examined the association between AC inputs (AC size, AC independence, AC meeting, and AC expertise) and financial performance, earnings quality, fraudulent financial reporting, voluntary disclosure, going-concern reports, stock price reaction, auditor changes, restatements, internal control quality of the firm, and financial reporting outputs (Carcello and Neal (2000), (Klein (2002); Rezaee et al., (2003); OECD (2004); DeFond, et al., (2005); Bedard et al., (2004); Chen et al., (2008); Beasley et al., (2009); Mohiuddin (2012); Ilaboya and Obaretin (2015); Wang et al., (2016). These studies generally conclude that independence, expertise, diligence, meeting, and the size of AC are positively or negatively or non-associated with quality financial reporting and auditing. The relevant literature on the characteristics of ACs is discussed below.

5.4.1 Audit Committee Size

AC size can be described as a significant and relevant factor in the effectiveness of AC duty. According to market regulators in the USA and UK CG code (2010), they proposed in their CG reports that a minimum number of AC directors should be three independent and non-executive members (BRC, 1999; Cadbury Report, 1992; CMA (2006); New York Exchange (2002); NACD (2002)). However, most of the empirical studies indicated that the normal size of AC in USA and UK ranges from 3 to 5 members (Carcello and Neal, (2000); Xie et al., (2003); Abbott et al., (2004); Collins, 2009). AC should have adequate expertise, experience, and informational or organisational related resources to help them work effectively. Although most of the literature suggested that the AC size should be enlarged to increase the accessibility of the required information and knowledge. However, the findings of the previous literature are inconclusive. Some UK and US studies found that AC size is positively related to EMs. While other prior studies revealed a negative association between AC size and EMs (Yang and Krishnan, 2005 and Lin and Hwang, 2010). Other studies reported a non-significant association between AC size and EMs (Xie et al., (2003); Bedard et al., 2004; Vafeas, 2005; Davidson et al., 2005; Baxter and Cotter, 2009; Soliman and Ragab, 2014). It appears that REM with a corporate governance relationship has remained an unexplored area (Osma, 2008, Malik, 2015, Talbi et al., 2015).

Regarding AC Size in the Developed countries, the empirical literature on earnings manipulation tends to support the view that large board size influence positively the quality of financial reporting and firm value. A large AC size has a greater organisational position and authority and a wider knowledge base. Hence, the large size of AC can support the company with the needed information and the most essential competencies such as functional knowledge and firm-specific knowledge. Thus, these qualifications and expertise are necessary for monitoring and controlling functions (Ghosh, Marra, and Moon, 2010 and Alessandro, 2013).

Yang and Krishnan (2005) found that AC size is negatively associated with quarterly EMs (using abnormal accrual as proxy) in 896 US firms from 1996 to 2000. The study suggested that the increased number of members in AC improves the efficiency and effectiveness of audit functions thereby, improving the reliability and integrity of financial reporting. Lin, Li, and Yang, (2006) conducted their study in a

sample of 212 American publicly held corporations that restated their reported earnings for the fiscal year 2000. The study revealed a significant and negative association between AC size and the degree of EMs. According to, Ghosh et al., (2010) found that larger ACs are less exposure to EMs. They are more effective in monitoring financial reporting due to high level of their knowledge. Lin and Hwang (2010) investigated the influence of the audit quality and CG practices on EMs using meta-analysis techniques using 48 studies. The study revealed a negative relationship between AC size, expertise, independence and meetings, and EMs.

Aldamen et al., (2012) explored during the global financial crisis from 2008-2009 that a large AC size gives the organisations the chance to have the right mix of members with appropriate skills and experience to deal with business complexities, competition, and changes. This helps its members to detect and resolve the present and potential problems in the financial reporting process due to effective monitoring. Garcia, Barbadillo, Perez, (2012) argued that AC size has a negative impact on the EMs manipulation for 108 Spanish firms that have traded on the Madrid Stock Exchange. When several members of the AC increase, the capability to uncover and resolve the problems of earnings manipulations increases. Although, the study found that large AC size might be useful for the company to discuss more relevant issues, too large size may be harmful and lead to biased opinions and miscommunication. This indicates a non-linear relationship.

Some empirical literature in these developed countries found an insignificant association between AC size and EMs. For instance, Xie et al., (2003) found a non-significant association between AC size and EMs. Similarly, when Abbott et al., (2004) compared between 44 fraudulent and 44 non-fraudulent companies in the US, They found a non-significant relationship between AC size and EMs whether the fraud is committed or not. Carcello and Neal (2000) found that the AC size did not influence the issuance of going-concern reports. Furthermore, when Bedard et al., (2004) in the US differentiated the firm having at least three members with those having less than three members, the non-significant relationship between AC size and EMs is found. Davidson et al., (2005) found the same conclusion for a sample of Australian data. Evidence from the UK, Basiruddin (2011) indicated an insignificant association between AC size and opportunistic EM on the FTSE 350 from 2005-2008. Also, Visvanathan (2008) indicated non-significant relationship between AC size and AC

independence and the three proxies of REM (reduction of discretionary expenses, sales manipulation or overproduction).

Sun, Lan, and Liu, (2014) examined whether REM is influenced by AC attributes (AC size, Board tenure, accounting financial expertise, block shareholding, and additional directorship) in the post-SOX period. The study revealed that adding more additional directorship on the board is less effective in constraining real earnings manipulations. Although previous studies indicated that including more members in AC may increase the varied experience and expertise that enable its director to monitor and oversee firm activities effectively (Baxter and Cotter, 2009). However, the study found that more AC directors on the committee may lead to more rider riding problems that reduce their effectiveness in performing their functions. Also, they do not have sufficient time, and firm-specific knowledge and information about the daily operating activities because they are served on several committees. Thus, they are less effective in monitoring and in detecting the firm deviation from their normal activities which tackle them to constrain REM. Therefore, the study concluded a non-significant relationship between AC independence, board tenure, block-shareholding, and AC accounting and financial expertise with REM practice. The study suggests that it should be considered the directors' busyness when appointing AC members to enhance the effectiveness in constraining real earnings manipulations. The AC duties should be enhanced and strengthened to enhance their understanding of business beyond their capabilities and accounting experiences. The study also suggests that regulators and the stock market should concentrate heavily on the role of board independence in enhancing the monitoring effectiveness over real earnings manipulations.

Recently, although Albersmann and Hohenfels (2017) in the German context expected that a large size of AC has more tendency to fulfill their duties effectively and to deal with any difficulties and complexities. Surprisingly, the study found that the AC size has a non-significant impact on DAs. The researchers stated that audit composition is more important than the AC size. As a result, given the conflicting theoretical arguments, there is no agreement regarding the impact of AC size on the quality of financial reporting.

In the developing economies, there are also contradictory findings regarding the relationship between AC size and earnings manipulations. For instance, Alzoubi and Selamat (2012) proposed a conceptual framework to examine the role of AC (size, independence, activity, financial literacy) on mitigating the DAs. The study revealed

that the AC with more members, more financial expertise, more activity, and more independent directors perform effectively the monitoring functions, thereby mitigating opportunistic earnings. Aryan (2015) investigated the relationship between AC attributes, external audit and firm profitability after the CG application became mandatory since 2009 in the Jordan Stock Exchange. Multiple regressions analysis revealed a positive association between AC size and the firm's profitability.

Inaam and Khamoussi (2016) applied the same perspective of Lin and Hwang (2010) and used Meta-analysis to analyze 58 prior studies to examine whether the AC effectiveness and audit quality mitigate the opportunistic behavior of management based on Accrual and REM. The findings revealed a negative relationship between AC independence, AC size, expertise, auditor size, specialization and the number of AC meetings with EMs. However, they argued that the impact of AC size on EMs manipulation differs according to firm-specific characteristics as well as country features (i.e., the legal system, investor protection, market takeover and market for corporate control). The potential problems of the large committee may be contingent upon the specific functions and effectiveness of boards and this will differ according to the institutional and legal environment.

On the other hand, several studies revealed that a small number of directors in AC have a positive impact on performance and negative influence on the earnings malpractices. Small AC size may be less overloaded with bureaucratic problems and are going to be more participative and focused on relevant issues to effective rather than the large size. For example, In China, Lin, and Hutchinson and Percy (2009) based on listed companies in Hong Kong examine to what extent the CG mechanisms influence the organisation's capability in constraining EM. The results found that the increased AC size can increase the problem of information asymmetry between the management and the AC. Thus, hindering the capacity of the AC in performing their monitoring and evaluating functions. However, the study found a non-significant association between financial and industry experience of AC, its independence and ownership concentration and DAs.

According to Al-Matari et al. (2012) found a negative association between AC size and firm performance measured by Tobin's Q in Saudi Arabia listed companies. when AC members increase the coordination and communication problem arises. Also, large AC size suffers from process losses and diffusion of responsibility. Hamdan et al., (2013) also reported that the organisations may find difficulty in meeting

arrangements and reaching an agreement that has a negative impact on the decision-making process. More members of AC may lead to unnecessary debates in their meetings and delays in the process of decision-making. It is not preferable to increase the size of the AC to a great extent to perform perfectly; the size should be within a suitable range which makes it more effective and efficient.

In the Egyptian context, as the multi-cultural root of Egyptian society is different from other societies, Soliman and Ragab (2014) were interested in Egypt to examine to what extent the association between the audit quality and AC effectiveness affects the DAs focusing on the most active 50 companies in Egyptian Stock Exchange. The study revealed a non-significant association between AC size and DAs (a proxy for EMs). This result is not consistent with the Egyptian CG code (2005, 2011) that recommended that the AC should be at least three directors. Drawing on the above discussion and previous studies' findings, no direction is predicted regarding the association between the AC size and earnings amendment. One explanation for the mixed empirical results could be a non-linear impact of AC size on earnings manipulations. Members in AC is beneficial to decision making and voting procedures to a certain limit, but if the AC size becomes too large, the positive effects might decline due to poor communication and diffusion of responsibility (Vafeas, 2005). Based on the above mentioned empirical studies on AC size, this study proposes the following hypothesis:

HA10: There is a positive and significant association between the AC size and Accruals-based activity management (AEM).

HB10: There is a positive and significant association between the AC size and Real-based activity management (REM).

HC9: There is a non-linear relationship between AC size and earnings management.

5.4.2 Audit Committee Independence

Due to the series of corporate scandals that happened around the world public confidence and trust regarding the financial statement reliability and integrity has been decreased. Therefore, the investors lost their confidence in financial statements. Thus, the Treadway Commission (1987), the Cadbury Report (1992), the American Law Institute (1994) and the BRC Report (1999), Sarbanes Oxley Act (2002) have all recommended and paid a great attention to the importance of composition and independence of directors in the AC especially after the accounting scandals.

Independent AC plays a significant role in enhancing the quality of financial statements and in reducing restatement and fraudulent financial reporting in different ways. The internal audit function is enhanced and improved when the AC does not have any member from the management and when the internal auditors submit the reports directly to the AC without the inclusion of any internal member. Consequently, the independent AC develops and expands the external audit scope to promote its role in detecting the misstatement in the financial statements (Bedard et al., (2004) and Abbott et al., (2004). For instance, independent AC prefers to elect the industry specialists as an external auditor to enhance the quality of audit services provided and to maintain the integrity of financial statements. Therefore, improve the quality and integrity of statements submitted to the shareholders but, this charges the organisation more audit fees to take superior audit services. Moreover, literature revealed that the more independent auditors in the committee, the less restatement in their financial statements (Lary and Taylor, 2012). Hence, it can be concluded that AC help strengthens internal audit structure and enhance external audit functions.

One definition for the CG, which was mentioned by (Cadbury, 1992), states that the CG is the system by which firms are directed and controlled. It is important to note that the Organisation for Economic Cooperation and Development (OECD) has created the principles of CG. The (OECD) stated in 2004 that “A qualified, independent and competent auditor should be in charge of conducting a yearly audit in order to provide an assurance, that is both external and objective, to the board and shareholders that the financial statements fairly represent the financial status and performance of the company in all material respects”. Furthermore, the purpose of ACs was highlighted by the Blue Ribbon Committee (BRC, 1999, p.20)²⁹, KPMG (2006, P.2), and U.S. SEC (2003) who believe that the critical purpose that the ACs play, including internal and external auditors, lies in supervising the process of the company's financial reporting,

²⁹ The role of AC in the CG is also addressed by the Blue Ribbon Committee (BRC, 1999, p.20) as: “Good governance promotes relationships of accountability among the primary corporate participants to enhance corporate performance. It holds management accountable to the board and the board accountable to shareholders. A key element of board oversight is working with management to achieve corporate legal and ethical compliance. Such oversight includes ensuring that quality accounting policies, internal controls, and independent and objective outside auditors are in place to deter fraud, anticipate financial risks, and promote accurate, high quality, and timely disclosure of financial and other material information to the board, to the public markets, and to the shareholders”.

including relevant risks and controls as well as ensuring high-quality financial reporting.

Prior studies described AC independence as a prerequisite for audit effectiveness. Including highly independent and expert directors in the audit process improve the quality of auditing. The independent director has a strong attitude and commitment to applying CG rules. The independent directors prevent managers from any financial and operating manipulations as well as protecting shareholder interest by increasing the oversight responsibilities (Mohiuddin, 2012). Consequently, independent directors should be separated from the management and owners of the organisation. The independent members included in the AC should have no business or personal relationship or economic ties with executive management in the organisation (BRC, 1999). This could minimise the possibility of financial fraudulent activities and ensure a fair assessment of the reporting and auditing process, which facilitates effective decision making.

AC can be considered as a good tool for reducing information asymmetry especially if independent directors supply reliable, sufficient, trustworthy information about business operation, and control and manage activities to the shareholders. For example, Carcello and Neal (2003) found a positive association between the number of independent directors in AC and the going concern of the company and value creation. The organisations usually prefer to include independent directors in the AC to enhance their reputation and maintain effectively in implementing accounting principles and standards.

Most empirical results highlighted that ACs are the basis of CG and composed of external and independent directors who can improve the transparency and accountability for the company (Aldamen et al., 2012). Many studies were concerned with investigating ACs qualities as one of the tools of CG, with many influences like controlling EMs, thereby promoting the quality of financial reports and financial performance.

In the Developed countries , several studies suggested that AC independence decreases financial statement fraud. The independent directors in AC act as an intermediary between outside auditor and management to have a more accurate and balanced report thereby, eliminating any positive or negative DAs (Klien 2002; Abbott et al., 2004). This indicates that the reduction in the number of independent directors in AC increases the likelihood of earnings manipulation and fraudulent financial reporting

(SEC Code, 2011). Therefore, the majority of directors in AC should be non-executive or independent members to be effective.

In the USA, Abbott, Park, and Parker (2000) showed that when AC consists of non-executive directors and meets at least twice per year, they are less likely to face fraudulent financial reporting and aggressive accounting. This indicates that independent/outsider directors in the AC play an effective role in monitoring the financial reporting process. In the same context, Abbott et al., (2004) found that when AC composed only from independent/non-executives' directors, meet frequently, and have the financial and accounting literacy and expertise, there are fewer tendencies to have financial restatement. Therefore, there is a significant and negative association between independent and experienced AC and aggressive EMs. This result is consistent with Bedard et al., (2004) and Chen, Firth, Gao, and Rui, (2006) findings.

Klien (2002) found that independent AC plays a significant role in limiting fraudulent financial reporting, they are concerned with providing reliable financial and accounting information and to enhance the role of board control effectiveness. However, the disclosure of loss in the financial reports and growth opportunities harm AC independence (Xie et al., 2003). However, Beasley (1996) in Canada stated that the AC alone does not guarantee the reduction in frauds and manipulations, but the addition of independent directors promote the quality of financial reporting and decreases the possibility of fraud. According to Xie et al., (2003) who investigated the association between AC characteristics (AC independence, AC activity, and their members' financial sophistication) and EMs. Although the findings found a non-significant association between AC independence and EMs, when the firm appoint very qualified board and AC members with financial, accounting and corporate background, firms also are keen to keep non-executive /independent directors who are interested to attend almost of meeting held by board or AC, there is less likelihood to conduct earnings manipulations.

Furthermore, Carcello et al., (2008) also found non-significant relationship between the presence of experts of AC and production manipulations, while a positive relationship between discretionary expenditures manipulation and experts members in AC. On the contrary, after passage of SOX, Krishnan and Visvanathan (2008), the AC play a crucial role in mitigating the real manipulation of earnings. Also, Garven (2009) and Talbi et al., (2015) for a sample of US Companies found that independent directors in the AC board have limited power, effectiveness and authority on the managers to

minimise the real earnings manipulations because real earnings manipulation are very specific to be detected. Recently, Zalata and Reboerts (2016) based on the top 500 UK firms asserted that the necessity that AC should be accompanied by more meetings, more financial experts directors, and more directors with long tenure to be effective and efficient in reducing levels of recurring items misclassification.

On the contrary, they revealed that level of misclassification shifting as tool of earnings manipulation can be more prevalent in the firms raised if the ACs are characterized by more members who are CEO in other companies or who hold multiple directorship. However, this study did not show how AC do that and recommend to identify in the future the mechanisms that are used by them to detect earnings manipulations. Consequently, this results confirmed the findings of prior studies such as (Xie et al., 2003; Bedard et al., 2004; Yang and Krishnan, 2005; and Zhang, Zhou and Zhou, 2007) who supported the importance of including AC with more directors having the financial expertise, and investment banking background to enhance their proficiency and efficacy in understanding the managerial and financial decisions that undertaken in the firm.

In the Developing countries, the findings of prior studies regarding the relationship between AC and EM practices are inconclusive. The relationship between the independence of AC and quality disclosure has been explored by the study conducted by Carcello and Neal (2003). A positive and significant relationship between the independence of AC and optimistic disclosure about the company financial status was revealed in this study. Moreover, the disclosure quality seemed to be positively influenced by the independence of the AC. In China, particularly in 2006, the association between the board of directors' characteristics and financial fraud was examined by Chen et al. Surprisingly, the researchers revealed that it is unlikely for firms consisting of a higher percentage of independent non-executive directors and have a higher frequency of meetings to commit fraud.

Regarding the AC role to control EMs, Saleh et al., (2007) in Malaysia examined the impact of the AC qualities such as (independence, size, frequency of meetings and the experience and their capability to monitor the management) on EMs practices. The findings revealed that the conflict between management and external auditor and the practice of EMs might happen because of the alternative accounting procedures. Also, there is a significant and negative association between AC independence and DAs. Furthermore, the firms who are their members of AC are

distinguished for professionalism, financial literacy, expertise, knowledge and frequent meetings, are less likely to suffer from EMs manipulations. This result is consistent with Madi, Ishak, and Manaf, (2014) finding. When Hutchinson and Zain, (2009) in Malaysia studied the impact of AC characteristics and those of internal AC to evaluate their role in the audit of the financial statements. The study found that there is a positive association between the role of the internal auditor and the qualities of AC (financial knowledge and expertise, the independence, auditing and reviewing programs of internal auditor). Thus, they perform oversight and monitoring functions effectively, thereby increase the accounting conservatism and reduce the litigation risk to improve the financial statement auditing quality.

In the Malaysian context, Madi et al., (2014) found that AC independence has a positive impact on the voluntary disclosure of 500 listed firms in 2009. The Agency Theory and RDT together are important in enhancing AC effectiveness. The theories stated that effective AC work independently and objectively from the management influence and encourage the management to provide more accurate and reliable information to outside investors thereby, reducing the agency costs. This improves the AC capability to mitigate the information asymmetry between management and stakeholders to promote the public confidence regarding the credibility, reliability, and accountability of the financial reporting process. This means that an increased number of independent members on AC improve the AC effectiveness that enhances the monitoring and overseeing functions over the financial reporting process.

Miko and Kamardin (2015) explored that the AC and audit quality influences negatively on the practice of EMs manipulations in the Pre and Post Nigerian CG Code 2011³⁰. The study of Vlaminck and Sarens (2015) extended the existing literature by examining whether AC characteristics impact the financial statement quality in Belgian. The study investigated 60 Belgian firms that have established an AC between 2008 and 2009. The results presented a significant and negative association between AC independence and manipulation of EMs. This means that independent AC has a greater ability to resist any influence from management to keep their objectivity. In addition, Ilaboya and Obaretin (2015) in Nigerian context found a positive association between independent directors in AC and firm performance. Consequently, it is favorable to strengthen the independence of AC to continuously achieve the control

³⁰ In Nigeria, two codes of CG were issued by SEC code 2003 and code 2011.

mechanism and oversight functions. Accordingly, the empirical results of these prior studies revealed that AC independence reduces the manipulation of EMs, more resistant to management pressure and are capable to maintain their objectivity. The results stated that there is a positive and significant association between the percentage of AC members along withholding more than three directorships and financial statement quality.

Although, the vast majority of archival studies indicated that AC independence increases the capability of boards to detect any earnings manipulations. However, there are several studies found a non-significant association between AC independence, EMs and firm performance. If AC members are not active and work in large and complex organisations during the short period, they are not able to detect fraud or accounting irregularities. Lin et al., (2006) conducted their study on the proxy statements³¹ to investigate the impact of ACs (size, independence, financial expertise, activity, and stock ownership) and earnings restatement as a proxy for EMs. Surprisingly, the study revealed a non-significant association between AC independence and financial statement restatement. In Malaysia, Abdul Rahman and Ali (2006) also revealed that the ACs have no significant impact in preventing EMs although the Code specifies that the AC main function is to supervise the financial reporting process, internal audit, and accounting system.

When Hamdan and Mushtaha (2011) analyzed the association between AC characteristics and the possibility of issuing an audit clean report of the industrial Jordanian companies. The researchers found a non-significant relationship between the non-executive members of the AC and the external auditor opinion. Furthermore, Kang and Kim (2012) in the Korean context found that AC does not have any influence over the level of real earnings manipulation. Also, Owens-Jackson, Robinson, and Waller Shelton, (2009) found that independent AC cannot eliminate fraudulent financial reporting. In line with this result, Fodio, Ibikunle, and Oba (2013) found that the association between AC independence and DAs is positive using 25 quoted insurance firms from 2007 to 2010.

By focusing on one of the emerging countries such as Jordan, Hamdan et al., (2013) investigated to what extent AC is applicable in 50 Jordanian industrial

³¹ Statements of 267 publicly held corporations in the USA that restated their reported earnings for the fiscal year 2000 and are identified by using keyword searches of Lexis-Nexis on the words "income or earnings restatement" and their variations.

companies from 2004 to 2009 after the issuance of a series of laws and legislation. The study illustrated non-significant relationship among AC independence, professionalism and expertise of AC members and earnings quality because most of the members in AC in Jordan are not independent. This may be due to their stock ownership and their family and financial association with the board of directors. Additionally, the members are not qualified or expert in limiting manipulation in financial statements. Consequently, the study recommended government authorities and the stock market to support the application of CG mechanisms to enhance transparency and disclosure of the financial reports that will have a positive impact on the whole economy.

When Hassan and Ibrahim (2014) in Nigeria used Roychowdhury (2006) model of abnormal cash flow to measure REM. They reported that AC independence is not effective in eliminating REM. In the similar vein, Abata and Migiyo (2016) in Nigeria found that AC independence, board independence and audit quality have a positive and non-significant impact on DAs (as a proxy for EM). Therefore, the literatures recommended the SEC, Nigeria Stock Exchange (NSE), the Central Bank of Nigeria (CBN) and the Financial Reporting Standards Council to let the application of CG as mandatory not optional for listed companies.

Furthermore, the study of Aryan (2015) stated that there is a non-significant association between AC composition, AC literacy, audit quality and company's profitability. Salehi and Shirazi (2016) reported a non-significant and positive association between the percentage of independent members on AC and quality of financial reporting and disclosure of listed firms in TSE from 2013 to 2014. The justification for this result is that the main objective of rules, corporate codes, and regulations imposed in Iran is not to enhance CG application. Therefore, the AC effectiveness cannot be used only as a proxy for measuring the CG effectiveness and strength.

In the Egyptian context, empirical evidence on the impact of AC on earnings management is limited. Kamel and Elkhatib (2013) focused on examining the perceptions of three different groups (namely, accounting academics, external auditors, and financial managers or senior accountants) regarding the role of the AC in Egypt and its influence on quality and credibility of financial reporting. The first launch of the "AC concept" and "non-executive directors" in Egypt was in June 2002, when the Egyptian Capital Market Authority (CMA) issued its new listing and de-listing rules. The results verified that the most important characters are the independent AC with

financial or accounting expertise and its important role in restricting the fraudulent financial reporting and increasing the investors' confidence toward the audited firm. Furthermore, supporting the communication functions between internal and external auditors and solving any conflicts between external auditors and management. Additionally, the study found that the most important function of AC is reviewing any significant changes in accounting policies and practices. This result is consistent with the Egyptian CMA rules and regulations that require listed companies on the stock exchange to form an AC consists of at least three qualified non-executive members, one of them will be the chairman of the AC.

In 2016, the listing rules of Egyptian stock exchange ECCG recommended that AC should be comprised of least three non-executive board members specifically two independent directors. The code also recommended that one of these two independent directors should have knowledge, experience, analytical and technical skills and financial and accounting expertise to be capable in detecting any manipulation that could affect the integrity of financial reporting. It has been noted from previous literature that AC in the Two tiered-board system does not have a significant impact on the effectiveness of CG implementation due to the voluntary establishment of AC which is flanked by “comply or explain” approach. However, Albersmann and Hihenfels (2017) suggested that the mandatory application of AC for all listed firms (eg US) does not guarantee to enhance the effectiveness in implementing CG practices because the AC may be established for legitimacy reasons.

It can be concluded from the previous literatures that majority of studies focused on the quantitative methodology in collecting data by depending on the published annual reports and using OLS regression in analyzing this relationship. It can be concluded conflicting or debatable views regarding the impact of AC independence on the quality of financial reporting. Majority of studies such as (Abbot et al., 2000; Klien 2002; Bedard, 2004; Abbot, et al., 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; Vlamincck and Sarens, 2015; Salehi, and Shirazi, 2016) indicated that AC independence has a negative and significant influence on EMs. However, AC independence seem to have no effect on the magnitude of EMs such as (Xie et al., 2003; Lin et al., 2006; Hamadan et al., 2013; Hassan and Ibrahim, 2014; Aryan, 2015; Abata, and Migiro, 2016). Furthermore, the researchers suggested that when the recent studies examine the impact of AC independence on firm performance to consider other factors

of CG such as ownership structure, CEO duality, and block holders. Based on the above theoretical and empirical justifications, this study proposes the following hypothesis relating to AC independence:

HA11: There is a significant and negative association between AC independence and Accruals-based activity management (AEM).

HB11: There is a significant and negative association between AC independence and Real-based activity management (REM).

HC10: There is a non-linear relationship between AC independence and earnings management.

5.4.3 Audit Committee Meetings

CG codes until now have no agreement on the number of AC meetings required to achieve effective audit work and SEC does not identify the exact number of audit meeting per year and does not make them mandatory. UK Cadbury report recommended a minimum of two meetings per year. Laws and regulations in the CG determine the importance of meeting the frequency of AC (BRC 1999, 2000). BRC (1999) demonstrated that the AC meeting should hold at least four times annually to discuss the relevant issues in financial reporting. The main purpose of the AC meeting is to ensure the reliability of accounting information released by the organisation. The frequent discussion between the auditors and directors in the AC improves the cooperation and communications thereby, increase the AC effectiveness. The AC that meets more frequently is likely to minimise the information asymmetry, eliminate conflicts among shareholders and managers hence, reduce the agency cost and promote information transparency (Sharma et al., 2009).

Different and mixed results have been concluded from the association between AC meetings and the quality of financial reporting. Audit meeting is considered one of the important factors that influence AC effectiveness and control. The frequency of the AC meeting is described as an indicator of the AC diligence/activity (Albersmann and Hohenfels, 2017). Activity is identified by the willingness of AC to fulfill their monitoring tasks appropriately. Even if the composition and independence of AC directors present, they cannot attain or achieve an effective performance regarding financial reporting if they are not active. The findings of prior studies are inconclusive. On one hand, several empirical studies recommended to raise the meeting frequency to enhance the performance of AC to increase their capabilities to control, monitor and

improve the quality of firm accounting information. For example, Beasley (1996) indicated a negative association between AC meetings and fraudulent financial reporting. Similarly, Carcello et al., (2002) argued that there is a positive association between the AC meetings and audit fees to attract more industry specialist to provide high qualified audit services. At the same time, the more ACs meeting the less non-audit services fees ratio thus, increase the effectiveness and independence of the external auditor. The result is consistent with Lary and Taylor (2012) who revealed that greater AC diligence in terms of meeting frequency is significantly related to lower non-audit fees ratio and higher external auditor independence. Whereas Baxer and Cotter (2009), yang and Krishnan (2005) and Davidson et al., (2005) found no significant relationship between AC meeting and EMs practice.

In the developed countries, the AC meetings, internal audit function with quality of financial reporting have been a subject in which several studies are interested in examining. A sample of 108 non-financial Spanish companies that traded on the Madrid Stock Exchange has been examined by Garcia et al., (2012). A negative association between the AC meetings and AC size and abnormal accruals was one of the important findings. They also revealed that the more frequent AC meeting, the easier for AC to monitor and assess the management and to decrease manipulations practices. However, Spanish CG reports do not specify a minimum number of meetings.

Abbott et al., (2004) found that AC that meets at least four times is not likely to restate their financial statements and improve the integrity of external financial statements. The frequent meetings of AC increase the opportunities to utilize more financial expertise and experience from its directors to promote the transparency and reliability of reporting. Saleh et al., (2007) in the Malaysian context and Xie et al., (2003) in the US found that EM practice is lower in firms with more active and knowledgeable AC. Visvanathan (2008) examined the association between CG and REM especially the role of AC in mitigating EM. The data was extracted from 6,759 US firm years' observations from 1996 to 2002. The study demonstrated that the increased number of AC meeting mitigate REM through reduction of discretionary expenses, but not through sales manipulation or overproduction.

Brick and Chidambaran (2010) examined several proxies for board monitoring (the number of annual board and AC meetings), firm characteristics and externally imposed regulations (Sarbanes Oxley Act) with firm value in a structural equation framework. They concluded a significant and positive association between the board

activity and monitoring and firm value measured by Tobin 'Q, not by ROA (Vafeas, 2005 and Chhaochharia and Grinstein 2007). Recently, Evidence from the German two-tier board system³², Albersmann, and Hohenfels (2017) revealed that the level of EM can be minimised after the establishment of AC. Specifically, the study found that the AC effectiveness is improved and EM is reduced when the committee has at least one member with financial expertise and increase their audit meetings frequency within the year. The threshold test also added that the 4-5 meetings annually represent the effective number of meetings that help the committee reduce the level of DAs. Hence, the relationship between AC meetings and EM is a curved (non-linear) relationship, meaning that EM is high when AC rarely meets or when they meet a lot.

Interestingly, other group of studies indicated that there is a non-significant association between AC activity and EM or firm performance. Davidson et al., (2005) in Australian context, and Yang and Krishnan (2005) in the US found that the meeting frequency of AC are irrelevant to the EM aggression and failed to find an association between them. Baxter and Cotter (2009) in Australian context before the introduction of mandatory implementation of AC requirement in 2003. The study discovered that the greater number of AC meetings is not as important as it thought to be. Since, the EM does not seem to be reduced, and, the earnings quality measures do not seem to be enhanced. (Lin et al., 2006 ; Bedard et al., 2004) did not find specific threshold for AC meetings that can have any significant effect on the earnings management practice. Furthermore, after the enactment of SOX in 2002 and combined code of CG which was introduced by the Financial Services Authority in the UK on November 2003. Habbash et al., (2013) found a non-significant association between absolute DAs and AC meetings covering the top 350 listed firms on the London Stock Exchange for the fiscal years 2006 and 2007. However, Albersmann and Hohenfels (2017) in German context suggested that the threshold of AC meetings should range from 4-5 meetings per year to be effective in reducing the level of earnings manipulations.

In the Developing countries, the studies that are conducted regarding relationship between AC meeting and earnings manipulations are inconclusive. Several

³² Two Tier board or Dual Board system is a corporate structure system that consists of two separate Boards of directors that work together in order to govern a business. The structure is composed of two boards, the "Management Board", and the "Supervisory Board" each of these serves a particular purpose (Fich and Haar, 2016). While one-tier board system is more common in corporate board of the US. Single tier system combines both managerial and supervisory responsibilities in one unified board of directors.

studies found that there is a positive association between AC meetings and DAs. For instance, Susanto (2016) performed his study in Indonesia from 2009 to 2012 and got empirical evidence a positive association between AC meetings and EM. In the Malaysian institutional context, Al-Rassas and Kamardin (2015) investigated the impact of internal and external audit functions, AC attributes, and ownership concentration on the earnings quality. The study found a positive but non-significant association between frequent meetings of AC and the level of DAs. Possible justification is that the ownership concentration that has a negative impact on the effectiveness of directors' independence, thereby reducing the quality of AC meetings. This result contradicts with Agency Theory and RDT.

However, After financial scandals in 2002, Oman was the first country in the Middle East region to issue the CG code announced by the CMA for companies listed on the Muscat Securities Market (MSM) in 2002. Consequently, Gebrayel et al., (2018) were interested to examine to what extent the AC attributes and internal audit function recognize the quality of financial reporting for the period 2013 and 2014. The study used accruals quality and absolute DAs as proxies for the quality of financial statements. The researchers found that the AC meetings frequency and internal audit function have a positive impact on the quality of financial reporting. Hence, the increased number of AC meetings increased the likelihood of oversight and monitoring of the financial reporting process.

Interestingly, other group of studies indicated that there is a non-significant association between AC activity and EM either accrual or Real EM. Evidence from Chinese firms listed in Hong Kong, Lin et al., (2009) found that the frequency of audit committee meetings is non-significant related to an abnormal level of accruals. There are very limited empirical studies which focused on examining the relationship between AC characteristics and REM. For instance, Susanto and Pradipta (2016) in Indonesia who hypothesized that the more the AC expertise, more directors and meetings, the more the capability to monitor the activities of the management. However, the study found that AC accounting expertise and AC size cannot influence on REM as the AC as external members cannot have all information related to real activities of firm. On the other hand, the AC meetings is positively associated with REM.

In the Egyptian context. the studies that examined the relationship between Ac meetings and EM is very rare. Soliman, and Ragab (2014) studied a sample of 40 non-financial companies listed on the Egyptian Stock Exchange from 2007 to 2010, after

controlling for size, leverage and cash flow from operation. The study revealed a significant and negative association among AC independence, the experience of AC members, AC meetings, and audit quality and DAs as a proxy for EM. Therefore, AC frequent meetings are considered one of the important CG mechanisms that improve the firm value and enhance the quality of financial statements. Within the Egyptian context, the Egyptian Code (2011 and 2016) recommends that members of audit committee shall be met at least four times per year and the code recommended that there should be a minimum of members who should attend the meetings to become valid meetings which is consistent with results of Albersmann and Hohenfels (2017) in German context.

Since there are many issues and subjects that may influence the AC activity such as cultural changes, ownership concentration, AC independence, and the existence of AC without taking into consideration, their competences, professionalism, activity and accounting expertise, busyness. The contradictory findings of the preceding studies are not surprising. Therefore, the studies revealed mixed results by assuming positive relationship, negative association or the non-linear relationship between the frequent meetings and the quality of financial reporting. To sum up, although the prior studies suggested that AC are responsible for reducing malpractice earnings manipulations and improving the quality of financial reporting, there is unclear evidence, to date, whether the AC attributes can influence REM due to the difficulty in detecting and constraining it (Sun, Lan and Liu, 2014). For instance, Carcello et al. (2008) failed to find significant relationship between AC financial expertise and REM (ABPROD) while a positive relationship with (ABDISCX) with weak corporate governance. Visvanathan (2008) also found that AC size and AC independence are not related with three proxies of REM while AC meetings is negatively associated with REM (through discretionary expenditures) only but not associated with (overproduction and sale manipulations measures). Susanto and Pradipta (2016) also did not find any association between AC size and level of financial and accounting expertise and REM justifying that they are external member and do not fully aware of real business activities. However, as the real earnings manipulation distort the reliability and accuracy of financial reporting, accordingly board of directors and AC members should have taken the responsibility for the oversight of financial reporting process to minimise the exercise of real earnings manipulation and to keep the integrity of financial reporting (Sun et al., 2014).

The literature suggested that AC should have several characteristics and competencies together to be capable of detecting earnings manipulations without the any influence from CEO (Blue Ribbon Committee, 1999; Zalata and Roberts, 2016). Members of AC should have financial expertise, and accounting knowledge to be capable for detecting AEM practices (Krishnan and Visvanathan, 2008; Bedard et al., (2004), accordingly they can be able to discover the REM practices. Furthermore, Sun et al., (2014) also recommended the stock exchange and regulators regarding the characteristics of AC that should be taken into consideration to increase their capability to detect accrual and real earnings manipulations. They suggested that AC with additional directorship impair the monitoring effectiveness and reduce their capability to detect accrual and real earnings manipulations. AC who are serving on several committees may not have time and effort to collect firm-specific knowledge and information that help them monitor and detect opportunistic behavior and become less effective in reducing accrual/real earnings manipulations (Kapoor and Goel, 2017). Zalata and Roberts (2016) also revealed that firms are less exposure to misclassification shifting as one of tools to mislead shareholders (earnings management) when AC directors meet frequently, have more experts members, do not hold multiple directorship, have a long tenure and do not serve as CEO in other firms. This indicates that board and AC are important together to collaboratively enhance and improve the integrity and reliability of financial reporting. Subsequently, this thesis formulates the following hypothesis:

HA12: There is a significant and negative association between the AC meetings and Accruals -based activity management (AEM).

HB12: There is a significant and negative association between the AC meetings and Real-based activity management (REM).

HC11: There is a non-linear relationship between AC meetings and earnings management.

5.5 External Audit and Earnings Management

The third group of the literature addresses the association between the audit quality and EMs practices. The audit quality represents an independent variable. EMs represents the dependent variable and includes the accruals and REM. The relationship between two variables can be indicated in figure (5.4):



Figure 5.4 Link between External Audit and EMs.

At the end of the 1990s and the beginning of the 21st Century, due to scandals and bankruptcies occurred (e.g., Enron, Xerox, WorldCom, Flowtex, and Tyco), the quality of financial reporting has been deteriorated and the investor confidence and trust on the accounting information are impaired. Consequently, the investor's contractual outcomes and the controlling of managerial opportunistic behaviors have been decreased (Lin and Hwang, 2010).

External auditors are charged for ensuring that the financial statements are following GAAP and enhancing the integrity of financial statements published to stakeholders. Due to frequent fraudulent financial reporting, external auditing is considered as an important potential monitoring mechanism in CG that can reduce agency problems between the shareholders and management. Moreover, cooperation between AC and external auditing help lessen information asymmetry between principals (shareholders) and agent (management) and minimise the risk of financial statement misstatement. The external auditors have a tendency to reduce the lack of managers' integrity in financial reporting to external users. As the quality of external auditing improved, the more the quality, creditability, and reliability of financial statements published (Bailey and Grambling (2005) and Basiruddin (2011).

Indeed, External auditing is an important mechanism for CG through the audit report, to confirm all stakeholders that financial statements are presented fairly. The CG efficiency system depends on auditor significant role. An effective system of reporting and controls that are associated with external auditors affect CG with better functionality of the company as well as protecting shareholders' interests (Habbash, 2010; Alzoubi, 2018).

The relationship between the quality of audit and EMs in the **developed countries** gives mixed results. In the UK, Habbash (2010) found that relative audit fees generated by a client and industry specialized auditor have a significant and negative impact on EMs. Thus, the external audit perform a critical role in enhancing the quality of reported earnings and reducing the level of DAs. In a similar UK context, Basiruddin (2011) found that the combined role of an independent board and the quality of the

audit improve their monitoring and oversight functions. The higher quality of audit (which either charges higher audit fees or are industry specialist auditors) promotes the capability of the firm to detect and limit earnings manipulations thereby, enhance the reliability and creditability of reporting. The findings confirmed the proposition of the Agency Theory.

Chi, Lisic, and Pevzner, (2011) used a sample of 925 observations from 2001-2008 to examine the association between the characteristics of audit and REM. The study found that auditor industry expertise, Big Audit, and high audit fees are associated with a higher level of the REM practices (lower abnormal cash flow, high over-production, lower discretionary Expenditures). Hence, a client of big audit firms will resort to more REM because discretionary accrual practice is likely to be detected by highly quality auditors. While there is a positive association between audit tenure and REM. In the context of the UK institutional setting, one notable study is Alhadab and Clacher (2018) who investigated the impact of audit quality on the real and accrual EM from 1998 to 2008. The study found that high-quality auditors for IPOs firms have a significant and negative impact on DAs manipulations and discretionary expenses (as a proxy for REM). However, the study does not find an association between high-quality audit and REM based on sales based manipulations for IPOs firm.

In the similar vein, Chi, et al., (2011) who investigated before to what extents the audit quality (Proxied by presence of big audit firms, audit industry specialism, higher audit fees, and longer audit tenure) affect the AEM and REM especially for the firm that has strong motives to manage earnings upward. Although the study revealed that all proxies of audit quality play a critical role in constraining accruals based manipulations. However, the study surprisingly found a positive relationship between the audit quality and REM. One possible explanation for this result is that high-quality auditor can restrict the accrual manipulations, so the clients switch to using a higher level of REM even if it is costly for the firm. Therefore, it is not necessary for high-quality auditors to mitigate all types of REM. On the other hand, other studies revealed that audit quality does not affect negatively the magnitude of the EM. For instance, Piot and Janin (2007) in the French stock market specifically the SBF 120 Index companies for 1999, 2000 and 2001 revealed that there is a non-significant relationship between big five-audit firms and EM either in terms of absolute or signed abnormal accruals. Also, there is a non-association between auditor tenure and abnormal accruals.

In the Developing Countries, Most of the previous studies agreed that Big audit firms have more likelihood to detect aggressive EMs and material misreporting to reduce the risk of litigation and to protect their reputation in the market Alhadab and Clacher (2018). According to Generally Accepted Auditing Standards (GAAS), it is necessary to link between the quality of external auditing, level of transparency and disclosure implemented. Auditing quality, especially in terms of (Big 4 audit firm, industry specialist, audit fees, audit seniority and audit tenure) may have a great impact on providing reliable and objective information to external users. Therefore, there are many studies that revealed a negative relationship between clients of high-quality audit and the magnitude of EMs (Abata and Migiro (2016); Waweru and Prot (2018)).

In the context of Bahrain as one of the developing countries, which characterized by a developed financial sector, low-liquidity stock market, low turnover in the board of directors of listed firms, an inactive merger and acquisition market and almost non-extent litigation. Al-Ajmi (2009) surveyed 300 members of credit and financial analysts to analyze their perception concerning the association between the effectiveness of AC, audit firm size and audit quality. Both groups revealed that the quality of financial statements audited by big 4 audit firms is better than the quality reports audited by non-big firms. There is a positive association between the audit firm size and effective AC with the creditability and reliability of financial statements. One possible explanation for that result is that big four audit firms are more qualified in resisting any management pressure in case of misleading the statement. However, both groups found that non-audit services have a negative impact on the auditor's independence and thus impair the audit quality.

A sample of 61 listed and unlisted Tunisian firms during the period 2007-2011 was studied by Kouaib and Jarboui (2014) revealed several interesting findings, that only auditor reputation has a negative and significant effect on EMs. Besides, they revealed that the external audit quality variables and institutional concentration surprisingly has a negative and significant impact on EM in industrial firms, but has a positive and non-significant effect in the commercial sector. In the Nigerian context, Miko and Kamardin (2015) suggested that AC and audit quality contribute to reducing EM considerably through DAs in the pre-and postcode 2011.

In the same vein, Saleem et al., (2016) concluded that CG mechanisms and external audit as controlling mechanisms play an important role in improving the quality of the financial reporting process. When Inaam and Khamoussi (2016) used a

meta-analysis approach, they found that audit quality has a significant and negative impact on the EM. However, these studies of meta-analysis suffer from endogeneity problems. Similarly, Garcia-Meca and Sanchez-Ballesta (2009) and Lin and Hwang (2010) both used meta-analysis techniques, and concluded that audit quality (as proxied by tenure, size, independence, and industry specialization) are positively correlated with quality of earnings and negatively with opportunistic EM. However, AC itself does not guarantee a positive impact on the quality of earnings.

After the introduction of the Jordanian CG in 2009, Alzoubi (2018) revealed a significant negative association between audit quality (audit size, audit tenure, audit specialist and audit independence), debt financing (low debt) and EM. The study suggested that big-audit firms are concerned with promoting the quality of audit services rather than non-big audit firms due to their experience, expertise, accounting and finance knowledge, technology, and more specialized human resources (Francis and Wang, 2008; Habbash, 2010).

Few studies are concerned with examining the effectiveness of the "comply or explain" CG code, particularly on the African continent. For instance, Waweru and Prot (2018) specifically in Kenya and Tanzania found a negative association between the audit quality and DAs as a proxy for EM. Whereas, there is a positive and significant relationship between board independence, board gender diversity and director ownership and DAs. They found that the CG guidelines requirements do not play a significant role in decreasing EM in the stock exchange due to the voluntary application of these requirements "Comply or explain" principle.

On the other hand, some studies failed to find significant relationship between audit quality and the magnitude of the EM. For instance, Hassan Che Haat, Abdul Rahman, and Mahenthiran (2008) conducted comparative study to examine the impact of internal CG mechanisms, ownership structure and audit quality on the transparency, timeliness, disclosure and market performance. Although the study found that audit quality has a significant and negative impact on market performance especially for poor performance companies. However, the study revealed that the audit quality has non-significant influence on transparency, timeliness and the quality of disclosure. Furthermore, Aryan (2015) found a non-significant association between AC composition, AC members' literacy, audit quality and company's profitability in Jordan from 2009 to 2014. While this study found no relationship, this may refer to the low quality of audit firms as Shanikat and Abbad (2011) claimed that the audit profession

in Jordan is dominated by big audit firms and a few smaller national audit firms. Hence, audit firms in Jordan are of low quality.

Abata and Migiro (2016) focused their study on Nigeria as the largest market in Africa due to its dominant roles in the economics and politics of the region in the ECOWAS³³ and the African Union. The study revealed that all of the CG variables in the study are not significantly related to the EM except the audit quality. The audit quality is positively and non-significantly correlated with EM. Similarly, Salehi, Moradi and Paiydarmanesh (2017) in Iran from 2009-2014 found a positive and non-significant relationship between all factors of audit quality and the quality of disclosure of financial statements information. These results contradict several studies such as (DeBoskey and Jiang (2012); and Dolan (2015) who confirmed that all of these audit quality factors are positively and significantly affecting the quality of disclosure and the quality of earnings.

In the Egyptian context, there is no consensus regarding the relationship between the quality of audit and EM practice in the Egyptian context. Although, prior studies found that the likelihood of litigation risk that the audit firms face, is low in the relatively less efficient market operating in MENA countries (Sarhan, Nithm and Al-Najjar, 2019), particularly in Egyptian context (Fawzy, 2003), where there is no difference between the quality of audit provided by Big four and non-Big four. In Egypt, Bassiouny, Soliman, and Ragab (2016) examined the impact of firm characteristics on accruals-based EM within the period 2007-2011. Their study found that firm size, age, and audit quality has an insignificant impact on the practices of earnings manipulations. However, the study found that there is a positive relationship between leverage and earnings manipulations practices. Therefore, managers are likely to use accounting policies and standards that allow them to raise profits to abide by the debt covenants imposed by lenders, and to avoid any potential renegotiation costs.

This result is not evident by Khalil and Ozkan (2016) who found that Egyptian firms with high-quality auditors have more tendencies to detect aggressive EM and report material misreporting. The statistics of their study revealed that Egyptian firms that are audited by Big four represent 58% of the sample. This indicates that the proportion of clients who are audited by big audit firms is raised in comparison to prior

³³ The Economic Community of West African States, also known as ECOWAS, is a regional economic union of fifteen countries located in West Africa.

years. For instance, Mohamed, Basuony, and Badawi, (2013) revealed that “non-big 4” audit firms represent 54.5% while “big-4” audit firms represent 45.5%. The finding of Khalil and Ozkan (2016) is relatively consistent with recent studies such as Sarhan et al., (2019) who found that the mean of Big audit firms in Egypt is 59%. Clients of high-quality audit firms have a smaller magnitude of abnormal accruals. Hence, those audit firms are afraid of losing their client and audit fees, thus, they have more likelihood to reduce risk litigation and keep their reputation. Soliman and Ragab (2014) also found that a large audit firm size as a proxy for the quality of audit is negatively associated with DAs in the Egyptian context.

However, the result of Yasser and Soliman's (2018) study is not consistent with agency theory which expects that audit quality is an effective tool in reducing earnings manipulation. Their study was conducted over EGX 100 from the period 2011-2016. They used three indicators for audit quality which are audit firm size, auditor industry specialization, and auditor tenure and tested the relationship between these attributes and DAs (a proxy for AEM). The study found that audit tenure influences positively and significantly with DAs. While the auditor industry specialist and audit firm size do not have any significant impact on the DAs. They conclude that lack of investor protection, weak regulatory regimes, and low auditor exposure to litigation risk may be the reasons for weak auditor effectiveness. This result is in-line with Bassiouny (2016) who found a non-significant relationship between the audit quality and EM based on the 50 most active firms in the EGX from 2007-2011. Consequently, there is no clear and consensus evidence to prove that audit quality reduce the earnings manipulations. These inconclusive results regarding the relationship between audit quality and earnings manipulations may be due to the voluntary application of CG, and the difference in the socio-economic and political environment among countries. Meaning that audit quality is not effective in all the cases in conveying useful information to the users due to the ineffectiveness of disclosure and low transparency of financial reporting. Subsequently, on the basis of these considerations, the following hypotheses can be formulated:

HA13: There is a significant and negative association between Audit quality and Accruals-based activity management (AEM).

HB13: There is a significant and negative association between Audit quality and Real-based activity management (REM).

To conclude, the research hypotheses are summarized in Table 5.1 in relation to the study's research objectives and questions and explained in detail from here onwards.

Table 5.1: Reasecrh objectives, Questions, and Hypotheses

Objectives	Questions	Hypotheses
1-To examine the impact of the ownership structure on the quality of financial reporting.	1-Which type of ownership structure (managerial ownership, family ownership, institutional ownership, and governmental ownership) has a role in enhancing the quality of financial reporting?	<p>HA1: There is a significant and positive relationship between managerial ownership and Accrual earnings management (AEM).</p> <p>HB1: There is a significant and positive relationship between managerial ownership and Real earnings management (REM).</p> <p>HA2: There is a significant and negative relationship between family ownership and AEM.</p> <p>HB2: There is a significant and negative relationship between family ownership and REM.</p> <p>HA3: There is a significant and negative relationship between institutional ownership and AEM.</p> <p>HB3: There is a significant and negative relationship between institutional ownership and REM.</p> <p>HA4: There is a significant and positive relationship between governmental ownership and AEM.</p> <p>HB4: There is a significant and positive relationship between governmental ownership and REM.</p>
2-To investigate to what extent the board of directors' attributes strengthens the organisation's capability in constraining the opportunistic EM.	2-What is the role of the board of directors' attributes (board size, board independence, board diversity, CEO duality, and board meetings) in constraining the opportunistic earnings management?	<p>HA5: There is a significant and negative relationship between board size and AEM.</p> <p>HB5: There is a significant and negative relationship between board size and REM.</p> <p>HA6: There is a significant and negative relationship between board independence and AEM.</p> <p>HB6: There is a significant and negative relationship between board independence and REM.</p> <p>HA7: There is a significant and positive relationship between CEO duality and AEM.</p> <p>HB7: There is a significant and positive relationship between CEO duality and REM.</p> <p>HA8: There is a significant and negative relationship between board diversity and AEM.</p> <p>HB8: There is a significant and negative relationship between board diversity and REM.</p> <p>HA9: There is a significant and negative relationship between board meetings and AEM</p> <p>HB9: There is a significant and negative relationship between board meetings and REM</p>
3-To investigate to what extent audit committee characteristics enhance the organisations in constraining the opportunistic EM.	3-To what extent audit committee characteristics (AC size, AC independence, and AC meetings) enhance the organisations in constraining the opportunistic earnings management?	<p>HA10: There is a positive and significant relationship between the AC size and AEM.</p> <p>HB10: There is a positive and significant relationship between the AC size and REM.</p> <p>HA11: There is a significant and negative relationship between AC independence and AEM.</p> <p>HB11: There is a significant and negative relationship between AC independence and REM.</p> <p>HA12: There is a significant and negative relationship between the AC meetings and AEM.</p> <p>HB12: There is a significant and negative relationship between the AC meetings and REM.</p>
4-To investigate to what extent the external auditing assists the listed companies of the	4- Does the external audit play a significant role in improving the quality of financial reporting?	<p>HA13: There is a significant and negative relationship between Audit quality and AEM.</p> <p>HB13: There is a significant and negative relationship between Audit quality and REM.</p>

Egyptian stock exchange in reducing earnings manipulations.		
5-To determine the optimal threshold value regarding the mechanisms of corporate governance that can achieve the minimum level of EM and to examine whether there is non-linearity relationship between CG mechanisms and EM.	5- What is the optimal threshold value for each mechanism of corporate governance that can reduce the level of EMs?	<p>HC1: There is a non-linear relationship between managerial ownership and earnings management.</p> <p>HC2: There is a non-linear relationship between family ownership and earnings management.</p> <p>HC3: There is a non-linear relationship between institutional ownership and earnings management.</p> <p>HC4: There is a non-linear relationship between governmental ownership and earnings management.</p> <p>HC5: There is a non-linear relationship between board size and earnings management.</p> <p>HC6: There is a non-linear relationship between board independence and earnings management.</p> <p>HC7: There is a non-linear relationship between board diversity and earnings management.</p> <p>HC8: There is a non-linear relationship between board meetings and earnings management.</p> <p>HC9: There is a non-linear relationship between AC size and earnings management.</p> <p>HC10: There is a non-linear relationship between AC independence and earnings management.</p> <p>HC11: There is a non-linear relationship between AC meetings and earnings management.</p>

5.6 Summary

The main purpose of the most extant literature is to analyze whether a CG structure and external auditing can exacerbate or alleviate EMs. It can be summarized from reviewing literature that almost of the above studies focused on examining the effect of CG mechanisms and external audit on EMs in a listed organisation, a little number of studies concentrated on non-listed organisations (privately held organisations). Almost of studies used abnormal DAs as proxy for accrual-based EMs and used the Modified Jones model developed by (Dechow et al, 1995) to calculate and detect DAs. Hence, the current study employed several models for detecting abnormal accruals which are Modified Jones model, Kothari model, Kasznik model and Raman and Shahrur model). Moreover, it became apparent that there is limited research in the area of real earnings manipulations and CG mechanisms. Those literatures usually focused on proxies (ABCFO, ABPROD, ABDISCX and aggregate proxies) developed by Roychowdhury (2006) to measure the practice of REM. Subsequent studies such as (Gunny, 2005, Zang, 2006, Cohen et al., 2008, Cohen and Zarowin, 2010, Gunny, 2010, Kang and Kim, 2012, Farooqi et al., 2014, Kim and Park, 2014, Cohen, Pandit, and Zach, 2016, Mellado-Cid, Jory, and Ngo, 2018) employed these measure and provided evidences of the construct validity of these proxies.

The majority of the above studies focused more on using a Quantitative approach focusing on examining listed companies in the stock market, as they are more applicable to the CG principles. The financial information about accrual-activity based and real-activity based EMs and control variables (size, leverage, firm growth, asset tangibility, operating cycle, capital structure, and profitability ratios) have been usually extracted from yearly financial statements from DataStream database. While the information about the different types of ownership structure, board of directors attributes, audit committee attributes have been extracted from annual reports, Securities and Exchange Commission and Stock Exchange filings, Minutes of annual shareholders` meetings, and company websites during specific period of time.

Majority of studies excluded companies in banking, finance, securities, and insurance industries because of the different nature of their business from other companies in other industries. The majority studies in CG and EM relationship used descriptive statistics, Correlation matrix, and pooled OLS regression to investigate the impact of CG mechanisms on the magnitude of EMs and little research used panel

regression analysis or dynamic panel regression to investigate the relationship between all variables to test the alternative hypotheses. The analysis in the study allow us to control efficiently for several econometric problems observed in the empirical literatures.

Very little research has concentrated on determining whether there is non-linear relationship between CG mechanisms and EM practice and on identifying the optimal threshold of CG mechanisms that can achieve the minimum level of earnings manipulations. Almost of those little research used quadratic regression approach to investigate the non-linear relationship except very little recent studies that conducted in China, and Taiwan used advanced panel threshold regression analysis. However, these studies did not consider the dynamic nature of EM variable while testing its relationship with CG variables.

Most of the previous empirical literatures did not follow a more comprehensive and integrated approach in examining several CG variables together with accrual-based activity and real-based activity EM together. The reasons behind the scarcity of that studies that concentrated on this category goes back to the difficulties in managing and collecting data about a large number of variables in developed and developing context. It is clearly obvious and evident from the above analysis that there is no single study that provided comprehensive framework regarding the optimal structure for CG in the emerging countries (e.g Egypt).

Most of the prior literatures focused mainly on the Agency theory as the sole theory that examine theoretically the relationship between CG variables and earnings manipulations practice. There is little tendency in the previous studies to apply multi-theory approach or theoretical triangulation to remedy the deficiency of one single theory with another theory in the investigation of a research question, and to develop confidence in ensuring findings and interpretation of results (e.g Klien et al., 2005; Abd-ElRahman and Ali, 2006; Habbash, 2010; Chemweno, 2016; Salehi, and Shirazi, 2016; Waweru and Prot, 2018; Alnabsha, et al., 2018)

The next chapter highlights the research methodology and design as well as illustrates the measurement of independent, dependent and control variables. It also presents the challenges of the sampling process, the issues of data collection and the selection of the convenient analytical methods for the various models that were introduced in the current study.

Chapter Six

Research Methodology and Design

6.1. Introduction

In the earlier chapters, the literature of this study and the associated concepts were presented. As previously stated, the research objective is to study the impact of internal CG's mechanism namely; board of directors' characteristics, the structure of ownership, AC attributes and external auditing towards EMs practices in Egypt. The research methodology is described as roadmap that determines the process in which data are collected, analyzed and explained to achieve the objectives of the study. The structure of the chapter is organized as follows: Section 6.2 outlines the research design and Section 6.3 describes the research philosophy. Section 6.4 states the research approaches, whilst research strategies are explained in Section 6.5. The details about the population of the study, the sample used, and data collection methods are presented in Section 6.6, Section 6.7, and Section 6.8 respectively. Section 6.9 describes the measurement of the variables including independent variables, dependent variables, and control variables. Section 6.10 explains the specification of the EM Models and hypotheses development. Section 6.11 describes the statistical tools used for analyzing the data of Egyptian firms listed in the stock exchange. Finally, Section 6.12 summaries the chapter.

After reviewing the literature in Chapters 3, 4, and 5, a research gap was recognized, where there is an absence of a comprehensive study that collectively investigates whether the internal CG mechanisms and external auditing influence the earnings manipulations practices and enactments of Egyptian listed firms. Therefore, this study justifies the motive to investigate the link between internal CG mechanisms, external audit, and earnings management, through the presence of the contradictory evidence from both theory and practice combined with the lack of evidence from the Egyptian business context. Accordingly, the gap in the literature (as can be observed from the previously-presented studies on the Egyptian market) results from very few studies examining the relations between CG mechanisms, external audit and different models of EMs simultaneously.

Consequently, this thesis aims at filling this existing gap through the development of an explanatory model that can be used to investigate whether the current Egyptian CG's mechanisms impact listed companies' quality of financial reporting. The empirical results will be authorized through the conduction of analysis for the financial statements and annual reports for listed firms in the Egyptian stock market. The findings are further be discussed through attempting to develop the current Egyptian CG's standards and to determine the optimal structure and CG index that can help in reducing earnings management's manipulations. Furthermore, the findings can help address the main research question which is: To what extent do Egyptian CG mechanisms have a role in minimizing management manipulations practices which has a significant impact on the Egyptian stock exchange?

The previous chapters demonstrated several theoretical approaches, particularly the most suitable theories as well as the empirical studies that link theoretically and empirically between each of CG mechanism, external auditing, and EMs. This presentation can provide a detailed description of applicable theories and the methods used in collecting and preparing data that supposed to be vital to examine the relationship between CG characteristics, external auditing, and EMs.

Firstly, this chapter demonstrates how the measurement of dependent variables (Accruals and Real-based activity EMs) is conducted by using different models for the robustness of the results. The second step is to explain how the measurement independent variables and the development of the hypotheses are conducted. This thesis divides the independent variables among four broad categories, which are the characteristics of the board of directors, the structures of the ownership, the effectiveness of the AC and the external auditing. Then, comes the description of how the control variables are measured. Secondly, this chapter presents the process of the choosing sample of the study and the databases used for collecting necessary information. Third, analytical procedures and techniques are explained to determine their suitability and relevance.

This thesis analyzes financial statements and ownership structure reports, the board of director's reports, and disclosures books for listed companies in the Egyptian stock market for four reasons. First, to investigate whether there is malpractice of EMs in the companies listed in the Egyptian stock market. Second, to determine to what extent mechanisms of CG are applicable in the Egyptian stock market. Third, to verify whether the implementation of the CG mechanisms reduces the earnings manipulations

practices. Fourth, to identify the optimal threshold of each CG mechanism to achieve the lowest level of the opportunistic earnings manipulation.

6.2. Research Design

Research design is the following step that researcher conduct after the research objectives and questions are formulated (Frankfort-Nachmias and Nachmias, 2008). A research design assists to shape structure and functions of the research to confirm that evidence obtained can provide answers to research questions as unambiguously as possible. The research design is the set of instructions, procedures and methods from which to conduct the research. Saunders, Lewis, and Thornhill (2009) explained the design of the study resembling an “onion-like process that supports the researcher to depict the issues underlying the choice of data collection methods”. As approaches in unlike coats have reliance, it is proposed that the design of the study should be generated through detaching the coats externally to internally. The first coat comes with the interrogation of the philosophy behind the study that was adopted by the scholar. The second one puts into consideration the research subject attitude, which is running from the philosophy of the study. Third, the overall research strategy that you choose to integrate the different components of the study to test the research hypotheses in a coherent and logical way. Fourth, the last coat indicates the time prospect applied to the study. The fifth coat is the method of collecting data.

6.3. Research Philosophy

The Research philosophy is referred as a system of beliefs and assumptions about the development of knowledge (Saunders et al., 2009). The research philosophies are categorized into three categories. These are quantitative (Positivistic), qualitative (interpretivism) or a combination of both (i.e. triangulation method) (Ticehurst and Veal, 2000).

6.3.1. Qualitative Research

The qualitative study depends on phenomenological or interpretivism principles or individuals' descriptive accounts of their perception, beliefs, attitude, opinions, and feelings that embrace certainty publicly created by separate or collective definitions of circumstances (Saunders et al., 2009). The qualitative study is concerned with the descriptive, non-numerical approach in collecting and interpreting information that helps produce results not reached by statistical procedures or any other methods of

quantitative estimation. The methods that can be used for collecting data under qualitative approach can be case studies, personal experiences, interviews, observations, and historical and visual texts (Sekaran, 2003).

The qualitative approach focuses on a small sample size, which does not allow generalizations of the study results. There are several disadvantages of qualitative research, such as being time-consuming with weaker forms of measurement and having a low degree in reliability and transparency (Bryman and Bell, 2003; Sekaran, 2003; Saunders et al., 2009). On the other hand, some works of literature have presented several advantages of the qualitative research such as; providing a deeper understanding of the phenomena, an efficient strategy for understanding vague attitudes and behaviors as well as for examining social processes over time. As result, this approach promotes a greater flexibility and validity during the case study; which consequently leads to providing various ways to access unattainable facts (Saunders et al., 2009; Babbie, 2009).

6.3.2. Quantitative Research

Quantitative analysis usually depends on a positivistic model, which supposes that social proofs are commonly there with a neutral certainty part apart from the views of other people. This approach uses different quantitative measurements and statistical analyses that can generate highly standardized numerical data as well as predicting the relationship with a high degree of confidence for a large population. Therefore, the quantitative approach increases the reliability, causality, strong measurement forms and generalization capability of the study findings (Bryman, and Bell, 2003). Furthermore, quantitative approaches can increase the generalization and comparability of data across individuals, time, settings and researchers (Sekaran, 2003).

However, the quantitative approach has some inconveniencies, which come from the need to avoid the influence of the researcher on the research, to neutralize the researcher to the extent that researchers become disembodied abstractions and depersonalized. Further, Robson (2002) pointed out several difficulties for quantitative research, referring to it as: "a field where it is not at all difficult to carry out an analysis which is simply wrong, or inappropriate for your purposes and the negative side of readily available analysis software is that it becomes that much easier to generate elegantly presented rubbish" (Sekaran, 2003). This research uses the positivistic philosophy to achieve the study objectives, obtain reliable results, and generalize the

results of the study. This research puts greater weight on procedures, methodologies, and statistical data, to decrease, if not eradicate, faults and prejudice through making use of experimental schemes and linked research to avoid subjectivity

6.3.3. Triangulation Research (Mixed Method)

Triangulation study is mixed between qualitative and quantitative approaches to harvest advantages of both types. This method has been characterized by the capability of triangulation indicating if there are any inherent biases in the data source, and the availability of neutralization when the data is used in conjunction with other data sources, and methods. Besides, it supports capitalize on the strengths of the two approaches and compensate for the weakness of each separate approach. This can enhance high validity and reliability, and more comprehensive understanding from multiple, fresh, and creative perspectives (Greene, 2007). However, this method has been criticized as it may lead to the derivation of data due to its relationship with different aspects of the same phenomenon (Fielding and Fielding, 1986, and Mason, 2002).

In conclusion, the fact that there is no single way that could be suitable for data collection and analysis while conducting different types of research should be admitted. The nature of the research, the data collection, and the research purposes are the key factors on which the choice of method(s) suitable for any study mainly depends. Moreover, the aim of the study, the sample size and distribution, the time available and the environment and conditions under which the study is conducted, are all some of the most influencing factors that affect the method of survey.

This study does not consider the qualitative approach in its data collection because it mainly concentrates on the financial data that is published in financial reports and does not find any space to conduct qualitative data collection methods. In addition, this study focuses on time series panel data across a long period from 2006 until 2017. Therefore, it is difficult to apply a questionnaire and interviews to properly cover this long period.

6.4. Research Approach

Two diverse attitudes can be used in the studies, namely deductive and inductive attitudes. The researcher usually selects the suitable approach according to the nature of the study, its variables and importance to generalize the study results (Sekaran,

2003).

On one hand, in an inductive reasoning, there is a gap in a logical argument between the conclusion and the premises observed. Indeed, known premises are used to develop untested conclusions (Saunders et al., 2009). It focuses on studying forms and past items and carries out explanations or interviews to collect its information in the setting of its normal existence. On the other hand, the deductive approach is specific in recognizing and isolating certain variables controlled in the research structure to pursue relationships, connections, and causation, that regulate the surroundings where the information is gathered to elude the peril of variables, except for the one being studied, relying on the recognized relationships (Sekaran, 2003).

Therefore, this thesis favors to follow the deductive approach to be capable in evaluating propositions or hypotheses related to an existing theory (Saunders et al., 2009), thereby determining the direction and strength of relationships among the variables by applying an advanced statistical analysis.

6.5. Research Strategies

This study has a great tendency to apply secondary data such as the analysis of financial statements or company annual reports rather than grounded theory or case study (primary data). This strategy is beneficial because it not only provides information to answer research questions but also provides good consideration and clarification of the research problem. There are many benefits to making use of non-primary information. For example; ease of obtainability, money and time saving, objective and reliable approach where information is organized, controlled and structured to address the cumulating of proofs and to decide the reasons of actions to examine the relationships between the variables and their effect(s) on the organisation's performance (Bryman and Bell, 2003).

6.6. Population of the Study

Noisy variables, a highly endogenous relationship between the dependent and explanatory variables and severe correlated omitted variables are considered as the main problems from which cross-country studies generally suffer. To control and eliminate the influence of the factors that vary from a country to another, future studies suggested the focus should be on one country or region of the world (Habbash, 2010; Basiruddin, 2011; Amer, 2016). Therefore, this approach results in a better research

design that is capable of capturing the construct and providing a deeper understanding of the phenomenon that is being studied. Thereby, this study's main focus is a single jurisdiction (Egypt), which is similar to most developing countries and continental Europe, where a wide range of family and governmental ownership exists (Kamel and Elbanna, 2010; Raafat, 2018) .

This thesis involves the organisations enlisted in the Egyptian Stock Exchange (226 listed firms), particularly, those in Cairo and Alexandria, classified by total market capitalization as the top Egyptian firms. The CG mechanisms were recommended by the Egyptian CG Codes (2005, 2011, and 2016) to be implemented by all listed companies in the Egyptian stock exchange, whereas SMEs are not obligated to implement CG recommendations. The study targeted these firms in particular due to its wide range of industrial and commercial activities they include. Besides, they account for a significant portion of the Egyptian economic output.

A 12-year reporting period has been covered by this study from 2006 to 2017. Several reasons contributed to this choice. Firstly, the study requires two years before 2008 to be capable of measuring the proxies of REM based on production cost and discretionary expenditures. Secondly, the study has to limit the study period to ten years to make the task viable because the researcher should collect large amount of data about CG variables as the hand-collected basis. Thirdly, The Egyptian CG code (2005) can be considered as the best guide for CG variables.

Many industrial sectors are excluded from the sample such as financial, regulated and mining industries (see Table 6.1). Regulated industries, if compared to other industries, appear to have more motives to follow conservative accounting practices as a result of their revenues that are set on fixed accounting rates of return, they are more likely to defer income recognition. Therefore, it is difficult to detect the manipulations of earnings. Moreover, there are several reasons behind the omission of financial institutions such as their special accounting practices, disclosure requirements, accruals, and EM incentives and the models used for measuring discretionary accruals proxies are likely to be different from those of firms in other industries as illustrated in previous empirical studies (e.g. Yang et al., 2009; Al-Fayoumi et al., 2010; Habbash, 2012; Yasser and Soliman, 2018). Besides, the exclusion of the companies in the mining industry is based on their different practice of income recognition and the fact that their market value differs from that of other firms (Habbash, 2010).

This study concentrates on the industries with sufficient firm observations to ensure unbiased estimation and to accurately calculate EM proxies. According to DeFond and Jiambalvo, (1994) and Subramanyam, (1996), industry groups with less than seven firms should be also excluded from the sample. Some of CG variables have mainly been missed due to the lack of disclosure by some of the sample firms.

6.7. The Sample of the Study

In sample-based studies, identifying the population being surveyed is very critical and to configure whether the selected sample provides an accurate representation of the population (Sekaran, 2003). Accordingly, the final sample of companies including observations from 2008 to 2017 represented by 780 firm-year observations. The sample involves the following sectors: 1) Construction and Material; 2) Chemicals; 3) Food and Beverage; 4) Personal and Household products; 5) Industrial Goods, Services and Automobiles; 6) Basic resources; 7) Real Estate and Housing. The final usable sample is 780 observations for the ten models.

6.8. Data Collection

A distinguished data set, representing a sample of non-financial publicly listed companies in Egyptian stock market over the period 2006 to 2017 is considered as the basis from which the data examined in this study are drawn. The calculation of proxies of REM requires two prior years before the base year for study. As the focus of the study is from 2008-2017. The EGX, the Capital Market Authority (CMA) and Egypt for Information Dissemination (EGID) are the main sources from which BOD reports, ownership structure and AC reports, the financial statements, annual reports and the annual disclosure book issued by EGX (various issues) were collected manually. Data for the control variables set and EM proxies are calculated based on data collected from the DataStream.

Table 6.1 Summary of the Study Sample

	Number	Ratio
Number of companies listed in the stock exchange	226	100%
less: Financial, insurance, and investment companies	47	21%
less: Companies 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 companies	18	8.00%
less: Missing DataStream information	23	10%
less: Missing corporate governance data	25	11%
Total companies included in the sample after excluding the missing data	78	64%
1-Basic resources sector	7	3%
2-Chemical Sector	7	3%
3 Food and Beverage Sector	20	9%
4-Industrial Goods and services	11	5%
5-personal Household product sector	8	4%
6-Construction and Building Materials	13	6%
7-Real Estate sector	12	6%
Total companies included in the sample	78	36%

6.9. Variables Measurement

The variables of interest that are used in this study, are explained in the following section. There are six main variables to be examined: (1) the ownership structure; (2) the board of directors attributes; (3) the AC attributes; (4) the audit quality proxies; (5) two types of earnings management; and (6) control variables.

6.9.1. Dependent Variables

This thesis focuses on the EM activities that are both accruals-based and real-based. This research contributes to the existing literature through studying both methods. In which, recent research such as Cohen and Zarowin, 2010, Zang, 2012, Doukakis, 2014, and Zhu et al., 2015) clarifies that both approaches could be employed by firms as substitutes. It might be misleading if the techniques were examined separately. Moreover, an increased appreciation of the significance of understanding EM through real-based activities in addition to accruals-based activities has been shown by Cohen and Zarowin (2010) and Zang (2012) in recent research. The studies argued that REM activities has been as widely analyzed and studied in comparison to accrual-based activities (Zang, 2012).

6.9.1.1. Accruals Based-EM

Accruals-based Activity EM is measured using proxy of DAs. In literature, various models which range from simple models, to more advanced and complicated models are proposed to clarify the accruals into DAs and non-DAs dimensions (Elkalla, 2017) and then, calculating DAs.

Compared to the models proposed by Healy (1985), DeAngelo (1986), Dechow and Sloan (1991) and Aharony et al., (1993) models, the original Jones (1991) model takes into consideration the impact of changes in a firm's economic circumstances on non-DAs. However, most of previous literature used the Modified Jones model to capture the sales based manipulation practices as developed from the Jones model (see for example, Kasznik, 1999; Klein, 2002; Kothari et al., 2005; Habbash, 2010; Doukakis, 2014; ElKalla, 2017). Hence, Doukakis, (2014) and Swai and Mbogela, (2016) argued that modified Jones model is described as more powerful test in comparison with standard Jones model. .

Since the existing and recent literatures documented that there is no perfect model for measuring magnitude of EM. It is not adequate to depend only on one single model to detect earnings manipulations (Kothari et al., 2005; Habbash, 2010; Doukakis, 2014; ElKalla, 2017). Consequently, it is more effective and feasible for the study to employ several alternative models to accurately validate the detection of the magnitude of earnings manipulations (Peasnell et al. 2000; Charfeddine et al., 2013) since the quality of models varies according to the nature of EM practices and bias that can affect the estimation. Accordingly, this study favored to employ the most widely used models in the EMs literature. They are the Modified Jones Model (Dechow *et al.*, 1996), the Kasznik Model (1999), the performance matched DAs model (Kothari *et al.* 2005) and the Raman and Shahrur, model (2008). The study uses the last three models in addition to the Modified Jones Model for robustness check.

This thesis follows the approach of Charfeddine et al. (2013) in Tunisian context, investigated the determinants of EM over the period (2003-2009). They employed the Modified Jones Model (1995), the Kothari *et al.* (2005) Model and the Raman and Shahrur (2008) Model as tools for detecting AEM. The thesis also followed a study of El-Kalla (2017) who examined the influence of firm and country level characteristics on EM practices in MENA countries from 1996-2014. He used several models to detect earnings manipulations because he suggested that there is no optimal proxy that can best detect the opportunistic behaviors. For instance, he stated that although, Kothari model control for what is considered to be 'normal' EM and for the companies with non-random performance. He claimed that Kothari model cannot remedy all problems arising from the other discretionary models. In addition, this model alone cannot recognize the motives that induce the accrual management unique to the research questions being addressed. McNichols (2002) also criticized the other

models because they omit the growth opportunities of the firm. Therefore, recently the Raman and Shahrur model proposed to use the book-market ratio as a measure of growth opportunities to capture the EMs in MENA region.

The current thesis favors the cross-sectional approach based on the industry classification of individual firms while detecting the DAs. Although several studies such as Subramanyam, (1996), Bartovand al. (2001), and Basiruddin, (2011) revealed that the outcome of the two models (time series and cross sectional Jones/Modified models) is the same and independent from the used approach (times-series and cross-sectional). They found that the cross sectional approach is more effective in detecting EM, in the estimation of the coefficient, and in avoiding survivorship bias problems as opposed to time-series models and (Al-Ghamdi, 2012; Spinós, 2013).

The DAs are the estimated residual obtained from the linear function of change in revenues and gross plant, property and equipment. Besides, several conditioning variables are used in the other models to capture the earnings manipulations (El-Kalla, 2017). The empirical estimation of the DAs model requires firstly to compute the total accruals (TACC), then subtracting non-discretionary accruals (NDA) which is derived from the different models that are discussed in details in chapter 3. This study focuses on the Modified Jones Model to extract non-discretionary accruals and use three additional models for the robustness of the results.

To calculate the total accruals in the extant literatures, one of the following two different methods should be followed: cash flow statement approach and balance sheet approach. Those approaches are not unique to the Standard Jones Model but also can be used for computing the accruals for Kothari et al., (2005) model, the Raman and Shahrur Model, and Kasznik Model. The difference between the two models, that were previously mentioned, was explained in detail in chapter 3.

The study has also clarified the reasons behind its preference for using the cash-flow statement approach rather than the balance sheet approach. It was inferred that the current study preferred to use the cash flow statement because there is an error implanted in the estimated total accruals which are considered discretionary accruals if the balance sheet approach is used (Kothari et al., 2005). In addition, measurement errors in the estimate of total accruals were found in the studies that focused on using balance sheet method for calculating EM as Hribar and Collins (2002) have indicated.

The models used in this thesis are Modified Jones (1995), the Kothari et al. (2005), Kasznik (1999) and the Raman and Shahrur (2008). These models are

estimated by the cross-sectional approach for each industry member for at least seven observations to ensure sufficient data for parameter estimation (Doukakis, 2014). These conditions can control the impact of changing industry-wide economic conditions on total accrual and permits the coefficient to be differentiated across time. This chapter provides a summary of models used in detecting the earnings manipulations which are discussed and explained in details in Chapter 3.

First, The Modified Jones Model (Dechow, et al., 1995).

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:

$$(20) \quad NDA = \alpha_1 (1/TA_{it-1}) + \alpha_2 (\Delta REV_{it} - \Delta REC_{it})/TA_{it-1} + \alpha_3 (PPE_{it}/TA_{it-1})$$

Where:

ΔREV_{it} = revenues in year t less revenues in year $t-1$;

ΔREC_{it} = net receivables in year t fewer net receivables in year $t-1$;

$\alpha_1, \alpha_2,$ and α_3 are firm-specific parameters.

$$(21) \quad DAt = TAt - NDA_t$$

Second, Performance-Adjusted Discretionary Accruals (Kothari, Leone and Wasley, (2005)

Dechow et al. (1995) suggested that Jones models may be unspecified because the sample may be skewed toward firms with extra intense performance. This suggestion was based on what they have found that DAs resulted from Jones model and Modified Jones models may be higher (lower) than usual for firms with high (low) reported earnings. Therefore, the performance matched model was anticipated by Kothari et al. (2005) model in which organisations categorized as having abnormally low or high levels of EMs are those that manage the earnings more than would be expected knowing their level of performance derived from ROA.

Kothari et al. (2005) suggested to use either the current year's ROA or the prior year's ROA in the performance matching model. The study uses the ROA in the previous year to calculate DAs. The same steps are concerned. first of all, it starts with the estimation of coefficients $\alpha_1, \beta_1, \beta_2, \beta_3$ for every industry in every year via OLS

regression to take out the non-DAs (Habbash et al. 2013; Mostafa, 2017; Waweru and Prot, 2018). The model is as follows:

$$(22) \quad TAC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \beta_1(\Delta REV_{it}/TA_{it-1}) + \beta_2(PPE_{it}/TA_{it-1}) + \beta_3ROA_{it} + \varepsilon_{it}$$

Where;

TAC_{ijt} : Total accruals for sample firm i in industry j for year t

TA_{ijt-1} : Total assets of firm i at the end of year $t-1$;

ROA_{ijt-1} : Return on assets for sample firm i in industry j for year $t-1$;

ΔREV_{ijt} : Change in revenues for sample firm i in industry j for year t ;

ΔREC_{ijt} : Change in account receivable for sample firm i in industry j for year t ;

PPE_{ijt} : Gross property plant and equipment for sample firm i in industry j for year t ;

$\alpha_1, \beta_1, \beta_2, \beta_3$: Regression parameters;

ε_{ijt} : Error term for sample firm i in industry j for year t .

Second, DAs is then computed by using the difference between total accruals and non-DAs. It is important to note that the constant variable was incorporated by Kothari et al. (2005) model to further control for heteroscedasticity not improved by utilizing assets as a deflator and to reduce the issues occurring from an absent scale variable.

Third, The Cash Flow Model (Dechow (1994) and Employed by Kasznik (1999))

As Dechow (1994) suggested a negative correlation between the total accruals and cash flows. Kasznik (1999) suggested the inclusion of change in the operating cash flow as an explanatory variable. Consistent with this view, this study extends the cross-sectional modified Jones model and includes operating cash flow lagged by total assets as an explanatory variable.

$$(23) \quad TAC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \beta_1(\Delta REV_{it}/TA_{it-1}) + \beta_2(PPE_{it}/TA_{it-1}) + \beta_3CFO_{it-1} + \varepsilon_{it}$$

Where as;

ΔCFO_{ijt-1} = Cash flow from operating activities for sample firm i in industry j for year $t-1$.

Using the estimated coefficient from the previous equation, non-DAs can be calculated a follow:

$$(24) \quad NDA = \alpha_1(1/TA_{it-1}) + \alpha_2\left(\frac{\Delta REV_{it}-\Delta REC_{it}}{TA_{it-1}}\right) + \alpha_3\left(\frac{PPE_{it}}{TA_{it-1}}\right) + \alpha_4CFO_{it-1} + \varepsilon_{it}$$

Then, DAs is estimated from the change between the total accruals and non-DAs.

Fourth, Raman and Shahrur Model (2008)

Raman and Shahrur (2008) model is proposed to control for performance derived from Kothari et al. (2005) performance matched model and growth opportunities. Extant literature such as (e.g. McNichols, 2002 and Cohen et al. 2008) suggested that organisations which are indicated by high growth opportunities, have extra tendency to have greater accruals. Consequently, this model has been developed to add the growth opportunities to Kothari model to estimate total accruals.

$$(25) \quad TACC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \alpha_2((\Delta REV_{it} - \Delta REC_{it})/TA_{it-1}) + \alpha_3(PPE_{it}/TA_{it-1}) + ROA + GO + e$$

Whereas;

GO= the growth opportunities is calculated as the ratio of total assets to total assets less the book value of equity plus the market value of equity.

After that, non-discretionary accruals (NDA) is thus computed as follows:

$$(26) \quad NDA_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \alpha_2((\Delta REV_{it} - \Delta REC_{it})/TA_{it-1}) + \alpha_3(PPE_{it}/TA_{it-1}) + ROA + GO + e$$

DAs are then calculated by the difference between total accruals and non-discretionary accruals. Lagged assets is used as scaling factor in most of literature in addition to other scale proxies such as the number of outstanding shares, the book value of equity, sales, total assets, and lagged price (Barth and Clinch, 2009).

6.9.1.2. REM Measurement Models

Since the accrual-based EM is exposed to a greater investigation from regulators and auditors more than real based activities (Cohen and Zarowin, 2010; Zang, 2012). Therefore, firms are having a growing inclination to conduct real-activities based earnings. Roychowdhury (2006); Habbash (2010); Zang (2012); and Elkalla (2017) demonstrated that REM can be performed through manipulating operating cash flow, the overproduction of inventory to decrease the cost of goods sold, cutting discretionary expenditures such advertising and R&D, and the general selling and administrative costs. The study explained in detail in chapter 3 the different types of REM. Thus, this chapter gives a brief explanation for how to detect the practices of REM (Roychowdhury, 2006; Cohen and Zarowin, 2010; Kuo, Ning, and Song, 2014).

First; REM Through Operating Cash Flow (Roychowdhury, (2006)

This model is used to detect REM as proposed by (Roychowdhury, 2006;Cohen and Zarowin (2010); Zamri, Rahman, and Isa, (2013); Kuo et al. (2014). The model of cash flow from operation is described as a linear function of sales and change in sales in the current year. This model can be expressed as follow;

$$(27) \quad \text{CFO}_{it}/A_{it-1} = \beta_1 [1/A_{it-1}] + \beta_2 [\text{Sales}_{it}/A_{it-1}] + \beta_3 [\Delta\text{Sales}_{it}/A_{it-1}] + \varepsilon$$

Where,

CFO_{it} = the cash flow from operating activities in year t

The estimate coefficient from the above regression equation is calculated to get the normal level of cash flow from operations. Then, the abnormal cash flow is driven by subtracting the actual cash flow from the normal cash flow from operations.

Second; REM Through Production Costs (Roychowdhury, 2006)

One of the most distinguished well-known types of REM is the level of production costs that is considered an abnormal one. The extent to which the cost of goods sold through the overproduction of stock has been estimated since the fixed cost per unit is decreased, the volume of production is increased. The normal level of production is estimated using the cross-section for each industry for at least seven firms in each sector. The estimated residual from the equation can be used to calculate the abnormal level of production cost. Increasing the level of inventory over-production leads to a reduction in the cost of goods sold, consequently, this raises the residual and the reported earnings of company. So that the normal production level can be measured through the following model.

$$(28) \quad \text{PROD}_{it}/A_{it-1} = \beta_1 [1/A_{it-1}] + \beta_2 [\text{Sales}_{it}/A_{it-1}] + \beta_3 [\Delta\text{Sales}_{it}/A_{it-1}] + \beta_4 [\Delta\text{Sales}_{it-1}/A_{it-1}] + \varepsilon$$

Where,

PROD_{it} :The sum of cost of goods sold and change in inventory of firm i in year t

Sales_{it} :Sales of firm i in year t

ΔSales_{it} :Sales of firm i in year t less sales of firm i in year t-1

$\Delta\text{Sales}_{it-1}$:Sales of firm i in year t-1 less sales of firm i in year t-2

Third; REM Through Discretionary Expenses (Roychowdhury, 2006)

The reduction of discretionary expenditures represents the third proxy for REM practice. The cross-sectional approach is used to get the estimated residuals which represent the abnormal level of discretionary expenditures. Roychowdhury's (2006) model is used to estimate the normal of discretionary expenses:

$$(29) \quad \text{DISEXP}_{it}/A_{it-1} = \beta_1 [1/A_{it-1}] + \beta_2 [\text{Sales}_{it-1}/A_{it-1}] + \varepsilon$$

Where;

DISEXP_{it} The total of Selling and Marketing Expenses and General and Administrative Expenses, advertising expenses, and research and development expenses of firm i in year t

In addition to the above three proxies extracted from these models, three comprehensive proxies for REM activities are also developed to compute the total effect of REM, compatible with Kuo et al. (2014) as follows; The first aggregate model is determined by multiplying ABCFO by (-1) and then adding ABPROD. So that, higher levels of RM1 signifies a higher level of REM (upward REM) as proposed by Cohen and Zarowin, (2010) and Braam et al. (2015).

$$\text{RM1} = - \text{Abnormal cash flows from operations} + \text{Abnormal production costs}$$

The second aggregate model is calculated by adding ABDISCX to ABCFO after multiplying ABCFO by -1. As result, the larger the value of these aggregate proxies, the higher sales manipulation and decline in discretionary expenditures for manipulating earnings are. It is proposed by Cohen and Zarowin (2010) and Braam et al. (2015) as follow;

$$\text{RM2} = -\text{Abnormal cash flows from operations} - \text{Abnormal discretionary expenditures.}$$

The third aggregate proxy is recognized by adding (ABDISCX), (ABPROD) and (ABCFO) together after multiplying ABCFO and ABDISCX by -1 (Zang, 2012). The higher the value of each of the three aggregate measures, the more likely the firm is engaged in REM.

$$\text{RM3} = -\text{Abnormal cash flows from operations} + \text{Abnormal production costs} - \text{Abnormal discretionary expenditures}$$

6.9.2. Independent Variables

The following section thoroughly determines how each independent variable is measured. Each category includes individual variables representing the specific attributes concerning internal CG mechanisms and external auditing. Internal CG mechanisms depict specific attributes about ownership structure (family ownership, institutional ownership, managerial ownership, and government ownership), the board

of director characteristics (board independence, its size, number of board meetings, CEO duality, board diversity), Audit Committee (AC size, AC independence, and AC meetings) and external audit quality.

6.9.2.1. Ownership structure

As described in the empirical and theoretical review in chapters 4 and 5, the ownership structure is considered a critical mechanism for the quality and comprehensiveness of the oversight administered in the organisation. Four variables represent the ownership structure of the firm namely, family ownership, managerial ownership, institutional ownership and governmental ownership.

1. Managerial Ownership

It is the total ownership held by executive directors scaled by the total shares outstanding in a given year. The study used this measure subsequent CG and EM literature such as (e.g. Hutchinson and Gul, 2004; Al-Fayomi et al. 2010; Al-Ghamdi, 2012; Alves, 2012; Ayadi and Boujelbene, 2014; Amer, 2016; Farouk and Bashir, 2017; Waweru and Prot, 2018).

Family Ownership

Following the prior studies, Akimova and Schwodiauer (2004); Omran et al. (2008); Habbash (2010); Usman and Yero (2012); Al-Ghamdi (2012); Abata and Migiro (2016), this study measures the family ownership as the ratio of total shares owned by family members. Previous studies such as that of San Martin-Reyna and Duran-Encalada (2012) categorized the sampled firms as families' companies in case they fit in the upcoming scenarios: a) fifty percent of shares belong to any family member plus being in control of managing their corporate; b) minimum fifty percent of shares belong to any family member but the firm's manager is not from the family nevertheless the Chief Executive Officer recognizes the company as a family business; c) possessing the company for a certain family does not exceed fifty percent but the firm is managed by the family and the Chief Executive Officer recognizes the company as a family business as well as "venture" resources or an investing firm possesses minimum fifty percent of shares.

Another example for classifying family ownership is Villalonga and Amit (2006) who mentioned that a family business exists when a certain family member is the Chief Executive Officer or even owns a minimum five percent of the stocks of the company or is one of the Directors' Board. According to the "DAX plus index" which

was generated by Deutsche Bourse Issuer Data & Analytics (2010) to define a family business by stating that it might be considered as one of the following descriptions: a) The one who founded the company or even his/her family owns minimum 25% of the company stocks; b) at least a family member belongs to the Directors' Board and he/she possesses a minimum of five percent of the company stocks. While, La Porta et al. (1999) suggested that when ultimate ownership of a firm is exceeding ten percent of shares, then the company is categorized to be Family Firm because sample firms are all listed firms, a 10% threshold is sufficiently large to justify family control. The 10% boundary has been widely used in the family business literature and maybe well-thought-out sufficiently great to be effectively controlled by the family.

Institutional Ownership

With regard to the previous literature such as Koh (2003); Zouari and Rebai, (2009); Yang et al., (2009); Iqbal and Strong, (2010); Issarawornrawanich, (2011); Farooq and El-Jai (2012); Al-Ghamdi (2012), the institutional ownership is determined as the number of the shares owned by institutions over the total outstanding shares. It is the sum of financial institutional ownership, securities investment trust funds ownership, incorporated company's ownership, pension fund, corporate institutions, mutual funds, foreign financial institutions, foreign institutions, foreign mutual funds, and other institutions.

Government Ownership

The study measures the governmental ownership (GOV.OWN) as the total number of ordinary shares held by all government scaled by the total number of ordinary shares of a firm at the end of its financial year (Huafang and Jianguo 2007; Al-Ghamdi 2012; Alnabsha et al., 2018). There is no consensus concerning theoretical predictions about the association between state ownership and earnings quality.

6.9.2.2. Board of Directors

The board of directors have taken the responsibility of supervising operations of the executive management and making strategic decisions for the company. They supposed to govern the organisation on the behalf of the shareholders as they act as trustees for the stakeholders interests Abata, and Migiro, 2016; Singn et al., 2017; Kao et al., 2019). This section explores of how each of the board characteristics is measured in accordance to the literature that is presented in chapter five. These board

characteristics can be the board size, CEO duality, board composition, board diversity and board meeting.

1. Board of Director's Size (*BRDSIZE*)

The board size (*BRDSIZE*) is measured by the total number of the directors on the board, as presented in the annual report at the end of each fiscal year (Abdul Rahman and Ali, 2006; Habbash, 2010; Yasser et al., 2011; Abed, et al., 2012; Fauzi and Locke, 2012; Dharmadasa, et al., 2014; Uwuigbe, et al., 2014; Samaha et al., 2015; Abata, and Migiro, 2016; Singn et al., 2017; Kao et al., 2019).

2. Board of Director's Composition (*BRDNED*)

Board of directors are classified into executive and non-executive directors. Following the prior studies such as Fama and Jensen (1983); Bhagat and Black (2002); Klein (2002); Xie et al. (2003); Rahman and Ali (2006); Osama (2008); Lo et al. (2010); Bala and Gugong (2015); Alzoubi (2016); Amer (2016). This study measures the board of director's composition (independence) as the percentage of independent directors (outsider) scaled by total number of directors on board at the end of financial year. They suggested that non-executive directors are more concerned with monitoring management functions and keeping them away from any opportunistic behaviours.

3. Board of Directors Meetings (*BRDMEET*)

The board meetings is considered by the total number of board of directors' meetings held throughout the year (Qinghua, et al., 2007; Abbadi et al., 2016; Chemweno, 2016). The meeting frequency represents the activity levels of the board.

4. CEO Duality (*CEODUL*)

Following extant studies, like those of Elsayed (2007); Sarkar et al., (2008); Duztas (2008); Abdel-Fattah (2008); Amer and Abdelkarim (2011); Roodposhti and Chashmi (2011); Fooladi (2012); Adebayo et al. (2013); Nosheen and chonglertham (2013); Issarawornrawanich (2015); Salihi and Kamardin (2015), the thesis measure duality as dummy variable set to one if the CEO and chairman are the same people and zero otherwise.

Some studies such as Davis and al. (1997); Brickley et al., (1997); Hou and Chuang (2007); Omran et al. (2008) supported the role of CEO duality. On the other hand, other studies such as Butt and Hasan (2009); Fooladi (2012); Nosheen and Chonglertham (2013); Issarawornrawanich (2015); Salihi and Kamardin (2015) weakened the role of

board monitoring effectiveness. However, several studies such as Xie, et al., (2003); Abdul-Rahman and Ali (2006); Al-Shammari and Al-Sultan (2010); Chugh et al., (2010); Shukeri et al., (2012); Velnampy and Nimalthasan (2013), Akbar (2015); Kao et al., (2019) revealed a non-significant relationship between CEO duality and the quality of earnings.

5. Board Diversity

One of the most controversial issues, not only in the board of directors but also in several social situations is gender diversity. In recent years, it has been an area of great CG research (Zalata et al., 2019). Gender diversity can be relied on to symbolize the notion of board diversity in general. Furthermore, many theories support the idea of gender diversity on boards, such as the Agency Theory and other theoretical perspectives (Hampel, 1998). According to Adams and Ferreira (2009); Akpan and Amran (2014); Lakhali et al. (2015); Arun et al. (2015); Kılıç and Kuzey (2016); Al-Shaer and Zaman (2016); Chen and Gaviious (2016); Adamu et al., (2017); Gull et al., (2018); Zalata et al., (2019), the gender diversity is measured as the size of female directors divided by the total number of directors on the board.

6.9.2.3. Audit Committee Attributes

AC is considered as another CG mechanism that helps to improve the quality of financial reporting, hence its performance. Extant literature such as (Hamadan et al., 2013; Habbash et al., 2013; Soliman and Ragab, 2014; Kapoor and Goel, 2017) did not provide an consensus evidence regarding the impact of AC on the earnings manipulations. This mechanism has been measured by several attributes, which can be the size of the AC, its independence, financial expertise, and intensity of AC activity (Xie et al., 2003; Abbot et al., 2004; Baxter and Cotter, 2009; Al-rassas and Kamardin, 2015; Salehi and Shiraz, 2016; Gebrayel et al., 2018; Zalata, Tauringana, and Tingbani, 2018; Zalata et al., 2019).

1. Audit Committee Size (*ACSIZE*)

AC size can be described as another influential and relevant factor in the effectiveness of AC duty. According to market regulators in the USA and UK, CG code (2010) proposed in their CG reports that a minimum number of AC directors ought to be three independent and non-executive members of directors (Capital market authority (2006); New York Exchange (2002); NACD (2002); Habbash (2010); Amer (2016).

Following the previous literature, such as Yang and Krishnan (2005); Lin and al. (2006); Garcia et al. (2012); Alzoubi and Selamat (2012); Al-Matari et al. (2012); Soliman and Ragab (2014); Inaam and Khamoussi (2016); Albersmann and Hohenfels (2017), the AC size is measured as the total number of directors in the AC presented at the end of a fiscal year.

2. Audit Committee Composition (ACIND)

The independence of AC is considered by the number of independent directors included in the AC divided by the size of the AC. This measure is consistent with the works of prior literature such as (DeFond and Jiambalvo, 1991; Beasley, 1996; Rainsbury et al., 2008; Habbash, 2010; Madi, et al., 2014; Abata and Migiro, 2016; Chemweno, 2016). This is consistent with the recommendations declared in the UK CG Code (2010). The justifications for having exclusively independent non-executive directors in the AC is to guarantee more fairness and objectivity in decision-making. While other literature measured the AC independence as a dummy variable taking the value of 1 if all members are independent and 0 otherwise (Saleh et al., 2007; Qinghua et al., 2007).

3. Audit Committee Meetings (ACMEET)

With regard to the extant literature such as (Bédard et al., 2004; Visvanathan, 2008; Krishnan and Visvanathan, 2009; Baxter and Cotter, 2009; Brick and Chidambaran, 2010; Habbash et al., 2013; Chemweno, 2016; Susanto, 2016; Gebrayel et al., 2018), the AC meeting is demonstrated as the number of the meeting held by the AC directors throughout the fiscal year. When the frequency of AC meetings is increased, likelihood to conduct financial frauds is reduced (Klein, 2000; Xie et al. 2001; Vafeas, 2005; Yang and Krishnan, 2005). *The UK CG Code* recommended that members of AC should be met at least three times within the year (The UK code, 2003)

6.9.2.4. Audit Quality

The audit quality is considered as one of external CG monitoring mechanisms that has a significant role in promoting the quality and effectiveness of CG implementation (Fan and Wong, 2005). Almost of extant literature in CG and EM area such as (Abdul Rahman and Ali, 2006; Piot and Janin, 2007; Lin and Hwang, 2010; Basiruddin, 2011; Nosheen and Chonglertham, 2013; Al-Rassas and Kamardin, 2015; Alhadaba and Clacher, 2018; Yasser and Soliman, 2018) used Big

4 audit firms as a proxy of audit quality. They measured the audit quality via dummy variable as equals “1” if the firm is audited by Big4 Auditors; and “0” otherwise.

6.9.3. Control Variables

After identifying how the CG mechanisms and the accrual and real EM based activities can be measured. It should be noted that numerous companies and particular business aspects must be well-organized to study more visibly the influence of CG mechanisms and external audits on earnings manipulations practices. The controlling variables used to assist in balancing the company-and business-particular variances in the sample that possess the inclination to influence the dependent variables EM. Different control variables are included to organize the causal association in a model to get a more complete empirical model and to eliminate the predicament of endogeneity.

Numerous previous studies were utilized several control variables and correlated them with EM practices (Anderson et al., 2004; Park and shin, 2004; Zouari and Rebai, 2009; Fauzi and Locke, 2012; Emile et al., 2014; Samaha et al., 2015; Al-Najjar and Clark, 2017; Zalata, et al., 2018). These control variables are leverage, operating cycle, firm size, profitability (ROA and ROE), gearing, liquidity, asset tangibility, and market capitalization. As discussed below, these control variables are measured independently, accompanied by the means of measurement for every variable.

The firm size: the extant literature used several proxies for measuring firm size such as total assets, sales and market capitalization computed by the ordinary logarithm of total assets (Claessens et al., 2000; Huafang and Jianguo, 2007; Omran et al., 2008; Habbash, 2010; Ruiz-Mallorquí and Santana-Martin, 2011). There is no consensus evidence regarding the impact of firm size on the CG and EM practices. For instance, Al-Ghamdi (2012) suggested that large companies might become much more proficient because it’s possible for them to “exploit economies of scale”, to hire other trained and well-practiced managers and to be much more powerful in the market; therefore, their financial situation could be secured which influence positively on CG and earnings quality. Similarly, Mitra (2002) revealed that large firms are characterized by much more abundant and prominent data atmosphere. Hence, several outside agencies can decrease the asymmetrical data between executives and external shareholders. Thus, bigger companies usually do not have more incentives to EM because they are exposed to nearer observations by financial analysts and investors. This suggests that companies

diverse in size might require different CG arrangements and that both small and large companies should not have essentially the same CG structures.

The Liquidity (Current ratio): it is the ratio of current assets to current liabilities (Abdel-Fattah, 2008; Mohamed et al., 2013; Lee, 2011). It denotes the capability of firms to transform their resources to cashed money with the least damage of rate. Firms that are capable of coming across their temporary commitments without having to liquidate their resources, they have tendency to recognize this point above disclosure in their financial reports and transparency towards their users.

Firm profitability: The accounting performance proxies are employed to control for firm performance. ROA and ROE are used in several literature of CG and EM. ROA is the net profit after-tax scaled by the total assets. ROA shows how management effectively uses the company's resources and assets to generate profits (Habbash et al., 2013; Almasrwah, 2015; Amer, 2016; El-Kalla, 2017). **Return on Equity (ROE)** is another widely applied profitability determinant of return on common stockholders' equity. This proportion indicates the percentage of the received net income when investing one dollar by those in authority. It can be the net income scaled by the regular joint equity of the stockholders (Almasrwah, 2015; Amer, 2016; El-Kalla, 2017).

Industry Type: A firm industry is considered a significant variable in settling on the accounting choices. Firms operating inside one industry might be more tempted to manage accounting or REM rather than the other (Watts and Zimmerman, 1986). The sample of Egyptian companies is classified into 13 industries after excluding financial services. However, the study focused only on seven sectors because the calculation of EM is based on the cross-sectional analysis. The industry sector should include at least seven companies to be capable of calculating the earnings management. The industry is measured based on the dummy variable in EM models.

Asset Tangibility: Consistent with Tian and Estrin (2008); El-Kalla, (2017); Khemiri and Noubbigh, (2018), it is the ratio of net fixed assets to total assets. However, the most common substitute is ratio of tangible assets to total assets according to (Arsov and Naumoski, 2016).

Operating Cycle: It offers insights into a company operating efficiency. Ross *et al.* (2013, p.517) defined a firm's operating cycle as "the period between the acquisition of inventory, selling inventory and the collection of cash from sale of inventory". The inventory period and the account receivable period are the two components of this cycle. So that the operating cycle can be considered is the sum of

the firm's inventory period and its accounts receivable period (Demerijan et al., 2013; Beuselinck et al., 2014).

Earnings Flexibility: Consistent with Roychowdhury (2006) and Anagnostopoulou and Tsekrekos (2016), it is ratio as total of inventories and receivables to total assets. it is used as an EM determinant.

Leverage: it is one of several financial measurement that focus om how much capital comes in the form of debt or evaluate how the organization meet its obligations. It represents the debt structure for the firm, or total debt ratio, or debt-equity ratio or equity multiplier ratio or consumer leverage ratio (DeFond and Jiambalvo 1994; Habbash et al., 2013). It is used as a proxy for debt convent violation (Habbash, 2010). This study included leverage as the firms with high debt ratio are likely to charge more monitoring costs. Accordingly, mangers of high leveraged firms pursue to reduce these costs by promoting the disclosure in the financial reports (Habbash, 2010). On the contrary, other studies found a positive relationship between leverage and EM practice because overstating assets or understating obligations may be used as motives for debt convent violations, thereby rising DAs (DeFond and Jiambalvo 1994; Habbash et al., 2013). In the CG and EMs literature, leverage is used as a control variable. The leverage is measured as the ratio of total debt to total assets (Huafang and Jianguo, 2007; Almasrwah, 2015).

Gearing (Capital Structure): The capital structure was defined by Subramanyam and Wild (2009, p.547) as "*the sources of financing for a company.*" It is a type of financial ratio that compare the firm debt relative to different financial metric such as total equity. It is used to evaluate how the company structure itself and the amount of risk involved with chosen structure (El Kalla, 2017). Therefore, Gearing is sum of all the long-term debts and all short-term debts divided by total shareholder's equity (Jensen, 1993). This measure includes total liabilities not necessarily only use total debts. The outline of study variables and their measurement are shown in Table 6.2 below.

Table 6.2 Summary of Variables and their Measurement

	Label	Measure	Source
Independent variables			
1- Board Of Directors			
Board size X1	BRDSIZE	The number of directors on the board at the end of the financial year.	Annual Disclosure Books By EGX, ownership structure reports and BOD reports
Board independence X2	BRDIND	It is number of the independent directors scaled by the total number of directors on the board at the end of its financial year.	Annual Disclosure Books By EGX, ownership structure reports and BOD reports
Board diversity X3	BRDIV	The number of female directors scaled by total board directors.	Annual Disclosure Books By EGX, ownership structure reports and BOD reports
CEO duality X4	CEODUL	Binary number that takes 1 if the roles of chairperson and CEO are combined at the end of its financial year, 0 otherwise.	Annual Disclosure Books By EGX, ownership structure reports and BOD reports
Board meetings X5	BRDMEE T	The yearly number meetings held by board of directors.	Annual Disclosure Books By EGX, Ownership Structure reports and BOD reports
2- Audit Committee			
Audit committee size X6	AUDSIZE	The total number of members on the audit committee.	Annual Disclosure Books By EGX and Audit Committee reports
Audit committee independence X7	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
Audit committee meetings X8	AUDMEE T	The number of meetings per year held by the AC directors.	Annual Disclosure Books By EGX and Audit Committee reports
3- Ownership Structure			
Family ownership X9	FAMOWN	The percentage of shares held by family members.	Annual Disclosure Books By EGX and ownership structure reports
Institutional ownership X10	INSTOW N	The ratio of shares outstanding owned by institutional investors at the end of its financial year.	Disclosure Books, and ownership structure reports
Managerial ownership X11	MANOW N	It is number of ordinary shares held by all directors of the board scaled by the total number of ordinary shares of a firm at the end of its financial year.	Annual Disclosure Books By EGX and ownership structure reports
Governmental ownership X12	GOVOWN	The total number of ordinary shares held by all government scaled by the total number of ordinary shares of a firm at the end of its financial year.	Annual Disclosure Books By EGX and ownership structure reports
4-External Auditing			
BIG 4 X13	AUD. QUAL	A dummy variable that takes a value of '1' if a sampled firm is audited by any of the big four auditing firms, and zero otherwise.	Annual Disclosure Books By EGX, Annual reports, and BOD reports
Dependent variable			
AEM	DACMJ	DAs is calculated based on Modified Jones model, (1995).	Data stream and financial statements

	Label	Measure	Source
AEM	DAK	DAs is measured based on Kothari et al. (2005), including lagged ROA.	Data stream and financial statements
AEM	DAKZ	DAs is measured based on (Kaszniak, 1999) model.	Data Stream and financial statement
AEM	DARS	DAs is calculated based on Raman and Shahrur (2008) Model	DataStream and financial statement
REM	RM_CFO	Abnormal levels of cash flow from operations is developed by Roychowdhury (2006).	Data stream and financial statements
REM	RM_DISX	Abnormal level from the sum of Selling and Marketing Expenses and General and Administrative Expenses of firm (i) in year (t) developed by Roychowdhury (2006),	Data stream and financial statements
REM	RM_PRO D	Abnormal level from the sum of cost of goods sold and change in inventory of firm i in year t	Data stream and financial statements
REM	RM1	ABCFO is multiplied by -1 and then ABPROD are added to it.	Data stream and financial statements
REM	RM2	ABDISCX is added to ABCFO after multiplying ABCFO by -1	Data stream and financial statements
REM	RM3	ABCFO is multiplied by -1 and then ABPROD is added to it, and then ABDISCX is added to them after multiplying it by -1.	Data stream and financial statements
Control variables			
Firm size	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
Liquidity	Liquid	It is ratio of current assets to current liabilities	Data stream and financial statements
Performance	ROA	The ratio of net income to total assets at the beginning of the year.	Data stream and financial statements
Performance	ROE	It is net income scaled by the total equity at the beginning of the year.	Data stream and financial statements
Capital structure (Gearings)	GEAR	It is total debt scaled by total equity at the end of fiscal year.	Data stream and financial statements
Leverage	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
Assets Tangibility	AT	It is total of net property plant and equipment scaled by total assets.	Data stream and financial statements
Operating Cycle	OC	The logarithm of the sum of the inventory and the receivables period.	Data stream and financial statements
Earnings Management Flexibility	EMFLEX	It is a total inventories and receivables scaled by total assets.	Data stream and financial statements

6.10. Specification of the EM Models and Hypotheses Development

The current study implement three separated models to investigate the relationship among CG mechanisms, external audit and EMs. The first model explains the relationship between different attributes of CG, external audit and DAs as proxy for EMs. The DAs is detected by using four models (Modified Jones Model, Kothari et al. (2005) Model, Kasznik Model, and Rahman and Shurar model). While the second model explains the relationship between CG mechanisms, external audit and REM. The study measured REM using six proxies of Roychowdhury, (2006) which are (ABCFO), (ABPRO), (ABDISX), RM1, RM2, and RM3. The third model explains the non-linear relationship between CG mechanisms and earnings management using one proxies of accrual-EM to determine the optimal threshold value for each of CG mechanisms that can achieve the minimum level of earnings manipulations that are exercised in the Egyptian context.

6.10.1. The Specification of Accruals-Based EM Model

The first empirical model examines the influence of CG characteristics and external auditing on the Accrual-based EMs. The Accrual-based EMs is using the proxy of the absolute value of the DAs. Modified Jones model (1995), the Kothari et al. (2005) model, the Kasznik (1999) Model, and the Raman and Shahrur (2008) Model are used to estimate the DAs. The main and sub-hypotheses will be formulated and tested.

HA: There is a significant relationship between the CG mechanisms, external auditing characteristics and Accrual-based EM (AEM).

HA1: There is a significant and positive association between managerial ownership and AEM.

HA2: There is a significant and negative association between family ownership and AEM.

HA3: There is a significant and negative association between institutional ownership and AEM.

HA4: There is a significant and positive association between governmental ownership and AEM.

HA5: There is a significant and negative association between board size and AEM.

HA6: There is a significant and negative association between board independence and AEM.

HA7: There is a significant and positive association between CEO duality and AEM.

HA8: There is a significant and negative association between board diversity and AEM.

HA9: There is a significant and negative association between board meetings and AEM.

HA10: There is a significant and positive association between the AC size and AEM.

HA11: There is a significant and negative association between AC independence and AEM.

HA12: There is a significant and negative association between the AC meetings and AEM.

HA13: There is a significant and negative association between Audit quality and AEM.

The proposed regression model is defined by the following equation:

$$(30) \quad DAEM_{jt} = \beta_0 + \beta_1 MNG.OWN_{jt} + \beta_2 FAM.OWN_{jt} + \beta_3 INS.OWN_{jt} + \beta_4 GOV.OWN_{jt} + \beta_5 BRDSIZE_{jt} + \beta_6 BRDIND_{jt} + \beta_7 BRDMEET_{jt} + \beta_8 BRDDIV_{jt} + \beta_9 CEO.DUL_{jt} + \beta_{10} ACINDEP_{jt} + \beta_{11} ACSIZE_{jt} + \beta_{12} ACMEET_{jt} + \beta_{13} AUDQUL_{jt} + \beta_{14} ROA_{jt} + \beta_{15} ROE_{jt} + \beta_{16} LIQ_{jt} + \beta_{17} Lev_{jt} + \beta_{18} Gear_{jt} + \beta_{19} Size_{jt} + \beta_{20} AT_{jt} + \beta_{21} OC_{jt} + \beta_{22} EMFLEX_{jt} + \epsilon_t$$

Whereas;

MANOWN refers to managerial ownership measured by the total number of ordinary shares held by all directors of the board scaled by the total number of ordinary shares of a firm at the end of its financial year; FAMOWN refers to Family ownership measured by the percentage of total shares held by family; INSTOWN refers to Institutional ownership measured by the average percentage of shares outstanding owned by institutional investors at the end of its financial year; GOVOWN refers to Governmental ownership measured by the total number of ordinary shares held by all government scaled by the total number of ordinary shares of a firm at the end of its financial year; BRDSIZE refers to the board size measured by the total number of directors on the board at the end of its financial year; BRDIND refers to the board independence measured by the number of non-executive independent directors divided by the total number of directors on the board at the end of its financial year; BRDIV refers to the board diversity is measured by the percentage of female directors to total board members; CEO.DUL refers to CEO duality measured by a dummy variable that takes the value of 1 if the roles of chairperson and CEO of the firm are combined at the end of its financial year, 0 otherwise; BRDMEET refers to board meetings measured by the yearly number of meetings; AUD SIZE refers to Audit committee size measured by the total number of members on the audit committee; AUDIND refers to Audit committee independence measured by the ratio of independent directors to total committee members; AUDMEET refers to AC meetings is measured by the number of meetings per year held by the audit committee; BIG4 refers to Audit type measured by a dummy variable that takes a value of '1' if a sampled firm is audited by any of the big four auditing firms (namely, Deloitte & Touche, Ernst & Young, KPMG, and Price Waterhouse Coopers), zero otherwise.

ROA refers to return on assets measured as net income scaled by total assets; ROE refers to return on equity measured as net income scaled by total equity; LIQ refers to liquidity measured by current assets divided by current liabilities; Lev refers to leverage measured as total debt scaled by total assets; Gear refers to gearing measured by ratio of total debt to total equity at the end of its financial year; Size refers to firm size measured as the logarithm of total assets; AT refers to asset tangibility measured as net property plant and equipment scaled by total assets; OC refers to the operating cycle measured as the logarithm of the sum of the inventory period and the receivables period; EMFLEX refers to EM flexibility measured as the sum of inventories and receivables scaled by total assets.

6.10.2. The Specification of the Real-Based EM Model

The second empirical model investigates the impact of internal CG characteristics and external auditing on the real earnings management (REM). The main and sub- hypotheses will be formulated and tested.

HB: There is a significant relationship between the CG mechanisms, external auditing characteristics, and REM.

HB1: There is a significant and positive relationship between managerial ownership and REM.

HB2: There is a significant and negative relationship between family ownership and REM.

HB3: There is a significant and negative relationship between institutional ownership and REM.

HB4: There is a significant and positive relationship between government ownership and REM.

HB5: There is a significant and negative relationship between board size and REM.

HB6: There is a significant and negative relationship between board independence and REM.

HB7: There is a significant and positive relationship between CEO duality and REM.

HB8: There is a significant and negative relationship between board diversity and REM.

HB9: There is a significant and negative relationship between board meetings and REM.

HB10: There is a significant and positive relationship between the AC size and REM.

HA11: There is a significant and negative relationship between AC independence and REM.

HB12: There is a significant and negative relationship between the AC meetings and REM.

HB13: There is a significant and negative relationship between Audit quality and REM.

The proposed regression model is defined by the following equation:

$$(31) \quad \text{Real EM}_{jt} = \beta_0 + \beta_1 \text{MNG.OWN}_{jt} + \beta_2 \text{FAM.OWN}_{jt} + \beta_3 \text{INS.OWN}_{jt} + \beta_4 \text{GOV.OWN}_{jt} + \beta_5 \text{BRDSIZE}_{jt} + \beta_6 \text{BRDIND}_{jt} + \beta_7 \text{BRDMEET}_{jt} + \beta_8 \text{BRDDIV}_{jt} + \beta_9 \text{CEO DUL}_{jt} + \beta_{10} \text{ACINDEP}_{jt} + \beta_{11} \text{ACSIZE}_{jt} + \beta_{12} \text{ACMEET}_{jt} + \beta_{13} \text{AUDQUL}_{jt} + \beta_{14} \text{ROA}_{jt} + \beta_{15} \text{ROE}_{jt} + \beta_{16} \text{LIQ}_{jt} + \beta_{17} \text{Lev.}_{jt} + \beta_{18} \text{Gear}_{jt} + \beta_{19} \text{Size}_{jt} + \beta_{20} \text{AT}_{jt} + \beta_{21} \text{OC}_{jt} + \beta_{22} \text{EMFLEX}_{jt} + \varepsilon$$

Where;

MANOWN refers to Managerial ownership; FAMOWN refers to Family ownership; INSTOWN refers to Institutional ownership; GOVOWN refers to Governmental ownership; BRDSIZE refers to the board size; BRDIND refers to the board independence; BRDIV refers to the board diversity; CEO.DUL refers to CEO duality; BRDMEET refers to board meeting; AUDSIZE refers to Audit committee size; AUDIND refers to Audit committee independence; AUDMEET refers to audit committee meetings; AUDDIV refers to Audit committee diversity; BIG4 refers to Audit type. *ROA* refers to return on assets; *ROE* refers to return on equity; *LIQ* refers to liquidity; *Lev* refers to leverage; *Gear* refers to gearing; *Size* refers to firm size; *MKT* refers to the market capitalization; *AT* refers to asset tangibility; *OC* refers to the operating cycle; *EMFLEX* refers to EM-flexibility.

6.10.3. The Specification of Threshold EM-Model

The third empirical model investigates whether there is a non-linear association between CG mechanisms and the Accrual-based EMs. The Accrual-based EMs is measured based on the absolute value of the DAs estimated by the Kasznik (1999) Model³⁴. The main and sub-hypotheses will be formulated and tested.

³⁴ The researcher is going to explain in details this model, the technique and the reasons for choosing this proxy as shown later in Chapter nine.

HC: There is a non-linear relationship between CG mechanisms and Accrual earnings management (AEM).

HC1: There is a non-linear relationship between managerial ownership and AEM.

HC2: There is a non-linear relationship between family ownership and AEM.

HC3: There is a non-linear relationship between institutional ownership and AEM.

HC4: There is a non-linear relationship between governmental ownership and AEM.

HC5: There is a non-linear relationship between board size and AEM.

HC6: There is a non-linear relationship between board independence and AEM.

HC7: There is a non-linear relationship between board diversity and AEM.

HC8: There is a non-linear relationship between board meetings and AEM.

HC9: There is a non-linear relationship between AC size and earnings management.

HC10: There is a non-linear relationship between AC independence and AEM.

HC11: There is a non-linear relationship between AC meetings and AEM.

6.11. Research Analytic Procedures

The current study uses the statistical package STATA 14.1 and SPSS version 24 to conduct its data analyses. Descriptive statistics, the correlation matrix, panel data regression, dynamic panel threshold analysis are the main tests in the study. Each of these is now reviewed briefly.

6.11.1. Descriptive Statistics

A single variable in a structured form is used to describe the sample data according to the descriptive statistics for all variables of the study (independent, dependent and control ones). The central tendency of each variable is recognized by the mean, median, first quartile, third quartile, and standard deviation. While the shape of the data distribution (e.g the symmetry, the peakedness, flatness of the distribution) is clarified through the skewness and kurtosis, as compared to a normal distribution (Basiruddin, 2011; Hair, et al., 2012; Alessandro, 2013).

6.11.2. The Correlation Matrix

The study employs two techniques (the correlation matrix and variance inflation factor test (VIF) to examine the problem of multicollinearity. The correlation among variables is demonstrated by the pairwise correlation matrix to recognize the level of the linear relationship between two variables which ranges from +1 to -1. The correlation of ± 1 indicates a perfect linear relationship between the variables. Problems of multicollinearity are signified when the correlation coefficient is above 0.60 and when a higher degree of inter-correlation among the independent variables exists. Multi-collinearity may violate the predictive capability of the regression model and the

estimation of the coefficients in the regression (Hababsh, 2010; Hair et al., 2012). Furthermore, the tolerance factor and variance inflation factor are also used as robustness test for multi-collinearity. The problem of collinearity between variables is evident and present if the tolerance factor is close to zero and the value of variance inflation factor is more than 10 (Habbash, 2010; Hair et al., 2012; Hassan and Ibrahim, 2014).

6.11.3. Multivariate Regressions

The main technique applied in this study is regression analysis which is considered the most significant method at the econometrician's disposal (Brooks, 2019) and the most popular method of multivariate analysis. According to Brooks, (2019), the Ordinary Least Squares (OLS) regression is deemed to be an appropriate method when the model composes of both dummy and continuous variables, which is similar to the case in this research. However, there are several fundamental assumptions before applying the parametric tests and confirming the validity of OLS regression (Habbash, 2010; Basiruddin, 2011; Hair et al., 2012).

- Assumption of normality: the sample must be drawn from normally distributed populations.
- Assumption of linearity: the predictors and the response variables should be linear relationship.
- Multicollinearity: one of the common problems in multiple-regression is the incidence of multi-collinearity between the explanatory variables. Multicollinearity creates several problems in the model driving significance tests to give misleading conclusions and hence making it difficult to draw functional interpretations (Hassan and Ibrahim, 2014). Therefore, researchers use SPSS to detect Multicollinearity by analyzing the correlation matrix between the independent variables to identify any sign of the high correlation between them. Additionally, researchers use STATA to apply the variance inflation factors (VIF) to determine to what extent the variation of variables within the regression model increases due to multicollinearity.
- Assumption of Heteroscedasticity versus Homoscedasticity: the study performs the Breusch-Pagan test through STATA to examine this assumption. Heteroscedasticity is another issue that makes the regression model less reliable and valid. This points out that the standard deviations of the error terms, given

the independent variables, are not constant. In other words, the error terms are dependent on the value of the independent variable in the case of heterogeneity.

- Autocorrelation: The study performs a Wooldridge test (*xtserial* command) on *STATA* to detect autocorrelation in panel data. Serial and cross-sectional correlations (autocorrelation) may cloud the interpretations because violating the assumption indicates that the covariance between the error terms over time and cross-sections is zero (Wooldridge, 2002).
- Omitted variables: the omitted variables may bias results in biased and inconsistent estimates of the coefficients (Brooks, 2019).

To sum up, when these assumptions (as shown above) are met and the variables are measured on at least an interval scale. Hence, the parametric test (OLS regression) can be used as suitable test. However, if one of these assumptions is violated, therefore, OLS regression may be biased and distorted, and use the non-parametric alternatively (Habbash, 2010). Consequently, the study conducts these previous mentioned tests before running OLS regression to confirm whether these assumptions have been met or not.

First; Panel Data Analysis

According to Hsiao (2007), longitudinal data, sometimes referred typically to (longitudinal survey or panel data) which includes repeated observations of the same variable over a short/long periods of time. Observations in panel data have at least two dimensions; a cross-sectional dimension, presented by subscript *i*, and a time-series dimension, presented by subscript *t*.

The extant and recent studies such as (Hsiao, 2007, and Mejri, 2017) explained several advantages for panel regression analysis; first, it provides a way for minimizing the inherent statistical problems such as endogeneity especially in the CG and EM area of research. Second, it considers the time effect into account that is not noticeable in pure cross-section data. Indeed, if an OLS regression for a single period provides a depiction, longitudinal data provide a series of depictions (Habbash, 2010; Amer, 2016; Mejri, 2017; El-Kalla, 2017). Third, researcher can obtain a larger number of observations, encounter high degrees of freedom and reduce the collinearity issues among the explanatory variables (Baltagi, 2008). Fourth, the panel data minimise eventually the influence of any omitted variables problems that may arise and control for unobservable individual heterogeneity and dynamics which is not possible in time series ($N=1$) and cross-sectional ($T=1$) regressions (Hsiao, 2007). Fifth, Panel data can

help the researcher tackle a wider range of problems and develop the efficiency of the estimates and promote the broader scope of interpretation. Sixth, unlike pooled cross-section data, the panel data cannot assume that the observations are independently distributed across time and therefore error terms may be correlated for a particular individual across different periods. Thus, one of the main assumption of OLS may be violated due to the correlation between the error terms suggesting that OLS is no longer the best estimator. Econometrically panel data sets are described as follows:

$$(32) \quad Y_{it} = \alpha + \beta x_{it} + u_i$$

Where Y_{it} is the dependent variable, α is the intercept, β is a $k \times 1$ vector of parameters; where k represents the number of explanatory variables, and x_{it} represents a $1 \times k$ vector of observations on the explanatory variable, where $t=1, \dots, T$ and $i=1, \dots, N$

Consequently, it is necessary to conduct the previous tests to examine the data against the OLS assumptions. Non-parametric tests are favored in this study. Consequently, GLS regression may be more suitable due to its capability to correct the omitted variable bias and the presence of autocorrelation and heteroscedasticity. Relying on this technique, the researcher is enabled to investigate the variations among cross-sectional units with variations within the individual units over time (Hassan et al. 2009; Basiruddin, 2011). Furthermore, the regression parameters do not differ between the various cross-sectional units, which enhances the reliability of the coefficient estimates. The study should perform many specification tests before running the regression analysis relevant to panel data to make sure that the regression model specification fits the data. Three main concerns should be addressed by the study: the question of whether to pool the data or not, the tests for individual and time effects and the heteroskedasticity of error terms.

However, most of the studies related to CG and EM practices suffer from three main problems which are unobservable heterogeneity, simultaneity, and dynamic endogeneity problems (Wintoki, Linck, Netter, 2012; Ahmed, 2016; Khemiri and Noubbigh, 2018). Accordingly, these assumptions make system generalized method of Moment (SYSTEM GMM) is preferred and superior model over OLS regression, and (GLS) to control for the problems of endogeneity by using instrumental variables (Al-Fayoumi et al., 2010; Ammann, Oesch, and Schmid, 2011; Wintoki, Linck, Netter, 2012; Ahmed, 2016; Khemiri and Noubbigh, 2018).

Second, Dynamic Generalized Method of Moment regression proposed by Arellano and Bond (1991)

As mentioned above, most of extant studies in CG and EM issues suffer from such a dynamic endogeneity, unobservable heterogeneity, and simultaneity problems. Accordingly, the current study follows Wintoki et al., (2008) and uses dynamic panel GMM estimator as proposed by Arellano and Bover (1995) and Blundell and Bond (1998) to control for those problems. Indeed, most empirical research in CG and EM practices suffer from endogeneity problem that may bias estimate of how (X) independent variables affect (Y) dependent variables. The endogeneity problem may come from unobservable heterogeneity (which may arise if there are unobservable factors that may influence both dependent and explanatory variables), simultaneity (which may arise if the independent variables are a function of the dependent variable or expected values of the dependent variables) and from dynamic endogeneity (which may arise if the relations among firm's observable characteristics are likely to be dynamic) (Ammann, Oesch, and Schmid, 2011).

Third, Dynamic Panel Threshold Regression Analysis developed by Seo and Shin, (2016)

This study investigates whether there is a non-linear association between CG attributes with EM practices. The study uses a new technique called dynamic threshold model assuming that there is an optimal ratio for CG mechanisms that can minimise the conducted earnings manipulations, thus, this can capture the relationship between each attribute of the CG and EM practices. This can support financial managers and policymakers understand the conditions under which the theory holds and help them formulate a CG policy.

6.12. Summary

The overall objective of the research can be achieved through determining the suitable research methodology, the most appropriate data collection methods, and statistical analyses. The chapter started by determining the research design and proposed the model of the study and the relationship between the variables to formulate study hypotheses. The steps of measuring the independent, dependent and control variables are illustrated in detail. Then, determining the population, the sampling process applicable and the method of data collection follows it. Finally, different

statistical analyses according to the nature of the relationship between variables are discussed at the end of the chapter.

In this research, the researcher tests the relationship between CG attributes, auditor quality and the EM which covers 10 years of time series data from 2008-2017. The research is applied to Egyptian companies listed in the stock exchange (EGX) and the collected data is from the annual reports published in EGX and Data Stream.

The main statistical techniques used in this study are descriptive analysis for each variable of the study, followed by the correlation matrix and Variance Inflation Factor (VIF) used to detect the multicollinearity between independent variables. After that, the dynamic SGMM regression estimator is used to examine the relationship between attributes of CG and audit quality with EM Models. Finally, the data analysis ends by using the dynamic panel threshold analysis to determine the optimal threshold for the CG structure regarding the earnings manipulations. Statistical analysis and examination are accomplished using the computer program *SPSS* and *STATA*. The following chapters present the results of tests selected to analyze the data gathered according to the steps explained above and the discussing in detail the findings from those analyses and comparing it with the results of the previous studies.

Chapter Seven

Results and Discussion of Accruals-Based EM Models

7.1. Introduction

This chapter presents data analysis and discussion of the results of the accruals-based EMs models. This chapter purposes to present and discusses the findings of statistical analysis regarding the relationship between CG mechanisms, audit quality and accruals-EMs based on different proxies. The structure of this chapter is presented as follows; Section 7.2 presents the descriptive statistics for the different models of the accruals-based EMs activity, the CGs mechanisms and the control variables in the Egyptian context. Section 7.3 section reports the results from the Pearson Correlation Matrix and the Variance Inflation Factor (VIF). While Section 7.4 demonstrates a discussion of the findings that result from SYSTEM GMM dynamic panel system for the model variables that relate between the CG mechanisms, external auditing, firm-level determinants to be determined by DAs using the statistical software *STATA* (version 14.1). Section 7.5 discusses the results from using additional analyses as robustness checks such as *FGLS*, Fixed and random effect panel data and OLS analysis with robust error to confirm the robustness of the results. Finally, section 7.6 provides a concluding discussion.

The thesis suggests to detect EM practice by using four models which are: (i) the Modified Jones model; (ii) the Kothari et al. (2005) model; (iii) the Kasznik (1999) model; and (iv) the Raman and Shahrur (2008) model as recommended in the previous literature as mentioned before.

Throughout literature, the modified Jones model is described as the most powerful tool in uncovering opportunistic manipulations activity in the period managers exercise their discretion over revenue recognition. This model outperformed other DAs models (e.g. the Healy (1985) model, the DeAngelo (1986) model, the Jones (1991) model). As this model focus on cross-sectional analysis rather than time series where the sample size can be maximized and the problem of survivorship bias could be minimised (Dechow et al., 1995; Peasnell et al., 2000; El-Kalla, 2017).

However, other authors have different attitudes and perspectives regarding the effectiveness of the modified Jones model. For instance, when Yoon, Miller, and

Jiraporn (2006) used the Modified Jones model as a model for detecting DAs in Korean companies, they claimed that this model is ineffective to identify manipulations in the Korean environment. Beslic, Jaksic, and Andric (2015) mentioned that Islam, Ali, and Ahmad, (2011) Bangladesh capital market revealed that the Modified Jones model (1995) is less effective in detecting EMs because the explanatory power of the Modified Jones model was 8.9%. Consistently, Alareeni and Aljuaidi (2014) in the Palestinian context reported that the Modified Jones Model has less predictive power in detecting the DAs as the explanatory power of the model for the service sector is 10% and 17% for the industrial sector. Dechow et al., (1995) argued that none of the models is flawless in detecting EM practice, i.e. measuring the size of DAs.

In addition to the survivorship bias problem existing in the Jones and the Modified Jones model, Siregar and Utama (2008) revealed that the capability of the Jones model and the Modified Jones model to accurately decompose accruals into DAs and non-DAs is still questionable for several reasons. First, the misclassification of accruals into DAs and non-DAs is possible. Second, the estimated coefficients of the change in revenues and property, plant, and equipment (PPE) variables may not be stationary over time. Third, the possibility of the occurrence of confusing effects in the period of estimation, which are unrelated to EM. Fourth, serially correlated residuals, which are the self-reversing property of receivables, may cause the problem of misspecification in the Jones and the Modified Jones model (Dechow et al. 1995; Saleh et al., 2007).

Consequently, recent studies in EMs practices, such as that of Sun, Salama, Hussainey, and Habbsah (2010) favored to use Kothari et al., (2005) model as due to its necessity to control net-income scaled by the current of previous year's total assets. Accordingly, this current study also prefers to use the Kothari et al., (2005) performance-adjusted DA model with a two-digit standard industrial classification code to avoid the problems of heteroscedasticity and misspecification matters that may be presented in other aggregate accruals models..

Moreover, several studies suggested the use of the Kasznik, (1999) model in detecting EM practices. For instance, Siregar and Utama (2008) preferred to use Kasznik model as the main model due to its highest adjusted R-squared over the Jones (1991) model, the Modified Jones Model (Dechow et al., 1995), and the Dechow et al., (2002) model. Furthermore, when Bešlić et al., (2015) in the Republic of Serbia examined the significance and predictively power of several models of DAs (the Jones model, the Modified Jones model, and the Kasznik model). The study compared the

explanatory power of these predictive models (the Jones model 5.4%; the Dechow model 2.6%; the Kasznik model 37%), From which only the Kasznik model proved to be statistically significant in the industrial sector. Therefore, the Kasznik model expands the Modified Jones model by controlling the change in cash flow from operations. After that, the Kasznik model is further extended by Raman and Shahrur (2008) and control the growth opportunities and the previously mentioned variables. Therefore, the study favors using those four accrual-based EM models.

The current study finds that it is critical to deal with missing data and extreme values (outliers) before conducting those analyses. An observation is treated as an outlier if its value is greater than three standard deviations of the sample distribution (ElKalla, 2017). Whilst they are much smaller or larger than the majority of observations and can distort the results, extreme values are considered to be suspicious observations. The issue of outliers has been an issue with various researches in the EMs and CG literature dealing with. The presence of outliers may violate the assumption of OLS regression upon which the models are based (Siregar and Utama, 2008, Bukit and Iskandar, 2009, ElKalla, 2017). Therefore, it is suggested to use either trimming or Winsorization of the data to maintain the characteristics of the original data and to limit the effects of outliers from the sample (ElKalla, 2017).

With regards to Kothari et al. (2005), Saleh et al. (2007), Cornett et al. (2009), Al-Rassas and Kamardin (2015) and Alhadab and Clacher (2018), the current study uses Winsorization using STATA software to eliminate outliers in the continuous variables at the top and bottom 5% of the data distribution. According to the views of prior literature, the CG variables (the independent variables) are not Winsorized because they do not have extreme values. While the dependent variables (different proxies of either AEM or REM) and the control variables are Winsorized at 5% and 95%. The statistics reported and discussed below for control variables and EMs are post-Winsorisation values. Although, winsorization cannot resolve the problem completely, both approaches (trimming and Winsorization) are acceptable (El-Kalla, 2017).

7.2. Descriptive Statistics for the Accrual-based EM Models

The following table (7.1) below presents the descriptive statistics for the variables of the study (the independent and dependent variables). This section aims at analyzing the descriptive data to help understand the most important characteristics of the data and accordingly contributes to paving the way for the interpretation of panel

data analysis and the pooled cross-sectional results. The following table includes data about the control variables, the CG mechanisms, external audit and the four proxies of accruals EM for the sample of listed Egyptian companies from the years (2008-2017).

Table 7.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
FAM	780	0	23.6	3.756564	7.072643	1.793	1.93
MAG	780	0	72	16.521618	23.2383773	1.213	0.033
INST	780	0	74.5	19.231841	25.4300124	1.015	-0.49
GOV	780	0	93.4	21.385859	30.7899223	1.27	0.104
Board size	780	3	15	7.87	2.615	0.596	-0.052
Board Independence	780	0	1	0.737874	0.1712428	-0.937	0.609
CEO Duality	779	0	1	0.71	0.455	-0.913	-1.169
Board Diversity	780	0	0.5	0.066825	0.0992813	1.394	1.369
Board Meeting	780	1	18	9.59	4.077	0.184	-1.149
AC size	780	3	5	3.42	0.693	1.132	0.302
ACIND	780	0	1	0.990662	0.0596373	-8.932	110.667
ACMEET	780	1	15	5.5	3.25	1.683	1.41
BIGAUDIT	780	0	1	0.3	0.459	0.875	-1.238
ROA	780	-0.0398	0.2163	0.051876	0.0650379	0.957	0.472
ROE	780	-0.0688	0.374	0.100429	0.1185833	0.813	-0.089
LIQU	780	0.5147	5.0461	1.833757	1.1885192	1.375	1.141
LEV	780	0.0182	0.6098	0.232505	0.1724446	0.618	-0.626
GEAR	780	0.0195	2.0804	0.518018	0.5552779	1.554	1.667
ASSTTANG	780	0.0089	0.78	0.356718	0.2437437	0.134	-1.156
OC	780	4.0974	6.8154	5.351267	0.7572294	0.219	-0.776
EMFLEX	780	0.0799	0.8734	0.400584	0.2238405	0.557	-0.596
FIRM-Size	780	4.6774	6.9666	5.691671	0.6958374	0.374	-1.037
DAMOD	780	-0.2862	0.238	-0.003923	0.12784	-0.234	-0.033
DAKOTH	780	-0.1782	0.205	0.001786	0.09442	0.145	-0.175
DAKAZNAK	780	-0.2042	0.181	-0.008495	0.090701	-0.088	0.102
DARAMAN	770	-0.194	0.192	-0.012164	0.09742	0.17	-0.339
Valid N (listwise)	770						

This table 7.1 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 2008-2017.

FAMOWN= Family ownership; INSTOWN= Institutional ownership; MANOWN= Managerial ownership; GOV.OWN=Governmental ownership; BRDSIZE =board size; BRDIND= Board independence; BRDIV=board diversity; CEO.DUL= CEO duality; BRDMEET= Board meetings; AUDSIZE= AC size; AUDIND =AC independence; AUDMEET= audit meetings; BIG4= Audit type; ROA= Return on assets; LIQ =Liquidity; Lev =Leverage; Gear =Gearing; Size = Firm size; AT = Asset Tangibility; OC =Operating Cycle; EMFLEX= EM-flexibility; GO=Growth 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 2008-2017.

The level of DAs across the accruals-based EM Models is presented by descriptive statistics. The mean value of DAs computed from the Kothari et al. (2005) model is positive for Egyptian firms listed in the stock exchange. whereas the mean value is negative for the Modified Jones model, the Kasznik Model, and the Raman and Shahrur models. This may be indicative that most of Egyptian firms engage in more income decreasing DAs compared with income increasing DAs on average. Test of DAs (the dependent variable) across the four models indicates that significant non-normality exists (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 Kasnizk model; skewness 0.17, kurtosis -0.339 for the Raman and Shahrur (2008) model). Thus, this leads to a non-normality in the residual of the regression which violates the OLS assumption. Therefore, the study normalized data using the Van der Waerden approach (Cooke, 1998) which effectively assigns ranks to non-normal data and transforms ranks to numbers with a normal distribution.

With regard to ownership variables, Table (7.1) reports that managerial, family, institutions, and government ownership on average are 16.79%, 3.7%, 19.7%, and 21.4%, respectively. This indicates that, on average, most of the firms were held by government shareholders.

With regard to board of director attributes, the percentage of board independence shown in the sample is relatively high; approximately 73.2%. This percentage highly complies with the CG recommendations in Egypt which called for maintaining a board to be mainly composed of non-executive directors. The average number of board meetings was approximately 10 times per year (mean=10), which is just above the minimum number of meetings recommended by the ECCG. Moreover, the results show that 71% of the sample had the chairman and the CEO positions held by the same person, which is against the Egyptian CG recommendation that both positions should be held by two different people.

This result is very close to the finding of Amer (2016) who found that 71.4% of the sample had CEO duality and with who Nasr and Ntim (2018) revealed a high percentage of CEO duality with mean 78% over EGX 100 for the year (2015). In most of the firms in the sample, executives do not have significant ownership, with a mean of 16.79%. This is not considered a relatively large percentage. As for the board size, 8 directors on the board is shown to be the average size (mean = 7.9) on the board. This board size is relatively similar to Amer (2016) who found that the average board size is 9.33 for a sample of 1,005 firm-year observations. This indicates that boards in Egypt are quite different from those in the US. Meaning that the number of directors in Egypt seems to be smaller than those in the US, which has a mean size of 11.45 (Bhagat and Black, 2002). However, Egyptian board size is larger than the boards in Australia which has a mean size of 6.6 (Nicholson and Kiel, 2003) and similar to those in the UK which have a mean board size of around 8 members (Peasnell et al., 2005). With regard to the board diversity in the sample, the results reveals that mean of board diversity is relatively very low (0.06), which can be considered as a slightly unsatisfactory figure. This ratio is relatively similar to the results of Salem et al., 2019 who found that ratio

of gender diversity in the Egyptian context is 5.6%. The findings of Brammer et al. (2007) were highly supported by the relatively low proportion of female directors as revealed in the current study.

With regard to the AC size, 96.45% of the sample followed the Egyptian CG recommendation of having at least three directors on the AC. Furthermore, the sample shows a high percentage of independence in the AC, at around 99% (mean = 99%). The average number of AC meetings per year was approximately 6 times (mean = 5.51), which is relatively close to that of the US which is 4.53, as reported by Xie et al. (2003). However, this figure is higher than that of Australia which had a figure of 2.50 times, as reported by Davidson et al., (2005).

7.3. Multicollinearity Diagnostics of the Accruals EM Models.

In the multiple regression analysis, it is problematic to draw inferences regarding the impact of a single independent variable when it is highly correlated with other independent variables. The multicollinearity problem exists when two or more independent variables are highly correlated (Field, 2009). High correlations between independent variables make it difficult to draw inferences regarding the individual effect of each independent variable. The study tests for multicollinearity across the accruals EM model variables using correlation analysis. The Pearson Correlation Matrix as shown in (Table 7.2) indicated that no critical multicollinearity problems exist as no strong correlations (0.8 or higher) were identified. Furthermore, collinearity statistics provided by the multiple regression using the STATA software was used to evaluate this issue. Collinearity measures such as the Variance inflation factor (VIF), which should be less than 10 and the tolerance value which should be less than 1 (Basiruddin, 2011; Hair et al., 2012) are presented in Table (7.3). These measures also indicate that multicollinearity does not exist in the regression models.

Table 7.2: The Correlation Matrix

	DAMOD	FAM	MAG	INST	GOV	Brd size	Board ind	CEO. duality	BRD-DIV	BRD-meet	AC size	ACME ET	ACIND	BIGAUDIT	ROA	ROE	LIQU	LEV	GEAR	ASSTANG	OC	EMFLEX	FIRM Size	
DAMOD	1																							
FAM	0.043	1																						
MAG	-0.042	-0.012	1																					
INST	0.045	-.184**	-.358**	1																				
GOV	-.079*	-.227**	-.379**	-.382**	1																			
Brd.Size	-0.007	-.095**	0.001	.131**	-0.012	1																		
Brd.IND	0.027	0.042	-0.014	.135**	-.162**	.224**	1																	
CEO.DUL	-0.015	0.068	-0.039	-.255**	.232**	-0.028	-.187**	1																
Brd.Div	0.068	-0.007	.117**	-0.046	-.089*	.178**	.084*	.099**	1															
BrD.Meet	-0.001	0.004	-.165**	-.167**	.368**	.073*	-0.056	.110**	0.037	1														
AC size	-0.054	0.023	-0.01	0.003	.090*	-.083*	-0.038	.112**	0.003	.129**	1													
ACMEET	-.107**	-0.061	-0.037	-.137**	.250**	0.048	-0.036	0.055	0.066	.365**	.217**	1												
ACIND	-.086*	0.005	-.075*	0.001	.087*	-.136**	.078*	-0.057	0.012	.136**	-0.003	0.066	1											
BIGAUDIT	0.01	-0.016	0.06	.265**	-.235**	.148**	0.035	-0.048	-0.012	-0.044	-.137**	-.150**	0.044	1										
ROA	.128**	0.029	.082*	-.142**	.128**	0.048	0.013	.136**	0.065	.077*	-0.029	.074*	-0.038	0.025	1									
ROE	.088*	0.005	0.043	-.114**	.159**	0.043	-0.009	.118**	0.04	.135**	-0.068	.128**	-0.032	0.047	.864**	1								
LIQU	.086*	-0.013	0.031	-.168**	0.008	-0.02	-0.051	.111**	0.007	0.022	.106**	.081*	-0.04	-.171**	.228**	0.046	1							
LEV	-.074*	0.004	0.049	.118**	-.098**	.074*	.099**	-0.059	0.024	-0.06	-0.07	0.005	-0.025	.186**	-.142**	-0.062	-.371**	1						
GEAR	-0.06	0.053	0.068	.090*	-.094**	.114**	.110**	-.142**	-0.063	-0.061	-.138**	0.042	0.018	.223**	-.166**	-0.042	-.364**	.800**	1					
ASSTANG	-.203**	0.067	-0.001	.145**	-0.032	0.031	.138**	-.158**	0.038	-0.056	0.02	-0.039	.078*	.080*	-.109**	-.178**	-.338**	.115**	.095**	1				
OC	0.037	-.117**	-0.015	.154**	0.069	.280**	-0.036	-.085*	-.073*	.103**	-.126**	0.031	-0.058	.267**	.081*	.255**	-.288**	.185**	.336**	0.01	1			
EMFLEX	.086*	0.028	-0.01	-0.063	-0.054	-.097**	-.096**	0.059	-.074*	-0.037	-0.03	-0.03	-.072*	0.018	-0.049	.111**	-0.041	0.049	.091*	-.452**	.254**	1		
FIRM Size	0.02	-0.015	0.029	0.006	-0.053	-0.025	0.016	-.075*	0.017	-0.041	-0.046	-0.03	0.048	0.032	0	0.03	0.032	-0.046	-0.041	-0.028	-0.044	0.061	1	

This table (7.2) measures the impact of CG characteristics, and firm-level characteristics on real activities-based EM for firms in the Egyptian context using a panel data regression from 2008-2017. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. The t-statistics are calculated using robust standard errors clustered at the firm-level and are reported between brackets.
 FAMOWN= Family ownership; INSTOWN= Institutional ownership; MANOWN= Managerial ownership; GOV.OWN=Governmental ownership; BRDSIZE =board size; BRDIND= Board independence; BRDIV=board diversity; CEO.DUL= CEO duality; BRDMEET= Board meetings; AUDSIZE= AC size; AUDIND =AC independence; AUDMEET= audit meetings; BIG4= Audit type;. ROA= Return on assets; LIQ =Liquidity; Lev =Leverage; Gear =Gearing; Size = Firm size; AT = Asset Tangibility; OC =Operating Cycle; EMFLEX= EM-flexibility; GO=Growth 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 2008-2017.

With regard to the Pearson correlation matrix, AC meeting (AC-Meet) and asset tangibility are negatively and significantly related with DAs at a 1% significance level. Governmental ownership, AC independence, and leverage are significantly and negatively related to DAs at 5% significant level. On the contrary, ROE, liquidity and earning flexibility are significantly and positively related to DAs at 5% while, ROA is positively and significantly related to DAs at 1%.

The Pearson correlation matrix also shows that institutional ownership, governmental ownership, the board size, and operating cycle are significantly and negatively related to family ownership at a 1% significance level. Institutional ownership, governmental ownership, and board meetings are significantly and negatively related to managerial ownership at a 1% significance level. In contrast, board diversity and ROA are significantly and positively related to managerial ownership at a 1% and a 5% significance level.

The results of the Pearson correlation matrix also show that board size, board independence, big four audits, leverage, operating cycle, and asset tangibility are positively and significantly related to institutional ownership at a 1% significance level. On the contrary, governmental ownership, CEO duality, board meetings, AC meetings, ROA, ROE, and liquidity are negatively and significantly related to institutional ownership at a 1% significant level.

Moreover, CEO duality, board meetings, AC meetings, ROA and ROE are significantly and positively related to governmental ownership at a 1% significance level, while the leverage, gearing, big four audits, and board independence are negatively and significantly related to governmental ownership at a 1% significance level. Board independence, board diversity, gearing, operating cycle, and big four audit firms are significantly and positively related to board size at a 1% significance level. On the contrary, AC independence, and earning flexibility are negatively and significantly related to board size at a 1% significance level.

Board independence is positively and significantly correlated with gearing, asset tangibility, and EM-flexibility at 1 % significant level. Board diversity and AC independence are positively and significantly correlated with board independence at 5%. However, board independence is negatively and significantly correlated with CEO duality and EM flexibility at 1% significant level.

With regard to the Pearson correlation matrix; CEO duality is positively and significantly correlated with board diversity, board meetings, AC size, ROA, ROE, liquidity at a 1% significant level. On the contrary, gearing and asset tangibility are negatively and significantly correlated with CEO duality at 1%. The firm size and operating cycle are negatively and significantly correlated with CEO duality at 5%. Board meetings are significantly and positively correlated with AC size, AC meetings, AC independence, ROE, and operating cycle at a 1% significance level and with ROA at a 5 % significant level.

Furthermore, AC size is negatively and significantly correlated with Big audit 4, gearing and operating cycle at a 1 % significant level. while AC size is positively and significantly correlated with AC meetings and liquidity at 1 % significant level. AC meetings are significantly and positively related to ROA and liquidity at a 5% level and with ROE at 1%. Additionally, AC independence is positively and significantly correlated with asset tangibility at 5% while AC independence is negatively and significantly correlated with EM flexibility at 5%. Big-Four Audit firm is positively and significantly correlated with leverage, gearing, and operating cycle at 1% while it is correlated negatively and significantly with liquidity at 1%.

Overall, the correlation coefficients as presented in the findings reveal that there is no high significant correlation between the independent variables, dependent variables and controlling variables except the highest correlation is 0.86 which is between the controlling variables (ROE and ROA) and are significant at the 1% level. There is a low risk of multicollinearity problems if those variables are included in one regression. Therefore, collinearity could not threaten the interpretation of regression coefficients of the independent variables in this model.

Furthermore, Variance Inflation Factor (VIF) and Tolerance values are conducted and shown in Table 7.3 to examine the problem of multicollinearity. The maximum and mean VIFs computed for the variables of the accruals-based EM models are presented in the following Table 7.3 and indicate that the VIFs and Tolerance values for the four accruals models are within acceptable limits. Gujarati (2003) suggested that a value of less than 10 shall be accepted. All models suggest that the VIF values as presented in Table 7.3 are between 1.00 and 5.6 and none of the variables have a VIF value higher than 10 or a tolerance value lower than 1. This suggests that there is no problem of multicollinearity.

Table 7.3: 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
GOV. OWN	3	0.333527
INSTITUTIONAL OWN	2.77	0.360570
MANAGERIAL OWN	2.33	0.430045
OPERATING CYCLE	1.78	0.562315
LIQUIDITY	1.66	0.603080
ASSET TANGIBILITY	1.64	0.609605
EM FLEXIBILITY	1.58	0.633835
FAMILY OWN	1.47	0.682281
BOARD MEET	1.36	0.735099
BOARD SIZE	1.35	0.742942
BIG AUDIT FIRM	1.27	0.785620
AC MEET	1.26	0.790957
BOARD INDEPENDENCE	1.24	0.805691
CEO DUALITY	1.24	0.808814
AC SIZE	1.16	0.865413
BOARD DIVERSITY	1.13	0.886477
AC INDEPENDENCE	1.10	0.907507
FIRM SIZE	1.03	0.966736
MEAN VIF	2.10	

7.4. Panel Regression Analysis

After the descriptive statistical analysis of the variables, it is essential to apply the appropriate statistical tests to the panel data in order to analyze the linear relation between the CGs mechanisms and DAs as proxies for EMs as mentioned earlier. In this context, it is important to highlight the characteristics of panel data.

Panel data have two dimensions: one for individuals (or any observation unit) and one for time. They are usually indicated by the index i and t respectively. It is often interesting to identify the effect associated with each individual, i.e. an effect that does not vary over time, but varies from one individual to another. This effect can be fixed or random.

In general, the fixed-effect model assumes that the relationships between the dependent variable and the independent variables are the same for all individuals. This model has a residual structure that tests the standard OLS hypotheses. In fact, it is a classical model with indicator variables. The parameter estimation method will depend on the structure of the error terms. On the one hand, if the errors are homoscedastic, i.e. the covariance of the errors is zero; the OLS method is used on the indicator variables. On the other hand, if on the other hand the errors are heteroscedastic; the Generalized Least Squares Method (GLS) is used on the indicator variables. The general model is:

$$(33) \quad y_{it} = \mu + \alpha'_i + \lambda'_t + \beta' x_{it} + u_{it}$$

As regards the random effect model, it assumes that the relationship between the dependent variable and the explanatory variables is no longer fixed but random. Moreover, the individual effect is no longer a fixed parameter but a random variable. This model consists in decomposing the error term as follows: $v_{it} = \alpha_i + \lambda_t + u_{it}$. With α_i the random individual effects; λ_t the identical temporal effects and finally u_{it} the error term which is orthogonal to the individual and temporal effects. This type of model is often known as the *error components model*. The general model is written as follows:

$$(34) \quad y_{it} = \mu + \alpha_i + \lambda_t + \beta' x_{it} + u_{it};$$

$$(35) \quad \text{or } y_{it} = \mu + \beta' x_{it} + v_{it},$$

$$\text{where } v_{it} = \alpha_i + \lambda_t + u_{it}$$

It is now necessary to specify which of the two models (fixed-effect or random-effect) is more appropriate for our data. The choice between fixed and random effects is based on the existence of a correlation between the individual effects and the explanatory variables. In this case, we use the Hausman test (Hausman 1978). It is based on the difference between fixed and random effects estimators. The fixed effect is convergent when the individual effect is correlated with the explanatory variable; the random effect is non-convergent. A statistically significant difference between the two estimators calls into question the random effect hypothesis. In short, under the null hypothesis H_0 , the random effects model is appropriate. On the other hand, under the alternative hypothesis H_1 , the fixed effects model is preferred.

7.4.1. Pooling Test

Comparing the panel data model and cross-sectional regression models, it can be seen that the panel data model has an important advantage. Indeed, the panel data model can allow heterogeneity between individuals. This is generally due to individual-specific parameters. Therefore, a main procedure should be conducted first to validate the need for individual-specific effects. The null hypothesis of homogeneity can be expressed as follow: $H_0: \lambda_1 = \lambda_2 = \lambda_3 \dots = \lambda_t = \lambda$.

According to Beck (2001), the Chow test is conducted to differentiate between the pooled and unpooled estimates according to the proposition that the error term $uit \sim N(0, \sigma^2)$. The researcher performs the Chow test statistic which follows an F distribution with $(N-1, NT-N-K-1)$ degrees of freedom. In Stata, this statistic is generated automatically after running a fixed effect regression (`Xtreg....., fe`).

Table 7.4: Chow Test for Fixed Effect Model

	Obs	F-Statistic	Pro> F
Modified Jones Model (1st model)	779	1.76	.000
Kothari, (2005) Model (2nd model)	779	1.18	.1454
Kaszniak (1999) Model (3rd model)	779	1.25	.0814
Raman and Shahrur, (2008) Model (4th model).	779	3.74	.0000

The Chow-test compares the fixed effect model to the OLS regression model. Table (7.4) as shown above presents the results of Chow test regarding the CG attributes and the four proxies of DAs. With regards to the result of the four models of DAs, the Chow test returns the F-statistic with a probability less than 10% for all regression models and thus leads to the rejection of the null hypothesis of homogeneity among individuals. This suggests that the use of panel data is justified in three models (the Modified Jones model, the Kasznik model, and the Raman and Shahrur model). One of the regression models related to DAs (the Kothari model) revealed that the probability of F-statistic is higher than 10%. In this case, the null hypothesis of homogeneity is accepted in this model, therefore the use of panel data is not justified and may use the pooled OLS instead. However, the study finds that it is more favorable to apply panel data analysis rather than OLS regression.

7.4.2. Residual Diagnostic

To control time-variant unobserved heterogeneity, the study favors applying Generalized Least Square (GLS) analysis using two basic approaches (fixed-effect or random-effect estimators) in the pooled sample. As regards the OLS (fixed effect) approach, the individual constant is considered to be a group-specific constant term in the linear regression. To estimate this model, it is useful to use the "xtreg" command with the "fe" option in the Stata software. Thus, Baltagi (2008) allows the least squares estimator to be used for point and interval estimates according to the classical

propositions that the error terms are homoscedastic with the same variance over time and individuals.

For the GLS (random-effects) approach, we run the “xtreg” command with “re” option using the Stata software. This model invokes the GLS estimator. Furthermore, Greene (2008) suggest that an individual constant is a group-specific disturbance similar to the error term. In this context, several statisticians suggested also the presence of a trade-off between the efficiency of the random effect estimator and the reliability of the fixed effect estimator. In this respect, Greene (2008) shows that the choice of the random effect method focuses on a basic assumption. This assumption implies that unobserved heterogeneity should not be correlated with the independent variables.

The common practice used to select between both approaches is to implement the “Hausman test (1978)” or the “Robust Hausman test (1993)”. The Hausman test specification differentiates between the fixed-effect and random effect method through the correlation between the X variables and the individual random effect ϵ_i . If there is no correlation between unobserved heterogeneity and the independent variables, the researcher can use the random effect model. However, if a correlation exists, the researcher should use the fixed effects model.

After the multiple regression analysis has been conducted, heteroscedasticity using Stata software has been detected using *hettest* command. The null hypothesis in the Breusch-Pagan test suggests that the variance of residuals is homogenous. If the P-value is less than 5%, the null hypothesis is rejected while the alternative hypothesis (the variance is heteroskedastic) is accepted. The following (Table 7.5) finds that the null hypothesis is accepted while the alternative hypothesis is accepted indicating that the variance is heteroskedastic across the four models as resulted from the Breusch-Pagan test and the significant chi2 statistic.

Table 7.5: Breusch-Pagan Test for Heteroskedasticity

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

There is another 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.

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 7.6: Wooldridge Test for Serial Autocorrelation Results

	obs	F-statistics	Pro> F
Modified Jones model (1st Model)	779	4.11	.0461
Kothari et al. (2005) (2nd Model)	770	6.921	.0103
Kasznik (1999) model (3rd Model)	770	1.431	.2352
Raman and Shahrur (2008) model (4th Model)	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 (7.5) and (7.6) summarize the different results. The estimated model can be written as follows:

$$(36) \quad EM_{it} = \beta_0 + \beta_2 Governance_{it} + \beta_j \sum_{j=3}^{12} X_{it} + t_i + v_i + \varepsilon_{it}$$

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 ε_{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.

Recently, several studies have claimed that the findings that are revealed from the relationship between different CG mechanisms and EMs are influenced by the potential sources of endogeneity and providing biased parameter estimators. As a result, the previous literature reported three major sources of endogeneity which are; time-invariant unobserved heterogeneity across firms, simultaneity and dynamic endogeneity (Nguyen, Reddy, and Locke, 2014; Thrikawala, Locke, and Reddy 2017; Schultz, Tan, and Walsh, 2017). Most of the previous empirical studies used a fixed/random effect approach or traditional instrumental variables (IV) to overcome the endogeneity problem that comes from simultaneity or/and unobserved heterogeneity. However, these techniques are not designed to deal with the problem of dynamic endogeneity which arises when CG-EM relationship is affected by the performance of previous years. Consequently, if this problem is not controlled, then it is not possible to determine the causal effects of these estimations. Most of the previous studies in CG and EMs do not explore the dynamic nature of this relationship. Therefore, the current study is interested to use dynamic panel SYSTEM GMM techniques taking into account the endogeneity problem that may arise from the dynamic nature of this association and the unavailability of appropriate instruments for CG-EM research.

7.4.3. Dynamic Panel Generalized Method of Moment (SYSTEM GMM) Estimation

After what has been discussed regarding the limits of applying the static model (Equ 36) using fixed or random effect panel (GLS) in the previous section. Indeed, GLS using fixed/random effect model most likely provide biased results due to the correlation between the error term and the lagged variable. Therefore, the use of instruments is justified as a result of the presence of this correlation issue. Accordingly, the GMM technique is proposed and developed by Hansen (1982) and refined by Arellano and Bond (1991), Arellano and Bover (1995), Holtz-Eakin et al. (1998) and Blundell and Bond (1998). They suggested that this technique can produce unbiased, more efficient and consistent results for dynamic panel data models (Khemiri and Noubbigh, 2018).

To solve the endogeneity problem, Arellano and Bond (1991) used lags appropriate to the dependent and independent variables as instruments. However, the lagged levels of the explanatory variables may be weak instruments for differentiated variables that cannot be identified in the difference estimator. Hence, Arellano and Bover (1995) and Blundell and Bond (1998) overcame the shortcomings of the GMM first difference estimator by proposing a two-step system GMM estimator. Indeed, the lack of information on the debugging variables in the level model can lead to the loss of a considerable part of the overall variance of the data (Arellano and Bover, 1995).

Furthermore, the first difference GMM estimator is found to have large sampling biases when the explanatory variables persist over time (Blundell and Bond, 1998). To solve this problems, Arellano and Bover (1995) and Blundell and Bond (1998) proposed a System GMM estimator. This estimator due to its several advantages. First, it can control for time-specific effects and eliminate cross-sectional dependency in the data and country through including time dummy variables. Second, the differences are not correlated even though the levels of the explanatory variables are necessarily correlated with the specific fixed effect of the country (Khemiri, and Noubbigh, 2018). As a result, the study proposes to implement the System GMM estimator for the sample of 780 observations from 2008-2017 in the Egyptian context to mitigate dynamic endogeneity, simultaneity, and time-invariant unobserved heterogeneity.

Following Roodman (2009b), we run the “*xtabond2*” command to conduct System GMM estimation using Stata software. In this study, we follow up with post estimation specification checks. Specifically, we use the Hansen J-test test for over-identifying restrictions and the Arellano and Bond (1991) test, AR(2), for no

autocorrelation in the second-differenced errors. Therefore, the study considers the following dynamic model of EM.

$$(37) \quad EM_{it} = \beta_0 + \beta_1 EM_{it-1} + \beta_2 Governance_{it} + \beta_j \sum_{j=4}^{13} X_{it} + \varepsilon_{it}$$

Where EM_{it} is the proxy of EM of firm i and time t, EM_{it-1} is proxy of lag EM, $Governance_{it}$ is the governance indicators, and ε_{it} represents an error term.

7.4.4. Regression Results and Discussion

The impact of CG mechanisms on the discretionary accruals using different proxies for EMs based on SYSTEM GMM is reflected in the following Tables (7.7), (7.8), (7.9), (7.10). The discussion covers to what extent those CG attributes and external audit, are statistically related to accruals-based EM models, where the dynamic nature of the relationship is considered. The dynamic nature of the governance-EM relationship is controlled by using the lagged DAs as an explanatory variable. The dependent variable now refers to the DAs using four proxies, which are the Modified Jones model (Dechow et al., 1996), the Kasznik model (Kasznik, 1999), the performance matched discretionary accruals model proposed by Kothari et al. (2005), and the Raman and Shahrur (2008) model. Consistent with accruals EMs models, the dynamic panel analysis begins by examining each CG mechanisms separately and firm-level determinants of accruals-based EM as shown in the following Equation.

$$(38) \quad EM_{it} = \beta_0 + \beta_1 EM_{it-1} + \beta_2 Governance_{it} + \beta_j \sum_{j=4}^{13} X_{it} + \varepsilon_{it}$$

Where;

EM_{it} is the earning management of firm i and time t, where EM models include Modified Jones model, Kothari (2005) model, Kasznik (1999) model and Raman and Shahrur (2008) model. EM_{it-1} is the Lag of EM. $Governance_{it}$ is the governance indicators, where Governance indicators include: FAMOWN = Family ownership; INSTOWN = Institutional ownership; MANOWN=Managerial ownership; GOVOWN = Governmental ownership; BRDSIZE= board size; BRDIND = board independence; BRDIV= the board diversity; CEO.DUL=CEO duality; BRDMEET = board meetings; AUDSIZE = Audit committee size; AUDIND = Audit committee independence; AUDMEET = audit meetings; BIG4 = Audit type; X_{it} is the vectors of control variables, ROA =Return on assets; ROE = Return on equity; LIQ=liquidity; Lev =leverage; Gear= gearing; Size = firm size; AT =asset tangibility; OC = the operating cycle; EMFLEX = EM flexibility and ε_{it} represents an error term.

Table7.7: Governance Indicators and Modified Jones: System GMM Estimation Results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO	ModCFO
L.ModCFO	-0.045*** (0.0165)	-0.061*** (0.0155)	-0.052*** (0.0139)	-0.051*** (0.0171)	-0.043** (0.0186)	-0.040*** (0.0146)	-0.050*** (0.0164)	-0.051*** (0.0179)	-0.044*** (0.0142)	-0.045*** (0.0167)	-0.048*** (0.0160)	-0.053*** (0.0151)	-0.05*** (0.0164)
Ownership structure													
Mag	-0.00025*** (9.06e-05)												
Fam		0.00180*** (0.00037)											
Gov			-0.00029*** (8.42e-05)										
Inst				0.00021** (8.24e-05)									
B.O.D													
Bsize					-0.0062*** (0.0018)								
B independence						-0.082*** (0.0063)							
Bdiversity							0.0345 (0.0254)						
CEOduality								-0.00729 (0.00541)					
B meeting									0.00176** (0.00074)				
Audit Committee													
Acsiz										0.00132 (0.00343)			
ACindependence											0.0207 (0.0762)		
Acmeeting												-0.0048*** (0.001)	
External auditing													
BG4													-0.009* (0.005)

Table: Continued

Roa	0.0404 (0.189)	-0.0551 (0.228)	-0.129 (0.192)	0.000922 (0.214)	-0.0758 (0.185)	-0.0364 (0.305)	-0.199 (0.284)	-0.241 (0.235)	-0.121 (0.134)	-0.108 (0.280)	-0.0270 (0.161)	-0.119 (0.211)	-0.168 (0.192)
ROE	-0.00342 (0.0709)	0.0113 (0.0911)	0.0724 (0.0682)	-0.0212 (0.0991)	0.0132 (0.0747)	0.0132 (0.119)	0.0972 (0.104)	0.0956 (0.111)	0.0466 (0.0613)	0.0571 (0.117)	0.0240 (0.0711)	0.0288 (0.0893)	0.0594 (0.0857)
Liq	0.00407 (0.00338)	0.00546* (0.00282)	0.00293 (0.00414)	0.00342 (0.00329)	0.00422 (0.00380)	0.00355 (0.00316)	0.00462 (0.00334)	0.00728** (0.00337)	0.00567** (0.00279)	0.00363 (0.00276)	0.00379 (0.00296)	0.00480 (0.00308)	0.00546* (0.00298)
Lev	-0.0947*** (0.0354)	-0.0856** (0.0355)	-0.0993*** (0.0343)	-0.0961** (0.0487)	-0.114*** (0.0380)	-0.0875*** (0.0307)	-0.0959* (0.0520)	-0.0947*** (0.0362)	-0.0801* (0.0430)	-0.0675** (0.0312)	-0.110*** (0.0335)	-0.0969** (0.0376)	-0.0855*** (0.0313)
Gear	0.0283*** (0.0110)	0.0168** (0.00820)	0.0236** (0.0110)	0.0235** (0.00923)	0.0261** (0.0106)	0.0278** (0.0113)	0.0251 (0.0153)	0.0171* (0.00985)	0.0206** (0.00891)	0.0256*** (0.00900)	0.0267*** (0.00956)	0.0225** (0.0108)	0.0166* (0.00933)
Size	0.00648 (0.0142)	0.0160 (0.0119)	0.00929 (0.0110)	0.0187 (0.0116)	-0.00594 (0.0116)	0.00823 (0.0126)	0.0132 (0.0108)	0.0108 (0.0118)	0.0102 (0.00902)	0.00572 (0.00931)	0.0109 (0.0101)	0.00490 (0.0142)	0.0143 (0.0113)
Asstan	0.154*** (0.0307)	0.151*** (0.0407)	0.161*** (0.0264)	0.161*** (0.0396)	0.180*** (0.0338)	0.153*** (0.0353)	0.204*** (0.0383)	0.190*** (0.0505)	0.173*** (0.0287)	0.188*** (0.0375)	0.177*** (0.0311)	0.153*** (0.0356)	0.173*** (0.0317)
OC	0.0112 (0.0169)	0.00818 (0.0173)	0.00226 (0.0154)	-0.00897 (0.0162)	0.0174 (0.0185)	-0.00686 (0.0115)	0.00278 (0.0162)	-0.00452 (0.0184)	-0.00212 (0.0137)	-0.0147 (0.0148)	0.0139 (0.0154)	-0.00271 (0.0161)	-0.00238 (0.0162)
Emflex	0.00254 (0.0404)	0.00644 (0.0449)	-0.0140 (0.0442)	0.0234 (0.0412)	-0.0254 (0.0511)	0.00502 (0.0376)	-0.00532 (0.0457)	0.0103 (0.0471)	0.0169 (0.0326)	0.0293 (0.0426)	-0.0194 (0.0455)	0.0141 (0.0453)	0.00357 (0.0492)
Constant	-0.156 (0.0953)	-0.198** (0.0934)	-0.109* (0.0621)	-0.124 (0.0930)	-0.0607 (0.0940)	-0.0114 (0.0815)	-0.166 (0.103)	-0.104 (0.0899)	-0.138* (0.0821)	-0.0442 (0.0759)	-0.213* (0.115)	-0.0443 (0.100)	-0.129 (0.0939)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Number of inst	121	121	121	121	121	121	121	121	121	121	121	121	121
Hansen test (p-val)	0.995	0.995	0.996	0.995	0.996	0.994	0.995	0.994	0.994	0.994	0.996	0.994	0.992
AR (2) test (p-val)	0.844	0.673	0.713	0.735	0.823	0.854	0.813	0.835	0.862	0.898	0.806	0.746	0.735

This Table (7.7) presents the results from SYSTEM GMM estimations for dynamic panel-data models. The dependent variable is the DAs based on modified Jones model. Sample consists of 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. Due to the lagged variables, the number of observations decreased from 780 to 702. ***Significance levels at the 1% levels, respectively. **Significance levels at the 5% levels, respectively. *Significance levels at the 10% levels, respectively. All variables are identified before.

Table7.8: Governance Indicators and kothari Model: System GMM Estimation Results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie	kotharie
L. kotharie	-0.202*** (0.0168)	-0.187*** (0.0148)	-0.177*** (0.0120)	-0.189*** (0.0119)	-0.180*** (0.0145)	-0.191*** (0.0156)	-0.176*** (0.0148)	-0.199*** (0.0164)	-0.178*** (0.0149)	-0.213*** (0.0173)	-0.218*** (0.0156)	-0.213*** (0.0130)	-0.223*** (0.0197)
Ownership structure													
Mag	-0.00037*** (5.47e-05)												
Fam		0.00115*** (0.000286)											
Gov			-0.00029*** (6.49e-05)										
Inst				0.00045*** (8.75e-05)									
B.O.D													
BD.size					-0.00436*** (0.00137)								
BD..Independence						-0.0408*** (0.00768)							
BD.diversity							-0.00410 (0.0239)						
CEO duality								-0.00482 (0.00397)					
Bd..meeting									0.00127*** (0.000435)				
Audit Committee													
AC size										0.0126*** (0.00298)			
ACindependence											0.0422 (0.0364)		
AC Meeting												-0.0027*** (0.00069)	
External auditing													
BG4													0.00490 (0.00495)

To be continued...

Table: Continued

Roa	-0.0530 (0.121)	0.0684 (0.146)	0.0414 (0.105)	-0.00530 (0.105)	-0.0292 (0.103)	-0.149 (0.138)	-0.0714 (0.107)	0.0121 (0.114)	-0.154 (0.159)	-0.00845 (0.125)	-0.0116 (0.0955)	0.0103 (0.120)	-0.0826 (0.146)
ROE	0.0297 (0.0384)	-0.0277 (0.0615)	-0.0192 (0.0520)	0.0132 (0.0435)	-0.00228 (0.0478)	0.0722 (0.0567)	0.0568 (0.0481)	0.00245 (0.0516)	0.103 (0.0698)	0.0405 (0.0626)	0.00554 (0.0403)	-0.0161 (0.0530)	0.0150 (0.0658)
Liq	0.00750*** (0.00179)	0.0103*** (0.00311)	0.00762*** (0.00265)	0.00847*** (0.00304)	0.00753*** (0.00226)	0.00536** (0.00215)	0.00718*** (0.00204)	0.00571*** (0.00186)	0.00645*** (0.00194)	0.00528* (0.00272)	0.00515** (0.00222)	0.00581** (0.00233)	0.00471* (0.00265)
Lev	-0.0233 (0.0315)	-0.0102 (0.0326)	0.00526 (0.0375)	0.0144 (0.0379)	-0.0135 (0.0354)	-0.0207 (0.0272)	-0.0298 (0.0293)	-0.0338 (0.0261)	-0.0248 (0.0175)	-0.0362 (0.0255)	-0.0360 (0.0427)	-0.0428* (0.0248)	-0.0381 (0.0256)
Gear	0.00319 (0.00694)	-0.00310 (0.00537)	-0.00145 (0.00576)	-0.00211 (0.00650)	0.000777 (0.00656)	0.00450 (0.00565)	0.00436 (0.00660)	0.00486 (0.00676)	0.00220 (0.00417)	0.00775 (0.00563)	0.00600 (0.00843)	0.00789* (0.00466)	0.00842 (0.00558)
Size	0.0452*** (0.0123)	0.0488*** (0.00839)	0.0498*** (0.0107)	0.0593*** (0.0112)	0.0436*** (0.0114)	0.0484*** (0.00899)	0.0484*** (0.00932)	0.0547*** (0.00837)	0.0456*** (0.00607)	0.0479*** (0.0135)	0.0591*** (0.0117)	0.0542*** (0.00905)	0.0483*** (0.0112)
Ass.Tan	0.0573*** (0.0163)	0.0559*** (0.0171)	0.0479** (0.0193)	0.0510*** (0.0175)	0.0451** (0.0204)	0.0610*** (0.0221)	0.0551*** (0.0170)	0.0499*** (0.0132)	0.0628*** (0.0195)	0.0654*** (0.0233)	0.0457*** (0.0175)	0.0389** (0.0172)	0.0323 (0.0274)
OC	-0.0329*** (0.00848)	-0.0250*** (0.00866)	-0.0252*** (0.00755)	-0.0261*** (0.00804)	-0.0333*** (0.0102)	-0.0337*** (0.00990)	-0.0332*** (0.00928)	-0.0322*** (0.00873)	-0.0363*** (0.0103)	-0.0192** (0.00857)	-0.0153 (0.0109)	-0.0222** (0.0102)	-0.0263*** (0.00943)
EM.Flex	0.0324 (0.0279)	0.0298 (0.0245)	0.0284 (0.0313)	0.0308 (0.0266)	0.0240 (0.0302)	0.0152 (0.0291)	0.0403 (0.0272)	0.0270 (0.0199)	0.0154 (0.0214)	-0.0105 (0.0264)	-0.0130 (0.0219)	-0.0108 (0.0210)	-0.00218 (0.0232)
Constant	-0.117* (0.0649)	-0.194*** (0.0620)	-0.184*** (0.0703)	-0.254*** (0.0720)	-0.0693 (0.0683)	-0.0973 (0.0615)	-0.142* (0.0745)	-0.168** (0.0683)	-0.115 (0.0707)	-0.242*** (0.0685)	-0.311*** (0.0976)	-0.188*** (0.0500)	-0.149** (0.0699)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Number of inst	121	121	121	121	121	121	121	121	121	121	121	121	121
Hansen test (p-val)	0.997	0.997	0.996	0.995	0.996	0.998	0.996	0.997	0.997	0.997	0.996	0.996	0.997
AR (2) test (p-val)	0.247	0.214	0.228	0.224	0.270	0.184	0.320	0.191	0.394	0.258	0.181	0.229	0.161

This Table (7.8) presents the results from SYSTEM GMM estimations for dynamic panel-data models. The dependent variable is the DAs based on Kothari model. Sample consists of 780 observations during period: 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. Due to the lagged variables, the number of observations decreased from 780 to 702. ***Significance levels at the 1% levels, respectively. **Significance levels at the 5% levels, respectively. *Significance levels at the 10% levels, respectively. All variables are identified before.

Table 7.9: Governance Indicators and kasznik Model: System GMM Estimation Results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	kazank	kazank	kazank	kazank	kazank	kazank	kazank	kazank	kazank	kazank	kazank	kazank	kazank
L. kazank	-0.0991*** (0.0251)	-0.0959*** (0.0210)	-0.0990*** (0.0237)	-0.0762*** (0.0150)	-0.0997*** (0.0167)	-0.0870*** (0.0211)	-0.0820*** (0.0191)	-0.0747*** (0.0228)	-0.0837*** (0.0195)	-0.0861*** (0.0186)	-0.0973*** (0.0206)	-0.0291 (0.0181)	-0.09*** (0.0275)
Ownership structure													
Mag	-0.000161* (8.37e-05)												
Fam		0.000455** (0.000227)											
Gov			6.63e-05 (4.78e-05)										
Inst				7.05e-05 (0.000101)									
B.O.D													
BDsize					-0.0029*** (0.00108)								
B independence						-0.0269*** (0.00874)							
BD.Diversity							-0.115*** (0.0269)						
CEO.Duality								0.0169*** (0.00379)					
B meeting									-0.0018*** (0.000526)				
Audit Committee													
AC.size										0.00740*** (0.00209)			
AC.independence											-0.144*** (0.0325)		
AC.meeting												-0.0016** (0.00062)	
External auditing													
BG4													0.00604 (0.00677)

To be continued...

Table: Continued

ROA	-0.405** (0.159)	-0.454** (0.222)	-0.406* (0.213)	-0.418* (0.253)	-0.263 (0.249)	-0.341 (0.232)	-0.429* (0.235)	-0.302 (0.229)	-0.317 (0.253)	-0.377** (0.166)	-0.269 (0.230)	-0.0243 (0.0893)	-0.404* (0.216)
ROE	0.239*** (0.0626)	0.296*** (0.0967)	0.281*** (0.0931)	0.241** (0.101)	0.178* (0.0959)	0.236** (0.0921)	0.292*** (0.108)	0.208** (0.100)	0.211** (0.0997)	0.239*** (0.0782)	0.188* (0.102)	0.0223 (0.0412)	0.243*** (0.0897)
Liq	-0.00500* (0.00296)	-0.00671** (0.00265)	-0.0066*** (0.00251)	-0.00603* (0.00318)	-0.00577** (0.00284)	-0.00716*** (0.00237)	-0.00658*** (0.00207)	-0.00533** (0.00226)	-0.00659*** (0.00224)	-0.00820*** (0.00251)	-0.00844** (0.00336)	0.00627* (0.00347)	-0.0068*** (0.00223)
Lev	-0.0495 (0.0349)	-0.0524* (0.0271)	-0.0382 (0.0310)	-0.0596** (0.0258)	-0.0789*** (0.0282)	-0.0490* (0.0254)	-0.0197 (0.0303)	-0.0544** (0.0265)	-0.0794*** (0.0225)	-0.0461* (0.0275)	-0.0604*** (0.0183)	-0.0182 (0.0280)	-0.0655* (0.0374)
Gear	0.0157 (0.00958)	0.0148 (0.00984)	0.0150* (0.00775)	0.00785 (0.00919)	0.0160* (0.00903)	0.0191** (0.00931)	0.00876 (0.00912)	0.0161** (0.00802)	0.0229** (0.00924)	0.0140 (0.0103)	0.0189** (0.00820)	-0.00265 (0.00631)	0.0152 (0.00957)
Size	-0.0338*** (0.00905)	-0.0328*** (0.0105)	-0.0321*** (0.0115)	-0.0392*** (0.0116)	-0.0321*** (0.00871)	-0.0296** (0.0126)	-0.0431*** (0.0104)	-0.0409*** (0.0102)	-0.0409*** (0.00963)	-0.0350*** (0.0104)	-0.0408*** (0.00970)	0.0332*** (0.0114)	-0.0363*** (0.00872)
Asstan	0.0610*** (0.0198)	0.105*** (0.0303)	0.109*** (0.0203)	0.102*** (0.0274)	0.102*** (0.0337)	0.129*** (0.0291)	0.0860** (0.0353)	0.0986*** (0.0264)	0.0894*** (0.0279)	0.130*** (0.0326)	0.119** (0.0473)	0.0448*** (0.0161)	0.130*** (0.0253)
OC	0.00222 (0.00784)	-0.00327 (0.00848)	-0.0136 (0.00827)	-0.0105 (0.00688)	0.00375 (0.00624)	-0.00920 (0.00753)	-0.0154* (0.00845)	-0.00684 (0.00874)	-0.00324 (0.00738)	-0.00395 (0.00687)	-0.0111 (0.00822)	-0.022*** (0.00751)	-0.00793 (0.00787)
Emflex	-0.0503*** (0.0179)	-0.0556*** (0.0164)	-0.0229 (0.0178)	-0.0423* (0.0230)	-0.0585*** (0.0178)	-0.0335** (0.0167)	-0.0367* (0.0193)	-0.0308 (0.0255)	-0.0411*** (0.0146)	-0.0432** (0.0197)	-0.0423** (0.0165)	0.00977 (0.0185)	-0.0541*** (0.0174)
Constant	0.184*** (0.0481)	0.191*** (0.0534)	0.221*** (0.0659)	0.273*** (0.0643)	0.179*** (0.0526)	0.206*** (0.0747)	0.317*** (0.0720)	0.238*** (0.0759)	0.259*** (0.0620)	0.172*** (0.0551)	0.420*** (0.0680)	-0.0879 (0.0684)	0.233*** (0.0544)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Number of inst	129	129	121	121	121	121	121	121	121	121	121	121	121
Hansen test (p-val)	1.000	1.000	0.999	0.997	0.998	0.998	0.998	0.996	0.996	0.998	0.996	1.000	0.998
AR (2) test (p-val)	0.067	0.110	0.105	0.153	0.099	0.164	0.140	0.145	0.152	0.118	0.106	0.332	0.115

This Table (7.9) present the results from System-GMM estimations for dynamic panel-data models. The dependent variable is the DAs based on Kasznik model. Sample is 780 observations during period: 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR (2) of residuals is always rejected. Standard errors are reported in parentheses. Due to the lagged variables, the number of observations decreased from 780 to 702. ***Significance levels at the 1% levels, respectively.

**Significance levels at the 5% levels, respectively.

*Significance levels at the 10% levels, respectively.

Table 7.10: Governance Indicators and Raman and Shahrur Model: System GMM estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu	Ramshu
L. kotharie	-0.173*** (0.0142)	-0.164*** (0.0141)	-0.172*** (0.0172)	-0.171*** (0.0135)	-0.165*** (0.0174)	-0.159*** (0.0154)	-0.162*** (0.0143)	-0.172*** (0.0183)	-0.157*** (0.0130)	-0.168*** (0.0145)	-0.158*** (0.0154)	-0.168*** (0.0169)	-0.161*** (0.0146)
Ownership structure													
Mag	-0.00026*** (5.84e-05)												
Fam		0.00156*** (0.000261)											
Gov			-0.00046*** (9.08e-05)										
Inst				0.00037*** (8.72e-05)									
B.O.D													
Bsize					-0.00487*** (0.000869)								
B independence						-0.0461*** (0.00988)							
Bdiversity							-0.0129 (0.0182)						
CEOduality								-0.0118*** (0.00339)					
B meeting									1.90e-05 (0.000535)				
Audit Committee													
Acszize										0.0165*** (0.00323)			
Acindependence											0.0741* (0.0445)		
Acmeeting												-0.00291*** (0.000721)	
External auditing													
BG4													0.00285 (0.00494)

To be continued...

Table: Continued

Roa	-0.0537 (0.151)	0.0260 (0.136)	-0.116 (0.120)	-0.0387 (0.149)	0.0359 (0.130)	-0.102 (0.146)	-0.0892 (0.0908)	-0.0765 (0.158)	-0.0999 (0.103)	-0.112 (0.154)	-0.0981 (0.133)	0.00513 (0.152)	-0.0174 (0.102)
ROE	0.0300 (0.0614)	-0.0210 (0.0511)	0.0438 (0.0536)	0.00176 (0.0646)	-0.0296 (0.0550)	0.0321 (0.0670)	0.0241 (0.0395)	0.0433 (0.0724)	0.0510 (0.0525)	0.0749 (0.0703)	0.0652 (0.0622)	0.0122 (0.0599)	0.0204 (0.0525)
Liq	0.00288 (0.00301)	0.00169 (0.00290)	0.00399 (0.00280)	0.00226 (0.00325)	0.00356 (0.00257)	0.00291 (0.00262)	0.00189 (0.00315)	0.00269 (0.00268)	0.00377 (0.00282)	0.000286 (0.00278)	0.00266 (0.00265)	0.00255 (0.00278)	0.00195 (0.00341)
Lev	-0.0148 (0.0270)	-0.0219 (0.0298)	-0.0222 (0.0250)	-0.0159 (0.0363)	-0.00618 (0.0211)	-0.0177 (0.0280)	-0.0141 (0.0266)	-0.0164 (0.0218)	-0.0156 (0.0269)	-0.0226 (0.0250)	-0.0214 (0.0282)	-0.0438 (0.0294)	-0.00968 (0.0256)
Gear	-0.00166 (0.00746)	-0.000780 (0.00621)	-0.000632 (0.00495)	-0.00202 (0.00754)	-0.00518 (0.00432)	-0.00155 (0.00525)	-0.00418 (0.00395)	-0.00160 (0.00565)	-0.00224 (0.00458)	0.00384 (0.00533)	0.000146 (0.00594)	0.00455 (0.00619)	0.000933 (0.00765)
Size	0.0483*** (0.00742)	0.0402*** (0.0106)	0.0447*** (0.00845)	0.0466*** (0.0101)	0.0389*** (0.00752)	0.0494*** (0.00692)	0.0480*** (0.00772)	0.0500*** (0.00743)	0.0447*** (0.00782)	0.0463*** (0.00942)	0.0494*** (0.00736)	0.0365*** (0.00981)	0.0452*** (0.00798)
Asstan	0.0360 (0.0243)	0.0275* (0.0143)	0.0343* (0.0199)	0.0494* (0.0300)	0.0387** (0.0170)	0.0316** (0.0144)	0.0386* (0.0219)	0.0401** (0.0167)	0.0441* (0.0227)	0.0602** (0.0257)	0.0382** (0.0162)	0.0527** (0.0241)	0.0325 (0.0231)
OC	-0.0297*** (0.00617)	-0.0208* (0.0115)	-0.0311*** (0.00869)	-0.0381*** (0.0117)	-0.0233* (0.0133)	-0.0318*** (0.00713)	-0.0354*** (0.0124)	-0.0321*** (0.00621)	-0.0285*** (0.00919)	-0.0336*** (0.00973)	-0.0265*** (0.00909)	-0.0272** (0.0113)	- (0.00762)
Emflex	0.0193 (0.0194)	-0.00930 (0.0220)	0.0191 (0.0229)	0.0219 (0.0295)	0.00342 (0.0199)	0.0238 (0.0212)	0.0228 (0.0232)	0.0143 (0.0211)	0.0204 (0.0147)	0.0210 (0.0262)	0.0166 (0.0171)	0.0333 (0.0237)	0.0149 (0.0222)
Constant	-0.146*** (0.0474)	-0.138** (0.0692)	-0.111* (0.0631)	-0.105 (0.0939)	-0.0876 (0.0875)	-0.108** (0.0451)	-0.114 (0.0865)	-0.137** (0.0606)	-0.140* (0.0740)	-0.182*** (0.0664)	-0.247*** (0.0881)	-0.0908 (0.0837)	-0.105* (0.0616)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Number of inst	121	121	121	121	121	121	121	121	121	121	121	121	121
Hansen test (p-val)	0.995	0.995	0.996	0.994	0.993	0.995	0.994	0.995	0.995	0.997	0.995	0.996	0.994
AR (2) test (p-val)	0.545	0.551	0.378	0.476	0.503	0.542	0.586	0.526	0.631	0.620	0.645	0.568	0.633

This Table (7.10) presents the results from SYSTEM GMM estimations for dynamic panel-data models. The dependent variable is the DAs based on Raman and Shahrur model. Sample is 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. Due to the lagged variables, the number of observations decreased from 780 to 702.

***Significance levels at the 1% levels, respectively.

**Significance levels at the 5% levels, respectively.

*Significance levels at the 10% levels, respectively.

7.4.4.1. Ownership Structure

The above tables show the main findings of (System GMM) regressions. The p-value of the Hansen Test and P-value of the AR test (2) is not statistically significant. Hence, the Two-step SYSTEM GMM method is used appropriately, and the estimated results are reliable and unbiased.

With regards to managerial ownership; hypothesis (HA1) expects a positive and significant relationship between managerial ownership and EMs. The outcomes reveal that managerial ownership is negatively and significantly linked to DAs based on the Modified Jones, Kothari, Kasznik and Raman and Shahrur models at 1%, 1%, 10% and 1% respectively. The negative coefficient does not support (HA2) that the proportion of managerial ownership is linked positively with the extent to which accruals based EM is conducted. This outcome is in line with the Stewardship Theory that suggests that there is no conflict of interest between managers' and shareholders' interests, and managers act as the best stewards of the firm's assets on behalf of shareholders and stakeholders (Donaldson and Davis, 1994, Habbash, 2010).

Additionally, Alves (2012) in Portugal, Sepasi et al., (2016) in Iran and Farouk and Bashir (2017) revealed also a negative and significant link between managerial ownership and DAs. They recommended to enhance and raise the managerial shareholding to make their interests closely aligned with shareholders' interests. On the other hand, this result contradicts the Agency Theory that expects that managers are likely to conceal firm earnings to maximize their wealth at the expense of the shareholders' interest due to the division between ownership and control. These results are not also consistent with the entrenchment hypothesis which proposes that insiders' ownership might turn out to be useless in supporting insiders to make value-maximizing decisions. For instance, Al-Fayoumi et al. (2010) in Jordan, Ayadi, and Boujelbene (2014) in France, Aygun et al. (2014) in Turkey, Waweru and Prot (2018) in Eastern Africa revealed a positive and significant relationship between managerial ownership and DAs. They suggested that most of the emerging countries with weak investor protection policies give managers the opportunities to conceal earnings and to misuse corporate resources which hence leads to wealth expropriation.

Therefore, there is no agreement either theoretically or empirically regarding the impact of the managerial shareholding on the DAs. This is consistent with the work of Gonzalez and Garci-Meca (2014), Lin (2011), Sanchez-Ballesta and Garcia-Meca

(2007) who reported a non-linear connection between managerial ownership and DAs. They suggested that managerial ownership can restrict the magnitude of DAs if the ownership concentration is not very high.

With regards to family ownership, as shown in Tables (7.7, 7.8, 7.9, 7.10), hypothesis (**HA2**) is not supported which suggests a negative link between family ownership and EMs. The results reveal that the family ownership is positively and significantly correlated with AEM across the four models. This result is in proportion to the entrenchment-effect (expropriation-hypothesis). This suggests that controlling shareholders confiscates the wealthy without consideration to minority shareholders' interest. They give the managers opportunities to manipulate the firm earnings for their benefits. This is derived from the proposition that family ownership is short-term oriented and engages in the EM to avoid negative effects of low earnings. Anderson and Reeb (2004) suggested that family firms tend to accumulate their wealth for their future generation and have a tendency to benefit from controlling rights through extraordinary dividends, related party transactions, and compensation schemes. Furthermore, these results are following Zhong et al. (2007), Guthrie and Sokolowsky (2009), and Halioui and Jerbi (2012). On the other hand, the study results contradict with Wang (2006), Ali (2007), Karuntarat (2013), Achleitner et al., (2014) who stated that controlling family shareholders is long-term oriented and more concerned with preserving their reputation and maximizing long-term wealth. Therefore, family owners cannot act to opportunistically manipulate the reported earnings.

Although Siregar and Utama's (2008) study in Jakarta Stock Exchange (JSE) found significant evidence that family ownership engages more inefficient EMs, suggesting that agency problems in family-owned firms are less than in other types of ownership structures due to less difference between principal and agent and the increased diligence and self-discipline. However, family owners may trigger other problems such as principal-principal problems between majority and minority shareholders if the ownership concentration in the hand of family firms is increased and in the countries with weak investor protection policies. This indicates that the increased concentration in family ownership increases the likelihood to undertake opportunistic earnings manipulations. Consistently, the studies of Arosa et al. (2010), Amador (2012), Wang (2006) and Lin and Tsangyao (2010) revealed a non-linear/curved relationship between family ownership and the quality of earnings.

With regard to institutional ownership, Table (7.7), (7.8), (7.9), (7.10) shows the outcomes of the four regression models employed to test the hypothesis (HA3). The results illustrate a significant and negative linkage between institutional ownership and DAs based on the modified Jones model, Kothari model, and Raman and Shahrur at 1%. This result strongly supports (HA3) which suggests a negative and significant relationship between institutional shareholding and DAs. This result is consistent with the opinion that institutional investors are more interested to actively observe and influence the management policy. Consequently, they are likely to detect and control any earnings manipulations and take actions that will help the organisation in the future. Moreover, they have more tendency to devote more resources and wealth to gather more relevant current or future information to promote future predictions of earnings (Bhojraj and Sengupta, 2003; Koh, 2003; Farooq and El-Jai, 2012; Siregar and Utama, 2008; Aygun et al., 2014). An institutional shareholder is more refined than other investors because they are more professional and experienced in business and capital markets. Although Abdul-Jalil and Abdul-Rahman (2010) found that institutional ownership is efficient in reducing the opportunistic EMs, it is necessary to raise the size of shareholding to better motivate and control firm performance. This is consistent with the efficient monitoring hypothesis (alignment hypothesis).

However, the findings revealed that EMs based on kasznik model is positively and insignificantly correlated with institutional ownership. This finding is in line with the outcomes of Roodposhti and Chashmi (2011) who discovered that firms in Iran with more institutional shareholdings manage earnings better. They suggested that institutional owners are not effective in monitoring management in terms of accruals quality. This outcome is in line with the studies of Park and Shin (2004), Peasnell et al. (2005), Yang et al. (2009), Iqbal and Strong, (2010), Abdul-Jalil and Abdul-Rahman (2010), Siregar and Utama (2008), Al-Fayoumi et al. (2010) and Al-Ghamdi (2012) who revealed a positive and non-significant link between institutional ownership and DAs. A likely justification for these results perhaps that most institutional investors in the stock market are short-term oriented investors due to the need for protection policies and the relatively weak regulatory system. The possible justifications for the different coefficient may be the use of different institutional ownership measures, various EM proxies and different characteristics of institutional investors. Interestingly, several studies such as Bhojraj and Sengupta (2003), Koh (2003), Ding et al., (2007), Lin (2010), Fazlzadeh, et al., (2011), Lin and Manowan (2012), Song (2013) proposed two

competing hypotheses (Alignment hypothesis and entrenchment hypothesis) suggesting U-Curved relationship between institutional ownership and EMs.

With regard to governmental ownership, it is worth noting that there is a scarcity in studies that focused on the relationship between state ownership and EMs. Hypothesis (HA4) suggests that governmental ownership is related with more opportunistic earnings management. The findings show a positive and significant link between government ownership and DAs across the modified Jones, Kothari and Raman and Shahrur models at 5%, 1% and 1% significant levels respectively and non-significantly with Kazznik model. These findings strongly support (HA4) which is in line with the work of Al-Ghamdi (2012), Ben-Nasr et al. (2015), Poli (2015) and Guo and MA (2015) who found a positive and significant link between State-owned ownership and DAs. The possible justification for that result is that State-owned firms allow for variance between cash-flow rights and control rights of the decision-maker. The government plays a dual role of owner and regulator, thereby following the firm strategy which involves a trade-off between the pursuit of shareholders and other goals. Consequently, the bureaucracy and divergence make the decision-maker less motivated to enhance profit maximization and to reduce the information asymmetry. These results contradict with Ding et al. (2007), Capalbo et al. (2014), Ben-Nasr et al. (2015) and Nguyen (2016) who revealed a negative and significant relationship between government ownership and EMs.

The study results also revealed a positive and non-significant coefficient between government own and DAs based on Kasznik model. This finding is in line with prior works of literature such as those of Chen et al. (2006) and Firth, Fung and Rui (2007) who conducted their studies in China and reported that state ownership has non-significant influence in hindering opportunistic EMs. Continuing this study, Bozec, Breton, and Cote (2002) argued non-significant relationship between state-ownership and performance. They suggested that it is not an issue of who owns the firm, but of what the goals practiced by the firm are.

To summarize the results of the regression model depicting the effect of ownership structure (independent variable) on accruals EM, most of the sub-hypotheses formulated earlier were rejected due to either opposing coefficients or insignificance.

7.4.4.2. Board of Director Characteristics

With regards to board size, hypothesis (HA5) suggests that a significant and negative association exists between board size and discretionary accruals. The findings as shown in Tables (7.7, 7.8, 7.9, 7.10) reveal a negative and significant link between board size and discretionary accruals across four models at a 1% significance stage.

This finding is consistent with several work of literature such as those of Xie et al. (2003), Peasnell et al. (2005), Al-Ghamdi (2012), Abed et al. (2012) in Amman stock exchange and Singn et al. (2017) in India who reported that big board size is extra successful in controlling the hostile behavior of top management. This implies that larger board sizes may be effective in their oversight duties and in reducing the incidence of earnings manipulations relative to small board sizes. The outcomes of the study supported the inclusion of a large board size in the board structure from the perspective of RDT and Stakeholder Theory (Anderson et al. 2004; Akpan and Amran, 2014; Uwuigbe et al., 2014; Amer 2016). They reckon that large board size develops more opportunities and resources to enhance their potential alliance with stakeholders and interest groups. In contrast, these results contradict with Agency and Stewardship Theory which recommended not to have numerous board members to reduce the conflict opinions, the incidence of severe rider problems and to develop the effectiveness and accuracy of the decision-making process. For instance, Abdul-Rahman and Ali (2006) and Dharmadasa et al. (2014) discovered a significant positive relationship between board size and EM (DAs) indicating that small board size is effective in the oversight and monitoring functions. However, there is no agreement on the optimal number of directors on the board that can reduce the opportunistic EMs at the minimum level. These results may be due to dissimilarities in economic and political stability, as well as differences in cultural and governance structures.

With regards to board independence, Table (7.7, 7.8, 7.9 and 7.10) report the results of the discretionary accruals test using the dynamic panel SYSTEM GMM to correct heteroscedastic and auto-correlation problems and to remedy the problem of endogeneity. Consistent with the suggestion of hypothesis (HA6), the results in the Tables shown above support that the estimated coefficient of board independence is negative and significant at 1% significant levels across the four models of DAs, implying the effectiveness of non-executive directors in monitoring and mitigating the manipulation of earnings. On one hand, this result is in accordance with prior studies

such as those of Klein (2002), Xie et al. (2003), Peasnell et al. (2005), Davidson et al. (2005), Osama (2008), Qinghua, et al. (2007), Osama (2008), Habbash (2010) and Uwuigbe et al. (2014). They revealed that independent directors (outsiders) have a significant function in mitigating opportunistic behaviors and in improving the quality of reporting. Therefore, the study outcomes support the hypothesis that there is a negative and significant association between independent directors and DAs. On the other hand, these results contradict the results of Waweru and Prot (2018) and Amer and Abdelkarim (2011) implying that independent directors could drop in the grey region where they could have friends or family relations with the management. The study of Fodio et al., (2013) in Nigeria also discovered a positive linkage between board independence and DAs implying that directors may not be financially well literate or may not have the industry experience that can enhance their effectiveness in the monitoring functions.

With regards to CEO Duality, the study findings show that CEO duality is significantly and positively linked with DAs calculated from the Kasznik model at a 1% significant level implying that this CEO duality is not effective in mitigating earnings manipulations. This finding is inconsistent with views of Roodposhti and Chashmi (2011), Supawadee et al. (2013) and Solimon and Ragab (2013) who revealed that the division of chairman and CEO positions lowers the tendency of managing accruals, implying that CEO duality could reduce the board's capability to promote governance functions.

However, the study outcome reveals that CEO duality is negatively and significantly linked to DAs based on Raman and Shahrur model at 1% and insignificantly related to DAs based on the modified Jones models and Kothari. Those outcomes are in line with Johari et al. (2009), and Mohamad, Rashid, and Shawtari (2012) who supported the supporters of the Stewardship Theory that combined leadership allowing the reduction of confidential information transfer between the CEO and the board members which results in lower information asymmetry. The unified authority facilitates the formulation and implementation of strategies which leads to greater efficiency. Accordingly, duality reduces the cost of information sharing, costs of inconsistent decisions, cost of extra remuneration and conflicts of interest between CEO and the chairman, which helps mitigate the opportunistic behavior of management (Alessandro, 2013). The study of Donaldson and Davis (1994) applying a sample of US firms and Amer (2016) in the Egyptian context also concluded a positive and significant

link between CEO duality and performance. Moreover, Boyd (1995) also revealed that firms with a single person holding the position of chairman and CEO at the same time exhibit positive and significant effects on performance. This is also consistent with Gonzalez and Garci-Meca (2014) who examined the link between CEO duality and discretionary accruals according to the Modified Jones model, the Jones model, the Jones cash flow model applied by Jeter and Shivakumar (1999) and the KS model suggested by Kang and Sivaramakrishnan (1995) and discovered an insignificant relationship between CEO-duality and DAs across the four models. The non-significance association is consistent with Abdul-Rahman and Ali (2006), Singhchawla et al. (2011) and Kao et al. (2019) who revealed an irrelevant link between CEO duality and EM. So, this outcome confirms partially hypothesis (**HA7**) which suggests that there is a significant and positive link between CEO duality and DAs. The variation in outcomes is probably because of the variation in the time scales used or the different measures of discretionary accruals.

With regards to board diversity, Tables (7.7, 7.8, 7.9, 7.10) show that board diversity is significantly and negatively correlated with DAs (the Kasznik model) at a 1% significance level while it is non-significantly related to the Kothari et al. model and the Raman and Shahrur model. These results are consistent with Adams and Ferreira (2009), Abbott et al. (2012) and Ntim (2015) who found that women are characterized by more risk aversion and conservatism while making financial decisions and more vigilance in monitoring and controlling functions. Therefore, female directors are more interested in reducing agency costs and enhancing the quality of financial reporting. Moreover, Lakhali et al. (2015) France discovered that women are effective in their oversight and controlling role and are then considered as a crucial CG device. As a result, women may be inherently more likely to detect earnings manipulation to keep away from litigation risk and loss of reputation as they do not easily accessible to such positions. This result supports the critical mass theory which enhances the necessity of raising the number of women on board by regulation and legislation. This outcome is contradictory to the outcomes of Bala and Gugong (2015) in Nigeria and Waweru and Prot (2018) in Africa which showed a significant and positive link between diversity and DAs due to the voluntary application of CG guidelines (comply-explain principle) in developing economies. Developing countries may need to shift the CG culture from mere adherence to rules and regulations and “Box Ticking” to a culture that reflects the essence of good governance. However, the study results reveal that

board diversity is positively and non-significantly correlated with DAs according to the modified Jones model. This outcome is in line with Habbash (2010) who discovered an insignificant link between gender diversity and DAs according to Kothari et al. (2005). One possible explanation for such results is that there is a tendency in the Egyptian firms to raise the proportion of women on boards and give them enough power to make effective decisions and enhance the quality of financial reporting. Therefore, these results partially support the hypothesis (**HA8**) which suggests that increased gender diversity leads to superior earnings quality.

With regards to board meetings, the SYSTEM GMM outcomes reveal a significant and positive relationship between board meetings and DAs (Modified Jones model and Kothari et al., 2005 model) at 5% and 1% and non-significantly linked to EMs based on Raman and Shahrur. While the findings reveal a significant and negative relationship between board meetings and DAs based on Kasznik model at 1%. Therefore, there is no evidence to confirm the hypothesis (**HA9**) regarding the negative and significant link between board meetings and DAs because the coefficient of board meetings is negative for one model and positive for the other two models implying that board meetings are not useful in justifying the opportunistic behavior of management.

Consequently, there are mixed outcomes regarding the relationship between board meetings and DAs. These results might be justified by assuming that board meetings are more likely to reveal the board reaction to critical business or unique situations rather than demonstrating the board's normal monitoring of financial reporting. Another possible explanation may suggest that the measurement of board meetings is not an effective measure of board diligence which can be measured by several other factors such as preparation before meetings, attentiveness, participation during meetings and post-meeting follow-up. Nevertheless, the extent of board meetings is the sole measure that is widely accessible. The insignificant coefficient result between board meetings and DAs is consistent with Habbash (2010) and Bala and Gugong (2015) who failed to discover a relevant important link between board meetings and DAs.

To summarize the findings of the regression model depicting the effect of board characteristics (independent variable) on accruals EM, most of the sub-hypotheses formulated earlier were rejected due to either opposing coefficients or insignificance.

7.4.4.3. Audit Committee Characteristics and External Audit Quality

With regards to the AC size, the hypothesis (HA10) suggests a significant and positive association between AC size and occurrence of EMs. As shown in Table (7.7), (7.8), (7.9) and (7.10), this hypothesis is supported. A significant and positive relationship is presented between the AC size and DAs (Kothari model, Kasznik model, and Raman and Shahrur models) at a 1% significance level. This result is consistent with studies such as Lin et al. (2009); Al-Matari et al. (2012); Hamdan et al. (2013); Vlaminck and Sarens (2015); Kapoor and Goel (2017) who revealed a positive connection between AC size and DAs.

However, no statistically significant relationship is perceived between AC size and EMs-based on the Modified Jones model, a positive directional sign of the coefficient is observed. One possible reason may be that the larger AC cannot play a vital role in enhancing the quality of financial reporting. This outcome is like that of the mainstream studies like those of Xie et al. (2003), Bedard et al. (2004), Habbash (2010), Habbash et al. (2012) and Soliman and Ragab (2014) and who failed to discover a relevant effect of AC size on earnings manipulations. Abbott et al. (2004) performed a study in 44 fraudulent and 44 non-fraudulent companies in the US and found that the AC size was irrelevant whether fraud happened or not. Furthermore, Kapoor and Goel (2017) found that the large AC size is ineffective in monitoring managers and they revealed an insignificant relationship between the AC size and the quality of accruals.

These findings are inconsistent with those of Yang and Krishnan (2005), Lin et al. (2006), Garcia et al. (2012) and Inaam and Khamoussi (2016) who argued that AC size is critical in minimizing the practices of earnings restatement and in enhancing the quality of information published to the public. However, these mixed results are observed as the optimal number of AC members which may differ from one country to another due to the firm-specific characteristics, the legal system, investor protection policies, market takeover and market for corporate control.

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. 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 (HA11) 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 while it is significantly related to DAs based on Raman and Shahrur model at 5%. 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.

With regards to AC meetings, the study finds a significant and negative relationship between the number of meetings made by the AC and DAs across the four models at 1% and 5% significance level. This is in line with former studies that revealed a negative and significant association between AC meetings and DAs. For instance, Ebrahim (2007) revealed a negative link between AC meetings and absolute DAs in US firms from 1999-2000. The findings of Lin and Hwang (2010) were similar. Soliman and Ragab (2014) also discovered a negative relationship between DAs according to

the Modified Jones model and the number of AC meetings. Moreover, the investigation of Saleh et al., (2007) in Malaysia revealed that the AC activity and accounting knowledge jointly have a positive effect on the quality of financial reporting and lead to the production of unbiased financial reports. Gebrayel et al., (2018) suggested the importance of frequent meetings to monitor any problems and discuss key financial reporting issues to improve the quality of the information provided to investors. Furthermore, Hamdan et al., (2013) also found a positive and significant link between AC meetings and the quality of earnings. This strongly confirms the hypothesis (HA12) which states that the frequency of AC meetings is significantly linked with DAs. This result is consistent with Agency Theory and Resources Dependency theory which proposes that increasing frequency of AC meetings enhances the quality of financial reporting, as they can enhance internal monitoring, raise transparency and reliability of financial reporting through utilizing directors' financial proficiency and knowledge during the meetings.

With regards to audit quality, the study results show that Big 4 audit companies are significantly and negatively linked to DAs based on the Modified Jones model at 10%. This result supports the perspective that firms audited by Big 4 auditors are doubtful to take part in earnings manipulations activities because of the higher quality of auditing offered by those auditors and the consideration of audit firms as good governance mechanisms that help mitigate earnings manipulations (e.g. Al-Ajmi, 2009; Basiruddin, 2011; Soliman and Ragab, 2014; Khalil and Ozkan, 2016; Alhadaba and Clachern, 2018). This view suggests that high-quality auditors are more objective in evaluating firm performance and withstand management pressure to issue an unqualified opinion or report.

However, the study results reveal that Big4 firms are insignificantly related to accounting earnings manipulations across the other three models. The outcomes of the study are in line with the findings of Fawzy (2003), Piot and Janin (2007), Aryan (2015) and Abata and Migiro, (2016) while it contradicts the Agency Theory that a Big 4 audit firm plays a significant role in mitigating earnings manipulation. This concept cannot be valid for all developing and developed countries due to several possible justifications; first, Civil law-countries (e.g. emerging economies, and continental Europe), as opposed to Common law countries (UK and US), are characterized by feeble enforcement mechanisms and poor outside obedience by the market for corporate control ending up in a safe litigation environment. Therefore, the possibility of litigation

risk that audit firms could encounter is low which leads to the lack of asymmetric supervision by those large audit firms (Abdul-Rahman and Ali, 2006, Piot and Janin, 2007). Therefore, the quality of auditing provided by Big 4 and non-Big 4 firms is the same.

On the contrast, in common law environment, where there is more enforcement of laws and regulations and a high level of investor protection, shareholders have the opportunity to file lawsuits against firms (e.g. class action and contingent fees), which makes audit firms more conservative and concerned in detecting aggressive earnings manipulations and reporting material misreporting and less susceptible to deep pocket incentives. They are also more concerned in preserving their reputations and reducing the risk of litigations even if they may lose several clients and audit fees. Another possible explanation is that audit firms may want to maintain their relationship with clients and to avoid the risk of ruining their future cooperation, so they do not tend to closely investigate the managers' work in the company they are monitoring and auditing (Al-Ghamdi, 2012). This supports partially hypothesis (HA13), which suggests a negative and significant relationship between the audit quality and DAs. To summarize the results of the regression model depicting the effect of AC characteristics and audit quality (independent variable) against accounting EM, most of the sub-hypotheses formulated earlier was rejected due to either opposing coefficients or insignificance.

To conclude, under dynamic SYSTEM GMM regression estimation, the findings from Tables (7.7, 7.8, 7.9 and 7.10) are reported as strong check robustness regarding the role of governance indicators in reducing the earnings manipulation and enhancing the quality of financial reporting. The study uses three models besides the Modified Jones Model to determine to what extent each of the CG mechanisms and external audit boost the integrity of reporting. The study uses more than one model in estimating DAs since the quality of model change according to the EM practices and bias that can affect the estimation. It is noted from the results below that the Kasznik model compared to the other three models achieve the highest acceptance for the hypotheses in comparison to other models of detecting Das. This outcome shows that the kasznik model is the most significant compared with the other models.

Table 7.11 Summary of SYSTEM GMM CG Mechanisms and Accrual-Based Earnings Management

	Expected sign	Modified Jones Model	Kothari Model	Kasznik Model	Raman and Shahrur Model
Ownership Structure Types					
<i>Mag. Own</i>	+	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 10%	Negative and significant at 1%
<i>Fam. Own</i>	-	positive and significant at 1%	positive and significant at 1%	positive and significant at 5%	positive and significant at 5%
<i>Inst. Own</i>	-	Negative and significant at 1%	Negative and significant at 1%	Positive and non-significant	Negative and significant at 1%
<i>Gov. Own</i>	+	Positive and significant at 5%	Positive and significant at 1%	Positive and non-significant	Positive and significant at 1%
BOD attributes					
<i>Board size</i>	-	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%
<i>Board Independence</i>	-	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%
<i>Board Diversity</i>	-	Positive and non-significant	Negative and non-significant	Negative and significant at 1%	Negative and non-significant
<i>CEO Duality</i>	+	Negative and non-significant	Negative and non-significant	Positive and significant at 1%	Negative and significant at 1%
<i>Board Meetings</i>	-	Positive and significant at 5%	Positive and significant at 1%	Negative and significant at 1%	Positive and non-significant
AC Attributes					
<i>AC Size</i>	+	Positive and non-significant	Positive and significant at 1%	Positive and significant at 1%	Positive and significant at 1%
<i>AC Independence</i>	-	Positive and non-significant	Positive and non-significant	Negative and significant at 1%	Positive and significant at 10%
<i>AC Meetings</i>	-	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 5%	Negative and significant at 1%
External Audit Big 4					
	-	Negative and significant at 10%	Positive and non-significant	Positive and non-significant	Positive and non-significant
<i>Accepted Hypothesis</i>		6	7	9	7
<i>Rejected Hypothesis</i>		7	6	4	6

7.4.5. Robustness Check and Sensitivity Analysis

The current study re-estimates the regressions by using the Feasible Generalized Least Squared estimations (F-GLS), panel data Fixed/random Effects (FE), and OLS with robust standard error as alternatives econometric techniques. In most of the cases, the results from FGLS remain invariant and the tests of research hypotheses concluded the same results. The other techniques do not provide evidence of such a relationship. This indicates that most of the significant relationships uncovered by a fixed-effect

model or pooled OLS, or OLS with robust standard error are the results of spurious relations³⁵.

With regards to managerial ownership, consistent with the main results of DAs using four models of EMs, the results revealed from FGLS analysis support the views that managerial ownership is negatively and significantly linked to DAs based on the (Modified Jones, Kothari, and Raman and Shahrur) at 5%, 1%, and 5% respectively. However, managerial own has no effect on EM based on the Kasznik model which is not contradictory to the key outcomes that found a negative and significant relationship between managerial ownership and DAs through the four models.

With regards to family ownership, Family own has a positive impact on DAs, in line with the main outcomes, except the Kasznik model. The FGLS analysis reveals family ownership is positively correlated with AEM proxies except Kasznik model. While Family own is negatively and insignificantly related to DAs based on the Kasznik model.

With regards to institutional ownership, FGLS analysis demonstrates a significant and negative relationship between institutional ownership and DAs based on the modified Jones model, Kothari model and Raman and shahrur. While it is positively related to DAs based on Kasznik model. This result strongly supports a negative and significant link between institutional ownership and DAs. This result is consistent with the main conclusions. However, the significance level in the main results is greater than the significance level of sensitivity analysis. The significance of this variable is at the 10% level weighed against the 1% level in the original test. However, the institutional ownership is positively and insignificantly associated with DAs based on Kasznik model.

With regards to governmental ownership, the result of the study from FGLs reveals a positive and significant relationship between government ownership and DAs across the modified Jones, Kothari and Raman and Shahrur models and non-significantly related to Kasznik model. The FGLS outcomes coincide with the main outcomes stated earlier which support the view that government ownership doesn't have a significant impact in decreasing the aggressiveness of earnings manipulations. This outcome is in agreement with the entrenchment theory that the managers in

³⁵For space-saving reasons these results are not tabulated, but all of them are available upon request to the corresponding author.

concentrated SOEs often use their prevailing power to expropriate wealth to meet their political or individual interests.

With regards to board size, the FGLS outcomes reveal a negative and non-significant link between board size and DAs based on four models. However, the significance of this variable in the main results across the four models is at the 1% level compared to the non-significance level in the sensitivity check.

With regards to board independence, FGLS results coincide with the key results that the estimated coefficient of board independence is negative and significant concerning modified Jones, Kothari and Kasznik model but insignificant based on Raman and Shahrur model, implying the effectiveness of non-executive directors in monitoring and mitigating the manipulation of earnings. However, the significance of this variable is at the 5% level compared to the 1 % significance level in the original test.

With regards to CEO Duality, FGLS results reveal consistent results with the main test except for the coefficient between CEO duality and the modified Jones model. Both analysis (SYSTEM GMM and FGLS) revealed a positive and significant relationship between CEO duality and DAs based on Kasznik model at 1% significant level. This encourages separating between two roles of CEO and chairperson to ensure effective monitoring.

With regards to board diversity, FGLS results are in accordance with the main findings. The possible reason for the different results in the two analyses is the application of various measures of both board diversity and EM practice. However, both tests confirm that gender diversity (Women) reveals a negative and significant relation with DAs at 1% in the main test and 5% in the sensitivity test. This result recommends policymakers in the Egyptian stock market to consider age, gender, nationality diversity in choosing directors. This supports that increased gender diversity leads to superior earnings quality.

With regards to board meetings, the coefficient of board meetings revealed from FGLS analysis confirms the validity of the main test. FGLS shows that board meetings have an insignificant and positive relationship with DAs computed applying the Modified Jones model and Kothari et al. (2005) model. While board meetings have an insignificant and negative relationship with DAs based on the Kasznik model and the Raman and Shahrur model. However, the significance of this variable in the main

results across the four models is at 5% and 1% significance level in contrast to the insignificance level in the sensitivity check.

With regards to the AC size, FGLS suggests a significant and positive relationship between the AC members and accruals-based models (Kothari and Raman and shahrur models) at 1% and 10% significance level. However, no statistically significant link is found between AC size and EM-based on Modified Jones and kasznik model, and a negative and positive directional sign of the coefficient is noticed. These results are in agreement with the main test except kasznik model.

With regards to AC independence, the FGLS results report that the calculated coefficient of AC independence is negative and significantly related to DAs, namely the Kasznik model at a 1% significance level and positively related to DAs based on Raman and Shrurar model at 10% significance level. However, an insignificant and positive relationship is revealed between AC independence and EM-based on the modified Jones model and Kothari et al. (2005) model. These findings are in line with the key test.

With regards to AC meetings, the study finds a significant and negative relationship between the number of meetings held by the AC and DAs based on the Kothari and Raman and shahrur models at a 1% significance level. However, no statistically significant relationship is detected regarding AC meetings and discretionary accruals based on the other two models. A negative directional coefficient sign is observed. The results from FGLS are in line with the key test. This strongly confirms the result of the key test regarding the negative relationship between AC meetings and DAs based on four models applied.

With regards to audit quality, the FGLS results show that Big 4 audit firms are insignificantly related to earnings manipulations across accrual models. This does not support the hypothesis (HA13), which suggests a negative and significant link between the audit quality and discretionary accruals. The outcomes of the study are in line with the findings of Fawzy (2003), Piot and Janin (2007), Aryan (2015), Yasser and Soliman (2018) and Abata and Migiro (2016) and contradict with the projection of the Agency Theory that a Big 4 audit firm undertake a significant part in mitigating earnings manipulation. These outcomes are in line with the main test except the relationship between Big audit 4 and DAs according to the modified Jones model. The main analysis (SYSTEM GMM) revealed a negative and significant link between Big 4 and DAs at 10%

It can be concluded that the FGLS regression results do not report significant coefficients. These results might be caused by omitted variable bias or other potential econometric problems. Thus, the study shows the results obtained from the dynamic SYSTEM GMM regression analyses, which are given in previous tables (7.7, 7.8, 7.9, 7.10, and 7.11). Contrary to the FGLS regression results, the dynamic SYSTEM GMM regression results reveal the significant and noteworthy effects of CG indicators on DAs as a proxy for EMs and using four models to detect the earnings manipulations as discussed above.

Table 7.12 Summary of FGLS CG Mechanisms and Accrual-Based Earnings Management

	Expected sign	Modified Jones Model	Kothari Model	Kasznik Model	Raman and Shahrur Model
Ownership structure					
Mag own	+	Negative and Significant at 5%	Negative and Significant at 1%	positive and non-Significant	Negative and Significant at 5%
Fam Own	-	Positive and significant at 10%	Positive and significant at 5%	Negative and non-Significant	Positive and non-significant
Inst Own	-	Negative and significant at 5%	Negative and significant at 5%	Positive and Significant at 10%	Negative and significant at 1%
Gov Own	+	Positive and significant at 1%	Positive and significant at 1%	Positive and non-Significant	Positive and significant at 1%
Board of director characteristics					
Board size	-	Negative and non-significant	Negative and non-significant	Negative and non-Significant	Negative and non-Significant
Board independence	-	Negative and significant at 1%	Negative and significant at 5%	Negative and Significant at 5%	Negative and non-Significant
Board diversity	-	Positive and non-sig	Negative and non-sig	Negative and Significant at 5%	Negative and non-Significant
CEO duality	+	Positive and non-sig	Negative and non-sig	Positive and Significant at 1%	negative and non-Significant
Board meetings	-	Positive and non-sig	Positive and non-sig	Negative and non-Significant	negative and non-Significant
Audit Committee Characteristics					
AC size	+	Positive and non-sig	Positive and significant at 1%	Negative and non-Significant	positive and sig at 10%
AC independence	-	Negative and non-sig	positive and non-sig	Negative and Significant at 1%	positive and sig at 10%
AC meetings	-	Negative and non-sig	Negative and sig at 1%	Negative and non-Significant	Negative and sig at 1%
External auditing Big 4	-	Positive and non-significant	Positive and non-significant	Positive and non-Significant	Negative and non-Significant

Table 7.13 summarizes the results of the accruals EM hypotheses and shows whether they are accepted or rejected based on the regression analysis presented in this chapter.

Table 7.13: Summary of Accrual Based EM Hypotheses Testing

Summary of Sub-Hypotheses findings regarding CG mechanisms, external auditing and discretionary accruals models (DAs)		Results
HA1	There is a positive and significant relationship between managerial ownership and DAs.	Rejected
HA2	There is a negative and significant relationship between family ownership and DAs.	Rejected
HA3	There is a significant and negative association between institutional ownership and DAs	Accepted
HA4	There is a significant and positive association between governmental ownership and DAs	Accepted
HA5	There is a significant and negative association between board size and Das	Accepted
HA6	There is a significant and negative association between board independence and Das	Accepted
HA7	There is a significant and negative association between board diversity and Das	Accepted
HA8	There is a significant and positive association between CEO duality and Das	Partially accepted
HA9	There is a significant and positive association between board meetings and Das	Partially accepted
HA10	There is a significant and positive association between AC size and DAs.	Accepted
HA11	There is a significant and negative association between AC independence and Das	Partially accepted
HA12	There is a significant and negative association between AC meetings and Das	Accepted
HA13	There is a significant and negative relationship between Audit quality and DAs	Accepted

7.5. Summary

This chapter presented the findings of the data analysis according to the research methods discussed in the prior chapter. The descriptive statistics for the variables adopted in this thesis are illustrated. The correlation coefficients outcomes using the Pearson correlation matrix and VIFs to check of multicollinearity are also presented. The outcomes indicate no problem with multicollinearity throughout the models. The hypotheses of accrual-based EMs models are then tested, and a discussion of the results is provided. The thesis first intends to use fixed/random effect panel data analysis as it is the most suitable because of the nature of data used in the thesis (times series and cross-sectional). Then the study conducts the steps to determine which model (fixed/random effect) is suitable for the research study using the Hausman test. However, the Wald test is not significant across the different models as the study suffers from heteroscedasticity and auto-correlation problems. Therefore, the study shifts to

apply feasible generalized least squared (FGLS) to remedy the problems that appeared in GLS using command Xtgls. At the same time, several pieces of literature suggested that most CGs and EMs relationship suffers from endogeneity problems. Then the thesis favored using the SYSTEM GMM estimator as the main statistical econometric technique to handle the issue of the dynamic endogeneity and heteroscedastic problems.

Besides, the study employs several sensitivity analyses such as (FGLS, OLS with robust standard error, GLS using fixed/random effect), since the inclusion of industry membership is not possible in the panel data as result of problem of multicollinearity, the study employed the pooled regression using robust standard errors.

The study revealed that some attributes of CG lack prevailing outcomes because of the weak role of CG structure and external audit in mitigating the earnings manipulation that negatively affects financial reporting in the Egyptian context. The outcomes of the thesis indicate that there is no universal CG structure that can fit all countries and each country should propose its CG code in a way that is equivalent to its legal, economic, cultural, institutional and political requirements. The weakness in the application of CG in emerging countries may be caused as a result of poor enforcement of laws and regulations and weak legal protection of minor shareholders. It is important to put more emphasis on proper enforcement of laws and regulations that may protect the minority shareholders. one way of achieving this might be by providing minority shareholders with more cumulative voting power to elect their representatives. The following chapter shows and discusses the results that are related to examining the relationship between CG mechanisms and Real-based EM.

Chapter Eight

Results and Discussion of Real Activity-Based EM Models

8.1. Introduction

The thesis purposes to examine to what extent to CG mechanisms and external auditing can help mitigate earnings manipulations based on real-based activities. This chapter is organized into six sections; following this introduction, Section 8.2 shows the descriptive statistics for REM models for listed firms in Egyptian stock market, CG mechanisms, external auditing and control variables. After that, Section 8.3 presents a discussion for the findings of the Pearson Correlation Matrix and the Variance Inflation Factor (VIF) as robustness check. Section 8.4 presents a discussion of the dynamic panel regression using System Generalized Moment Method (SYSTEM GMM) for the different models that starts with a discussion of CG, firm-level determinants, external auditing, and REM proxies within the Egyptian context. The dataset includes a sample of listed firms in the Egyptian stock exchange totaling 780 observations. Section 8.5 presents the findings from the additional analysis conducted as a robustness check for the main analysis. The chapter is then summarized in the last Section 8.6.

As mentioned in the methodology of the previous chapter, Chapter seven employs DAs as a proxy of accrual-based activity EMs. The previous chapter of the thesis used four models (Modified Jones Mode (1995), Kothari et al., (2005) model, Kaznisk Model, and Raman and Shrirar model) trying to detect DAs. In this chapter, the thesis explores the relationship between CG, external audit, and REM. Six REM models are analyzed and reported: (i) abnormal cash flows from operations (ABCFO); (ii) abnormal production costs (APROD); (iii) abnormal discretionary expenditures (ADISX); and three aggregate proxies of REM. The ABCFO model inspects whether firms offer more lenient credit terms or more price discounts to increase sales levels (Roychowdhury, 2006) as indication for REM. The ABPROD model tests whether firms reduce the cost of goods sold through the overproduction of inventory (Roychowdhury, 2006). The ABADISX model investigates if firms minimize discretionary expenditures such as R&D, advertising and selling, general, and administrative expenses to boost margins (Roychowdhury, 2006). RM1 aggregates

(ABCFO) and (ABPROD). RM2 combines (ABCFO) and (ABDISCX). RM3 combines all last three models.

8.2. Descriptive Statistics for the Real-based EM Models

Table 8.1 reports the descriptive statistics for the variables of the model. Descriptive analysis supports to recognize the most important characteristics of the data and accordingly contributes to determining how the panel data analysis will be interpreted. The descriptive statistics of the independent variables are in accordance with the outcomes reported in the prior chapter and are nearly identical. Hence, they are overlooked from this chapter to keep away from any duplication. Table (8.1) illustrates the descriptive statistics of the six models used to measure REM for the sample of listed Egyptian companies for the years 2008-2017.

Table 8.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
ABCFO	780	-0.1161	0.3152	0.063246	0.109628	0.622	-0.033
ABPROD	771	-0.3129	0.9497	0.15093	0.3463521	0.889	-0.085
ABDISX	780	-0.0001	0.1245	0.046524	0.0356111	0.742	-0.45
RM1	780	-0.5193	0.9232	0.091336	0.3780786	0.535	-0.286
RM2	780	-0.3813	0.0752	-0.112051	0.1188598	-0.659	-0.152
RM3	780	-0.61	0.9132	0.041996	0.3932643	0.479	-0.237
Valid N (listwise)	770						

This table (8.1) reports the descriptive statistics for the different models of the REMs. The minimum, maximum, mean, standard deviation, skewness, and kurtosis values are presented in the columns for CG characteristics, and firm-level characteristics on REM for firms in Egypt from 2008 to 2017 are not reported here to avoid any duplication. The table only presents descriptive statistics for dependent variables (REM proxies).
ACFO refers to abnormal cash flows from operations scaled by lagged total assets; APROD indicates to abnormal production costs scaled by lagged total assets; ADISX indicates to abnormal discretionary expenditures scaled by lagged total assets; RM1 refers to aggregate proxy 1; RM2 refers to aggregate proxy 2; and RM3 refers to aggregate proxy 3.

The descriptive statistics of REM shows the minimum, maximum, and mean of six models used for measuring REM (ABCFO), (ABPROD), (ABDISCX), (tRM1, RM2, and RM3). ABCFO and ABDISCX are multiplied by -1 so that high levels of EM proxies signify higher levels of upward REM behavior. Hence, a larger mean value signifies a higher degree of REM on average. Furthermore, positive values of mean signify income-increasing REM on average. From the results presented above, it appears that firms undertake a greater degree of real earnings manipulations through overproducing inventory at a lower cost of goods sold that results in high abnormal production costs compared to other proxies of REM.

8.3. Multicollinearity Diagnostics of Real EM Model Variables

The coefficients of correlation provides check for the presence of high collinearity amongst the variables (ownership structure attributes, board of directors characteristics, AC variables, audit quality) using Pearson correlations. Table 8.2 below presents the Pearson correlation regarding the independent variables and control variables within the REM Models. The correlation coefficients as presented in table below indicate no significant correlation between the variables. Therefore, collinearity could not threaten the interpretation of the regression coefficients of the independent variables in those six models. None of these correlations were significant since the correlations are lower than 0.80. As recommended by Hair et al. (2010) and Gujarati (2003), 0.80 is considered the threshold at which multicollinearity concerns might be threatening for the regression analysis (Amer, 2016).

Table 8.2 Pearson Correlations Matrix for the REM Model Variables

	ABCFO	ABPROD	ABDISX	DAMOD	MAG	FAM	GOV	INST	BRDSIZE	BRDIND	CEODuL	BRDDIV	BRDMEET	AC size	ACMEET	ACIND	BIGAUDIT	ROA	ROE	LIQU	LEV	GEAR	ASSTTANG	OC	EMFLEX	FIRMSize
ABCFO	1																									
ABPROD	-.159**	1																								
ABDISX	0.011	-.222**	1																							
DAMOD	-.431**	.296**	.091*	1																						
MAG	.076*	-0.004	-0.022	-0.042	1																					
FAM	-0.052	-0.028	0.048	0.043	-0.012	1																				
GOV	.120**	-0.063	-.071*	-.079*	-.379**	-.227**	1																			
INST	-.112**	.176**	.117**	0.045	-.358**	-.184**	-.382**	1																		
brdsize	0.024	0.07	0.017	-0.007	0.001	-.095**	-0.012	.131**	1																	
boardind	-0.044	0.027	-0.035	0.027	-0.014	0.042	-.162**	.135**	.224**	1																
CEOduality	-0.009	-0.068	0.052	-0.015	-0.039	0.068	.232**	-.255**	-0.028	-.187**	1															
boarddiversity	0.049	-.174**	.139**	0.068	.117**	-.007	-.089*	-0.046	.178**	.084*	.099**	1														
brdmeet	0.066	-.180**	-.073*	-0.001	-.165**	0.004	.368**	-.167**	.073*	-0.056	.110**	0.037	1													
AC size	0.018	-.084*	0.019	-0.054	-0.01	0.023	.090*	0.003	-.083*	-0.038	.112**	0.003	.129**	1												
ACMEET	.170**	-0.049	-0.048	-.107**	-0.037	-0.061	.250**	-.137**	0.048	-0.036	0.055	0.066	.365**	.217**	1											
ACIND	0.046	-.123**	0.031	-.086*	-0.075*	0.005	.087*	0.001	-.136**	.078*	-0.057	0.012	.136**	-0.003	0.066	1										
BIGAUDIT	-0.047	.169**	.076*	0.01	0.06	-0.016	-.235**	.265**	.148**	0.035	-0.048	-0.012	-0.044	-.137**	-.150**	0.044	1									
ROA	.411**	-.115**	0.026	-.128**	-.082*	0.029	.128**	-.142**	0.048	0.013	-.136**	0.065	.077*	-0.029	.074*	-0.038	0.025	1								
ROE	.339**	-0.019	0.068	.088*	0.043	0.005	.159**	-.114**	0.043	-0.009	.118**	0.04	.135**	-0.068	.128**	-0.032	0.047	.864**	1							
LIQU	.130**	-.144**	-.078*	.086*	0.031	-0.013	0.008	-.168**	-0.02	-0.051	.111**	0.007	0.022	.106**	.081*	-0.04	-.171**	.228**	0.046	1						
LEV	-.084*	0.022	.123**	-.074*	0.049	0.004	-.098**	.118**	.074*	.099**	-0.059	0.024	-0.06	-0.07	0.005	-0.025	.186**	-.142**	-0.062	-.371**	1					
GEAR	-.117**	.137**	-.017	-0.06	0.068	0.053	-.094**	.090*	.114**	.110**	-.142**	-0.063	-0.061	-.138**	0.042	0.018	.223**	-.166**	-0.042	-.364**	.800**	1				
ASSTTANG	0.07	.090*	0.069	-.203**	-0.001	0.067	-0.032	.145**	0.031	.138**	-.158**	0.038	-0.056	0.02	-0.039	.078*	.080*	-.109**	-.178**	-.338**	.115**	.095**	1			
OC	-0.049	.294**	-0.028	0.037	-0.015	-.117**	0.069	.154**	.280**	-0.036	-.085*	-.073*	.103**	-.126**	0.031	-0.058	.267**	.081*	.255**	-.288**	.185**	.336**	0.01	1		
EMFLEX	-.215**	.112**	0.001	.086*	-0.01	0.028	-0.054	-0.063	-.097**	-.096**	0.059	-.074*	-0.037	-0.03	-0.03	-.072*	0.018	-0.049	.111**	-0.041	0.049	.091*	-.452**	.254**	1	
Firm Size	-0.045	0.014	0.032	0.02	0.029	-0.015	-0.053	0.006	-0.025	0.016	-.075*	0.017	-0.041	-0.046	-0.03	0.048	0.032	0	0.03	0.032	-0.046	-0.041	-0.028	-0.044	0.061	1

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

This Table (8.2) reveal the results regarding the impact of CG characteristics and firm-level characteristics on REM for listed firms in the Egyptian context using SYSTEM GMM analysis from 2008 to 2017. ***, **, and * represent significance level at the 1%, 5% and 10% levels, respectively. FAMOWN= Family ownership; INSTOWN= Institutional ownership; MANOWN= Managerial ownership; GOV.OWN=Governmental ownership; BRDSIZE =board size; BRDIND= Board independence; BRDIV=board diversity; CEO.DUL= CEO duality; BRDMEET= Board meetings; AUDSIZE= AC size; AUDIND =AC independence; AUDMEET= audit meetings; BIG4= Audit type; ROA= Return on assets; LIQ =Liquidity; Lev =Leverage; Gear =Gearing; Size = Firm size; AT = Asset Tangibility; OC =Operating Cycle; EMFLEX= EM-flexibility; GO=Growth Opportunities. REM measured by ABCFO, ABDISCX, ABPROD, RM1, RM2, and RM3.

As shown in the Pearson Correlation Matrix in table (8.2) above, DAs as proxy for accrual EM is significantly and positively correlated with APROD and ABDISX at the 5% and 10% significance level. While DAs is negatively associated with ABCFO at the 5% significance level. This indicates that AEM and REM tools could be potentially employed as complements rather than substitutes.

The correlation between (ABCFO) with governmental ownership, the frequency of audit meetings, (ROA), (ROE), and liquidity are positively and significantly related at the 5% significance level and negatively related with institutional ownership, EM flexibility, leverage and gearing at the 5% significance level.

With regard to the Pearson correlation matrix, institutional ownership, big 4 audits, gearing, asset tangibility, operating cycle, and EM flexibility are positively and significantly associated with REM based on (ABPROD) model at the 5% significance level. On the contrary, (ABPROD) as proxy for REM is negatively and significantly associated with board diversity, board meetings, AC independence, ROA and liquidity.

The Pearson Correlation Matrix shows that (ABDISX) as a proxy for REM is positively and significantly correlated with institutional ownership, board diversity and leverage at the 5% significance level. While it is negatively and significantly correlated with governmental ownership, board meetings, and liquidity at the 5% significance level.

Furthermore, the study performed Variance Inflation Factor (VIF) tests as robustness check for multi-collinearity. The VIFs values for all models are within acceptable limits. Gujarati (2003) suggested that a value of less than 10 shall be accepted. The VIF values of each independent variable are presented in Table 8.3, showing that the maximum VIF for ROA is 5.5 which is lower than the acceptable threshold value for VIF.

Table 8.3 Test Results for VIF and Tolerance Values

Variable	VIF	1/VIF
ROE	5.5	0.179769
ROA	5.4	0.182472
Gear	3.50	0.2845660
Leverage	3.12	0.320985
Gov Own	2.9	0.334147
Institutional Own	2.7	0.359389
Managerial Own	2.30	0.435571
Operating Cycle	1.76	0.566583
Liquidity	1.67	0.600512
Asset Tangibility	1.64	0.610499
EM Flexibility	1.58	0.633835
Family Own	1.47	0.679588
Board Meet	1.37	0.728672
Board Size	1.32	0.755189
Big Audit Firm	1.30	0.772944
AC Meet	1.29	0.771103
Board Independence	1.23	0.849286
CEO Duality	1.18	0.813041
AC Size	1.16	0.861915
Board Diversity	1.13	0.883914
AC Independence	1.10	0.906911
Firm Size	1.03	0.964374
Mean VIF	2.09	

8.4. Panel Regression Analysis

After the variables of study have been analyzed descriptively, it is essential to perform statistical tests to examine the linear relation between the dependent variable “Real-based EM” and the independent variables “CG mechanisms and external audit” as well as the control variables as mentioned earlier. Therefore, the following steps are conducted to choose the appropriate statistical techniques according to the nature of the relationship between CG mechanisms, external audit and six proxies of REM.

8.4.1. Pooling Test

As mentioned before in the previous chapter, the study followed Beck (2001) who suggested to compare the pooled and unpooled estimates under the assumption that the error term $u_{it} \sim N(0, \sigma^2)$ using Chow test. The researcher performs the Chow test statistic which follows an F distribution with $(N-1, NT-N-K-1)$ degrees of freedom. In Stata, after fixed effect regression (xtreg....., fe) in GLS analysis is run, this statistics has been generated automatically.

Table 8.4: Chow Test for Fixed Effect Model

	Obs	F-statistics	Pro> F
ABCFO Model	779	5.31	.000
ABPROD Model	779	32.19	.000
ABDISX Model	779	17.68	.0000
RM1	779	15.30	.0000
RM2	779	6.15	.0000
RM3	779	13.82	.0000

The choice between a fixed-effect model and an OLS regression model is dependent on the results from the Chow test. Table (8.4) presents the Chow test results concerning the CG factors and REM models. If one of the regression models related to EMs revealed that the probability of F-statistic is higher than 10%, the null hypothesis of homogeneity can be accepted, and accordingly, the use of panel data is not justified and the pooled OLS is used alternatively.

With regards to the results of the six models of REM, the Chow test returns an F-statistic with a probability of less than 10% for all regression models and thus leads to the rejection of the null hypothesis of homogeneity among individuals. This suggests the preference for and justification for the use of panel data.

8.4.2. Residual Diagnostic

All steps in conducting the fixed effect and random effect regression models (GLS analysis) are explained in detail as mentioned in the previous chapter (CH7). It is critical before performing a regression analysis to examine the heteroskedasticity problem (Baltagi, 2008). The Bresch-Pagan test is used for panel data and pooled OLS regression models. Table (8.5) presents the results of the Breusch-Pagan test. The significant chi2 statistic indicates that the null hypothesis should be rejected and the alternative hypothesis should be accepted indicating that the variance is not homogenous across the six models.

Table 8.5 The Breusch-Pagan test for Heteroskedasticity

	Obs	F-Statistic	Pro> F
ABCFO Model (First Model)	779	45.42	0.0000
ABPROD Model (Second Model)	770	102.36	0.0000
ABDISCX Model (Third Model)	779	15.57	0.0001
RM1 (Fourth model)	779	36.97	0.0000
RM2 (Fifth model)	779	36.63	0.0000
RM3 (Sixth model)	779	19.88	0.0000

Another issue in cross-sectional time-series data is the contemporaneous and serial correlation. According to Baltagi (2008) study, one of the assumptions of the classical regression model is that the disturbances in the model are not autocorrelated. Another way of stating this assumption is that the correlation between disturbances from different observation periods is zero. With economic and financial cross-sectional time-series data, unfortunately this assumption is often not true. If the disturbances are autocorrelated then, as in the case of heteroscedastic errors, various problems arise. Among these problems are; the OLS estimator, although still unbiased and consistent, is no longer efficient. An unbiased estimator that is different from the OLS estimator can be shown to have a smaller variance. The usual formulas for calculating the standard errors of the OLS estimators are incorrect. The usual formulas for calculating t and F statistics are incorrect and so inference based on these statistics will be misleading; if we choose a critical value to reject the null hypothesis 5% of the time when the null hypothesis is true, the study might be rejecting the null hypothesis 15% or 1% of the time when the null hypothesis is true. The formula for calculating R2 is also incorrect and is likely to overstate the explanatory power of the fitted regression (Hsiao, 2007)

Table 8.6 The Wooldridge Test for Serial Autocorrelation Results

	Obs	F-Statistics	Pro> F
ABCFO Model (1st Model)	779	7.70	0.0069
ABPROD Model (2nd Model)	770	29.619	0.0000
ABDISXC Model (3rd Model)	770	32.276	0.000
RM1 (4th Model)	770	22.006	0.0000
RM2 (5th Model)	770	9.884	0.0024
RM3 (6th Model)	770	28.290	0.0000

To test the serial correlation, we use the Wooldridge test whose null hypothesis is that there is no autocorrelation of errors. If we reject this hypothesis, i.e. if the value obtained is higher than the critical value, the errors of the individuals are autocorrelated. To do this, the researcher executes the "xtserial" command using the Stata software. Table 8.6 summarize the different findings.

Based on the results of these tests, we use the FGLS method in order to remedy such problems. The estimated static model can be written as follows:

$$(39) \quad EM_{it} = \beta_0 + \beta_2 Governance_{it} + \beta_j \sum_{j=3}^{12} X_{it} + t_i + v_i + \varepsilon_{it}$$

Where EM_{it} is the earning management 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 ε_{it} represents an error term.

However, extant literature (Nguyen et al., 2014; Thrikawala et al., 2017; Schultz et al., 2017) claimed that most of findings regarding the association between CG mechanisms and REM suffer from dynamic endogeneity problem. Consequently, they favored using System GMM estimator to deal with this problem (Khemiri and Noubbigh, 2018). To do this, we run the *xtabond2* command using Stata. In addition, we use two main tests related to dynamic panel data (GMM in system). The first is the Hansen J-test. It tests the over-identifying restrictions. He second is the Arellano and Bond (1991) test, AR(2). It test the no autocorrelation in the second-differenced errors. Therefore, the study considers the following dynamic EM Models:

$$(40) \quad EM_{it} = \beta_0 + \beta_1 EM_{it-1} + \beta_2 Governance_{it} + \beta_j \sum_{j=4}^{13} X_{it} + \varepsilon_{it}$$

Where EM_{it} is the earning management of firm i and time t , EM_{it-1} is the lag of earnings management, $Governance_{it}$ is the governance indicators, X_{it} is the vectors of control variables, and ε_{it} represents an error term.

8.4.3. Regression Results and Discussion

The impact of CG mechanisms on the REM using different proxies for EMs based on SYSTEM GMM is reflected in the following Tables (8.7), (8.8), (8.9), (8.10), (8.11) and (8.12). The discussion reflects the results that indicate to what extent the CG attributes and external audit, are statistically related to REM, where the dynamic nature of the relationship is considered. The dynamic nature of the governance-EM relationship is controlled by using the lagged REM as an explanatory variable. The dependent variable now refers to the REM using six proxies, which are (ABCFO), (ABPROD), (ABDISCX) used separately, as well as each of the three aggregate proxies which are RM1, RM2, and RM3. The CG variables include four types of ownership structure, five attributes of the B.O.D and three mechanisms of the ACs in addition to the external audit. The study develops many models to examine each mechanism of CG separately and external auditing with six proxies of the real activity-based EM Models after controlling firm-level determinants as shown in the following equations. Consistent with REM models, the analysis begins by examining each CG mechanism

separately and firm-level determinants of REM models as shown in the following Equation.

$$(41) \quad EM_{it} = \beta_0 + \beta_1 EM_{it-1} + \beta_2 Governance_{it} + \beta_j \sum_{j=4}^{13} X_{it} + \varepsilon_{it}$$

Where;

Governance indicators include; MANOWN=managerial ownership; FAMOWN=family ownership; INSTOWN = institutional ownership; GOVOWN = governmental ownership; BRDSIZE = board size; BRDIND = board independence; BRDIV = board diversity; CEO.DUL = CEO duality; BRDMEET = board meetings; AUDSIZE = audit committee size; AUDIND = audit committee independence; AUDMEET = audit meetings; BIG4 = audit type; X_{it} ; control variables include *ROA* = return on assets; *ROE* = return on equity; *LIQ* = liquidity; *Lev* = leverage; *Gear* = gearing; *Size* = firm size; *MKT* = market capitalization; *AT* = Asset Tangibility; *OC* = operating cycle; *EMFLEX* = EM-flexibility. REM is measured by six proxies (ABCFO, ABPROD, ABDISCX, RM1, RM2, RM3)

Table 8.7: Governance Indicators and ABCFO: System GMM Estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO	ABCFO
L.ABCFO	-0.0430*** (0.0111)	-0.0486*** (0.0116)	-0.0479*** (0.00987)	-0.0335*** (0.00812)	-0.0356*** (0.0101)	-0.0478*** (0.00941)	-0.0506*** (0.00822)	-0.0442*** (0.00896)	-0.0480*** (0.00895)	-0.0418*** (0.00880)	-0.0454*** (0.00951)	-0.0499*** (0.00831)	0.102*** (0.0340)
Ownership structure													
Mag	0.000107* (5.72e-05)												
Fam		0.000717*** (0.000246)											
Gov			-0.00020*** (4.00e-05)										
Inst				0.000133* (7.05e-05)									
B.O.D													
Bsize					0.00280*** (0.00103)								
B independence						-0.00939* (0.00542)							
Bdiversity							0.106*** (0.0148)						
CEO.duality								-0.0101*** (0.00366)					
B meeting									-0.00433*** (0.000356)				
Audit Committee													
ACsize										0.000551 (0.00235)			
ACindependence											0.00746 (0.0290)		
ACmeeting												0.00439*** (0.000658)	
External auditing													
BG4													-0.00492 (0.00404)

To be continued...

Table: Continued

ROA	0.0613 (0.146)	0.0729 (0.155)	0.0147 (0.232)	-0.308 (0.227)	0.112 (0.243)	-0.0224 (0.147)	-0.127 (0.177)	-0.138 (0.215)	0.0394 (0.174)	-0.0726 (0.147)	-0.0304 (0.162)	0.134 (0.155)	0.203 (0.153)
ROE	0.137** (0.0563)	0.123*** (0.0441)	0.106 (0.0911)	0.206*** (0.0790)	0.122 (0.0963)	0.148*** (0.0481)	0.180*** (0.0582)	0.202*** (0.0752)	0.146* (0.0763)	0.138** (0.0570)	0.165** (0.0720)	0.127 (0.0827)	0.126* (0.0656)
Liq	0.00571** (0.00291)	0.00539** (0.00225)	0.00768*** (0.00250)	0.00875*** (0.00206)	0.00388 (0.00331)	0.00676* (0.00368)	0.00866** (0.00376)	0.00898*** (0.00338)	0.00559** (0.00271)	0.00730*** (0.00225)	0.00567** (0.00279)	0.00451 (0.00300)	0.00248 (0.00277)
Lev	-0.0194 (0.0281)	0.00474 (0.0368)	-0.0169 (0.0395)	0.0205 (0.0270)	-0.0258 (0.0357)	-0.0281 (0.0352)	0.0467 (0.0473)	-0.0214 (0.0276)	-0.0326 (0.0273)	-0.0164 (0.0419)	-0.0430 (0.0314)	-0.00377 (0.0273)	-0.0999** (0.0484)
Gear	-0.0155* (0.00820)	-0.0212** (0.00873)	-0.0223*** (0.00780)	-0.0238*** (0.00590)	-0.0104 (0.00780)	-0.0133 (0.00861)	-0.0307*** (0.0110)	-0.0119* (0.00708)	-0.0116** (0.00586)	-0.0179* (0.0101)	-0.0137 (0.00854)	-0.0233*** (0.00735)	0.00124 (0.0114)
Size	0.0444*** (0.00937)	0.0376*** (0.0111)	0.0532*** (0.00782)	0.0459*** (0.00901)	0.0471*** (0.00818)	0.0353*** (0.0106)	0.0414*** (0.0126)	0.0347*** (0.0117)	0.0455*** (0.00890)	0.0338*** (0.00855)	0.0383*** (0.00719)	0.0525*** (0.00871)	0.0374*** (0.0123)
Asstan	-0.121*** (0.0296)	-0.149*** (0.0328)	-0.180*** (0.0264)	-0.190*** (0.0215)	-0.176*** (0.0215)	-0.179*** (0.0221)	-0.175*** (0.0228)	-0.159*** (0.0227)	-0.195*** (0.0241)	-0.138*** (0.0320)	-0.173*** (0.0284)	-0.179*** (0.0243)	-0.113*** (0.0316)
OC	-0.0524*** (0.00925)	-0.0537*** (0.0136)	-0.0317*** (0.0101)	-0.0416*** (0.0132)	-0.0355*** (0.0132)	-0.0409*** (0.0109)	-0.0440*** (0.0110)	-0.0436*** (0.0108)	-0.0394*** (0.00686)	-0.0461*** (0.0124)	-0.0338*** (0.0102)	-0.0236*** (0.00861)	-0.0337*** (0.0124)
Emflex	0.0236 (0.0182)	0.0237 (0.0228)	0.00318 (0.0225)	0.0428* (0.0239)	0.0253 (0.0250)	0.0258 (0.0253)	0.0223 (0.0211)	0.0179 (0.0214)	0.0214 (0.0147)	0.0254* (0.0133)	0.0232 (0.0174)	-0.0164 (0.0151)	-0.0133 (0.0263)
Constant	0.108 (0.0773)	0.159 (0.103)	-0.0117 (0.0558)	0.0567 (0.0824)	-0.00191 (0.0881)	0.125 (0.0839)	0.0847 (0.0878)	0.134 (0.0917)	0.105 (0.0674)	0.142* (0.0817)	0.0586 (0.0727)	-0.0779 (0.0684)	0.0585 (0.102)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Number of inst	122	122	122	122	121	121	121	121	121	121	121	121	121
Hansen test (p-val)	0.999	0.999	0.998	0.999	0.999	0.999	1.000	1.0000	0.999	0.999	1.000	0.999	1.000
AR (2) test (p-val)	0.348	0.344	0.330	0.341	0.353	0.339	0.325	0.341	0.334	0.345	0.347	0.334	0.510

This Table (8.7) presents the results from System-GMM estimations for dynamic panel-data models. The dependent variable is the REM based on abnormal cash flow from operations model. Sample consists of 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively.

Governance indicators include; MANOWN=managerial ownership; FAMOWN=family ownership; INSTOWN = institutional ownership; GOVOWN = governmental ownership; BRDSIZE = board size; BRDIND = board independence; BRDIV = board diversity; CEO.DUL = CEO duality; BRDMEET = board meetings; AUDSIZE = audit committee size; AUDIND = audit committee independence; AUDMEET = audit meetings; BIG4 = audit type; Xit; control variables include *ROA* = return on assets; *ROE* = return on equity; *LIQ* = liquidity; *Lev* = leverage; *Gear* = gearing; *Size* = firm size; *MKT* = market capitalization; *AT* = Asset Tangibility; *OC* = operating cycle; *EMFLEX* = EM-flexibility. REM is measured by six proxies (ABCFO, ABPROD, ABDISCX, RM1, RM2, RM3)

Table 8.8: Governance indicators and ABPROD: System GMM estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD	ABPROD
L. ABPROD	0.0419*** (0.00905)	0.0615*** (0.0163)	0.0460*** (0.0100)	0.0550*** (0.0126)	0.0626*** (0.0149)	0.0367** (0.0157)	0.0527*** (0.0131)	0.0499*** (0.0104)	0.0557*** (0.0120)	0.0546*** (0.0146)	0.0522*** (0.00995)	0.0410*** (0.00970)	0.0508*** (0.0107)
Ownership structure													
Mag	-0.000472*** (8.00e-05)												
Fam		-7.73e-05 (0.000189)											
Gov			0.000416*** (4.55e-05)										
Inst				2.21e-05 (6.04e-05)									
B.O.D													
B size					-0.00849*** (0.00154)								
B.Ind						-0.000176 (0.0123)							
B diversity							-0.120*** (0.0208)						
CEO duality								0.000979 (0.00270)					
B meeting									0.00288*** (0.000497)				
Audit Committee													
AC size										0.00317 (0.00283)			
AC Indep											-0.227*** (0.0726)		
AC meeting												- 0.00192*** (0.000692)	
External auditing													
BG4													- 0.0147*** (0.00502)

To be continued...

Table: Continued

ROA	-0.556**	-0.340	-0.484*	-0.371	-0.476**	-0.672**	-0.391*	-0.670***	-0.315	-0.376	-0.459*	-0.581**	-0.406*
	(0.262)	(0.238)	(0.248)	(0.265)	(0.225)	(0.285)	(0.206)	(0.226)	(0.198)	(0.244)	(0.258)	(0.256)	(0.241)
ROE	0.158	0.0515	0.224*	0.0720	0.0862	0.202	0.230**	0.193**	0.0663	0.149	0.0882	0.176	0.170
	(0.118)	(0.108)	(0.128)	(0.121)	(0.112)	(0.136)	(0.116)	(0.0907)	(0.0781)	(0.0970)	(0.110)	(0.108)	(0.105)
Liq	0.00122	0.00345	0.00181	0.00495	0.00417	0.00290	-0.00299	0.00254	0.00214	0.00210	0.00330	0.00284	-0.000449
	(0.00340)	(0.00239)	(0.00310)	(0.00358)	(0.00316)	(0.00305)	(0.00250)	(0.00330)	(0.00318)	(0.00301)	(0.00308)	(0.00292)	(0.00288)
Lev	0.119***	0.0130	0.133***	0.145***	0.108**	0.0928*	0.00723	0.122***	0.162***	0.0901*	0.0794**	0.102**	0.0448
	0.0419***	(0.0311)	(0.0351)	(0.0357)	(0.0455)	(0.0481)	(0.0489)	(0.0350)	(0.0364)	(0.0520)	(0.0374)	(0.0482)	(0.0362)
Gear	(0.00905)	0.0460***	0.0116	0.00663	0.0211*	0.0333**	0.0587***	0.0151	0.00979	0.0356**	0.0309**	0.0247	0.0297**
	(0.0146)	(0.00980)	(0.0135)	(0.0160)	(0.0128)	(0.0140)	(0.0134)	(0.0141)	(0.0146)	(0.0142)	(0.0123)	(0.0152)	(0.0122)
Size	-0.0545***	-0.0474***	-0.0776***	-0.0518***	-0.0729***	-0.0549***	-0.0667***	-0.0377**	-0.0346**	-	-	-	-
	(0.0145)	(0.0113)	(0.0162)	(0.0150)	(0.0158)	(0.0134)	(0.0156)	(0.0159)	(0.0141)	0.0626***	0.0411***	0.0674***	0.0672***
Asstang	0.0988***	0.0434	0.0822**	0.0271	0.109***	0.0940**	0.0749**	0.0648	0.0229	0.0972**	0.127***	0.101**	0.151***
	(0.0370)	(0.0334)	(0.0362)	(0.0427)	(0.0418)	(0.0408)	(0.0328)	(0.0506)	(0.0455)	(0.0435)	(0.0315)	(0.0439)	(0.0376)
OC	0.164***	0.182***	0.148***	0.162***	0.150***	0.156***	0.168***	0.174***	0.156***	0.151***	0.176***	0.155***	0.159***
	(0.0104)	(0.0186)	(0.0218)	(0.0164)	(0.0148)	(0.0180)	(0.0201)	(0.0225)	(0.0215)	(0.0224)	(0.0149)	(0.0191)	(0.0196)
Emflex	-0.0191	-0.0335	0.0350	0.0115	0.0360	0.0200	-0.00812	-0.0109	-0.0123	0.0132	0.0160	0.0202	-0.0135
	(0.0460)	(0.0372)	(0.0325)	(0.0409)	(0.0354)	(0.0423)	(0.0430)	(0.0421)	(0.0453)	(0.0461)	(0.0436)	(0.0479)	(0.0554)
Constant	-0.482***	-0.586***	-0.298**	-0.493***	-0.270**	-0.465***	-0.433***	-0.637***	-0.579***	-0.408***	-0.429***	-0.377***	-0.408***
	(0.102)	(0.125)	(0.152)	(0.136)	(0.117)	(0.114)	(0.151)	(0.148)	(0.166)	(0.150)	(0.161)	(0.123)	(0.155)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Hansen test (p-val)	0.999	0.998	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.998	0.999	0.999
AR (2) test (p-val)	0.585	0.539	0.737	0.597	0.550	0.663	0.674	0.517	0.619	0.669	0.669	0.725	0.605

This Table (8.8) presents the results from System-GMM estimations for dynamic panel-data models. The dependent variable is the REM based on abnormal production cost model. Sample consists of 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. *, **, *** significance levels at the 10% , 5% and 1% levels respectively

Table 8.9: Governance indicators and ABDISCX: System GMM estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX	ABDIX
L. ABDISCX	-0.256*** (0.0134)	-0.228*** (0.00858)	-0.250*** (0.00947)	-0.256*** (0.00850)	-0.248*** (0.00941)	-0.239*** (0.0110)	-0.251*** (0.00794)	-0.241*** (0.00847)	-0.250*** (0.00830)	-0.241*** (0.00894)	-0.247*** (0.00825)	-0.254*** (0.00937)	-0.242*** (0.00797)
Ownership structure													
Mag	-3.51*05*** (1.22e-05)												
Fam		-9.84e-05*** (2.89e-05)											
Gov			-7.46e-05*** (1.30e-05)										
Inst				7.96e-05*** (1.19e-05)									
B.O.D													
Brd.size					1.00e-05 (0.000169)								
B independence						0.0120*** (0.000904)							
Brd.diversity							- 0.0204*** (0.00265)						
CEO.duality								- 0.00445*** (0.000542)					
B meeting									8.86e-06 (0.000102)				
Audit Committee													
AC>size										0.000916** (0.000444)			
ACindependence											0.00652 (0.0140)		
ACmeeting												7.86e-05 (7.34e-05)	
External auditing													
BG4													0.00253** (0.00114)

To be continued...

Table: Continued

ROA	0.0712 (0.0563)	0.0217 (0.0605)	0.118** (0.0559)	0.00987 (0.0638)	0.118*** (0.0399)	0.0300 (0.0642)	0.0387 (0.0510)	0.0350 (0.0666)	0.0726* (0.0389)	0.0884 (0.0563)	0.0435 (0.0636)	0.0124 (0.0630)	0.0698 (0.0685)
ROE	-0.0167	0.0162	-0.0503*	0.00562	-	-0.00450	-0.0136	0.000530	-0.0254	-0.0316	-0.0110	-0.0133	-0.0248
					0.0438***								
Liq	(0.0278) -0.000512 (0.000645)	(0.0300) -0.000244 (0.000363)	(0.0296) -0.00113* (0.000632)	(0.0321) 0.000216 (0.000641)	(0.0164) -0.000272 (0.000622)	(0.0298) -8.79e-06 (0.000637)	(0.0211) -0.000170 (0.000662)	(0.0303) -0.000273 (0.000743)	(0.0165) -0.000705 (0.000546)	(0.0260) -0.000168 (0.000704)	(0.0270) 6.92e-05 (0.000706)	(0.0315) 0.000117 (0.000434)	(0.0331) -0.000360 (0.000771)
Lev	0.0279*** (0.00833)	0.0409*** (0.00974)	0.0183 (0.0132)	0.0190* (0.0106)	0.0258*** (0.00837)	0.0189** (0.00805)	0.0301*** (0.00825)	0.00721 (0.00977)	0.0252*** (0.00851)	0.0283*** (0.00997)	0.0179** (0.00880)	0.0239*** (0.00877)	0.0203** (0.0102)
Gear	- 0.0187*** (0.00255)	- 0.0177*** (0.00285)	-0.0176*** (0.00298)	- 0.0183*** (0.00212)	- 0.0160*** (0.00191)	-0.0155*** (0.00235)	-0.0172*** (0.00178)	- 0.0137*** (0.00226)	-0.0186*** (0.00245)	-0.0159*** (0.00224)	- 0.0155*** (0.00203)	- 0.0162*** (0.00125)	-0.0165*** (0.00240)
Size	- 0.0137*** (0.00411)	- 0.0143*** (0.00189)	-0.0117*** (0.00301)	- 0.0120*** (0.00241)	- 0.0142*** (0.00242)	-0.0153*** (0.00261)	-0.0154*** (0.00263)	- 0.0146*** (0.00276)	-0.0100*** (0.00266)	-0.0181*** (0.00260)	- 0.0119*** (0.00297)	- 0.0142*** (0.00354)	-0.0146*** (0.00299)
Asstan	-0.0288** (0.0113)	-0.0149* (0.00762)	-0.0378*** (0.00737)	-0.0251** (0.0123)	- 0.0279*** (0.00891)	-0.0277*** (0.00928)	-0.0212*** (0.00750)	- 0.0302*** (0.00809)	-0.0337*** (0.00658)	-0.0215*** (0.00782)	- 0.0199*** (0.00696)	- 0.0275*** (0.00577)	-0.0279*** (0.0103)
OC	0.0637*** (0.00570)	0.0549*** (0.00536)	0.0613*** (0.00456)	0.0577*** (0.00501)	0.0608*** (0.00512)	0.0646*** (0.00514)	0.0652*** (0.00337)	0.0571*** (0.00551)	0.0608*** (0.00522)	0.0633*** (0.00508)	0.0611*** (0.00489)	0.0582*** (0.00512)	0.0625*** (0.00533)
Emflex	-0.0316** (0.0124)	-0.0183* (0.00969)	-0.0208*** (0.00516)	-0.0176** (0.00816)	- 0.0185*** (0.00342)	-0.0179*** (0.00462)	-0.0271*** (0.00370)	-0.0123 (0.00768)	-0.0241*** (0.00596)	-0.0163* (0.00899)	- 0.0144*** (0.00445)	- 0.0199*** (0.00544)	-0.0208** (0.00968)
Constant	-0.182*** (0.0348)	-0.146*** (0.0323)	-0.172*** (0.0252)	-0.167*** (0.0270)	-0.168*** (0.0274)	-0.189*** (0.0302)	-0.181*** (0.0227)	-0.143*** (0.0292)	-0.184*** (0.0284)	-0.167*** (0.0254)	-0.194*** (0.0358)	-0.154*** (0.0237)	-0.174*** (0.0285)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Hansen test (p-val)	1.000	1.000	0.999	1.000	1.000	0.999	1.000	0.999	1.000	1.000	1.000	1.000	0.999
AR (2) test (p-val)	0.239	0.273	0.245	0.254	0.254	0.265	0.259	0.266	0.248	0.255	0.260	0.250	0.266

This Table (8.9) presents the results from System-GMM estimations for dynamic panel-data models. The dependent variable is the REM based on abnormal Discretionary expenditures model. Sample consists of 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2) of residuals is always rejected. Standard errors are reported in parentheses. *, **, *** significance levels at the 10% , 5% and 1% levels respectively .

Table 8.10: Governance indicators and RM1: System GMM estimation results

VARIABLES	(1) RM1	(2) RM1	(3) RM1	(4) RM1	(5) RM1	(6) RM1	(7) RM1	(8) RM1	(9) RM1	(10) RM1	(11) RM1	(12) RM1	(13) RM1
L. RM1	0.0395*** (0.0119)	0.0434*** (0.0112)	0.0315** (0.0147)	0.0313** (0.0144)	0.0516*** (0.0145)	0.0422*** (0.0119)	0.0389*** (0.0140)	0.0470*** (0.0123)	0.0494*** (0.0118)	0.0332*** (0.0114)	0.0484*** (0.0122)	0.0218 (0.0144)	0.0396*** (0.0152)
Ownership structure													
Mag	-0.000702*** (0.000120)												
Fam		0.000450 (0.000360)											
Gov			0.000496*** (8.10e-05)										
Inst				-0.000194*** (6.86e-05)									
B.O.D													
Bsize					-0.0147*** (0.00191)								
B independence						0.0310** (0.0125)							
Bdiversity							-0.190*** (0.0265)						
CEOduality								0.00473 (0.00611)					
B meeting									0.00771*** (0.000891)				
Audit Committee													
AC size										0.0160*** (0.00362)			
AC independence											-0.307*** (0.0893)		
AC meeting												-0.00736*** (0.00142)	
External auditing													
BG4													-0.0192** (0.00942)

To be continued...

Table: Continued

ROA	-0.614 (0.387)	-0.439 (0.398)	-0.543 (0.370)	-0.564 (0.347)	-0.671 (0.434)	-0.635 (0.441)	-0.838* (0.461)	-0.705** (0.347)	-0.986** (0.441)	-0.667 (0.410)	-0.864** (0.366)	-0.719* (0.384)	-0.463 (0.325)
ROE	0.0204 (0.151)	-0.101 (0.155)	-0.00583 (0.134)	0.0283 (0.135)	0.0507 (0.163)	0.0418 (0.173)	0.142 (0.161)	0.0819 (0.143)	0.171 (0.196)	0.0456 (0.156)	0.0766 (0.133)	0.0714 (0.143)	-0.0547 (0.120)
Liq	-0.00265 (0.00649)	-0.00612 (0.00511)	-0.00918 (0.00599)	-0.00163 (0.00450)	-0.00253 (0.00528)	-0.00527 (0.00687)	-0.00120 (0.00697)	-0.00331 (0.00593)	-0.00253 (0.00604)	0.000986 (0.00646)	-0.00502 (0.00605)	-0.000761 (0.00631)	-0.00859* (0.00517)
Lev	0.0530 (0.0481)	0.0308 (0.0664)	0.0808* (0.0465)	0.0158 (0.0465)	0.0383 (0.0315)	0.0170 (0.0534)	0.0734 (0.0520)	0.0681 (0.0438)	0.101* (0.0580)	0.0450 (0.0500)	0.0453 (0.0515)	0.0313 (0.0412)	0.0457 (0.0436)
Gear	0.0652*** (0.0129)	0.0714*** (0.0185)	0.0686*** (0.0120)	0.0705*** (0.00981)	0.0732*** (0.0116)	0.0798*** (0.0144)	0.0578*** (0.0130)	0.0729*** (0.00985)	0.0418*** (0.0160)	0.0717*** (0.0150)	0.0713*** (0.0139)	0.0808*** (0.0142)	0.0635*** (0.0160)
Size	-0.0968*** (0.0216)	-0.115*** (0.0218)	-0.0862*** (0.0218)	-0.0957*** (0.0191)	-0.141*** (0.0178)	-0.118*** (0.0161)	-0.111*** (0.0142)	-0.104*** (0.0144)	-0.105*** (0.0178)	-0.0899*** (0.0228)	-0.109*** (0.0175)	-0.101*** (0.0198)	- (0.0189)
Asstan	0.245*** (0.0542)	0.270*** (0.0638)	0.290*** (0.0585)	0.326*** (0.0695)	0.324*** (0.0561)	0.310*** (0.0637)	0.320*** (0.0580)	0.281*** (0.0493)	0.366*** (0.0515)	0.330*** (0.0675)	0.302*** (0.0643)	0.305*** (0.0696)	0.358*** (0.0786)
OC	0.201*** (0.0226)	0.203*** (0.0340)	0.186*** (0.0262)	0.186*** (0.0237)	0.205*** (0.0329)	0.178*** (0.0273)	0.180*** (0.0252)	0.189*** (0.0244)	0.180*** (0.0287)	0.184*** (0.0258)	0.215*** (0.0266)	0.169*** (0.0297)	0.177*** (0.0366)
Emflex	0.0600 (0.0435)	0.0656 (0.0593)	-0.0269 (0.0690)	0.0406 (0.0480)	0.00752 (0.0542)	-0.00282 (0.0615)	-0.00259 (0.0557)	0.0272 (0.0464)	-0.0558 (0.0616)	0.00771 (0.0721)	0.0429 (0.0627)	-0.00300 (0.0641)	-0.0462 (0.0700)
Constant	-0.549*** (0.116)	-0.494*** (0.156)	-0.551*** (0.134)	-0.501*** (0.150)	-0.235 (0.176)	-0.331** (0.134)	-0.374*** (0.125)	-0.466*** (0.132)	-0.483*** (0.160)	-0.584*** (0.140)	-0.291 (0.217)	-0.326* (0.174)	-0.438** (0.178)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Hansen test (p-val)	0.999	0.999	0.997	0.999	0.998	0.998	0.999	0.998	0.999	0.998	0.999	0.999	0.998
AR (2) test (p-val)	0.742	0.700	0.730	0.690	0.685	0.765	0.818	0.760	0.827	0.695	0.734	0.646	0.756

This Table (8.10) presents the results from System-GMM estimations for dynamic panel-data models. The dependent variable is the REM based on RM1 model. Sample consists of 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. *, **, *** significance levels at the 10% , 5% and 1% levels respectively.

Table8.11: Governance indicators and RM2: System GMM estimation results

VARIABLES	(1) RM2	(2) RM2	(3) RM2	(4) RM2	(5) RM2	(6) RM2	(7) RM2	(8) RM2	(9) RM2	(10) RM2	(11) RM2	(12) RM2	(13) RM2
L. RM2	-0.00176 (0.00907)	0.00526 (0.0119)	-0.0117 (0.00993)	-0.00151 (0.0101)	-0.00945 (0.0117)	-0.00502 (0.0120)	0.00256 (0.0109)	-0.0140 (0.00984)	0.000421 (0.0103)	0.00339 (0.0106)	-0.0109 (0.0112)	-0.0134 (0.0115)	-0.0140 (0.00934)
Ownership structure													
Mag	-4.69e-06 (4.24e-05)												
Fam		-0.000507 (0.000340)											
Gov			0.000168*** (6.46e-05)										
Inst				-0.000148*** (5.12e-05)									
B.O.D													
BD.size					-0.00172 (0.00107)								
BD.independence						-0.00579 (0.00667)							
Bdiversity							-0.0910*** (0.0146)						
CEO.duality								0.00965*** (0.00279)					
B meeting									0.00428*** (0.000487)				
Audit Committee													
AC.size										-0.00188 (0.00229)			
AC.independence											-0.0469* (0.0275)		
AC.meeting												-0.00440*** (0.000573)	
External auditing													
BG4													0.00457 (0.00547)

To be continued...

Table: Continued

Roa	0.148 (0.160)	0.0565 (0.178)	-0.141 (0.216)	0.222 (0.188)	0.0120 (0.118)	0.164 (0.201)	0.191 (0.182)	-0.148 (0.205)	0.0300 (0.172)	0.285 (0.183)	-0.113 (0.189)	-0.153 (0.199)	0.0217 (0.199)
ROE	-0.242*** (0.0604)	-0.197*** (0.0716)	-0.101 (0.0920)	-0.258*** (0.0744)	-0.177*** (0.0498)	-0.232*** (0.0727)	-0.232*** (0.0822)	-0.117 (0.0846)	-0.176** (0.0743)	-0.279*** (0.0884)	-0.126* (0.0756)	-0.124 (0.0826)	-0.175** (0.0796)
Liq	-0.00461* (0.00275)	-0.00212 (0.00212)	-0.00244 (0.00539)	-0.00681** (0.00270)	-0.00382 (0.00280)	-0.00652** (0.00284)	-0.00776** (0.00325)	-0.00440* (0.00244)	-0.00564** (0.00287)	-0.00759** (0.00359)	-0.00479 (0.00402)	-0.00380 (0.00358)	- (0.00630**)
Lev	-0.00226 (0.0244)	-0.0121 (0.0586)	0.00605 (0.0535)	-0.0621** (0.0256)	0.0141 (0.0314)	-0.0141 (0.0361)	-0.00154 (0.0344)	0.0153 (0.0552)	0.0399* (0.0219)	0.00436 (0.0236)	-0.0284 (0.0458)	-0.0301 (0.0305)	-0.00143 (0.0272)
Gear	0.0358*** (0.00650)	0.0408*** (0.0138)	0.0363*** (0.0114)	0.0464*** (0.00852)	0.0252*** (0.00536)	0.0395*** (0.00819)	0.0372*** (0.00743)	0.0280** (0.0121)	0.0248*** (0.00627)	0.0304*** (0.00461)	0.0374*** (0.0110)	0.0425*** (0.00747)	0.0316*** (0.00683)
Size	-0.0291*** (0.00922)	-0.0351** (0.0146)	-0.0349*** (0.00527)	-0.0249** (0.00992)	-0.0370*** (0.00858)	-0.0233* (0.0133)	-0.0324*** (0.00674)	-0.0328*** (0.00792)	-0.0386*** (0.00876)	-0.0221*** (0.00784)	-0.0334*** (0.00629)	-0.0501*** (0.00596)	- (0.0329***)
Asstan	0.142*** (0.0178)	0.172*** (0.0410)	0.178*** (0.0341)	0.166*** (0.0170)	0.151*** (0.0319)	0.194*** (0.0396)	0.165*** (0.0457)	0.184*** (0.0354)	0.154*** (0.0272)	0.135*** (0.0189)	0.164*** (0.0198)	0.224*** (0.0547)	0.159*** (0.0183)
OC	-0.0210* (0.0120)	-0.0272** (0.0131)	-0.0383*** (0.0112)	-0.0284** (0.0133)	-0.0269** (0.0133)	-0.0284** (0.0124)	-0.0338** (0.0138)	-0.0180** (0.00878)	-0.0281** (0.0138)	-0.0110 (0.0132)	-0.0183 (0.0119)	-0.0279** (0.0111)	-0.0171 (0.0117)
Emflex	0.0176 (0.0202)	0.00491 (0.0171)	0.0390 (0.0345)	-0.00602 (0.0220)	0.00374 (0.0119)	0.00585 (0.0182)	-0.00511 (0.0186)	0.0215 (0.0212)	0.0121 (0.0166)	-0.0165 (0.0177)	0.0219 (0.0270)	0.0638*** (0.0233)	0.0380** (0.0192)
Constant	0.124 (0.0931)	0.183 (0.122)	0.216*** (0.0733)	0.149 (0.104)	0.219** (0.0969)	0.124 (0.108)	0.221** (0.0888)	0.105 (0.0812)	0.168** (0.0846)	0.0582 (0.0805)	0.175** (0.0870)	0.256*** (0.0826)	0.113 (0.0924)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Hansen test (p-val)	1.000	0.999	0.999	0.999	1.000	0.999	0.999	0.999	0.999	0.999	0.999	1.000	0.998
AR (2) test (p-val)	0.349	0.353	0.343	0.349	0.346	0.346	0.350	0.344	0.347	0.352	0.347	0.338	0.343

This Table (8.11) presents the results from System-GMM estimations for dynamic panel-data models. The dependent variable is the REM based on RM2 model. Sample consists of 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. *, **, *** significance levels at the 10% , 5% and 1% levels respectively.

Table 8.12: Governance indicators and RM3: System GMM estimation results

VARIABLES	(1) RM3	(2) RM3	(3) RM3	(4) RM3	(5) RM3	(6) RM3	(7) RM3	(8) RM3	(9) RM3	(10) RM3	(11) RM3	(12) RM3	(13) RM3
L. RM3	0.0401*** (0.0147)	0.0406*** (0.0150)	0.0305*** (0.00988)	0.0241 (0.0169)	0.0409** (0.0168)	0.0201 (0.0156)	0.0209* (0.0123)	0.0368** (0.0153)	0.0152 (0.0167)	0.0216 (0.0152)	0.0460*** (0.0121)	0.0158 (0.0135)	0.0227* (0.0128)
Ownership structure													
Mag	-0.000384*** (0.000133)												
Fam		-0.000164 (0.000388)											
Gov			0.000554*** (7.88e-05)										
Inst				-0.000186* (9.67e-05)									
B.O.D													
Bsize					-0.0120*** (0.00272)								
B independence						-0.0130 (0.0118)							
Bdiversity							-0.158*** (0.0296)						
CEOduality								0.0187*** (0.00432)					
B meeting									0.00782*** (0.000840)				
Audit Committee													
Acszize										0.00394 (0.00356)			
Acindependence											-0.384*** (0.0749)		
Acmeeting												-0.00569*** (0.00144)	
External auditing													
BG4													-0.00260 (0.00858)

To be continued...

Table: Continued

Roa	-0.535 (0.383)	-0.766* (0.419)	-0.743* (0.386)	-0.600 (0.415)	-0.809** (0.384)	-0.929** (0.439)	-0.867** (0.402)	-0.325 (0.451)	-1.412*** (0.465)	-0.610 (0.375)	-0.669** (0.329)	-0.747** (0.379)	-0.515 (0.373)
ROE	-0.0303 (0.145)	0.0604 (0.166)	0.101 (0.137)	0.0420 (0.152)	0.0502 (0.141)	0.181 (0.164)	0.144 (0.153)	-0.0904 (0.185)	0.401** (0.180)	0.0464 (0.150)	0.0520 (0.132)	0.111 (0.132)	-0.0179 (0.146)
Liq	-0.00569 (0.00432)	0.000931 (0.00671)	-0.00122 (0.00548)	-0.00118 (0.00644)	0.00162 (0.00629)	0.00582 (0.00584)	-0.000867 (0.00573)	-0.00133 (0.00643)	-0.000130 (0.00525)	0.00892 (0.00679)	2.69e-05 (0.00675)	0.00500 (0.00703)	-0.00132 (0.00702)
Lev	0.0605 (0.0525)	0.0625 (0.0555)	0.0788* (0.0471)	0.0312 (0.0429)	0.0629 (0.0412)	0.114*** (0.0431)	0.0254 (0.0475)	0.0348 (0.0383)	0.0825* (0.0497)	0.0856* (0.0459)	0.0224 (0.0427)	0.0783* (0.0428)	0.0485 (0.0470)
Gear	0.0825*** (0.0141)	0.0676*** (0.0181)	0.0686*** (0.0173)	0.0863*** (0.0107)	0.0785*** (0.0112)	0.0765*** (0.0126)	0.0882*** (0.0137)	0.0887*** (0.0113)	0.0615*** (0.0142)	0.0773*** (0.0122)	0.0900*** (0.0162)	0.0840*** (0.0125)	0.0866*** (0.0129)
Size	-0.0715** (0.0288)	-0.0714*** (0.0275)	-0.0618*** (0.0173)	-0.0671*** (0.0260)	-0.106*** (0.0234)	-0.0839*** (0.0172)	-0.0636*** (0.0237)	-0.0811*** (0.0175)	-0.0501** (0.0242)	-0.0546** (0.0241)	-0.0921*** (0.0205)	-0.0927*** (0.0172)	-0.0705*** (0.0241)
Asstan	0.298*** (0.0516)	0.263*** (0.0630)	0.378*** (0.0692)	0.333*** (0.0610)	0.344*** (0.0575)	0.292*** (0.0548)	0.368*** (0.0627)	0.300*** (0.0508)	0.433*** (0.0743)	0.350*** (0.0571)	0.383*** (0.0623)	0.314*** (0.0729)	0.325*** (0.0520)
OC	0.174*** (0.0300)	0.159*** (0.0324)	0.153*** (0.0243)	0.150*** (0.0360)	0.137*** (0.0277)	0.107*** (0.0324)	0.142*** (0.0354)	0.151*** (0.0294)	0.142*** (0.0318)	0.125*** (0.0281)	0.153*** (0.0229)	0.117*** (0.0293)	0.112*** (0.0321)
Emflex	-0.0297 (0.0689)	-0.0169 (0.0648)	-0.0496 (0.0510)	0.00348 (0.0707)	-0.0360 (0.0595)	-0.0223 (0.0604)	-0.0529 (0.0608)	0.0279 (0.0737)	-0.0355 (0.0623)	0.00948 (0.0615)	0.00614 (0.0666)	0.0901* (0.0506)	-0.00637 (0.0690)
Constant	-0.605*** (0.201)	-0.518*** (0.197)	-0.576*** (0.160)	-0.528** (0.229)	-0.137 (0.164)	-0.197 (0.140)	-0.487** (0.192)	-0.465*** (0.148)	-0.680*** (0.194)	-0.526*** (0.134)	-0.0441 (0.181)	-0.225 (0.160)	-0.313 (0.200)
Observations	702	702	702	702	702	702	702	702	702	702	702	702	702
Number of firms	78	78	78	78	78	78	78	78	78	78	78	78	78
Hansen test (p-val)	0.998	0.999	0.998	0.997	0.998	0.999	0.998	0.998	0.999	0.998	0.998	0.999	0.998
AR (2) test (p-val)	0.487	0.512	0.490	0.461	0.487	0.474	0.486	0.448	0.477	0.456	0.460	0.413	0.465

This Table (8.13) presents the results from System-GMM estimations for dynamic panel-data models. The dependent variable is the REM based on RM3 model. Sample consists of 780 observations during period 2008–2017. Two-step results and Hansen J tests never reject the validity of the over-identifying restrictions. Second order autocorrelation (AR(2)) of residuals is always rejected. Standard errors are reported in parentheses. *, **, *** significance levels at the 10% , 5% and 1% levels respectively.

8.4.3.1. Ownership Structure

Limited theoretical and empirical CG and REM literature presented earlier in chapters three, four and five propose that the type of ownership structure has a significant impact on REM. The hypotheses HB1, HB2, HB3, and HB4 are formulated to examine the association between managerial ownership, family ownership, institutional ownership and governmental shareholding with different proxies of REM. Tables (8.7, 8.8, 8.9, 8.10, 8.11 and 8.12) as shown above presents the results of the System Generalized Moment Method (SYSTEM GMM) regression analysis between ownership structure and REM.

With regard to managerial ownership, the SYSTEM GMM analysis as shown in table (8.7, 8.8, 8.9, 8.10, 8.11 and 8.12) reveals that the coefficient of managerial ownership is negative and significant at 1% significance across four models of REM (ABPROD, ABDISCX, RM1, RM3) and non-significantly based on RM2. Whereas, the coefficient is positive and significant based on (ABCFO) as proxies of REM at a 10% significance level. This result is consistent with the claim of (HB1) which assumes a significant and negative link between the proportion of managerial ownership and the extent to which REM is conducted. This result is consistent with Khalil and Ozkan (2016) who revealed that at lower levels of managerial ownership, top management and controlling shareholder may have more likelihood to expropriate firm resources either for their consumption or capital market objectives (e.g seeking more compensation, meeting or exceeding market analysts forecast and avoiding debt covenants violations). However, at high levels of managerial ownership, the powerful manager/controlling shareholding can act as a monitoring and controlling mechanisms to reduce the opportunistic earnings manipulations as they would not like to bear a larger share of the decline in firm value resulting from opportunistic EM and to give investors more assurance about their commitment to their interest not to manage earnings.

The thesis results are inconsistent with the majority of empirical studies that revealed a positive association between managerial ownership and EM such as the studies of Ayadi and Boujelbene, (2014) in France, Aygun et al., (2014) in Turkey and Al-Fayoumi et al., (2010) in Jordan discovered that the association between managerial ownership and EM is consistent with the entrenchment hypothesis where executive ownership is ineffective in aligning the interest of shareholders with insiders' interest to make value-maximizing decisions. However, this relationship has changed due to

changes in the economic condition of the country especially in times of economic downturns. This outcome is constant with the Stewardship Theory which assumes that there is a convergence between manager and shareholders' interest as executives devote their effort and time to achieve organisational objectives (Peasnell et al. 2005; Habbash, 2010; Al-Ghamdi, 2012).

With regard to family ownership, Tables (8.7, 8.8, 8.9, 8.10, 8.11 and 8.12) show the results of the six regression models about family ownership. A positive and significant relation is found between the proportion of family ownership and REMs based on (ABCFO) at a 1% significance level and insignificantly associated with (RM1). Razzaque et al., (2016) in Bangladesh revealed that family firms conduct more real earnings manipulations especially at an early stage of ownership concentration, beyond a certain threshold, the relationship reverses. Leuz et al., (2003) also found that family firm engages in more REM to facilitate their private benefit consumptions specifically in countries with weak investor protection. They assumed that the regulatory framework, the level of investor protection, enforcement of legal codes and ownership concentration undertake an important role in family firms regarding their tendency to reduce/increase the REM (Razzaque et al., 2020). Findings are consistent with the work of Claessens et al., (2000) and Fan and Wong, (2002) who discussed that non-family firms perform better than family firms as they are less likely to improve the financial information quality provided to minority shareholders. This indicates that the family firm is more exposed to expropriate minority shareholders to pursue their private benefits, thereby suffering from principle-principle conflict.

However, the results shown in Tables (8.10, 8.11, and 8.12) indicate a negative and significant relationship between family ownership and REM based on ABDISCX at a 1% significance level. While, family ownership is non-significantly related to proxies of REM (ABPROD, RM2, and RM3). This finding is in accordance with Achleintner et al., (2014) in the German context and Masri, (2018) who found that family firm engages less in REM. Family-owned firms are more concerned with preserving the long-term prospects of their investments in the firms and they are worried about negative future value implications. This is consistent with the views of Ali et al., (2007), Cascino et al., (2010) and Wang, (2006) who found that family firms rather than non-family firms promote the integrity of financial reporting. These results are consistent with another strand of research such as the work of Ghabdian et al. (2012), Usman and Yero (2012), and Halioui and Jerbi (2012) who revealed that non-

family firms engage in accruals EM more than family firms. Siregar and Utama (2008) found that family ownership influence negatively and significantly on opportunistic EMs. It was found that ownership concentration in family firms increases the tendency to adopt efficient EM compared to non-family firms.

Interestingly, EM practice in family-owned firms is still an empirical issue due to the relative influence of entrenchment and alignment effects. Several studies on the family firms provided evidence that family ownership has a non-monotonic/nonlinear relationship with EMs either with DAs or REM due to the level of an equity stake. For instance, Akimova and Schwodiauer (2004); Ukraine et al. (2010); Wang (2006); Razzaque et al., (2016) also revealed a non-linear/curve association between family firms and EMs. The lack of generalizability of the findings on earnings quality in family firms mostly revolves around accruals EMs measures. However, there is evidence that EM is not limited to accruals management only but may involve REM (Graham et al., 2005; Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin, 2010; Gunny, 2010; Zang, 2012). These outcomes support partially (HB2) which claims that the family-owned firm is significantly and negatively related to the extent to which REM is conducted.

With regard to the institutional ownership, the research hypothesis (HB3) suggests that institutional ownership has a negative and significant impact on REMs. The SYSTEM GMM results finds a negative and significant relationship between institutional shareholding and REM based on (ABCFO and ABDISX) at 1% significance level. There is a shred of substantial evidence documenting a negative association between institutional own and REM such as the work of Park and Shin (2004), Aygun et al., (2014), Ayadi and Boujelbene (2014), Azoubi (2016) and Farouk and Bashir (2017). It is noticed from the prior literature that there is a scarcity in the studies that examine the relationship between institutional ownership and REM. Bushee et al., (1998) found a negative relationship between institutional ownership and the manager's tendency to cut R&D expenditures but not for all types of institutions. Roychowdhury (2006) also revealed a negative relationship between institutional shareholding and REM based on (ABDISCX and ABPROD).

In subsequent studies such Zang (2012) also found that institutional shareholders exert more efforts and pressures on the management to reduce REM more than AEM due to long term consequences of the REM. However, he stated that the institutions may not be able to prevent the incidence of REM if their shareholding is

low. Moreover, Kaldonski, Jewartowski, and Mizerka (2019) also reported that firms with more stable institutions are expected to engage participants in fewer sales manipulation or overproduction. However, Bushee et al. (1998), Koh (2007), Chen et al. (2007), Sakaki et al. (2017) in the USA, Mehrani, Moradi, and Eskandar (2017) in Iran, and Kaldonski et al., (2019) in Poland found that type of institutional ownership (e.g. time horizon, ownership concentration, and institutional stability) influence the likelihood of the management to conduct REM. These results imply that active and long-term oriented institutional ownership acts as a monitoring mechanism in preventing the wrongdoings in the process of financial reporting and in encouraging higher earnings quality. These results are consistent with RD Theory and efficient monitoring hypothesis that suggest that institutional owners secure necessary and scarce resources, opportunities and ability to monitor, discipline and develop the managements' decisions more than individuals. Lin and Hwang (2010), Farooq and El-Jai (2012) and Farouk and Bashir (2017) discovered a negative and non-significant link between institutional ownership and earnings manipulations. As a result, they recommended raising the percentage of the institutional shareholding where the distribution of more shares as the negative sign is a sign that institutional investors could aid in justifying EMs.

On the other hand, the result from SYSTEM GMM analysis also reports a positive and significant relationship between institutional ownership and REM based on the four models of REM (ABPROD, RM1, RM2, and RM3) at 1%. This result is consistent with the study of Bushee (1998) who suggested that the institutional ownership with high ownership concentration and high turnover trading motivate myopic investment behavior and cut R&D expenditures for short term profitability. Similarly, Siregar and Utama (2008) for Indonesian firms, Yang et al. (2009), Iqbal and Strong (2010), Abdul-Jalil and Abdul-Rahman (2010), Al-Fayoumi et al. (2010) in Jordan, Roodposhti and Chashmi (2011) in Iran and Issarawornrawanich and Jaikengkit, (2011) in Thailand revealed a positive relationship between institutional ownership and EM. They argued that when institutions are short-term oriented, lack the expertise and knowledge or suffer from free-rider problems or strategically ally with the management, they do not monitor or control the management functions effectively due to low shareholding, or entrenchment hypothesis or the agency problem.

With regards to the governmental ownership, empirical and theoretical studies that paid attention to the relationship between state ownership and both types of EMs

(AEM and REM) are limited. Hypothesis (HB4) predicts a positive link between the proportion of governmental ownership and REM using six models developed by Graham et al. (2005), Roychowdhury (2006) and Cohen and Zarowin (2010). The results from SYSTEM GMM reveal a positive and significant relationship link between government ownership and REM (ABCFO and ABDISCX) at 10% and 1% and insignificantly related to (APROD) as proxies of EMs. In the prior literature such as Sun and Tong (2003), it is widely expected that firms with further governmental ownership manipulate earnings more than privately-owned firms due to the highly layered organisational hierarchy, bureaucratic interference and lack of competition. In this case, managers have more opportunities to perform discretion in financial reporting. Agency problems in SOEs are more likely to increase more than in privately owned firms due to the conflicts of interest either between state and minority shareholders or between owners and managers. Consequently, there is no effective monitoring and control in SOEs enterprises because oversight functions are often performed by a governmental official who acts as agents of the State leading to increased information asymmetry, multiple interest conflicts and agency problems (Poli, 2015; Ben-Nasr et al., 2015).

In contrast to a conventional belief regarding corporate inefficiency with state ownership, the results reveal a negative and significant relationship between government ownership and REM (RM1, RM2, RM3) at 1%, 1%, and 10% correspondingly. The findings are in line with the work of Ding et al., (2007), Wang and Yung (2011) who revealed a negative link between REM and State shareholding. They found that state ownership plays a significant role in reducing abnormal accruals and enhancing accruals quality even after controlling tunneling. As the government works as a powerful external monitor protecting against managerial opportunism in state institutions. This forces the managers to reduce manipulating firm-specific information in state-owned organisations (Capalbo et al., 2014; Hoang et al., 2014). Therefore, governmental ownership has a different effect on REM proxies due to the different proxies used for calculating REM. Overall, it can be concluded that very limited evidence was found regarding the impact of ownership structure (independent variable) and REM. Most of the sub-hypotheses formulated earlier was rejected due to either opposing coefficients or insignificance.

8.4.3.2. Board of Directors Characteristics

Based on the literature of CG mechanisms and EMs practice as presented and discussed earlier in chapters four and five, the board of directors' characteristics is presented and included in five hypotheses (HB5, HB6, HB7, HB8, and HB9) to investigate how the board of directors' characteristics results in differences in the mitigation of managers' opportunistic behavior.

An important characteristic of CG that may influence EM is the board size. Yet, there is no consensus regarding the optimal board size. The study partially supports the hypothesis (HB5) which suggests a significant and negative connection between board size and REM. Evidence for the effectiveness of board size is inconclusive. The results revealed a significant and negative association between the board size and REM across ABPROD, RM1 and RM3 models at a 1% significance level and insignificantly related to RM2. This result is consistent with Kang and Kim (2012) who found that REM is reduced when the number of boards of directors is large. Alternatively, there is a significant and positive association between the board size and REM based on ABCFO and insignificantly related to RM2. Oh and Jeon (2017) revealed that board size does not constrain REM (ABCFO, ABPROD, ABDISCX as proxies of REM). Abdul Rahman and Ali (2006) and Gonzalez and Garcia-Meca (2014) found a positive correlation between board size and REM. These results are in line with prior studies of Abubakar and Ishak (2017), Adamu, et al., (2017) and Alhadab and Clacher (2018) who discovered an irrelevant link between board size and REM based on ABCFO, ABPROD, ABDISX, and the aggregate REM.

With regard to board independence, Tables (8.7, 8.8, 8.9, 8.10, 8.11, and 8.12) show the results of six regression models. A significant and negative relation is detected between the proportion of independent directors and (ABCFO) as a proxy for REM at 10%. This finding is consistent with the studies such as Klein (2002), Park and Shin (2004), Rahman and Ali (2006), Siregar and Utama (2008), Visvianathan (2008), Kam and King (2017) and Alhadab and Clacher (2018), who found that the proportion of external director's influence REM negatively and significantly through abnormal real activities. The SYSTEM GMM analysis revealed that the relationship link between board independence and REM based on (ABPROD, RM2, and RM3) is insignificantly and negatively associated. Furthermore, these findings are consistent with Hassan and Ebrahim (2014) who found that characteristics of the B.O.D, such as outside directors

were non-effective in restraining real-based activities manipulations based on the ABCFO of listed manufacturing firms in Nigeria. Qinghua et al. (2007) also found a non-significant association between the proportion of independent directors and the EM.

However, they found that outside directors may be effective use in promoting the quality of financial reporting if the percentage of independent directors increased to be more than one-third of the board size. Jaggi, Leung, and Gul (2009) conducted a similar study in Hong Kong and reported that independent directors have low tendency in mitigating earnings manipulations, especially in family-controlled firms. The insignificance of the effect of independent directors may be due to the weakness of regulatory systems of countries with less investor protection or the dominance of family ownership. Another plausible justification is that non-executive director may be under the authority and power of executive directors, and thus, they are not in positions that restrict managers from exercising opportunistic behavior. As a result, independent directors have a limited influence on crucial corporate issues or outsiders may lack the financial sophistication or access to relevant information that helps them to spot earnings manipulations. They may be uninterested directors in monitoring and controlling firm activities due to lack of ownership interest of the firm they monitor. The labor market for board independence is under-developed in Egypt. The existence of controlling owners may reduce the tendency of directors to reduce earnings manipulations. On the contrary, the empirical results revealed a positive and significant relationship between board independence and REM based on ABDISCX and RM1. These outcomes are in line with Oh and Jeon (2017) found a significant and positive relationship between board independence and REM (ABCFO, ABPROD, ABDISCX). This confirms partially (HB6) which proposes that the number of independent directors is negatively and significantly related to the extent to which REM is exercised.

With regard to CEO duality, the study outcome reveals a statistically significant and negative relationship between CEO duality and REM (ABCFO and ABDISX proxies) at a 1% significance level. This finding is coherent with the Stewardship Theory which suggests that such a leadership structure enhances the proper CEO activities and counter against Agency Theory which argues that such a leadership structure leads to moral hazard and adversely impacts the firm performance. On the contrary, CEO duality is positively and significantly correlated with REM based on RM2 and RM3 at a 1% significance level and insignificantly related to RM1 and ABPROD. These results are consistent with the agency argument that CEO duality is

likely to weaken the firm's board monitoring role (Xie et al, 2003; Davidson et al., 2005; Abdul Rahman and Ali 2006; Qinghua et al., 2007; Al-Ghamdi, 2012; Khalil and Ozkan, 2016). Furthermore, Chouaibi et al. (2018) also revealed a positive and insignificant relation between dual executive leadership and abnormal cash flow as a proxy for REM in Tunisian listed firms. They suggested that the Duality gives the CEO more power to extract rents for themselves at the expense of shareholders and take the actions that reduce personal risks and entrench themselves. These results indicate the necessity of applying CG mechanisms regarding CEO duality. While the code restricts managers from holding two positions, duality persists in practice leading CEOs to become more concerned with earnings management. The mixed result regarding the impact of CEO duality may have resulted from the culture surrounding the organisations, type of ownership concentration, different organisational objectives. Those findings partially support (HB7) that there is a negative link between CEO non-duality and REM.

With regard to board diversity, Tables (8.7, 8.8, 8.9, 8.10, 8.11 and 8.12) report that board diversity has a significant and negative impact across the ABPROD, ABDISX, RM1, RM2, RM3 models of REM. The negative coefficient of gender diversity strongly supports the hypothesis (HB8) implying that women directors enhance superior earnings quality. These results are consistent with Nguyen and Faff (2007); Kılıç and Kuzey (2016); Adamu et al. (2017); Luo et al. (2017); Gull et al., (2018) who revealed that board diversity has a greater tendency to alleviate earnings manipulations thereby promoting firm value. They suggested that gender diversity enhance the communication with female customers, develop the effectiveness of decision making, improve the image of corporations, bring different and non-traditional approaches to board discussions and guarantee a better understanding of the marketplace. Conversely, the study revealed a significant and positive association between board diversity and ABCFO as a proxy for REM at a 1% significance level. A possible justification for these results may be the relatively small number of woman directors on the board (as shown in the descriptive analysis), they lack sufficient power to monitor and control managers' functions. These findings are consistent in line with the views of Adams and Ferreira (2009); Habbash (2010); Hassan and Ibrahim (2014); Lakhal et al., (2015); Lara et al. (2017)

With regard to board meetings, Tables (8.7, 8.8, 8.9, 8.10, 8.11 and 8.12) demonstrate that board meetings have significant and positive relationships across the models of REM at a 1% significance level except for (ABCFO). Thus, these findings may constitute evidence to support the hypothesis (HB9) regarding the positive relationship between board meetings and REM. These findings are consistent in line with Abubakar and Ishak, (2017) and Kang and Kim, (2012) who revealed that board meetings influence adversely the quality of earnings. Conversely, the empirical results of the study reveal that there is a negative and significant association between board meetings and ABCFO as a proxy for REM. This finding is consistent with Gonzalez and Garcia-Meca (2014) and Bala and Gugong (2015). They revealed a significant and negative correlation between frequency of board meeting and EM. furthermore, Additional work of literature such as Xie et al. (2003) and Al-Ghamdi (2012) revealed that the frequency of board meetings leads to reduced level of earnings manipulations. The non-significant relationship between board meetings and the quality of financial reporting is consistent with Ebrahim (2007), Qinghua et al. (2007) and Habbash (2010).

According to the above findings, it is evident that the impact of the different mechanisms and BOD characteristics is partially irrelevant to REM. Most of the hypotheses formulated earlier were rejected due to either opposing coefficients or insignificance.

8.4.3.3. Audit Committee Characteristics and Audit Quality

Based on the literature presented and discussed earlier in chapters four and five, four hypotheses are formulated to investigate the extent to which AC size, AC meetings, AC independence, and external auditing influence earnings manipulation based on real activities.

With regards to AC size, the empirical result manifests a significant and positive association between AC size and REM (ABDISXC and RM1) at a 1% significance level. Consequently, these outcomes confirm the Agency Theory and the Resources Dependency Theory that assumes that large AC size can bring more external resources and enhance monitoring and oversight functions to promote the quality of financial reporting. This provides evidence to support the hypothesis (HB10).

As shown in the tables above (8.7, 8.8, 8.9, 8.10, 8.11 and 8.12), the study reveals a positive and insignificant relationship between AC size and REM based on

(ABCFO, ABPROD, and RM3). This finding is consistent with Faud, (2016) who revealed a positive association between AC size and REM in Indonesia from 2012 until 2014. These outcomes are contradicting to those of Yang and Krishnan (2005), Lin et al. (2006), Lin and Hwang (2010), Garcia et al., (2012) and Inaam and Khamoussi (2016) who argued that large AC size is related to fewer earnings manipulations practices. Besides, the study finds non-significant and negative relationship between AC size and the proxies of REM (ABCFO, ABDISCX, RM2, and RM3). These findings confirm the argument that large size of AC does not enhance the quality of financial reporting, and are similar to the findings of the majority of literature such as Bedard et al. (2004), Visvanathan (2008), Baxer and Cotter (2009), Habbash (2010), Basiruddin (2011), Habbash et al. (2013), and Soliman and Ragab (2014) who failed to find a significant relationship between AC size and the aggressiveness EMs.

With regard to AC independence, there is a general acceptance regarding the role of AC independence in mitigating the aggressive manipulative reporting. The study finds that AC independence significantly and negatively influences REM (based on ABPROD, RM1, RM2, and RM3) at 1% and 10% significance level. This outcome is in line with Kang and Kim (2012) indicating that REM (using ABCFO, ABPROD, ABDISX, and aggregate REM) decreases when the independence of the AC or the number of meetings of the AC increases. Consequently, these findings support the hypothesis (**HB11**) which assumes that AC independence has a negative impact on REM.

However, the study finds that the coefficient is positive and insignificant regarding the relation between AC independence and REM based on two proxies (ABCFO and ABDISCX). Although most of the previous studies such Lin et al., (2006); Hamdan et al. (2013); Aryan (2015); Abata and Migiro (2016) suggested that AC independence has a negative effect on EM, they revealed insignificant positive associations between AC independence and EMs. They proposed that there might be a family and financial relationship between the board of directors and their members of AC which would reduce the ability to control the organisation's work. Moreover, Talbi et al. (2015) also revealed that the independence of AC is insignificantly associated with REM (ABCFO, ABPROD, and ABDISX) and is not effective to detect real-based manipulations activities.

Likewise, Owens-Jackson et al. (2009) suggested that it is important to take into consideration the firm nature, the contracting environment, and the type of ownership

structure when studying the relationship between AC independence and the quality of financial reporting. Al-Matari et al., (2012) discovered an insignificant relationship between AC independence and Tobin's Q in Saudi Arabia-stock exchange. The result of the study is contradictory to the Agency Theory that assumes that AC can align shareholders' interests with the organisation's objectives to mitigate agency problems and reduce agency costs by. Moreover, Peasnell et al. (2005) did not find adequate proof regarding the effect of AC independence on the practice of earnings manipulations. Most of the previous studies employ discretionary accruals as a proxy of EM. These findings are consistent with Hassan and Ibrahim (2014) who reported that AC attributes like AC size, independence and AC meetings are positively related to REM practices of listed manufacturing firms in Nigeria. One plausible justification for these results may be the use of different proxies of EM or that the majority of the firms in the sample of the study have such committees.

With regard to AC meetings, this study suggests the existence of a significant and negative association between AC meetings and REM. The results of the study finds a negative and significant association between AC Size and ABPROD, RM1, RM2, RM3 as proxies of REM at a 1% significance level. These findings confirm the hypothesis (HB12). These outcomes are in line with the argument of Resources Dependency and Agency Theory which expect that the incidence of more AC meetings can promote the transparency of financial reporting due to the continuous monitoring or the exploitation of directors' expertise during meetings (AL-Rassas and Kamardin, 2015).

Alternatively, the AC meeting is positively and significantly related to ABCFO at 1% and insignificantly related to ABDISCX. These findings are not surprising since most of the previous studies indicated non-significant association between AC meetings and earnings manipulations either DAS or REM. For instance, Bédard et al. (2004), Yang and Krishnan (2005), Davidson et al. (2005), Abdul Rahman and Ali (2006), Baxter and Cotter (2009) and Habbash et al. (2013) failed to have sufficient evidence regarding the relationship between AC meetings and opportunistic management behavior. Similarly, Al-Rassas and Kamardin (2015) also found a non-significant and positive relation between AC meetings and EM due to the ownership concentration. Hassan and Ibrahim (2014) also reported that AC meetings do not significantly influence REM in their investigation of Nigerian listed manufacturing firms. Additionally, Visvanathan (2008) found that AC meetings and REM are insignificantly

associated based on ABCFO and ABPROD, but negatively and significantly associated based on ABDISX. There are several possible explanations for these results. For instance, Habbash (2010) expected that AC meetings may not be a good proxy for the attentiveness of ACs. Al-Ghamdi (2012) also claimed that meetings by AC directors are merely largely ceremonial so that they are not effective in promoting the quality of financial reporting. Another possible justification is that AC members have a low tendency to raise complex issues and critical problems and questions through formal meetings which may influence the outcome of governance regulations. Therefore, their roles may not be effective within formal meetings.

Regarding external auditing, the audit quality becomes a crucial mechanism to boost the transparency, creditability, and reliability of the information provided to shareholders, especially after the recent financial scandals that occurred globally. Most of the literature expected that highly qualified audit firms would lead managers to be more concerned about shareholders' interests. Hypothesis (HB13) predicts that audit quality (Big 4 audit) is negatively associated with REM. The test for hypothesis (HA13) based on the measures of Roychowdhury (2006) shows a significant and negative relationship with ABPROD and RM1 at 1% and 5% significance level and insignificantly associated with ABCFO and RM3. These outcomes are consistent with Alhadab and Clacher (2018) who found a negative relationship between high-quality auditors and REM using ABDISXC, ABCFO, and aggregate REM as well as discretionary accruals. This outcome is in line with the perspective of the Agency Theory which suggests that the shareholders are more concerned to hire a third party (external audit) to check the quality of information disclosed and reduce from the information asymmetry. The theory argues that big audit firms are more prone to enhance the monitoring and controlling functions over the management to detect the incidence of earnings manipulations. The theory supports the views that big audit firms have the competencies; more financial and operational resources and expertise that make them independent and provide high-quality services.

Conversely, the thesis found a significant and positive relationship between big audit firms and REM based on ABDISXC and insignificantly related to RM2. The results do not support the argument that audit quality is negatively related with aggressive earnings manipulations. The findings of the thesis are consistent with those of Yasser and Soliman (2018) in Egypt who failed to find enough evidence that the auditing firm size and auditor specialization can constrain earnings manipulations due

to the weak regulatory system in Egypt and the weak application of CG in developing countries. This weak regulatory system provides the auditing firm with less exposure to litigation risk which makes them less effective in performing their duties. Furthermore, Chi, Lisic, and Pevzner (2011) reported that Big N audit firms and auditor industry specialists are linked to a higher level of the overall REM.

Piot and Janin (2007) in France, Abata, and Migiro (2016) in Nigeria and Chouaibi and al. (2018) in Tunis revealed a positive and insignificant relation between audit quality and earnings manipulations. Additionally, Jeong and Rho (2004) also demonstrated that institutional settings play a critical role in encouraging auditing firms to perform their oversight and monitoring functions to help their clients to constrain opportunistic behavior. They discovered no variation in the quality of big auditing firms and non-big auditing firms in performing their duties regarding the audit services provided to clients. This is due to the weak regulatory institutional regime in Korea. Therefore, the effectiveness of an auditor is dependent on the country's audit environment. Consequently, these results partially support (HB13) which suggests a negative and significant relationship between the audit quality and earnings manipulations.

In essence, the results of the regression model of ACs characteristics and audit quality (independent variable) against REM show that most of the sub-hypotheses formulated earlier are rejected due to either opposing coefficients or insignificance.

Table 8.13 Summary of SYSTEM GMM CG Mechanisms and Real-Based Activity EMs practice

	Expected sign	ABCFO	ABOPRO	ABDISX	RM1	RM2	RM3
Ownership Structure							
Mag. own	+	Positive and significant at 10%	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%	Negative and non-sig	Negative and significant at 1%
Fam. Own	-	Positive and significant at 1%	Negative and non-sig	Negative and significant at 1%	Positive and non-significant	Negative and non-sig	Negative and non-sig
Inst. Own	-	Negative and significant at 1%	Positive and significant at 1%	Negative and significant at 1%	Positive and significant at 1%	Positive and significant at 1%	Positive and significant at 1%
Gov. Own	+	Positive and significant at 10%	Positive and non-sig	Positive and significant at 1%	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 10%
BOD Characteristics							
Board size	-	Positive and significant at 1%	Negative and significant at 1%	Positive and non-sig	Negative and significant at 1%	Negative and non-sig	Negative and significant at 1%
Board independence	-	Negative and sig at 10%	Negative and non-sig	Positive and significant at 1%	Positive and significant at 5%	Negative and non-sig	Negative and non-sig
Board diversity	-	Positive and significant at 1%	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%	Negative and significant at 1%
CEO duality	+	Negative and sig at 1%	Positive and non-sig	Negative and significant at 1%	Positive and non-sig	Positive and significant at 1%	Positive and significant at 1%
Board meetings	-	Negative and sig at 1%	Positive and significant at 1%	Positive and non-sig	Positive and significant at 1%	Positive and significant at 1%	Positive and significant at 1%
AC Characteristics							
AC Size	+	Positive and non-significant	Positive and non-significant	Positive and sig at 1%	Positive and significant at 1%	Negative and non sig	Positive and non-significant
AC Independence	-	Positive and non-significant	Negative and significant at 1%	Positive and non-sig	Negative and significant at 1%	Negative and sig at 10%	Negative and significant at 1%
AC Meetings	-	Positive and significant at 1%	Negative and significant at 1%	Positive and non-sig	Negative and significant at 1%	Negative and sig at 1%	Negative and significant at 1%
External Audit							
Big 4	-	Negative and non-significant	Negative and significant at 1%	Positive and sig at 1%	Negative and significant at 5%	Positive and non-sig	Negative and non-significant
Accepted Hypothesis		7	10	5	6	7	9
Rejected Hypothesis		6	3	8	7	6	4

8.5. Robustness check and Sensitivity Analysis

Several further checks are conducted to ascertain the creditability of the primary findings. The first set of tests, comprising the main results, is reported by the main model with alternative proxies for REM. Also, FGLS analysis, pooled OLS with robust standard error and fixed/random effect panel data analysis is conducted as a robustness check for the findings.

Consistent with the main test, the FGLS analysis as shown in table below (8.14) reveals that the coefficient of managerial ownership is negative across five models of REM (ABCFO, ABPROD, ABDISCX, RM1 and RM3) as proxies of REM assuming that as the level of managerial ownership increase, the level of REM increases. This results in contradicting the hypothesis which suggests a positive and significant relation between managerial own and REM. In terms of family ownership, the results revealed from FGLS regarding the association between the proportion of family ownership and REM based on (ABCFO, RM2, RM3) is consistent with the main test. However, the results are not consistent with the main test regarding the coefficient and significance level based on (ABPROD, ABDISCX, RM1)

FGLS reveals less significance level than SGMM analysis but the directions in both analyses (coefficient) are the same. This supports the results regarding the significant role of institutional shareholders in reducing the level of accruals and real-based activity EMs. The results from FGLS support the results of the main test that governmental ownership has a positive impact on REM across the six models. However, the significance level in the main test (SGMM) is higher than the significance level of these variables in the (FGLS) . This result is not consistent with the theme of Agency Theory which suggests that lower opportunistic earnings manipulation is associated with the existence of government ownership (Habbash, 2010).

In terms of board size, similar to the main results concluded by ABCFO, ABPROD, ABDISCX, RM2. FGLS reveals a similar direction between board size and REM across those models but with a lower significance level. Arguably, the coefficient and the significance level between board size and REM based on (RM1 and RM2) are not consistent with the main test.

With regards to the board independence, FGLS Test across six regression models indicates an insignificant and negative relationship between the proportion of independent directors and the different measures of REM except ABDISCX. The

coefficient between board independence and REM in this analysis is consistent with the main test except for RM1. Similarly, with other previous variables discussed, the significance level in the SGMM test is higher than the degree of significance in the FGLS test.

With regards to CEO duality, the study results reveal that there is a negative and insignificant relationship between CEO duality and REM based on the ABCFO and ABPROD except the ABDISX model that is significantly related to CEO duality at the 1% significance level. On the contrary, CEO duality is positively and insignificantly correlated with REM based on RM1 and RM3 except RM2 at 10%. The coefficient of these findings is consistent with the main test except the ABPROD model. The degree of the significance level in this test is lower than the significance of the main test.

With regards to board diversity, the FGLS test reveals that board diversity shows a significant and negative impact across the ABDISX, RM1, RM2, RM3 models of real-based EM. In contrast, there is a significant and positive association between board diversity and ABCFO as a proxy for EM at 5% and insignificantly related to ABPROD. Consistent with the primary test findings for real-based activity EM, the direction and significance level between board diversity and REM are nearly consistent with the main test except for ABPROD. However, the significance level drops from 1% to 5%.

With regards to board of director characteristics, even if the board meeting does not demonstrate any significant effect on the REM across the six models, the direction and coefficient in both analyses remain the same. However, the main analysis shows a highly significant association between a board meeting and REM models compared with the sensitivity analysis.

As concluded in the main finding regarding AC size, the main test revealed a positive and insignificant relationship between AC size and REM. However, the results from only three models of REM are consistent with the findings of the main test.

The study found that AC independence is negatively associated with different proxies of REM. However, the coefficient is positive and insignificant regarding the relation between AC independence and EM based on only one measure of REM (ABCFO). This finding is consistent with the findings of the main test.

With regard to AC meetings, the current study expects a significant and negative association between AC meetings and REM. The FGLS analysis finds a negative and significant association between AC Size and RM1 at a 10% significance level.

However, an insignificant and negative relation is found between AC meetings and different indicators of REM based on ABCFO, ABPROD, and RM3. On the other hand, the AC meeting is positively and insignificantly related to ABDISX and RM2. These findings are consistent with the results of the main test except the relationship that is based on ABCFO. Taking into consideration that the level of significance in SGMM analysis is higher than FGLS analysis.

The test for the hypothesis that examines the relationship between the external audit and REM based on the measures of Roychowdhury (2006) shows that FGLS reveals similar and consistent results as in the main test. This confirms the argument that audit quality negatively affects aggressive earnings manipulations.

Table 8.14 Summary of FGLS CG Mechanisms and Real-Based Activity EMs.

	Expected sign	ABCFO	ABOPRO	ABDISX	RM1	RM2	RM3
Ownership structure							
Mag own	+	Negative and non-significant	Negative and non-significant at 1%	Negative and non-significant	Negative and non-significant	Positive and non-significant	Negative and non-sig
Fam Own	-	Positive and non-significant at 1%	Positive and non-significant	Positive and non-significant	Negative and non-significant	Negative and sig at 10%	Negative and non-sig
Inst Own	-	Negative and non-sig	Positive and non-significant	Negative and non-sig	Positive and non-significant	Positive and non-significant	Positive and non-significant
Gov Own	+	Positive and non-sig	Positive and non-significant	Positive and non-significant	Negative and non-significant	Negative and non-significant	Negative and non-sig
Board Of Director Characteristics							
Board size	-	Positive and non-sig	Negative and non sig	Positive and sig at 10%	Positive and non-significant	Negative and non-significant	Positive and non-significant
Board independence	-	Negative and non sig	Negative and non sig	Positive and sig at 5%	Negative and non-significant	Negative and non-significant	Negative and non-sig
Board diversity	-	Positive and significant at 5%	Positive and non-sig	Negative and sig at 1%	Negative and sig at 10%	Negative and sig at 10%	Negative and significant at 1%
CEO duality	+	Negative and non-sig	Negative and non sig	Negative and sig at 1%	Positive and non-sig	Positive and sig at 10%	Positive and non-significant
Board meetings	-	Negative and non-sig	Positive and non-sig	Positive and non-sig	Positive and non-sig	Positive and non-sig	Positive and non-significant

Audit Committee Characteristics

AC size	+	Negative and non-sig	Positive and non-sig	Negative and non-sig	Positive and non-sig	Negative and non-sig	Negative and non-sig
AC independence	-	Positive and non-sig	Negative and sig at 1%	Negative and sig at 10%	Negative and sig at 1%	Negative and non-sig	Negative and sig at 1%
AC meetings	-	Negative and non-sig	Negative and non-sig	Positive and non-sig	Negative and sig at 10%	Positive and non-sig	Negative and non-sig
External Audit Big 4	-	Negative and non-sig	Negative and non-sig	Positive and non-sig	Negative and non-sig	Positive and non-sig	Negative and non-sig

Table 8.15: Summary of Real Activities-Based EM Hypotheses Testing

	Summary of Sub-Hypotheses for Real Activities Based EM(REM)	Results
HB1	There is a significant and positive association between managerial ownership and REM.	Partially accepted
HB2	There is a significant and negative association between family ownership and REM	Partially accepted
HB3	There is a significant and negative association between institutional ownership and REM.	Partially accepted
HB4	There is a significant and positive association between governmental ownership and REM.	Partially accepted
HB5	There is a significant and negative association between board size and REM.	Partially accepted
HB6	There is a significant and negative association between board independence and REM.	Partially accepted
Hb7	There is a significant and negative association between board diversity and REM.	Accepted
HB8	There is a significant and positive association between CEO duality and REM.	Partially accepted
HB9	There is a significant and negative association between board meetings and REM.	Partially accepted
HB10	There is a significant and positive association between AC Size and REM.	Partially accepted
HB11	There is a significant and negative association between AC independence and REM.	Accepted
HB12	There is a significant negative association between AC meetings and REM.	Partially accepted
HB13	There is a significant and negative association between audit quality and REM	Partially accepted

8.6. Summary

This chapter aims is to investigate statistically the relationship between REM and mechanisms of CG, mainly; ownership structure, the board of directors, and audit committee and external auditing. The expectations of these beneficial CG variables in constraining earnings manipulations are to a large extent, found to be inaccurate and inconsistent in the Egyptian context.

This chapter presented the results and findings of the data analysis using the research methods applicable in the preceding chapter. The descriptive statistics for the variables adopted in this research were illustrated. The results of the descriptive statistics suggest that Egyptian firms engage more in income increasing REM especially through abnormal production costs compared to other types of REM. The chapter also discussed the Correlation Matrix results to perform correlation analysis and VIFs to test multicollinearity. The results reveals the non-existence of multicollinearity problem across the variables of model. A discussion is then provided

on the results of the hypotheses testing for the REM models using Dynamic SYSTEM GMM regression analysis. The REM models used are abnormal cash flow, abnormal production costs, abnormal discretionary expenditures, RM1, RM2, and RM3 calculated using the cash flow approach. The study used SYSTEM GMM analysis as the main model. The results of the sensitivity analysis are mainly consistent with the key findings. The consistency in the results enhances the validity of the results and the recommendations derived from them.

The results from dynamic SYSTEM GMM regression analysis illustrate mixed findings in the respect of the influence of CG mechanisms and external auditing on REM practice. The study reveals that managerial ownership and family ownership, AC meetings, AC independence, the board size, and board diversity are good mechanisms for constraining different types of REM except for ABCFO. On the other hand, board meetings, and AC size, and board size are less effective in reducing earnings manipulation except for ABCFO. Although not all CG mechanisms support the stated hypotheses; this study accomplished its objectives by identifying the features that answer the research questions. This study, consequently, finds not only one theory but also several theories such as the Agency Theory, Institutional Theory, and Stewardship Theory provide the most comprehensive rationalization for the relationship between both CG and external audit mechanisms and earnings manipulations practice. The following chapter presents and discusses the results of the threshold model that examine the non-linearity between CG mechanisms and Earnings manipulations.

Chapter Nine

Dynamic Panel Threshold: Governance Indicators and Accrual-Based Earning Management

9.1. Introduction

In this section, the thesis has made an econometric study of panel data during the period 2008–2017 on a sample of 78 non-financial firms in Egypt with the purpose of examining the nonlinear relationship between CG variables and EMs and to determine the optimal threshold that can achieve the minimum level of earnings manipulations.

Since several studies such as Mork et al. (1998), and Gonzalez and Gacia-Meca, (2014) stated non-linearities between CG and EMs or firm value which support the alignment-of-interests and entrenchment hypotheses. Consequently, this research applies advanced technique called a dynamic panel threshold to investigate the possible non-linearities between ownership structure, board of directors, and AC attributes with DAs as proxy for earnings manipulations.

Dynamic Panel threshold regression analysis is conducted to verify the optimal attributes of ownership structure, the board of directors, and AC in relation to EMs practice. The study applies the absolute value of DAs as a proxy for the degree of EMs. The study uses the Kasznik (1995) model to estimate abnormal DAs because this model achieves the highest R² and lower AIC in comparison to the other models as shown in Table in appendices below. Moreover, the threshold variables consists of the managerial ownership (the percentage of equity owned by the board of directors and supervisors to total equity), family ownership (the percentage of equity owned by the family members and supervisors to total equity), institutional ownership (the percentage of equity owned by the institutions and corporations to total equity), governmental ownership (the percentage of equity owned by the government to total equity), the board size (the number of directors on the board), the proportion of independence directors (the proportion of independent directors), board diversity (the proportion of female directors on the firm board), board meeting (the number of meetings held by the BOD per year), AC size (the number of directors in the AC), AC independence (the proportion of independent directors in the AC), and AC meetings (the number of meetings held by AC each year). The study also includes several control

variables normally utilized in the analysis of EMs literatures, namely; firm size, financial leverage, Gearing, liquidity, assets tangibility, EM flexibility, ROA, ROE, and the operating cycle.

9.2. Dynamic Panel Threshold Analysis

To examine the non-linear relationship between certain CG mechanisms, firm value and MS, the financial literature (see, among others, Mork et al (1988), Navissi and Naiker (2006), Al-Farooq et al (2007), Pucheta-Martinez et al (2018), AlNabsha et al (2018) used quadratic regression. However, it neglects threshold models such as the panel transition regression (PTR) model (Hansen (1999), panel smooth transition regression (PSTR) model (Gonzales et al., 2005), and dynamic panel threshold regression (DPTR) model (Seo and Shin, 2016).

In this context, Hansen (1999) proposed a PTR model where regression coefficient can take on a small number of different values. Furthermore, the PSTR model developed by Gonzalez et al. (2005) permits the coefficients to change gradually from one regime to another. These two models are considered to be static models, yet not validated in dynamic panels. In this context, it is interesting to note that the issue of the non-linear asymmetric non-linear mechanism in dynamic panels, especially over short periods of time, has been neglected. Nevertheless, the only study that has addressed this issue is Seo and Shin, (2016). This study examined the GMM estimation of the linear dynamic panel with heterogeneous individual effects.

The DPTR model has been developed several times. First, Ramirez-Rondan (2015) extended the work of Hansens (1999) to allow the threshold mechanism in dynamic panels. In addition, he suggested maximum likelihood estimation techniques using the model development of Hsiao et al. (2002). Subsequently, Kremer et al. (2013) examined the hybrid dynamic version by combining forward orthogonal deviation transformation (Arellano and Bover, 1995) and estimation of instrumental variables in the cross-sectional model (Carnet and Hansen, 2004). This is likely to allow endogenous regressions. Consequently, Seo and Shin (2016) proposed a GMM approach based on the first difference transformation (FD-GMM) to allow threshold variables and regressors to be endogenous. This approach should overcome the main limitations of other models. These are the assumptions of exogeneity of regressors and/or transition variables that may affect the threshold regression model (Seo and Shin, 2016).

Following Seo and Shin (2016)³⁶, the dynamic panel model equation with threshold effects is written as follows:

$$(42)$$

$$EM_{it} = \left(\phi_1 EM_{it-1} + \theta_{11} GI_{it} + \sum_{j=1}^9 \theta_{j1} X_{it} \right) 1\{q_{it} \leq \gamma\} + \left(\phi_2 EM_{it-1} + \theta_{12} GI_{it} + \sum_{j=1}^9 \theta_{j2} X_{it} \right) 1\{q_{it} > \gamma\} + \alpha_i + \nu_{it}$$

(43)

where $1\{\cdot\}$ is an indicator function, q_{it} the transition variable and γ the threshold parameter.

Tables (9.1), (9.2), (9.3) summarize the estimation results for the dynamic threshold model of EM measured by Kasznik model, with GI, ROA, ROE, Liquidity, leverage, GEAR, SIZE, ASSTAN, OC, EMFLEX and governance indicators (GI) used as the transition variable, which are expected to proxy the certain governance indicators. The FD-GMM estimation results are reported respectively in the low and the high regimes.

9.2.1. Threshold Value for Ownership Structure Attributes

To check the validity of the final specifications employed above, we follow Seo and Shin (2016) using the bootstrap test. The findings show that the p-values of the linearity test are all close to zero, providing strong evidence in favor of threshold effects. In general, these results outcomes confirm the perspective that the governance indicators ownership structure including managerial own, institutional own, family own and governmental own affect its earning management in a non-linear way.

With regards to managerial ownership, when MAG OWN is employed as the transition variable, the findings as shown in Table (9.1) show that the threshold estimate is 18.67% fall into the upper MAG regime. Moreover, the coefficient (ϕ_1) in the lower regime is statistically significant and positive with (0.0134). While the coefficient ϕ_2 in the upper regime is statically significant and negative (-0.0142). Consequently, the coefficient of the upper regime is higher than the coefficient of low regime. In this case, the upper regime is considered as the optimal regime; hence, it is better to increase the managerial ownership above 18.67%. The dynamic panel threshold analysis reveals that 18.67% is the optimal ratio that achieves the lowest level of earnings

³⁶ For more details on Dynamic Panel Threshold Model, see Seo and Shin (2016).

manipulations. Accordingly, the results of the GMM dynamic panel threshold analysis can define two regimes formed by three threshold values to be ranged from 0 to 18.67%, at 18.67% and above 18.67%. The coefficient is positive and presents an increasing trend when the ownership is between (0%-18.67%). Alternatively, when managerial ownership level is above 18.67%, the relationship between managerial ownership and EM is negative and more significant. At this level of ownership, managers are more concerned with aligning their interest with shareholders' interest and make the interest of the firm their paramount objective. This describes the link between managerial ownership and EM as a non-monotonic relationship taking the pattern of "entrenchment-alignment" hypothesis.

This result contradicts with Al-Fayoumi et al., (2010) who discovered that greater ownership in the hand of managers will lead to more entrenchment and greater scope for earnings manipulations in Jordan context. Furthermore, this result contradicts with Gonzalez and Garcia-Meca (2014) that the managers are more likely to manipulate earnings if the managerial ownership gets to certain threshold which is 14.1%. This indicates that managerial ownership can be a mechanism that can limit the manipulative practice when the shareholding is moderate (efficient monitoring hypothesis). Nevertheless, when the managerial ownership concentration reaches about 14.1%, there is an increase in the DAs. Those studies have suggested that when the managers hold a certain proportion of the share wealth in the organisation they lead, they are likely to align their interest with the other shareholders (convergence of interest hypothesis) by conducting less earnings manipulations. Nevertheless, managerial ownership concentration may have an unfavourable impact on the firm interest. This is due to high power and control that they have that may affect negatively on the interest of shareholders and firm value (entrenchment-hypothesis). A further increase in managerial ownership increases malpractices manipulations which gives them full control of the firm. This to maximizing their own interest at the expense of the minority shareholders. Thus, they have compelled to suggest that the relationship between managerial ownership and EM is U-shaped. Besides, managerial shareholding should not be increased unlimitedly. Accordingly, this finding support hypothesis (HC1) that suggests a non-linear relationship between managerial ownership and EMs.

With regards to Family ownership, when FAM.OWN is used as the transition variable, the findings as shown in Table (9-2) manifests that the threshold estimate is 21.19%. When the family shareholding is above the threshold, the relationship between Family own and EMs is a positive and non-significant in the subsequent year. This is

indicated by the insignificantly positive slope coefficient. Similarly, there is a positive and statistically non-significant between family own and EMs if the Family owned is lower than the threshold. The coefficient (\emptyset_1) in the lower regime is statistically insignificant and positive with (0.00318). The coefficient \emptyset_2 in the upper regime is statically non-significant and positive (.216). Consequently, the coefficient of the upper regime is higher than the coefficient of the low regime. In this case, the upper regime is considered as the optimal regime which is favorable to increase the family ownership above 21.19%. At the low level of ownership (below 21.19%), firms with low family ownership are not fully controlled by family shareholders. However, these firms are considered as family owned organisations. This is in line with the hypothesis that firms with low family ownership tend to pursue their personal interest more than aligning their interest with the interest of shareholders (entrenchment hypothesis). On the other hand, when family ownership is at 21.19%, managers of this type are likely to align the interest of shareholders with firm objectives (alignment hypothesis). When family ownership further increases and reaches very high levels (beyond 21.19%), the entrenchment hypothesis contends that family firms have a higher propensity to expropriate minority shareholders when their ownership concentration and controlling rights are increased. Consequently, this may encourage the controlling owners to indulge in earnings malpractices and manipulations.

The study, therefore, compels to conclude that the relationship between family ownership and EM can be represented as a non-linear relationship. Family shareholding should not be increased unlimitedly. There is an optimal level beyond which the increased ownership does not have a better effect on EMs. The analysis reveals that the optimal ratio of family ownership that can achieve the lowest level of EMs is 21.19%. The overall pattern of behaviour is therefore “entrenchment-alignment-entrenchment.” This finding supports hypothesis (HC2) that there is a non-linear between family ownership and EMs.

The result of the study is consistent with the findings of Wang (2006), who revealed a curvilinear relationship between family ownership and AEMs in the US. He has provided evidence that the level of abnormal accruals tends to demonstrate a declining trend up to around 33.72% of family ownership that increases with the magnitude of family ownership. This indicates a U-shaped relationship between family ownership and DAs. These results contradict with Razzaque, et al. (2016) that imply with increased family ownership concentration, firms demonstrate lower REM. Specifically, family firms with ownership of 25% to 30% have the maximum level REM. Then the level of REM starts to recede beyond the 30% ownership. Hence, the

study offers recommendations to sponsors, directors and promoters to keep family ownership at the minimum level of 30%. This is to reduce REM among firms with concentrated ownership. This pattern contradicts with of “alignment-entrenchment-alignment” as documented in the findings of Morck et al. (1988) and Short and Keasey (1999).

With regards to institutional ownership, the Dynamic panel threshold analysis finds that the optimal threshold is estimated at 44.09%. This implies that earnings manipulations reach their minimum level when institutional ownership is at 44.09%. Hence, when institutional ownership is exceeding the threshold, a positive and non-significant relationship with EMs in the following year is documented. This is signified by the insignificantly positive slope coefficient. Similarly, there is a positive and statistically insignificant effect of institutional Own on EMs if the institutional Own is below the threshold. As displayed in Table (9.1) below, the coefficient of the lower regime (.00114) is lower than the coefficient of the upper regime (.00488). Thus, the upper regime is considered as the optimal regime. Therefore, the institutional ownership should not exceed than 44.09%. The coefficient is positive and presents an increasing trend when institutional ownership is 44.09%, implying that further increase in institutional ownership results in more earnings manipulations. Thus, this outcomes support the argument that the percentage of institutional shareholding reduces the opportunistic behaviour of management. This is in accordance with the efficient monitoring hypothesis. Nonetheless, when their presence attain a certain threshold, institutional shareholders could maximize their wealth without consideration of shareholders’ interest. This may be due to the increased power and shareholding in their hands leading them to seek to raise their private benefits, in accordance with the expropriation hypothesis. Consequently, this results supports hypothesis **(HC3)** that show non-linear relationship between institutional ownership and earnings manipulations.

This outcome confirms Bhojraj and Sengupta, (2003) study that revealed that ownership concentration may be beneficial to a certain extent. After that it begins to have a negative impact. This association is based on alignment and entrenchment hypothesis. On the contrary, this result contradicts Koh (2003) who has found a non-linear association between institutional ownership and income increasing discretionary accruals. The study finds out that when the institutional ownership is below 54.3%, there is a positive relationship between institutional shareholding and DAs. In contrast, when the threshold level is above 54.3%, a negative link between institutional ownership and DAs emerges. Furthermore, it is in line with Navissi and Naiker (2006)

who have revealed non-linear/quadratic relationship between institutional ownership and firm value. their study suggests the alignment hypothesis between institutional ownership and firm value. This owes to the fact that the institution plays a complementary role in the governance mechanisms. However, if the institutional shareholding reaches a threshold (30%), they may entrench themselves and extract personal benefits at the expenses of other shareholders. Consequently, they become more motivated to have absolute control of the firm and preserve their business relationship. In contrast, Faroque et al., (2007) have revealed U-shaped non-linear relationship between institutions and performance. This implies that the inflection point is 29.83% and 13.16% between institution ownership and Tobin's and ROA respectively. They have revealed that when the ownership is less than that threshold, the firm value decreases. However, when the proportion of shareholding increases above this threshold, firm performance will start to increase. Moreover, Lin (2010) in Taiwan has shown that the institutional ownership begins to increase firm performance when the institutional shareholding is more than 81.2%. However, when the ownership is below 81.20%, the study failed to find any significant relationship between institutional ownership and firm value.

With regard to the Governmental Own, the Dynamic panel threshold analysis finds that the optimal threshold is estimated at 47.65%. Hence, when Gov.own is above the threshold, a negative and significant relationship between state ownership and EMs in the following year is implied. This is as indicated by the significantly negative slope coefficient. On the contrary, there is a positive and significant relationship between GOV.OWN and EMs if the governmental Own is below the threshold. As indicated in Table (9.1) below, the coefficient of the lower regime (.009) is higher than the coefficient of the upper regime (.008). In this case, the lower regime is considered as the optimal regime. Therefore, government ownership should not exceed than 47.65%. Moreover, it is not logical to increase the ownership of government by high degree. This will affect the interest of shareholders (conflict of interest). The empirical results that support low regime indicate that, at the inferior level of ownership (below 47.65%), the relationship between governmental ownership and EM is positive and direct. This implies that when the size of the government's shareholding decreases, EM declines. The results from threshold panel regression confirm that at the low levels of ownership, governmental ownership is beneficial. They are also expected to align their interest to the company objectives. On the other hand, when the governmental ownership further increases, they exploit their power and control in expropriating the power of the minority shareholders. The turning point is at about a 47.65% stake. The results from

dynamic threshold analysis confirm that at the medium levels of ownership (47.65%), governmental ownership is beneficial. They are also expected to align their interest to the company objectives. When ownership is above 47.65%, the association between governmental ownership and EM is negative and significant. However, the upper regime is not preferred. This implies when governmental ownership further increases and reaches a very high level (beyond 47.65%), they exploit their power and control in expropriating the power of the minority shareholders.

The thesis therefore supports hypothesis (**HC4**) that the association between governmental ownership and DAs represents a non-linear relationship. These results outcomes are in line with the static trade-off theory. This argues that firms seek optimal structures that balance the gains and costs of ownership structures. This result contradicts with the study of Tian and Estrin (2008) that indicated the relationship between governmental ownership and firm value is U-shaped in China's PLCs. They found that when governmental ownership increases, firm value initially declines. When ownership reaches a threshold of (25%), the firm performance begins to increase again. The percentage of the governmental shareholding increases above 25% of the firm's equity.

Table 9.1: Governance indicators (Ownership Structure) and Kasznik model: Threshold estimation results

<i>Impact of ownership structure/ Earning management</i>				
$X_{it} \setminus Q_{it}$	MAG	FAM	GOV	INST
	Lower regime (\emptyset_1)			
Kazank ₋₁	-0.0655 (0.0824)	-0.0226 (0.0452)	0.164*** (0.0620)	0.218*** (0.0611)
Governance	0.0134*** (0.00322)	0.00318 (0.00390)	0.00936*** (0.00185)	0.00114 (0.00139)
Roa ₋	0.00962 (0.303)	-0.193 (0.221)	0.0691 (0.271)	0.780** (0.316)
Roe	-0.0672 (0.169)	0.0550 (0.100)	-0.198* (0.118)	-0.388** (0.153)
Liq	-0.00101 (0.00478)	0.00182 (0.00327)	0.00402 (0.00556)	-0.0232*** (0.00446)
Lev	-0.0544 (0.0700)	-0.0817** (0.0387)	0.0685 (0.0465)	0.165*** (0.0362)
Gear	0.0635** (0.0309)	0.0407*** (0.00764)	0.000207 (0.00691)	-0.0363*** (0.0139)
Firmsize	-0.0212 (0.0238)	-0.0669*** (0.0138)	0.0308 (0.0291)	0.0121 (0.0173)
Asstan	0.0589 (0.0618)	0.0129 (0.0395)	-0.0125 (0.0726)	-0.272*** (0.0444)
Oc	-0.0376 (0.0306)	0.0677*** (0.0216)	0.0317 (0.0292)	0.0609** (0.0280)
Emflex	0.00837 (0.0471)	0.0838*** (0.0303)	-0.192*** (0.0551)	-0.0981* (0.0543)
	Upper regime (\emptyset_2)			
Kazank ₋₁	0.441*** (0.137)	0.446 (0.395)	-0.0800 (0.280)	-0.610*** (0.148)
Governance	-0.0142*** (0.00488)	0.216 (0.171)	-0.00816** (0.00372)	0.00488 (0.00358)
Roa	1.780*** (0.550)	0.107 (2.693)	-0.746 (0.628)	-0.651 (0.624)
Roe	-0.941*** (0.250)	-1.617 (1.627)	0.773*** (0.291)	0.231 (0.299)
Liq	-0.0105 (0.0144)	-0.196** (0.0946)	0.0149 (0.0218)	0.0388*** (0.0133)
Lev	0.345*** (0.0946)	0.211 (0.762)	0.294** (0.136)	-0.479*** (0.177)
Gear	-0.202*** (0.0384)	-0.331* (0.183)	-0.0549 (0.0456)	0.114** (0.0475)
Size	-0.0707* (0.0415)	0.295** (0.136)	-0.271*** (0.0574)	-0.0641* (0.0362)
Asstan	-0.290*** (0.0733)	-0.116 (0.169)	0.0247 (0.101)	0.347*** (0.0873)
Oc	0.111*** (0.0373)	-0.0590 (0.146)	0.203*** (0.0451)	-0.103** (0.0473)
Emflex	0.165* (0.0860)	-0.430 (0.306)	-0.0848 (0.125)	0.277*** (0.0895)
Constant	-0.0593 (0.182)	-5.734 (4.264)	0.293 (0.284)	0.274* (0.160)
Threshold	18.67** (9.222)	21.19*** (0.872)	47.65*** (10.84)	44.09*** (10.64)
Linearity (p-value)	0.000	0.000	0.000	0.000
Observations	780	780	780	780
Nombre of firms	78	78	78	78

9.2.2 Threshold Value for Board of director's characteristics

To check the validity of the final specifications employed above, we follow Seo and Shin (2016) using the bootstrap test. The findings show that the p-values of the linearity test are all close to zero, providing strong evidence in favor of threshold effects. In general, these results outcomes confirm the perspective that the governance indicators (board of directors attributes including board size, board meetings, board independence, and board diversity) affect its earning management in a non-linear way.

When board size is employed as the transition variable, the findings as shown in table (9-2) reveal that the threshold estimate is 5 members. The coefficient (ϕ_1) in the lower regime is statistically insignificant and positive (0.00055). Similarly, the coefficient (ϕ_2) in the upper regime is statically insignificant and positive (.00987). Consequently, the coefficient of the upper regime is higher than the coefficient of the lower regime. In this case, the upper regime is considered as the optimal regime. Therefore, it isn't favorable to increase the board size above 5 members. The dynamic panel threshold analysis reveals that 5 members on the board are the optimal ratio that achieves the lowest level of earnings manipulations. As a result, this result proposes that the inflection point is 5 members on the board. This means that they remain active and perform the monitoring and controlling functions over the management team only until their number reaches this threshold. This indicates that any additional members may have a positive impact on earnings manipulations. Both too small and too large board size will probably be useless in decision making. This is in line with Lipton and Lorsch (1992), and Jensen (1993). They suggested that the board size should not exceed eight or nine directors to reduce the problems of coordination and communicating problems which influence negatively the monitoring functions. These results also support the views of Vefas (2000) and Abbot et al (2004) who found that the board size with a minimum number of 5 directors is more impactive in enhancing the informativeness of earnings information. This increases the quality of financial reporting. This supports the idea that small board size can communicate effectively and their responsibilities are properly identified. this is contrary to the diffused responsibilities in the large board size. Moreover, they are more responsive to the significant issues that may influence investor confidence, especially those regarding financial reporting. Thus, this finding supports the hypothesis (HC5) that proposes a

non-linear relationship between board size and DAs as a proxy for earnings management.

With regards to board independence, the dynamic panel threshold analysis reveals that when board independence is applied as the transition variable, the threshold estimate is 47.5% table (9.2). The coefficient (ϕ_1) in the lower regime is statistically insignificant and positive (0.0166). Similarly, the coefficient (ϕ_2) in the upper regime is statically insignificant and positive (.181). Consequently, the coefficient of the upper regime is higher than the coefficient of the lower regime. In this case, the upper regime is considered as the optimal regime. Therefore, 47.5% of non-executive directors is the optimal ratio required to achieve the lowest level of earnings manipulations. Accordingly, the increasing the proportion of independent directors reduces earnings manipulations until reaches a certain threshold of 47.5% of the board members. Thus, beyond this turning point, additional non-executive directors perform a passive and ineffective monitoring role in reducing earnings manipulations. This means that, at this level of threshold, outside directors act as good monitors for the shareholders' interest. They could inspire managers to enhance firm value rather than pursuing their-own objectives. Independent directors are interested in eliminating agency problems between managers and shareholders, exerting greater control over management and detecting opportunistic behavior quickly. Consequently, the inflection point in the non-linear relationship between non-executive directors and earnings manipulations is 47.5%.

Furthermore, the addition of more non-executive directors beyond this point may induce the directors to make sub-optimal decisions that increase earnings manipulations. This result is consistent with Lin (2011) who argued that when the proportion of independent directors is less than 38.37%, they can effectively supervise and monitor management. This achieves efficient EM rather than opportunistic manipulations. They have a higher tendency to devote their knowledge and expertise to support managers in making effective decisions and to provide impartial and objectives recommendations to the organisations. He recommended that board independence should be at least one-fifth of board seats (at least 2 members). Consequently, the hypothesis (HC6) supports a non-linear relationship between board independence and DAs.

With regards to the board diversity, the dynamic panel threshold analysis reveals that when board diversity is used as the transition variable, results show that the threshold estimate is 8% as shown in Table (9-2). The coefficient (ϕ_1) in the lower regime is statistically significant and negative (-4.59). While the coefficient (ϕ_2) in the upper regime is statically significant and positive (4.641). Consequently, the coefficient of the upper regime is higher than the coefficient of the lower regime. In this case, the upper regime is considered as the optimal regime. Therefore, 8% of board diversity is the optimal ratio required to achieve the lowest level of earnings manipulations. This result contradicts Agency Theory that suggests that females on the board increase the board's independence and strengthen the existing control mechanisms over the managers and executives, thereby mitigating agency costs (Hillman and Daziel, 2003; Martinez et al., 2018). This result is consistent with Pucheta-Martinez et al., (2018) who have found a non-linear link between gender diversity and firm value. This suggests that if the number of women on the board reaches a threshold of 11.72%, the addition of more females will have a negative influence on firm value. Therefore, the female directors have an active monitoring role over management until their presence reaches this point. However, beyond this turning point, they become passive and do not perform the controlling and monitoring functions effectively. Accordingly, this results in support Hypothesis (**HC7**) that suggests there is a non-linear relationship between board diversity and DAs as a proxy for accrual-EM.

With regards to board meetings, the empirical results imply that when board meetings are employed as the transition variable, the finding reveal that the threshold estimate for the number of the meeting held by the board members is 14 meeting table (9.2). The coefficient (ϕ_1) in the lower regime is statistically insignificant and positive (.000863). On the other hand, the coefficient ϕ_2 in the upper regime is statically significant and positive (.0223). Consequently, the coefficient of the upper regime is higher and more significant than the coefficient of the lower regime. In this case, the upper regime is considered as the optimal regime. Therefore, 14 meetings are considered as the optimal ratio required to achieve the lowest level of earnings manipulations. This indicates that the frequency of board meetings allows the directors to identify and resolve the problems which can reduce the possibility of fraud. This supports the views of (Krishnan and Visvanathan, 2009; Alzoubi and Selamat, 2012)

that an active board that meets frequently has a higher tendency to perform their duties following shareholders' interest. Not only that but to develop the integrity and reliability of financial reporting as well. Accordingly, the findings recommend that when the number of board meetings reaches a threshold of 14 meetings, EMs reaches its minimum level. The number of board meetings begins to have a positive relationship with earnings manipulations. Thus, the inflection point is 14 meetings implying that board meetings may be effective and active only until their representation reaches this point, after which the board meetings held become passive and ineffective in their monitoring and controlling role. This shows that the optimal number of board meetings is 14 meetings beyond the addition of one meeting will have a positive association with earnings manipulations. The conclusion is the existence of a non-linear association between board meetings and opportunistic earnings practices which supports the hypothesis (HC8).

Table 9.2: Governance indicators (Board of Directors attributes) and Kasznik model: Threshold estimation results

<i>Impact of B.O.D/ Earning management</i>				
$X_{it} \setminus q_{it}$	BSize	BINDEP	BdivER	BMEETING
	Lower regime (\emptyset_1)			
Kazank ₋₁	-0.00192 (0.135)	-0.190 (0.222)	0.0694 (0.0739)	0.0201 (0.0563)
Governance	0.000559 (0.0386)	0.0166 (0.104)	-4.597*** (1.144)	0.000863 (0.00194)
ROA ₋	1.710*** (0.586)	0.671 (0.766)	-0.0470 (0.223)	-0.414** (0.187)
ROE	0.625** (0.306)	-0.712** (0.330)	-0.0870 (0.148)	0.125 (0.0861)
Liq	-0.0135 (0.0176)	-0.0438** (0.0215)	0.0199** (0.00901)	0.00944** (0.00372)
Lev	-0.0986 (0.124)	-0.0898 (0.265)	0.182*** (0.0453)	0.0486 (0.0361)
Gear	0.0667** (0.0299)	0.107 (0.0811)	-0.0118 (0.0107)	0.0150 (0.00950)
Firmsize	-0.341*** (0.0922)	-0.228*** (0.0680)	-0.0180 (0.0167)	-0.0228* (0.0127)
Asstang	0.00545 (0.0959)	0.0339 (0.101)	0.0165 (0.0784)	0.0318 (0.0407)
Oc	0.327*** (0.0839)	0.0675 (0.0773)	0.0158 (0.0348)	0.00377 (0.0205)
EMflex	-0.356*** (0.0878)	0.282 (0.177)	-0.153*** (0.0545)	0.0554 (0.0431)
	Upper regime (\emptyset_2)			
Kazank ₋₁	0.0565 (0.155)	0.279 (0.237)	-0.802*** (0.138)	-0.145 (0.240)
Governance	0.00987 (0.0403)	0.181 (0.124)	4.641*** (1.264)	0.0223** (0.0113)
Roa	-1.214* (0.688)	-0.908 (0.798)	-0.913** (0.435)	1.875** (0.904)
Roe	-0.866** (0.342)	0.907*** (0.338)	0.703*** (0.242)	-0.767 (0.505)
Liq	-0.00302 (0.0200)	0.0439* (0.0237)	-0.0607*** (0.0156)	-0.0404*** (0.0155)
Lev	-0.0591 (0.152)	0.0711 (0.274)	-0.426*** (0.113)	-0.829** (0.356)
Gear	0.000669 (0.0393)	-0.119 (0.0851)	0.0359 (0.0374)	-0.160 (0.186)
Firmsize	0.386*** (0.0903)	0.188*** (0.0701)	0.00246 (0.0384)	-0.0226 (0.0616)
Asstan	0.264*** (0.0958)	0.00767 (0.100)	0.247*** (0.0708)	-0.711*** (0.133)
Oc	-0.272*** (0.0879)	-0.0874 (0.0750)	-0.0692* (0.0363)	0.0650 (0.0750)
Emflex	0.222** (0.101)	-0.315* (0.180)	0.414*** (0.0739)	0.321** (0.160)
Constant	-0.872*** (0.308)	-0.793*** (0.181)	0.244* (0.142)	-0.273 (0.360)
Threshold	5*** (0.512)	0.475*** (0.0339)	0.0816*** (0.0168)	14.04*** (0.259)
Linearity (p-value)	0.000	0.000	0.000	0.000
Observations	780	780	780	780
Number of firms	78	78	78	78

9.2.3 Threshold Value for Audit Committee Characteristics

To check the validity of the final specifications employed above, we follow Seo and Shin (2016) using the bootstrap test. The findings show that the p-values of the linearity test are all close to zero, providing strong evidence in favor of threshold effects. In general, these results outcomes confirm the perspective that the governance indicators AC characteristics that include AC size, and AC meetings except for AC independence affect its earning management in a non-linear way.

The empirical results reveal that when AC size is employed as the transitional variable, the finding presents that the threshold estimate is 3 members in the AC as shown in table (9.3). The coefficient (ϕ_1) in the lower regime is statistically significant and negative (0.307). In contrast, the coefficient (ϕ_2) in the upper regime is statically significant and positive (.386). Consequently, the coefficient of the upper regime is higher than the coefficient of the lower regime. In this case, the upper regime is considered as the optimal regime. Therefore, the optimal number of directors in AC required to achieve the lowest level of earnings manipulations is 3 members. Accordingly, the result suggest a negative relationship between the number of directors in AC and the opportunistic behavior of management. This happens until the number of directors in the AC reaches a threshold of namely 3 directors. Thus, the inflection point is 3 directors in the AC that can enhance the quality of financial reporting. These results are consistent with (Xie et al., 2003; Abbott et al., 2004; Vafeas, 2005) who suggested that the perfect average number for AC size is between 3 and 4 members.

Furthermore, this finding is consistent with Abdul-Rahman and Ali (2006) in Malaysian context and with Lin et al. (2006) in the US. They proposed that AC with a large number of directors is not more coordinated and cooperative in their work. Besides, they cannot increase the quality of financial statements, results in more biased opinions. They have indicated that larger boards may be useless in their monitoring and supervision tasks compared to smaller boards. This finding is consistent with Hamdan et al., (2013) in the Jordanian context who revealed a negative relationship between the AC size and earnings quality. They recommended that Jordanian corporations should reduce the size of AC to the minimum to be able to perform their duties perfectly. This indicates that an inappropriate increase in the size of AC may lead to a decrease in the effectiveness of the activity of AC. This is due to the increase in costs and muddling in the work. However, the study outcome is in line with the market regulations in the US

and UK. This indicates that a minimum of three directors should be in the AC (NACD, 2002; ICAEW, 2001). Indeed, some empirical studies found that the normal number of directors in the AC in the US and UK is three to five (Carcello and Neal, 2000; Davidson et al., 2005). Furthermore, the Cadbury Report (1992), the Smith Report (2003), the Blue Ribbon Committee Report (1999), and the Sarbanes–Oxley Act (2002) have recommended a minimum of three directors in the AC. This implies that too small AC size is not preferred. This is due to the limited capability to serve the committee and to fulfill their assigned duties efficiently. Also, when AC size is too large, it may suffer from coordination and communications problems that highlight another reason for weak monitoring (Alzoubi and Selamat, 2012). Thus, the thesis findings support the hypothesis (**HC9**) that suggests a non-linear relationship between AC size and DAs.

With regards to AC independence, the findings show insignificance and reject the hypothesis of a non-linear relationship (**HC10**) between AC independence and DAs. Therefore, the analysis cannot identify the optimal threshold of non-executive directors on the AC that can reach the minimum level of earnings manipulations.

With regards to AC meetings, the empirical results as displayed in the table (9.3) below reveal that when AC meetings is used as the transitional variable, the results for (Equ.42) show that the threshold estimate is 13 meetings that can be held by the AC. The coefficient (\emptyset_1) in the lower regime is statistically significant and negative (0.00356). On the other hand, the coefficient (\emptyset_2) in the upper regime is statically significant and positive (.0372). Consequently, the coefficient of the upper regime is higher than the coefficient of the lower regime. In this case, the upper regime is considered as the optimal regime. Therefore, the thesis finds that the p-values of the proxy of EMs, i.e. DAs is significant and negative. This is achieved when the AC meetings are below a threshold of 13 meetings. Thus, the inflection point is 13 meetings that should be held by the AC. This number of AC meetings can help its members to conduct the monitoring and controlling functions in an effective manner. Thus, the effectiveness of the AC is promoted. Nevertheless, beyond this turning point, additional AC meetings may be useless and ineffective in performing their required roles. These outcomes confirm the notion that more AC meetings increase the firm value, which promote the quality, validity, and credibility of financial reporting.

Besides, more AC meetings give more opportunities to their members to detect any manipulation in the financial statements. This is consistent with the supervision (Contest) hypothesis (Xie et al., 2003, Abbott et al., 2004, Krishnan and Visvanathan,

2009). Hence, the directors in AC are less sanctioned to fraud and aggressive earnings manipulations. However, when the number of meetings is more than the 13 meetings threshold, this may lead to unnecessary debates. It may also delay in taking decisions following the collusion (expropriation) hypothesis. These findings are consistent with Albersmann and Hohenfels (2017), as well as, numerous codes and recommendations of CG, such as the Sarbanes–Oxley Act (2002) and the Blue Ribbon Committee Report (1999). All have recommended a minimum of four meetings a year to maintain the effectiveness of the audit committee. Therefore, this result supports the hypothesis (HC11) which suggests a non-linear relationship between AC meetings and DAs.

Table 9.3: Governance indicators (Audit Committee) and Kasznik model: Threshold Estimation results

<i>Impact of Audit Committee/ Earning management</i>		
$x_{it} \setminus q_{it}$	ACSIZE	ACMEETING
	Lower regime (\emptyset_1)	
Kazank ₋₁	0.126** (0.0536)	0.251***
Governance	-0.307*** (0.111)	-0.00356**
Roa ₋	-0.687 (2.481)	0.722***
Roe	0.245 (0.694)	-0.180 (0.130)
Liq	-0.00686 (0.00812)	-0.0131*** (0.00299)
Lev	-0.128 (0.987)	-0.0904** (0.0392)
Gear	0.0203 (0.432)	0.0582*** (0.0134)
Firmsize	-0.0314 (0.0231)	-0.0679*** (0.0135)
Asstan	-0.0195 (0.303)	0.0256 (0.0511)
Oc	-0.0468 (0.0374)	0.0314 (0.0195)

Emflex	0.141* (0.0734)	0.0640** (0.0316)
	Upper regime (\emptyset_2)	
Kazank ₋₁	-0.0104 (0.161)	-1.573** (0.628)
Governance	0.386*** (0.0771)	0.0372** (0.0180)
Roa	1.378 (2.564)	4.731* (2.759)
Roe	-0.381 (0.795)	-0.526 (0.921)
Liq	-0.00467 (0.0106)	-0.0981** (0.0419)
Lev	-0.558 (0.942)	1.239** (0.493)
Gear	0.242 (0.423)	-0.301*** (0.113)
Firmsize	-0.0124 (0.0408)	0.813*** (0.263)
Asstan	-0.175 (0.306)	-0.340 (0.331)
Oc	-0.0115 (0.0512)	-0.733*** (0.277)
Emflex	-0.0472 (0.0914)	0.782* (0.414)
Constant	-1.066*** (0.248)	-1.306*** (0.434)
Threshold	3 (2.061)	13*** (0.252)
Linearity (p-value)	0.000	0.000
Observations	780	780
Number of firms	78	78

9.3 Summary and Conclusion

This chapter analyzed the relationship between different types of ownership structures. This is in addition to the attributes of the board of directors and the different characteristics of the audit committee with EM in Egypt. A dynamic panel threshold analysis is used. The study finds that the depiction of the unambiguous relation between ownership concentration, the board of directors, and audit committee attributes and EMs is still an empirical issue. Moreover, the study concludes that the relationship between CG mechanisms (ownership structure, the board of directors, and audit committee) and EMs could take the form of a non-linear relationship with the pattern of (entrenchment-alignment hypothesis). The sample under study spans the years 2008 to 2017. This confirms two hypotheses of the relation between CG attributes and the quality of financial reporting;

- (i) the efficient-monitoring hypothesis,
- (ii) the conflict-of-interest hypothesis.

With regards to the efficient monitoring hypothesis, shareholders are not interested to be fully entrenched. They tend to use their experience to oversight and control the management. Therefore, the alignment effect dominates the entrenchment effect. On the other hand, according to the entrenchment effect, shareholders become fully entrenched with sufficient voting rights. This provides them with the opportunities to expropriate minority shareholders and to be in conflict with them. Furthermore, controlling shareholders have become more entrenched because they are subjected to less stock market discipline and governance input by minority shareholders. They have a higher tendency to hide the company's real economic performance due to their opportunistic activities. For instance, controlling shareholders or parent firms may accommodate non-profitable units from listed companies before listing. Or, they may inject valuable assets into listed branches to boost earnings (Ding et al., (2007). Consequently, the entrenchment effect dominates the alignment effect, which leads to a reduction in the quality of financial reporting and firm value (McConnell and Servaes, 1990; Morck et al., 1988; Stulz, 1988, Habbash, 2010).

If the ownership structure is taken an example to summarize the point of view of this chapter, there are two conflicting views regarding the relationship between ownership concentration and the earnings manipulations. On one hand, some extant literature expected that since developing countries are characterized by less effectiveness of corporate control and market discipline coupled with their weak managerial labor market. The increased ownership equity makes controlling shareholders more likely to make accounting choices in line with their motives rather than firm value. They have more voting power with more facility to pursue self-interest value maximization at the expense of shareholder wealth without fear of punishment (Yang, Lai, and Tan 2008). Therefore, high ownership concentration gives the managers a high tendency to engage in more earnings manipulations. The goal is to guarantee their future benefits, increase the value of shares, and to keep the prices of stocks high. In this sense, increased ownership concentration is associated with more EM which supports the entrenchment hypothesis (Cheng and Warfield, 2005; Al-Fayoumi et al., 2010; Mitani, 2010).

However, the Agency Theory suggests that ownership concentration enhances the firm's performance and the quality of financial reporting. Controlling shareholder's favor, the convergence between manager and shareholder interests. These results are in line with Ding, et al., (2007), in China who revealed that the link between ownership

concentration and EMs has an inverted U-shaped pattern. They suggested that when ownership concentration is low, they strive to maximize their earnings and to secure their future earnings (entrenchment effect). On the contrary, When ownership concentration is high, they become more concerned with preserving the potential growth of the firm. This is to maximize its long-term objectives and reduce the incentives to manipulate earnings which is consistent with the alignment hypothesis (Dhaliwal, Salamon, and Smith, 1982; Warfield et al., 1995; Klein, 2002; Ebrahim, 2007; Ali, Salleh, and Hassan, 2008; Banderlipe and Reynald, 2009). As a result, ownership concentration can serve as a control mechanism for the agency problem in Western economies such as the US and UK, where ownership is diffused and separated from the control.

In conclusion, the overall pattern of the relationship between any type of ownership structure and EMs will be a non-linear relationship. Ownership concentration is not always harmful to the organisation. It may be favorable to the organisation according to the type of ownership structure and level of ownership concentration. For instance, the study finds that managerial ownership concentration is preferable than the concentration in family ownership. The study finds that family ownership entrenchment hypothesis at low levels of ownership, followed by a wide range of alignment at intermediate levels of ownership, and then followed by entrenchment at the relatively high levels of ownership concentration, thereby following the pattern of (entrenchment-alignment-entrenchment). Consequently, this pattern is the opposite of the pattern (alignment-entrenchment-alignment) found by Mork et al., (1988) and Short and Keasey (1999). This was due to the different types of ownership concentration and agency problems available in emerging countries compared to developed countries (US and UK) and East Asian countries. Therefore, it is not preferable to generalize the findings of the impact of ownership concentration on the quality of financial reporting and firm performance. It is important to test each type of ownership structure and determine to what extent it can reduce the EM at the minimum level. The thesis reveals that the increased ownership concentration in managerial and government ownership plays an important role to reduce the tendency of the managers to manipulate the quality of earnings. However, the study finds that institutional and family ownership concentration should not be increased unlimitedly.

Chapter Ten

Summary and Conclusions

10.1. Introduction

This current study addresses the gaps in the existing literature to explore the extent of internal CG mechanisms and external auditing's role in mitigating managers' EM. To examine these impacts, chapter two discusses the current system of the Egyptian context. Chapter three explains the concept of EM and the different models and techniques used to detect EM. Moreover, chapters four and five provide a literature review of theories and their empirical evidence on the association between internal CG mechanisms, external auditing and EM. Each chapter may complement or contradict the others. Nevertheless, by examining the role of ownership structure and EM practices, each chapter may contribute to the academic knowledge on whether firms with different ownership structures and CG function as predicted by the underlying theory.

Prior studies indicated that the existing literature does not suggest the best CG model. That is, an ideal CG model may work for certain countries, but not for others. Therefore, more works are needed to understand the role of internal CG mechanisms in limiting or increasing agency problems in different institutional environments, such as Egypt. Then, chapter six explains the methodological and analytical procedures in investigating the extent to which CG mechanisms and external auditing can enhance the EGX-listed organisations in limiting real and accrual-based EMs. DAs and REM are used as variables for measuring EM.

The study sample is derived from the EGX-listed organisations. Firms in the financial, utilities and insurance sectors are initially eliminated from the sample because they have distinctive characteristics, such as different regulations, taxes and accounting rules and financial statement profitability measures. A final sample of 78 Egyptian firms totaling 780 firm-year observations is used. The research has covered 2006-2018. Moreover, the study has used the SYSTEM GMM method as the main statistical tool hypothesis testing in terms of autocorrelation, heteroscedasticity and dynamic endogeneity. Furthermore, the study has used dynamic panel threshold regression developed by Seo and Shin (2016) to examine the existence of a non-linear relationship between CG

mechanisms and EM and determine the optimal threshold for each variable for the CG in relation to EM.

10.2. Research Findings

The main conclusions that can be derived from this work are summarized below:

First, the following conclusions are formulated based on extensive literature review and various theoretical models:

- a. A consensus on the best model of CG system does not exist due to national cultural, political, economic and social differences.
- b. A clear consensus in the literature concerning the specific definition and appropriate model for EM does not exist.
- c. A literature review reveals that the Middle East region has not been given great attention in terms of the impact of internal CG mechanisms on EM, particularly REM practices.
- d. Studies examining the effect of institutional ownership on opportunistic EM have conflicting results because institutional ownership is treated as a homogeneous group.
- e. Previous research findings on the relationship between the board of directors' characteristics, AC attributes and EM are relatively inconsistent. This fluctuation in the findings may be partially due to methodological differences in previous studies (ranging from divergent measurement of those mechanisms to the use of different statistical methods). Different institutional environments at firm and national levels, such as firm characteristics, laws and regulations, culture values and economic conditions, also contribute to this variation in findings.
- f. Review of existing literature did not give a specific conclusion and has provided mixed results regarding the effect of ownership structure on agency costs and opportunistic EM. The non-linear relationship between ownership structure and EM is found in the literature considering the difference in investments' time horizon, shareholding size, business relationship with the investee firm, sensitivity of shareholding, shareholder activism, changing culture and business environment.

Second, Conclusions Derived Based on the Empirical Study

The empirical examination of the hypotheses has revealed a mixed set of results. The findings of the research hypotheses are summarized regarding the first and second model of Accrual-based EM model and Real-based EM model as follows:

The first sub-hypotheses HA1 and HB1 predict that the managerial ownership has a positive and significant relationship with DAs and real-based management activities. Surprisingly, the coefficient of the managerial ownership and DAs is negative and significant across the four models of EMs. Moreover, the results indicate that managerial ownership and REM have a significant and negative relationship across the measures of REM except for ABCFO.

The hypotheses HA2 and HB2 predict that the family ownership has a positive and significant relationship with DAs and REM. Consistently to this, the results indicate that family ownership and DAs have a significant and positive relationship across the four models. While, results from SYSTEM GMM reveals that family ownership and REM have a negative relationship except for ABCFO and RM1.

The third sub-hypotheses HA3 and HB3 predict that institutional ownership has a negative and significant role in mitigating the DAs or real-based EM. Consistent with this, the results have revealed that the institutional ownership is effective in eliminating DAs. Inconsistently to this, the findings manifest that institutional shareholding and REM have a positive and significant relationship across the measures of REM except for ABCFO and ABDISCX.

The hypotheses HA4 and HB4 predict that governmental shareholding has a positive and significant impact on the DAs and REM. In line with this expectation, the study finds that the government ownership has a significant and positive influence on DAs. Similarly, the study shows that the government ownership has a positive influence REM across ABCFO, ABPROD, and ABDISX. However, the result from SYSTEM GMM reveals that government ownership has a negative influence REM across RM1, RM2, RM3.

The hypotheses HA5 and HB5 state a negative and significant relationship between board size and EM (DAs and REM). The SYSTEM GMM results indicate that the larger the board members, the less effectiveness in mitigating discretionary accruals. While, the SYSTEM GMM results regarding REM Models reveal a negative

relationship between board size and REM based on ABPROD, RM1, RM2, RM3. While a positive correlation is found between board size and REM across ABCFO and ABDISCX, advocating that the board size does not have a role in reducing REM.

Hypotheses HA6 and HB6 expect a negative and significant association between board independence and EM (DAs and REM) as suggested by the regulatory code. The study manifests that the board independence plays a critical role in mitigating opportunistic earnings manipulations (DAs). inconsistent to this, the board independence has a positive impact on the REM across (ABDISCX and RM1).

Hypotheses HA7 and HB7 suggest a positive and significant association between CEO duality and both types of EM practices. There is no consensus regarding the impact of CEO on limiting Earnings manipulations. Based on the accounting EM Models, the study finds that the negatively-signed coefficient and significant relationship based on Raman and shahrur model showed in the results reject this research argument and hypothesis. This means that from theoretical perspectives and based on the research sample, the Egyptian market supports Stewardship Theory which assumes that CEO would not have conflicts of interests with shareholders which is beneficial for the organisation to have dual authority to enhance performance (Amer, 2016). On the contrary, the results reveal a positive and significant relationship between CEO duality and DAs based on Kasznik model. Regarding the connection between CEO duality and REM, they have a negative and significant relationship based on ABCFO and ABDISCX, while they are positively correlated based on ABPROD, RM1, RM2, RM3.

Hypotheses HA8 and HB8 predict a negative and significant association between board meetings and EM based on DAs and REM. Consistent with this, there is a negative relationship between board meeting and DAs based on Kothari model while positively correlated based on the other three models. On the other hand, board meeting is positively correlated with REM across different measures of REM except for ABCFO. The results show that board meetings and both approaches of the EM are negatively and insignificantly associated.

Hypotheses HA9 and HB9 suggest a negative association between board diversity and EM based on accruals and real-based activities. The results reveal that board diversity and EM is negatively related to DAs except for Modified Jones Model. Regarding REM models, the board diversity has a role in reducing the practice of REM except for ABCFO.

Hypotheses HA10 and HB10 predict a positive association between AC size and EM either accruals or real-based activities. The findings reveal that AC size is positively and significantly with related DAs based on Kothari, Kasznik, and Raman and Shahrur models and non-significantly related with Modified Jones Model. On the other hand, the results suggest that there is a positive association between AC size and REM except for RM2.

Hypotheses HA11 and HB11 suggest that independent AC is negatively and significantly related with EM. The results of the study find that AC independence and DAs are positively correlated. However, AC independence influences significantly and negatively on DAs based on Kasznik model. The results reveal that the AC independence has a negative and significant influence on REM based on ABPROD, RM1, RM2, RM3 and non-significantly related to the other models.

Hypotheses HA12 and HB12 predict that the AC meetings have a negative and significant impact on EM(DAs and REM). The findings manifest that AC meeting is significantly and negatively related to DAs across four models. Similarly, the results find that AC meetings are negatively and significantly associated with REM based on ABPROD, RM1, RM2, RM3 while positively related to other indicators of REM.

Hypotheses HA13 and HB13 suggest that the external auditing has a negative and significant influence on the EM (DAs and REM). The results support the hypothesis that the audit quality is negatively and significantly related with DAs. In terms of REM measures, the findings reveal that external audit has a negative impact on REM based (ABCFO, ABPROD, RM1, and RM3).

The empirical examination of the hypotheses that are related to the third model of threshold EM model indicate that there is non-linearity between CG mechanisms (managerial own, family own, institutional own, governmental own, board size, board independence, board meetings, board diversity, AC size, and AC meetings) and DAs except the AC independence. The study demonstrates the optimal threshold value for each variable of CG that can achieve the minimum level of earnings manipulations. It should be noted that the CEO duality and audit quality cannot be examined in this model as they are dummy variables and dynamic panel threshold model cannot conduct test for those dummy variables.

It has been concluded that some mechanisms in the first and second model do not have a significant impact on the earnings manipulations due to much weakness related to CG and external auditing in the Egyptian context in reducing the opportunistic

behavior of management and in enhancing the reliability and creditability of financial reporting. Some plausible explanations for those result may be a weak legal protection of minority shareholders, inadequate enforcement of laws and regulations, lack of disclosure and voluntary implementation of CG. Another possible justification may be due to inherent issues and economic and political events that happened in Egypt and influenced and restricted the role of the monitoring mechanisms. Furthermore, the non-significant association between CG attributes and EM practice may be due the effect of (entrenchment-alignment) hypotheses that make linear model struggle to deliver an “average slope” over the whole range of ownership structure. Consequently, the positive and negative slopes tend to cancel each other out, which makes the coefficient to be zero and adversely affects the level of significance. Therefore, there is a greater need to concentrate more on proper enforcement of laws and regulation to protect minority shareholder’s rights and give them more voting rights to elect their representative. Furthermore, it is important to understand the surrounding environment, legal framework, political and statutory regulations, and cultural values in the Egyptian context and match them with the design of the CG structure in the Egyptian context.

10.3. Research Implications

This study provides many contributions to the literature concerning CG effect on financial reporting quality, though certain limitations also exist. The results of the study have implications for setting standards and contribute to the debate on whether harmonizing CG practices globally would be feasible.

Based on a review on previous empirical literature, different theories regarding the effectiveness of CG mechanisms and findings of the current study, it is revealed that CG quality differs among countries. This difference in CG application may be due to variations in macro- and microeconomic conditions, cultural values, required level of disclosure requirements, stock market laws and regulations, protection level given to minority investor and ownership structure.

Egypt is considered as an example of developing countries that differ from the Anglo Saxon context (e.g. the US and the UK). Consequently, implications from studies conducted in these countries may be misleading and cannot be applied to the Egyptian context. Thus, results acquired from using new data set, such as the EGX that represents the institutional of emerging economies, can be generalized and applicable to emerging

markets as they have features, institutional setting and characteristics similar to those of the Egyptian context.

Most recent studies in CG development in the UK and the US revealed that the inclusion of more independent directors on the board can promote firm performance and financial reporting quality as shareholder interests are more protected and maximised. The findings of this study from the SYSTEM GMM are contrary to the conventional concept that greater representation of independent members on the board is related to less EM incidences. Therefore, this study implies that considerable attention to CG regulators in the EGX is needed and adding non-executive directors is unlikely to enhance financial reporting quality, thereby increasing agency costs. Furthermore, results from the GMM confirm a non-linear relationship between board independence and EM. This finding indicates that the proportion of external directors should not be increased to more than 47.5% to effectively minimise EM. That is, if the number of external directors increases above this threshold, then they will become passive and ineffective in their monitoring and controlling function, thereby affecting negatively the financial reporting quality.

The results of the current study also reveal conflicting results concerning the impact of AC composition on EM practices. The study finds that AC of non-executive directors positively and significantly relates to opportunistic EM. This result is contrary to the 2005/2011/2016 ECCG recommendations on AC composition of at least three independent directors. This finding implies that the 2005 ECCG about AC independence should mandatorily consider the nature of different industries, types of ownership structure and the surrounding environment. Moreover, it is recommended that authorities monitoring organisations in the Egyptian context should enact a legislation that enhances the independence of AC members and ensures the existence of any family or financial relationship between AC members. The study results cannot confirm a curvilinear relationship between the number of independent AC members and EM.

Although the ECCG (2005) has recommended that AC size must have at least three non-executive directors, the findings of this study reveal that AC size and DAs or REM are positively and significantly related. This finding indicates that large AC size does not significantly reduce DAs based on several measures used. Accordingly, this study finds that an AC composed of more than three members may be unbeneficial for

firm performance and may increase organisational costs from the agency theory perspective.

With regard to board and AC meetings, the 2005 ECCG has recommended that the board of directors and AC should meet at least four times annually. The outcome of the study implies that as the board and AC meetings increases, the financial performance and financial reporting quality are enhanced. This evidence supports the findings of the study that board and AC meetings should be conducted more than times annually but with certain limitations (i.e. AC and board meetings should not exceed 13 and 14, respectively). This study concludes that the number of AC meetings and EM have a non-linear relationship. These findings are consistent with the opinion that more AC meetings can enhance firm value and the credibility and integrity of reporting, hence provide additional opportunities to its members in detecting financial statement manipulations. Thus, this case suggests a supervision (contest) hypothesis. However, AC meetings above the given threshold may lead to unnecessary debates and delay decision making. Thus, this case suggests a collusion (expropriation) hypothesis. Therefore, CG authorities should mandate these recommendations.

The study also reveals that different types of ownership structures significantly impact EM. Thus, opportunistic behaviors of the management are affected not only by market and economic circumstances but also by ownership concentration. The study shows that developing countries should not generalize the negative impact of concentrated ownership. In addition, the study reveals that ownership structure and EM practices have a non-linear relationship. Furthermore, the result of this study finds that ownership structure (family, institutional, governmental and managerial holdings) and financial reporting quality have a non-uniform relationship over the entire range of ownership. Furthermore, EM and the different types of ownership structure have a quadratic relationship, thus supporting the combined result of alignment and entrenchment hypotheses. The study further recommends that an ownership structure has a certain threshold that may be applicable in the EGX-listed companies and help achieve the lowest level of EM.

With regard to managerial ownership, the study finds that managerial ownership and EM have a non-linear relationship. The study analysis reveals that when managerial shareholding is less than 18,67%, managers are more likely to manipulate earnings and expropriate shareholder interest. The findings reveal that managerial ownership's the

optimal ratio is at 18.67% or above, where they can play an effective monitoring role in achieving the lowest level of EM.

With regard to family ownership, at the low ownership level (below 21.19%), firms with low family ownership are not completely controlled by family shareholders, though they may be family-owned organisations. Accordingly, this finding is consistent with the hypothesis that firms with low family ownership are likely to pursue their interest relatively more than aligning it with shareholder interest (entrenchment hypothesis). On the contrary, when family ownership is at 21.9%, managers are likely to align shareholder interest with firm objectives (alignment hypothesis). When family ownership further increases and reaches an extremely high level (beyond 21.9%), the entrenchment hypothesis contends that family firms have a higher likelihood of expropriating minority shareholders when their ownership concentration and controlling rights increase.

The study finds that government shareholding should not be increased unlimitedly. Moreover, the study signifies that the optimal threshold value for government ownership is at 47.65%, implying a direct relationship between government ownership and EM. That is, as the size of the government's shareholding increases, EM initially increases. Similarly, as government ownership decreases, EM decreases. Therefore, this study suggests that government ownership should not increase more than 47.65% to avoid exploiting their power and control in expropriating the power of minority shareholders, thereby enhancing firm performance and financial reporting quality.

Empirical results suggest that when institutional ownership is above 44.09%, EM increases when the trend increases. The study also reveals that the optimal threshold is when institutional ownership structure reaches 44.09%, where EM reaches its minimum level. Therefore, the study suggests that institutional ownership should not be increased above 44.09%.

Accordingly, the researcher recommends that empirical findings from the current study and those from other studies can serve as the baseline for current CG codes and recommendations. Consequently, this research highly recommends regulators and standards setters to pay attention to the weaknesses of CG application and CG mechanism development. CG application and mechanism are then matched with the institutional setting, legal and political needs and regulatory requirements. The findings of this current study advocates that adherence to good CG practices provide

opportunities for firms to achieve higher financial reporting quality and promote firm performance, though the research results find that not all CG mechanisms can reduce agency costs and opportunistic EM practices.

10.4. Research limitations

Although there is a careful treatment regarding the variables used in the analysis and methodology applied, the study is subject to some limitations.

First, although the study has used several alternative DAs models and different measurement error-related variables, the results of the study is not totally free of the measurement errors. Besides, there is an on-going debate regarding the inefficiency of the existing accrual models to classify the DAs and non-DAs components.

Second, classifying directors into executive and non-executive members is based on the information available in the financial reports of sample firms and that gathered from the Egyptian stock market or from the EGID. Consequently, the reliability and validity of information collected depend upon the reliability of its sources.

Third, although the study has the possibility to extend the extracted CG index to cover subjective yet significant areas for CG such 1) accuracy and adequacy of the internal control systems, policies and procedures, 2) the degree to which principle risks are identified, 3) the effectiveness of remuneration policies in aligning the board of directors' interest with the shareholders' interest. If this was possible, the results and findings could have been different. However, this was not possible due to data restrictions as well as the high level of subjectivity involved in these CG mechanisms.

Fourth, the CG index could also be extended to involve the CG external mechanisms. Nevertheless, the present Egyptian guidelines include recommendations that relate only to internal mechanisms besides that the implementation of the Egyptian CG guidelines is partially voluntary.

Fifth, the study aims at including several independent variables (such as corruption, law enforcement and mismanagement) in the formulated tested models in order to investigate their impact on the practices of EMs. However, this was not possible due to the difficulty in collecting data of the Egyptian context especially if it is related to the aforementioned factors.

Sixth, the sample of the study covers only the years 2008-2017 and may suffer from survivorship bias. Future researchers may favor to account for this bias and

encompass the analysis to more recent years, including for example, before CG reform and after CG reform.

Seventh, as the study findings only apply to listed large and publicly traded firms in Egypt, generalization beyond those limits may not be warranted. Additional research would be needed to replicate the results in private firms or firms outside EGYPT.

Finally, the study has also excluded finance and banking industries due to their unique ownership, governance structure, and different regulations that govern these industries.

10.5. Future Research

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.

Future research is also needed on the impact of certain additional attributes of the board of directors and family ownership. Additional attributes of the board of directors include their experience and education level, whereas those of family ownership include the role of families in supervisory and advisory boards, generation of the family, number of family managers and founder managers and their positions and educational backgrounds.

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.

Future research may employ new, alternative accrual-based approaches, such as the approach of Dechow et al. (2000) with reversal factors that develop the quality of DAs variables. In addition, this study recommends the discretionary revenue-based approaches (Stubben, 2010) to be used as a comparative measurement. Moreover, it will be interesting for future research to further investigate and distinguish whether

managers exercise accounting discretion for opportunistic or beneficial purposes (e.g. see Bowen et al., 2008).

Future research can analyse different types of institutional ownership by classifying them into long- (active) and short-term (passive) investors and measuring their EM and firm performance.

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.

Future research could consider other audit quality proxies rather than those used in this study that may have a greater impact on discretionary accruals and consequently on EM, such as auditor's opinion in its audit report and auditor's experience level. It is proved that the audit quality proxies used in this research explain a small percentage of EM variations.

Another future research avenue is to consider the same CG mechanisms and other external audit elements and determine their impact on other issues of earnings quality, such as auditor's opinion, accounting conservatism, restatements and fraud. It is very interesting to examine the impact of these dimensions on the relationship between quality of audit and firm value.

Future studies should consider the role of gender diversity in detail when designing or amending the provision of CG code. The Egyptian stock market should specify the proportion of women that firms should maintain, mandate firms to abide by such rule and determine whether women have valuable participation in the board of directors.

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Appendices

Appendix (A) Summary of Literatures Reviews

1) Summary of Studies Investigating the Relationship between CG, Managerial ownership and EM

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
1	Sanchez-Ballesta and Garcia-Meca (2007) Spain (Madrid Stock Exchange)	64 companies totaling 203 firm-year observations.	1999-2002.	Meta analytic techniques	Agency Theory	MAG OWN	The absolute DAs (the cross sectional Modified Jones model)		Non-linear relationship between insiders' ownership and DAs. However, this relationship is affected by the financial crisis.
2	Huafang and Jianguo, (2007) China	599 listed firms	2002	OLS regression	Agency Theory	MAG OWN	The voluntary disclosure	firm size, Big 4, intangible assets ratio, leverage ratio	Managerial ownership, state ownership and legal-person ownership are not related to disclosure.
3	Butt and Hasan (2009), In Pakistan	58 non-financial listed companies from Karachi stock exchange	2002-2005	OLS regression analysis	Pecking order Theory	MAG OWN	Capital structure	Firm size and ROA	A negative relationship between managerial ownership concentration and gearing levels (debt to equity ratio).
4	Al-Fayoumi, et al., (2010). Jordan	195 firm-year observations	2001 to 2005.	OLS regression analysis, and GMM estimator.	Agency Theory	MAG OWN	Absolute DAs (Modified Jones model)	Firm size, Return on Equity, Growth opportunity, financial leverage.	The Mag ownership is significantly and positively related with DAs
5	Iqbal and Strong (2010), UK	100 listed firms	1991 to 1995.	OLS regression	Agency Theory	MAG OWN	DAs (Kotharie et al. 2005)	firm size, Book to market value; sales growth, the right issue discount; the ratio of cash flow to total assets; issue size; an extreme earnings performance dummy; year and industry dummy	There is no relation between DAs and MAG own around rights issues nor do
6	Daraghma and Alsinawi (2010), Palestine	28 listed corporations	2005-2008	OLS regression	NA	MAG OWN	Performance (return on revenues and return on sales)		A positive relationship between MAG Own and the financial performance.
7	Lin, 2011 Taiwan	277 public trading companies	1997-2007	Panel Smooth Transition Regression Model	Entrenchment and Alignment effect	MAG OWN	DAs (Modified Jones model (1995)	Firm size, Leverage, growth	There is non-linear relationship between MAG own and DAs. This is consistent with entrenchment effect and alignment effect.

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
8	Alves, (2012) Portugal	34 firms totaling 204 firm-year observations).	2002-2007	OLS regression	Agency Theory	MAG OWN	The absolute DAs (Modified Jones model)	firm leverage, firm size, CFO, performance, board size	There is a negative relationship between Mag own and DAs. This result is consistent with the alignment of interest hypothesis.
9	Spinos, (2013), USA	235 U.S. firms listed in the S&P 500 index	2004-2009	OLS regression analysis	Agency Theory and Positive Accounting Theory	MAG OWN	Absolute DAs (Modified Jones model (Dechow et al., 1995)	No control variables	There is a negative but insignificant relationship between the DAs and the Mag Own.
10	Bos et al., (2013) in UK	236 constituents of the U.K. firms	All Firms listed after IPO.	OLS regression analysis	NA	MAG OWN	ROE, and Tobin's Q	firm leverage, industry, firm growth, R&D expenditures, block holder ownership	Non-linear relationship between Mag Own and the performance of U.K. firms.
11	González and Garcí a-Meca (2014), Latin American	435 firms totaling 1,740 observations	2006-2009	GLS regression analysis	NA	MAG OWN	The absolute DAs (the cross sectional variation of the modified Jones model)	Firm size, Debt Level, ROA, Economic Return, GROWTH	A non-linear relation between insiders ownership and DAs.
12	Ayadi and boujelbene (2014). France	117 company totaling 1,053 observations.	2003-2011	GLS analysis	Agency Theory	MAG OWN	Earnings quality (AEM and market earnings informativness	Firm size, Leverage, growth, IFRS	The MAG Own has a significant and positive effect on EMS.
13	Aygun, et al., (2014). Turkey	230 firms	2009 to 2012	OLS regression	Agency Theory	MAG OWN	Absolute DAs (Modified Jones model) (Dechow et al., 1995)	Firm size, ROA, financial leverage.	There is a significant and positive relationship between MAG Own and DAs.
14	Sepasi, et al., (2016) Iran	80 listed companies on the Tehran Stock exchange	(2010-2014)	OLS regression	Agency Theory	MAG OWN	Quality of disclosure	firm size	MAG Own has a negative and significant effect on disclosure quality.
15	Farouk, and Bashir, (2017) Nigeria	6 listed conglomerates	2008-2014	GLS analysis	Agency Theory	MAG OWN	Absolute DAs (Modified Jones model)	firm size and share price	The MAG Own has a significant and negative effect on DAs
16	Waweru and Prot (2018) Eastern Africa	480 firm year observations listed in Kenya and Tanzania	2005-2014	GLS regression analysis	Agency Theory and RD theory	MAG OWN	The absolute DAs (Modified Jones model and Kothari model)	board meetings, board size, audit committee, cash flow, firm size, leverage, and ownership concentration	A significant and positive relationship between Managerial Own and DAs.
17	El-Moslemany and Nathan (2019)	50 listed firms in Egyptian stock exchange	2004-2015	OLS and GLS regression	Agency Theory	MAG OWN	DAs (modified Jones model)	Firm age, firm size. ROA, Debt ratio, and Market-book value	Non-significant relationship between managerial ownership and DAs

2) Summary of Key Studies Investigating the Relationship between CG, Family Ownership Structure and Earnings Management

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
1	Akimova and Schwodiauer (2004), Ukraine	Survey conducted in 2001 on 202 medium and large firms for the period 1998-2000			NA	Family Own	performance sales per employee		Family Own has a significant and non-linear effect on performance, positive within a lower range but negative from a threshold close to majority ownership onwards.
2	Wang 2006, (USA)	S&P 500 companies.	1994-2002	OLS regression analysis	Alignment hypothesis and Entrenchment hypothesis	Family Own	Earnings quality (Abnormal Accruals, Earnings Informativeness, Persistence of Transitory Loss Components in Earnings).	Firm size , leverage, institutional own, non-family insider ownership and firm age	There is a U-shaped relation between family ownership and DAs. When family ownership exceeds certain levels (about 58–67%), family firms start to report earnings of lower quality than non-family firms.
3	Maury (2006) Western European countries	1672 non-financial firms	1998	OLS regression	NA	Family Own	Tobin's q and return on assets (ROA).	Sales growth, Capital expenditures/sales, firm size, Total debt/total capital, and industry variables	Family firm outperforms non-family firm. active family control achieves higher profitability than non-family control firms in different legal regimes, however, the passive family control does not affect the profitability.
4	Siregar and Utama (2008) Indonesia	144 firms listed on the Jakarta Stock Exchange (JSE)	from 1995–1996, and 1999–2002. (the Asian financial crisis period)	OLS regression	NA	Family Own	Opportunistic or Efficient EM (Jones (1991), Modified Jones model, Kasznik (1999), Dechow, Richardson, and Tuna (2002).		There is a negative relationship between the family ownership and opportunistic EMs.
5	Saito (2008) Japan	1818 distinctive firms totaling 15,950 firms in Tokyo, Osaka, and Nagoya	1990-1998	OLS regression	Agency Theory	Family Own	Tobin's q, Industry-adjusted Tobin's Q, ROA, Industry-adjusted ROA	Assets, leverage beta, Idiosyncratic risk	Family firms slightly outperform nonfamily firms in Japan. However, the family firm premium has mainly arisen from active founders. After founders retire, the results are mixed.
6	Omran et al., 2008 Arab countries (Egypt, Jordan, Oman and Tunisia)	304 firms	2000-2002	OLS regression	NA	Family Own	Firm performance and profitability	Firm level characteristics and Country level characteristics	There is non-significant relationship between family own concentration and firm profitability and performance measures.

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
7	An and Naughton (2009), Korea (KSE).	3054 firm-year observations	2000-2005	OLS regression	Agency Theory	Family Own	ROA, Tobin's Q, Market to Book value, Earning quality	foreign ownership, business group dummy, size, leverage, sales growth ratio, capital asset investment ratio, and liquidity ratio.	Family own mitigates agency problems leading less opportunistic management behaviors.
8	Arosa et al., (2010). Spain	586 non-listed firms.	2006	OLS regression	Agency Theory	Family Own	Return on Assets (ROA).	Insider ownership, BOD composition, Outsiders, Growth opportunity, Leverage, Firm's size, and Firm's age	In first-generation family firms, there is a positive relationship between family ownership concentration and ROA at low level of control rights and a negative relationship at high level of ownership concentration.
9	Lin and Wu (2010). Taiwan	629 listed companies among the financial institutions	1996-2007	OLS regression	Agency Theory	Family Own	Risk taking measured by annualized volatility of stock prices and annualized volatility of assets market value		Family ownership has a significant negative effect on risk taking in the financial industry. Moreover, this influence was non-linear by the range of family ownership.
10	Cascino, et al., (2010) Italy	778 firm-year observations	1998-2004	OLS regression	Alignment hypothesis and Entrenchment hypothesis	Family ownership	Earnings quality (accrual quality, persistence, predictability, and smoothness and "market-based" attributes such as value relevance, timeliness, and conservatism).	Firm size, Leverage, board Independent, Institutional own, ROA, Growth, Audit firm	The quality of financial reporting in family firm is higher than the quality of reporting in non-family firms.
11	Lin and Tsangyao (2010) Taiwan	242 listed companies totaling 2,420 observations.	1997-2006	OLS regression and advanced panel threshold regression	NA	Family Own	Tobin's Q	firm size, Leverage, Sales Growth, Industry	There is U-curved relation between family ownership concentration and Tobins' Q
12	San Martin-Reyna, and Duran-Encalada, (2012). Mexican	90 listed companies	2005 -2009	OLS regression	Agency Theory	Family Own	Tobin's Q	Leverage (DEBT), and firm size	Family-owned firms do better than non-family counterparts do.
13	Ghabdian et al., (2012) Iran	31 non-family and 31 family companies through	2002 to 2009	OLS regression	NA	Family Own	DAs (Modified Jones Model)	No control variables	Non-family firms engage in EM more often than family ones.

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
		distributing surveys to companies listed in TSE							
14	Amador (2012), Netherlands Amsterdam Stock Exchange.	34 Dutch publicly listed companies	2000 to 2010	OLS regression	Entrenchment and Alignment effects theories	Family Own	DAs (Modified Jones Model)	Firm Size., firm age, Audit firm, IFRS, Loss	Firms with higher percentage of closely held shares (high ownership concentration) statistically report higher abnormal accruals than those firms with lower levels of ownership concentration.
15	Halioui and Jerbi (2012) Tunis	31 companies totaling 257 firm-year observations	1998-2009	OLS regression	NA	Family Own	DAs (Kothari et al. (2005) model)	Audit quality, firm size, Leverage, and Debt level	A positive association between block-holders and DAs especially in case of declining pre-managed earnings to obscure this decline.
16	Usman and Yero, (2012) Nigeria	Six firms, with 30 firm-years observations	2004-2010	OLS regression	Agency Theory	Family Own	DAs (Modified Jones Model)	Firm Size, Leverage, and ROA	There is a negative relationship between family ownership concentration and DAs, thereby improving the reliability of the reported earnings.
17	karuntarat (2013) Thailand.	3,998 firm-year observations from 1994 to 2007 in total for ROA, and 3,997 for Quasi-q	1994- 2007	OLS regression	Agency Theory	Family Own	DAs and/or revenues, ROA and Quasi Tobin's Q	Board Size, board independence, board experience, CEO Founder, CEO Descendant, CEO-Chair, CEO-Chair Group, firm size, firm Age, firm growth, and leverage	There is a negative relationship between the family ownership concentration and the magnitudes of EM practices.
18	Jameson et al., (2014).	1796 firm-year observations	2011	OLS regression	Agency Theory	Family Own	Tobin's Q	Growth in sales, Assets Tangibility, capital expenditures, long term debt, total assets, Industry dummies	There is a negative relationship between family controlling shareholder presence in the governance and Tobin's Q.
19	Razzaque et al., (2016) Bangladesh	691 firm-year observations	2006-2011	OLS regression and Fama-Macbeth regression.	NA	Family ownership	REM using AB-CFO, AB-DISC, REM-1, AB-PROD, and REM-2	ROA, firm size, Growth, firm age, loss, and leverage.	There is a curvilinear relationship between family ownership and several measures of the (REM)

3) Summary of Key Studies Investigating the Relationship between CG, Institutional ownership and Earnings Management

	Author, year, country	Sample	Period	Model	Theories	Independ variable	Dependent variable	Control variables	Findings
1	Bhojraj and Sengupta, (2003) Tehran market	137 listed firms	2001-2006	OLS regression.	Agency Theory	Institutional Own	firm performance: net income to total assets ratio (NIA) and ordinary income to total assets ratio (OIA).	firm size, leverage, Liquidity, current ratio), firm risk, the beta, coefficient of capital asset pricing model (CAPM), firm's inventory to total assets (IVA)	The relation between the institutional ownership and performance is U-curved relationship.
2	Koh, (2003) Australia	107 firm-year observations	1993 and 1997	OLS regression.	NA	Institutional Own	DAs (Jones Model)	Size, leverage, auditor quality, MAG own, controlled entity, industry membership, and year	There is non-linear relationship between the institutional ownership and DAs.
3	Park and shin (2004) Canda	539 observations	1991-1997	OLS regression	NA	Institutional Own	DAs (Modified Jones model)	Financial leverage, firm size, investment opportunities, and weight of bonus	A negative relation between representatives of the active institutional shareholders and EMs.
4	Siregar and Utama (2008), Indonesia	144 firms listed	From 1995–1996, and from 1999–2002.	OLS regression	NA	Institutional Own	Opportunistic or Efficient EMs (Jones (1991), Modified Jones Model, Kasznik (1999), Dechow, Richardson, and Tuna (2002).	No Control variables	There is non-significant and positive relationship between institutional ownership and efficient EM.
5	Zouari, and Rebai, (2009). USA	121 US firms.	2002-2005	Neural network approach	Positive Accounting Theory	Institutional Own	DAs (Modified Jones Model)	Firm size	Involvement of pension funds and banks in the firms' capitals limits EMbehaviors. While, investment funds ownership incites to increase earnings.
6	Yang, et al., (2009).	613 firms	2001-2003	OLS Regression	NA	Institutional Own	DAs (Modified Jones Model)	firm size, board size, board activity, leverage, CFO	There is non-significant relationship between the DAs and institutions investors in the industrial products and consumer products sectors.
7	Lin, (2010), Taiwan	221 listed companies totaling 2,210 observations.	1997-2006	Hansen's (1999) panel threshold regression model	Agency Theory	Institutional Own	Tobin's Q	Firm size, Leverage, Sales growth and Industry q	There is single threshold influence between institutional ownership and firm value. If the institutional ownership is less than 81.2%, there will be no connection between institutional ownership and Tobin's Q. On the

	Author, year, country	Sample	Period	Model	Theories	Independ variable	Dependent variable	Control variables	Findings
									contrast, when the institutional shareholding is more than 81.2%, Tobin's Q grows by 1.2484% with a 1% increase in the institutional ownership.
8	Iqbal and Strong, (2010), UK	100 right issuers	1991 to 1995.	Univariate and Multivariate regression	Agency Theory	Institutional Own	DAs (Modified Jones Model)	firm size, Book to market value, sales growth, the right issue discount, the ratio of cash flow to total assets; issue size; an extreme earnings performance, year and industry dummy	There is no relation between DAs and institutional ownership around rights issues nor do.
9	Abdul-Jalil and Abdul-Rahman, (2010) Malaysia	94 top firms totaling 564 firm year observations.	2002-2007	OLS regression	Agency Theory	Institutional Own	Signed DAs (Modified Jones Model)	leverage, capital intensity a size, Big 4-auditor variable	There is non-significant relationship between either sensitive institutional investors or pressure in-sensitive investors with DAs.
10	Al-Fayoumi et al., (2010). Jordan	195 firm-year observations	2001 and 2005.	GMM regression estimator.	Agency Theory	Institutional Own	DAs (Modified Jones Model)	Firm size, Firm profitability, Growth opportunity, Firms financial leverage	There is non-significant relationship between the institutions own and DAs.
11	Roodposhti and Chashmi, (2011) Iran	196 firms	2004-2008	GLS regression	Agency Theory	Institutional Own	DAs (Modified Jones model)	firm size, and firm leverage	There is a positive and significant relationship between institutional ownership and DAs.
12	Issarawornrawanich and Jaikengkit, (2011) Thailand	304 companies	2007	OLS regression.	Agency Theory	Institutional Own	DAs (Jones and the Modified Jones model).	firm size, leverage, Cash flow from operations, Big audit 4	Firms with institutional investors are more prone to manage income-increasing EMs. Managers have incentive to manipulate earnings to avoid earnings decreases or losses because the short-term institutional investor trading is sensitive to current earnings news.
13	Lin and Manowan, (2012), USA	18,969 firm year observations with 4946 firms	1996-2001	OLS regression.	NA	Institutional Own	DAs (Modified Jones model)	Size, Risk, ROA, Leverage, and CFO	There is a significant positive relationship between transient institutional ownership (holding diversified portfolios with high turnover) and DAs.

	Author, year, country	Sample	Period	Model	Theories	Independ variable	Dependent variable	Control variables	Findings
									There is a negative relationship (not significant) between dedicated institutional ownership (holding concentrated portfolios with low turnover) and DAs.
14	Farooq and El Jai, (2012) Morocco	All non-financial firms in Casablanca Stock Exchange	2004-2007	GLS regression.	NA	Institutional Own	DAs (Modified Jones model)	Firm size, Payout ratio, and Leverage	The presence of institutions (foreign and local) as the largest shareholder has a negative impact on DAs.
15	Aygun et al., (2014). Turkey	230 firms	2009 to 2012	OLS regression.	Agency Theory	Institutional Own	DAs (Modified Jones Model)	Firm size, Return on Assets, financial leverage.	There is a negative relationship between institutional ownership and DAs
16	Ayadi and boujelbene (2014). France	117 companies totaling 1,053 observations.	2003-2011	GLS regression.	Agency Theory	Institutional Own	Earnings quality (accounting EM and market earnings informativness	Firm size, Leverage, growth, IFRS	The institutional ownership has a positive influence on earnings informativeness.
17	Latif and Abdullah (2015) Pakistan	120 non-financial firms listed on the Karachi market	2003-2012	OLS regressions		Institutional ownership	DAs (Jones model, Modified Jones model and Augmented Jones model)		The institutional ownership is positively related with DAs for low-growth firm and irrelevant for high-growth firms.
18	Farouk and Bashir (2017) Nigeria	All six listed-non financial firms	2008-2014	GLS regression.	Agency Theory	Institutional Own	DAs (Modified Jones model)	Firm size and share price	There is non-significant and negative relationship between institutional ownership and DAs.

4) Summary of Studies Investigating the Relationship between CG, Governmental Ownership and Earnings Management

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
1	Ding et al., (2007) China	273 State owned organisations (SOE) and privately owned organisations (POE).	2002	OLS regression, and 2SLS regression analysis	Alignment hypothesis and Entrenchment hypothesis	State ownership	DAs (Jones model (1991), and non-operating income/sales)	firm size and capital structure	The publicly owned organisations have low tendency to manipulate the earnings as opposed to the privately owned organisations.
2	Huafang and Jianguo, (2007) China	599 listed firms	2002	OLS regression analysis	Agency Theory	State ownership	The voluntary disclosure	firm size, Big 4, intangible assets ratio, leverage ratio	State ownership and legal-person ownership are not related to disclosure.
3	Wang and Campbell, (2012) China	1329 SOE, totaling 11,947 company years	1998-2009	OLS regression analysis	NA	State ownership	DAs is measured using Leuz et al., (2003)		Negative relationship between State ownership and DAs.
4	Capalbo et al., (2014) Italy	1457 (SOE) and 3892 (POE)	2009-2012	OLS regression	NA	State ownership	EM is based on model developed by Stubben (2010) using the revenue variations.	firm size, capital structure and profitability	There is a negative relationship between the EMs and State owned organisations.
5	Ji et al., (2015), China	12267 firm-year observations	2000-2010 before and after corporate reforms	OLS regression	NA	State ownership	Absolute value of DAs, timeliness of earnings, and earnings informativeness.	firm size, leverage, growth, ROA, CFO, Audit size, industry and year dummies	There is a great tendency to transfer the state ownership to the general public in order to enhance the quality of CG and financial reporting.
6	Guo and MA, (2015) China	1176 Chinese listed organisations	2004-2010.	OLS regression, and 2SLS regression analysis	Agency Theory, and RD Theory	State ownership	Quality of accruals is measured by Dechow and Dichev model, (2002).	firm size, leverage, growth prospect, financial distress, and year and industry dummies	There is a positive and direct relationship between the SOEs and earnings manipulations.
7	Poli, (2015) Italy	13,724 unlisted companies	2012-2014	Logit analysis	Agency Theory	State ownership	Earnings minimization (EM) and Earnings Change minimization (ECM) using the earnings frequency distribution method	Tax, Financial and size incentives, and time and sectors	There is a positive, and significant association between the publicly held organisations and both practices of EM(EM or ECM)

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
8	Ben-Nasr et al., (2015)	50 privatized firms from 45 countries totaling 250 international companies subject to recent privatization	1990-2000	GLS regression analysis	NA	State ownership (SOEs)	Three different proxies of earnings quality (i.e., discretionary abnormal accruals, earnings response coefficients, and earnings persistence) are determined on the basis of the Dechow and Dichev model (2002) as modified by (Ball and Shivakumar, 2005)	Firm size, Loss, Leverage, Market to Book Value, ROA, Annual growth, CFO, CFO volatility, GDP per capita	The state ownership is associated with: (a) greater abnormal accruals, b) less earnings informativeness, and (c) more transitory earnings.
9	Nguyen, (2016), Vitenam	570 non-financial listed firms totaling 2654 observations	2010-2014	OLS regression and GLS regression analysis	Agency Theory, Stakeholder Theory, RD Theory and Stewardship Theory	State ownership (SOEs)	DAs (Modified Jones model, Kothari et al., (2005), and accruals quality by McNichols, (2002).	firm size, leverage, growth prospect, performance, Big 4, year and industry dummies	There is negative relationship between the state ownership and EMs.
10	Sepasi et al., (2016) Iran	80 Iranian listed companies	(2010-2014)	OLS regression analysis	Agency Theory	State ownership	Quality of disclosure	Firm size	Non-significant relationship between SOE and disclosure quality.
11	Alnabsha, et al. (2018) Libya	93 companies totaling 193 firm-year observations	2006-2010	OLS regression, and 2SLS regression analysis	Agency Theory, Stakeholder Theory, and RD Theory	State ownership	Mandatory and voluntary disclosure	firm size, firm age, gearing, profitability, liquidity, listing status, industry type, auditor type	There is non-linear relationship between the state ownership and mandatory and voluntary disclosure.
12	Hoang et al., (2018). Vietnam	71 (SOE) and 79 (POE)	2005-2011	OLS regression with robust standard error	RD Theory	State ownership and private owned	EM (the quality of accruals on the basis of Dechow and Dichev (2002)	firm size, length of operating cycle, cash flow variability, Loss	There is a negative relationship between the public ownership and EMs.
13	Capalbo et al., (2018)		1996-2016	Meta-analysis		State Ownership	EMs		The quality of earnings published in the budget of State Owned organisation must be slightly higher than the quality of earnings published by private enterprises

5) Summary of Key Studies Investigating the Relationship between CG, Board size and Earnings Management

		Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
1	Xie et al., 2003	282 firm-year observations	1992, 1994, and 1996	OLS regression	NA	Board size	DAs (Jones, 1991 model and Toeh et al., 1998)	No control variables	There is a negative and significant association between board size and DAs
2	Anderson et al., (2004)	1052 observations on 252 firms	1993-1998	Univariate statistics and OLS regression , 2SLS regression and random/fixed effect models	N/A	Board size	The cost of debt financing (spread)	Firm size, leverage, firm performance, block-holding, age of debt, credit rating, bond age	The cost of debt is inversely related to board size.
3	Abdul Rahman and Ali (2006) Malaysia	97 listed firms	2002-2003	OLS regression	Agency Theory Stewardship Theory, RD Theory	Board size	Discretionary working capital accruals (the cross-sectional modified version of Jones (1995)	no control variables	Board size is positively related to DAs.
4	Nguyen and Faff (2007) (Australia)	500 largest listed companies totaling 832 observations.	2000-2001	OLS and GLS regression	N/A	Board size	Market firm value (Tobin`Q)	No control variables	As board size increases firm value declines, however at a decreasing rate suggesting that the relationship between board size and firm value is not strictly linear.
5	Yasser et al., (2011), Pakstain	Top 30 companies of Karachi Stock Exchange	2008 to 2009.	OLS regression	N/A	Board size	ROE and profit margin	No control variables	A positive significant relationship between board size and ROE and PM.
6	Fauzi and Locke (2012), NEW Zealand	Balanced panel of 79 listed firms[2007 to 2011	GLS regression Analysis.	Agency Theory	Board size	Tobins` Q and ROA	Leverage, firm size, industry level	A positive relationship between board size and performance.
7	Abdul Rauf, et al., (2012) Malaysia	428 firm-year observations which represent 214 public listed companies.	2008	OLS Regression analysis	Agency Theory	Board size	DAs (Modified Jones model)	no control variables	The board size does not have any significant effect on DAs.

		Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
8	Abed, et al., (2012) Jordan	329 firm observations	2006 to 2009	OLS regression analysis	Agency Theory	Board size	DAs (Modified Jones model)	Firm size, firm leverage and industry	Board size has a significant and negative relationship with DAs.
9	Adebayo et al., (2013). Nigeria	30 listed firms	2005-2010	OLS regression	N/A	Board size	EPS and ROE	no control variables	A negative relationship between board size and performance.
10	Emile et al., (2014) Egypt	210 observations, for 30 active companies	2004 - 2010	OLS Regression	Agency Theory and RD Theory	Board size	ROA	Firm size	There is non-significant relationship between board size with ROA.
11	Uwuigbe et al., (2014) Nigeria	40 firms	2007 to 2011	OLS regression	N/A	Board size	DAs (Modified Jones model)	Firm size	A negative relationship between the board size and DAs
12	Akbar, (2014) Pakstain	12 textile firms on the Karachi stock exchange.	2007-2012	OLS Regression analysis	N/A	Board size	ROA, and ROE	No control variables	The firms favored to have small board size to affect positively on firm performance. However, the board size should be limited to a sizeable number to avoid any delays in important corporate decisions in case of larger board size.
13	Dharmadasa et al., (2014) Sri Lanka	189 companies	2012 and 2013	Hierarchical regression	Agency Theory, RD Theory, and Managerial Harmony Theory	Board size	Performance	Firm size and firm age	A negative association between boards size and firm performance.
14	Talbi et al., (2015) USA	7,481 US firms	2000 to 2009.	OLS regression	N/A	Board size	Real EM (ABCFO, ABDISX, and ABPROD)	Firm size, leverage, market to book value, ROA, and Bonus compensation	A positive relation between board size and real EM.
15	Samaha et al., (2015)	64 research articles	1997-2013	Meta-analysis	N/A	Board size	Voluntary disclosure	CG, the level of investor protection, and country geographic location.	Board size has a significant and positive effect on voluntary disclosure.
16	Abata and Migiuro, (2016) Nigeria	24 listed companies (12 banks and 12 manufacturing companies).	2008-2013	OLS regression	Agency Theory	Board size	DAs (Modified Jones model)	Firm performance, form size, and leverage	Board size is insignificantly and negatively correlated with DAs.

		Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
17	Singn et al., (2017), India	50 companies	2005-2016	GLS regression	NA	Board size	DAs (Modified Jones model)	ROA	A negative relationship between board size and DAs.
18	Fadzilah, (2017) Malaysia	736 of firm-year, which are 184 companies	2009 to 2012	OLS regression	N/A	Board size	DAs (Modified Jones model)	firm size, ROA, firm leverage, CFO.	There is non-significant relationship between board size and DAs.
19	Adamu et al., (2017) Nigeria	45 financial institution	2011-2016	OLS Regression	N/A	Board size	Real EM (ABCFO, ABPROD, and ABDISX)	firm size, leverage, profitability, firm age, firm growth	A non-significant relationship between board size and three measures of REM
20	Al-Najjar and Clark, (2017) Middle-East and North African (MENA countries)	430 non-financial firms	2000 to 2009	Panel data analysis (OLS with clustered errors) and 2SLS	Agency Theory and Trade off Theory	Board size	Firms' decision to hold cash.	Dividends per share and leverage	A negative relationship between board size and cash holdings.
21	Kao et al., (2019), Taiwan	6,137 firm-year observations,	1997-2008	OLS regression	N/A	Board size	ROA, ROE, Tobins Q, and Market-book value	Firm size, growth, firm age, R&D, big audit firm, Product market competition, and dividends payout ratio	A significant and negative relationship between board size and both accounting and market-based measures.

6) Summary of Key Studies Investigating the Relationship between CG, Board Independence and EM

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent variables	Control variables	Findings
1	Klein, 2002 (USA)	692 companies listed on the S&P 500	1992-1993	OLS regression	NA	Board independence	DAs (cross-sectional Jones regression)	No control variables	A negative relation between independent directors and DAs
2	Xie et al, 2003	282 firm year observations from the S&P 500 index	1992, 1994 and 1996	OLS regression	NA	Board composition	DAs (Jones, 1991 model and Teoh et al., 1998)	No control variables	Inclusion of more independent on the board reduce the level of EM manipulations.
3	Park and shin (2004) Canada	539 Canadian firm-years	1991-1997	OLS regression	NA	Board Independence	DAs (Modified Jones Model (Dechow et al., 1995)	Financial leverage, firm size, investment opportunities, and weight of bonus	Non association between the proportion of independent directors and DAs before or after guidelines period.
4	Klein et al., (2005) Canada	263 firms – years observations	2002	OLS regression	Agency Theory and Stewardship Theory	Board composition	Tobins' Q	firm size, growth, leverage	The board independence does not affect positively firm value.
5	Rahman and Ali (2006) Malaysia	97 listed firms	2002-2003	OLS regression	Agency Theory, Managerial Harmony Theory, Stewardship Theory	Board composition	working capital accruals (Modified Jones Model)	ROA, leverage, cash flow, size, book to market value, big 5 auditor	There is a positive but non-significant association between the board independence and EMs.
6	Lim et al., (2007) Australia	181 listed firms	2001	A two-stage least squares regression (2SLS) model	Agency Theory	Board composition	Voluntary disclosure, and its components	firm size, leverage, ROA, industry, audit type, management compensation, top 20 shareholders	There is a positive association between board composition and both total voluntary disclosure especially forward looking information and strategic information. There is no relationship between non-financial and historical financial voluntary disclosure and board composition.
7	Qinghua et al., (2007), China	1192 companies	2002	logistic regression analysis	Classical Governance Theory	Board composition	Quality of financial reporting or EMs (Modified Jones model)	Company scale, financial leverage, management stock holding, losses, abnormal fluctuation of performance, motive for right offering and centralization of stock rights	A Positive relationship between independent directors, and the quality of accounting earnings information.

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent variables	Control variables	Findings
8	Oasma, (2008) UK	3,438 firm-years	The sample starts in December 1989, when SSAP 13 (revised) and spans all fiscal years up to 2002	OLS regression analysis	Agency Theory	Board composition	REM (R&D expenditures)	SIZE, Leverage, market-book ratio, and R&D intensity	There is a negative relationship between board independence and REM.
9	Lo et al., (2010) Shanghai stock exchange	266 listed firms	2004	OLS regression analysis	NA	Board composition	EM (transfer prices for related-party sales transactions)	Bonus, tax difference, governmental ownership, firm size, Country, Top 10	A negative and significant relationship between board independence and transfer pricing manipulations.
10	Singhchawla et al., (2011) Australia	250 companies	2004-2005	OLS regression	Agency Theory	board composition	Performance (The annualized return to shareholders)	Auditor size, firm size, debt ratio, industry variables, board size	There is a positive relationship between independent director and performance but independence may be impaired and impacted in case of their own shareholding.
11	Amer and Abdelkarim, (2011) Palestine	22 Palestine firms	2009-2010	OLS regression	Agency Theory	Board Independence	DAs (Modified Jones model)	Size, ROA, and Leverage	Board independence was positively related with DAs in both years.
12	Roodposhti and Chashmi (2011) Tehran stock exchange	196 listed companies	2004-2008	OLS regression	Agency Theory	Board composition	DAs (Modified Jones model (Dechow et al., 1995)	Firm size and Leverage	Board independence is negatively related to DAs.
13	Horvath, and Spirollari (2012) USA	136 firms from S&P 500 index in U.S.A	2005-2009	OLS regression	NA	Board Independence	Performance (price to book ratio)	Leverage ratio and Firm size	There is negative relationship between independent directors and firm performance
14	Fooladi, (2012) Malaysia	30 listed firms	2007	OLS regression	Agency Theory	Board Independence	ROA and ROE	firm size and leverage	Non-significant relation between the board independence and performance measures
15	Shukeri et al., (2012) Malaysia	100 listed firms	2011	OLS regression	Agency Theory	Board Independence	Firm performance (ROE)	no control variables	Outside directors may affect negatively on the performance because they may owe their position to management who proposed/recommended them to be directors in the first place.
16	Wang and Campbell, (2012) China	1329 publicly listed companies, totaling 11,947 observations	1998-2009	OLS regression	NA	Board Independence	DAs (Leuz et al., (2003)		A negative relationship between independent directors and earnings manipulations, requiring at least 1/3 of the members of the BOD to be outside directors.
17	Al-Matari et al., (2014) Oman	Non-financial firms	2011-2012	OLS regression	Agency Theory and RD Theory	Board Independence	performance (ROA)	Firm size, Leverage, legal counsel and secretary	There is a negative but non-significant relationship between board independence and ROA.

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent variables	Control variables	Findings
18	Akpan and Amran, (2014) in Nigeria	90 listed companies	2010-2012	logistic regression	NA	Board Independence	Performance using turnover	No control variables	A non-significant relationship between the board independence and performance
19	Jamaludin et al., (2015) Malaysia	26 listed GLCs	2005 -2010	OLS regression	RD Theory	Board composition	DAs (Kothari et al., (2005) Model	No control variables	The inclusion of independent directors adds more breadth of experience and expertise to the firm that enhances the monitoring, and supervising functions that reduce the DAs..
20	Issarawornrawanich (2015) Thailand	Non-financial firms	2010-2011	OLS regression	Agency Theory	Board composition	ROA and Tobin`s Q	firm size, firm risk and leverage	A positive relation between the board composition and firm`s ROA and firms with the existence of nomination and/or remuneration committee have higher Tobin`s
21	Talbi, et al., (2015), USA	7,481 listed firms on AMEX, NYSE and NASDAQ	2000 to 2009.	OLS regression analysis	NA	Board Independence	REM (ABCFO, ABPROD, ABDISX)	firm size, leverage, ROA, book to market ratio, average bonus compensation	A negative relationship between board independence and REM.
22	Salihi and Kamardin, (2015) Nigeria	24 companies	2011-2014	OLS regression analysis	Agency Theory	Board composition	DAs (Modified Jones model)	Leverage, Profitability and Firm The size.	The board independence was positively and insignificantly related with DAs.
23	Bala and Gugong (2015) Nigeria	Eight firms	2009 to 2014	GLS regression analysis	NA	Board composition	DAs (Modified Jones model (Dechow et al., 1995)	firm size	There is a positive relationship between board independence and DAs.
24	Dada and Ghazali (2016), Nigeria	101 firms listed	2005-2015	logistic regression	The Enlighten Stakeholder`s Theory and RD Theory	Board Independence	Performance (Tobin`s Q and Altman Z`s Score)	firm size, firm age, and Economic Condition (GDP)	Board independen has a negative and significant relationship with accounting and market performance.
25	Al-Najjar and Clark, (2017) MENA Countries	430 non-financial firms	2000-2009	OLS regression, GLS, and 2SLS regression analysis	Agency Theory and Trade off Theory	Board Independence	Firms` decision to hold cash.	Dividends per share , leverage, profitability, firm size	Independent directors are not effectively providing better monitoring activities. They are less active in monitoring firms` financial policies due to the external governance factors.
26	Waweru and Prot, (2018) Africa	480 firm-year observations	2005-2014	OLS regression	Agency Theory, RD Theory, and Managerial Hegemony Theory	Board Independence	DAs (Modified Jones Model and Kothari et al (2005)	Board size, ownership concentration, AC, Board meetings, Firm size, CFO and leverage	There is a positive relationship between board independence and DAs.

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent variables	Control variables	Findings
27	Kao et al., (2019) Taiwan	6,137 firm-year observations	1997-2003	OLS regression analysis	Agency Theory	Board Independence	ROA, ROE, market to book-value and Tobin's Q	size, growth opportunity, leverage, dividends payout ratio, market competition, firm age, big 4 audit firm, R&D ratio	There is a significant and positive relationship between the independence and performance.

7) Summary of Studies Investigating the Relationship between CG, Board diversity and Earnings Management

		Sample	Year	Model	Theory	Independent Variables	Dependent Variables	Control Variables	Findings
1	Nguyen and Faff (2007) (Australia)	500 largest listed companies totaling 832 observations.	2000-2001	OLS regression and 2SLS analysis	NA	Female board diversity	Market firm value (Tobin`Q)	No control variables	A positive and significant association between gender diversity and shareholders' value.
2	Adams and Ferreira, (2009) USA	86,714 observations from 1,939 firms	1996-2003	GMM estimator	Management and organisation theory, Theory of tokenism, Standard principal-Agent theory	Gender diversity	Tobin's q and ROA	No control variables	A positive and significant relationship between female directors and performance
3	Habbash, (2010) UK	Top 350 companies listed on the London Stock exchange	2003-2006	OLS regression, GLS regression, 2SLS regression analysis	Agency Theory, Stakeholder Theory, Stewardship Theory, and Institutional Theory	Female Gender diversity	DAs (Modified Jones Model and Kotharie et al. (2005)	IFRS, CFO, firm growth, firm size, leverage, firm performance (ROA)	There is a negative and non-significant relationship between the number of women directors and DAs.
4	Hassan and Ibrahim (2014)	20 firms	2007-2012	OLS regression and GLS analysis	Efficient contracting Theory and Opportunistic theory	Gender diversity	REM (ABCFO based on Roychowdhury (2006)	Firm size	Non-significant relationship between women directors and REM.
5	Akpan and Amran, (2014) Nigeria	90 listed companies	2010-2012	logistic regression analysis	NA	Female gender diversity	Performance using turnover	No control variables	A negative and significant relationship between the gender diversity and performance
6	Lakhal et al., (2015) France	170 companies	2008-2011	OLS regression analysis	Mass theory	Female gender diversity	DAs (Modified Jones model, Kothari et al. (2005) and Raman and Shahrur (2008)	firm size , Board size , Board independence, CEO duality, ownership dispersion, performance, growth opportunities, leverage	There is a negative and significant relationship between proportion of women directors in the board and DAs.
7	Bala and Gugong (2015) Nigeria	8 listed firms	2009 to 2014	OLS regression, and GLS analysis	Agency Theory	Female gender diversity	DAs (Modified Jones model)	firm size	The female directors on the board increase the practice of opportunistic EMs.
8	Arun et al., (2015) UK	1217 firm-year observations	2003-2011	OLS regression and OLS analysis with robust regression.	NA	Female directors on the board and Female CEO	DAs (Modified Jones Model and Jones Model).	firm size, CFO, ROA, financial leverage, growing sales, market-to-book, LOSS	The firm with more female and independent female directors on the board have tendency to engage in income decreasing rather than income increasing EMs.

		Sample	Year	Model	Theory	Independent Variables	Dependent Variables	Control Variables	Findings
9	Al-Shaer and Zaman (2016) UK	All companies listed in the UK FTSE350	2012	OLS regression and Logistic regression analysis	NA	Female gender diversity	Sustainability reporting quality	No control	There is a positive relationship between gender diverse boards and the quality sustainability reports. Independent female directors have greater effect on sustainability reporting quality than female directors.
10	Chen and Gaviious, (2016) Isreal	65 firms totaling 520 firm-years	2003-2010	Multivariate Analysis	NA	Female gender diversity	DAs (Kothari et al. 2005 and non-operating accruals).	Female Directorship, IFRS, Firm Size, Firm Age, ROA, Sales Growth, R&D expenditures, Tobin's Q, stock return, stock volatility, diversity, value-weighted market return Directorships	A negative and significant relationship between gender diversity and DAs. it is required from female director to be financially literate (financial education and background), to incrementally contribute in monitoring opportunistic EM either before or after IFRS periods.
11	Kılıç and Kuzey, (2016), Turkey	149 listed firms in Borsa Istanbul	2008-2012	OLS regressions and 2SLS regression	RD Theory and Agency Theory	Female gender diversity	ROA, ROE and ROS.	Independent directors, firm size, firm leverage	There is a significant and positive relationship between female directors and firm performance.
12	Luo et al., (2017), China	11,831 firm-year observations	2000-2011	OLS regressions	Organisational Theory and Agency Theory	Female gender diversity	REM (RM_CFO, RM_PROD and RM_DISEXP)	Firm size, Firm age, Firm profitability, Firm growth, sales growth, Market to book value, External auditor, IFRS , Ownership concentration, State ownership.	There is a negative relationship between female director REM.
13	Adamu et al., (2017) Nigeria	45 financial institutions totaling 270 observations	2011-2016	OLS regression analysis	NA	Female directors	REM (RM_CFO, RM_PROD and RM_DISEXP)	growth, firm profitability, firm leverage, and firm age	A negative correlation between board diversity and REM.
14	Lara et al., (2017) UK	4785 firm-year observations	2003-2012	OLS regression analysis, and 2SLS	Agency Theory and Organisational Theory	Female gender diversity	Earnings quality(Modified Jones)	Director Qualifications, (ROA), Size (total assets), the market to book ratio, Loss, the dividend pay-	There is a positive and significant association between woman diversity and accounting quality in case of discrimination. However, they

		Sample	Year	Model	Theory	Independent Variables	Dependent Variables	Control Variables	Findings
								out ratio	would not have an effect on the monitoring functions and on the EMs if the females and males behave similarly in high profile jobs under no discrimination.
15	Gull et al. (2018) France	394 French firms listed on Euronext Paris	2001 to 2010.	GMM regression	Agency and RD Theory	Female gender diversity	DAs (Modified Jones Model)	Board size, board independence, board meetings, CEO duality, family own, institutional own, big auditor, leverage, Tobins' Q, financial loss, R&D, CFO, foreign assets, market risk, cross listing in US market, and firm size, industry	There is a negative relationship between female directors and DAs.
16	Waweru, and Prot (2018) Africa	48 listed companies totaling 480 observation	2005-2014	Multivariate Analysis	Agency Theory, RD Theory, Managerial Hegemony Theory	Female gender diversity	DAs (Modified Jones Model and Kothari et al. (2005)	board size, ownership concentration, AC, board meetings, firm size, CFO and leverage	There is a positive and significant relationship between gender diversity and DAs.

8) Summary of Studies Investigating the Relationship between CG, CEO Duality and Earnings Management

	author	sample	year	model	theory	independent	dependent variable	control variables	Findings
1	Elsayed (2007) Egypt	92 public limited firms	2000-2004	OLS regression	Agency and Stewardship Theory	CEO duality	performance (ROA)	board size, institutional own and managerial own	There is non-significant relationship between CEO duality and firm performance. This may due due to the context of firms and industry, and that CEO duality will only be advantageous for some firms whilst not for others.
2	Abdel-Fattah, (2008) Egypt	100 Listed companies on EGX	2003-2006	OLS regression	Disclosure Theory	CEO duality	Voluntary Disclosure	Firm size, Gearing, Profitability, Liquidity, Industry type, Audit firm	A non-significant relationship between CEO duality and voluntary disclosure.
3	Yasser et al., (2011), Pakistan	Top 30 companies of Karachi Stock Exchange	2008 to 2009.	OLS regression	N/A	CEO duality	ROE and profit margin	No control variables	There is non-significant relationship between CEO duality and the two performance measures.
4	Amer and Abdelkarim, (2011) Palestine	22 listed firms	2009-2010	OLS regression	Agency Theory	CEO duality	DAs (Cross sectional modified Jones model)	Size, ROA, and Leverage	CEO duality is positively and insignificantly related with DAs.
5	Roodposhti and Chashmi (2011) Iran	196 listed firms in Tehran securities market	2004-2008	OLS regression	Agency Theory	CEO duality	DAs (modified Jones model)	Size, and Leverage.	If the CEO is board chair, the likelihood of EM will increase.
6	Singhchawla et al., (2011) Australia	250 listed companies	2004-2005	OLS regression	Agency Theory	CEO duality	Performance (The annualized return to shareholders)	Auditor quality, Debt ratio, Industry type, Firm size, Board size	A Non-significant relationship between CEO duality and performance.
7	Samaha et al, (2012) Egypt	The most active 100 Egyptian stock exchange	2009	OLS regression	Agency Theory	CEO duality	Voluntary Disclosure	firm leverage, firm size, profitability and industry type	The level of CG disclosure is lower when the organisation has CEO duality and there is high degree of family ownership concentration in the hand of block-holders.
8	Shukeri et al., (2012) Malaysia	100 index	2011	OLS regression	NA	CEO duality	Firm performance (ROE)	No control variables	There is no significant relationship between CEO duality and firm

	author	sample	year	model	theory	independent	dependent variable	control variables	Findings
									performance as result of challenges/difficulties in determining contingencies around the organisation
9	Abed et al., (2012) Jordan	329 firm observations	2006 to 2009	OLS regression analysis	Agency Theory	CEO Duality	DAs (Modified Jones model)	firm size, firm leverage and industry	There is non-significant relationship between CEO duality and DAs.
10	Nosheen, and chonglertham, (2013) Pakistan	406 observations	2009-2010	OLS regression	Agency Theory	CEO duality	Disclosure quality	firm size, leverage, board independence, and board size	There is a negative relationship between CEO duality and disclosure quality, thereby, increasing the information asymmetry.
11	Adebayo et al., (2013), Nigeria	(15) manufacturing firms and (15) financial and service institutions	2005-2010	OLS regression	Agency Theory	CEO duality	Performance (EPS and ROE)	No control variables	The CEO duality has a negative and significant relationship with performance.
12	Emile et al., (2014) Egypt	210 observations, for 30 active companies	2004 -2010	OLS regression	Agency Theory and RD Theory	CEO duality	firm performance (ROA)	firm size	There is non-significant relationship between CEO duality with firm performance.
13	Uwuigbe et al., (2014), Nigeria	40 listed firms	2007-2011	OLS regression	NA	CEO duality	DAs (Modified Jones model)	firm size	There is a positive between CEO duality and DAs.
14	Issarawornrawanich (2015) Thailand	Non-financial firms in the Stock Exchange of Thailand (SET)	2010-2011	OLS regression	Agency Theory	CEO duality	Performance (Tobin's Q and ROA)	Firm size, leverage, and firm risk	An Inverse relation between the CEO duality and both return on assets (ROA) and Tobin's Q.
15	Salihi and Kamardin, (2015) Nigeria	24 listed firms	2011-2014	OLS regression	Agency Theory	CEO duality	DAs (Modified Jones Model)	Leverage, Profitability and Firm The size.	A positive relationship between CEO duality and DAs.
16	Fadzilah (2017) Malaysia	184 companies totaling 736 of firm-year	2009-2012	OLS regression	N/A	CEO duality	DAs (Modified Jones model and Kothari et al. (2005)	Firm size, ROA, firm leverage, CFO	A non-significant relationship between CEO duality and DAs.
17	Kao et al., (2019) Taiwan	6,137 firm-year observations	1997-2008	OLS regression	N/A	CEO duality	ROA, ROE, Tobin's Q and market-book value of equity	Firm size, Audit firm, firm age, R &D ratio, product market competition, growth opportunity, dividends payout ratio	A Non-significant relationship between CEO duality and firm performance.

9) Summary of Key Studies Investigating the Relationship between Board meetings and Earnings Management.

	Author, year, country	Sample	Period	Model	Theories	Independent variable	Dependent variable	Control variables	Findings
1	Xie et al., (2003) UK	282 firm-year observations	1992,1994, 1996	OLS analysis	NA	Board meetings	DAs (Modified Jones model)	NA	Board meetings influence negatively and significantly on the EMs.
2	Qinghua, et al., (2007) China	1192 companies both Shenzhen and Shanghai stock markets	2002	OLS regression analysis	NA	Board meetings	Quality of financial reporting (Modified Jones model)	leverage, company scale, Loss, abnormal fluctuations of performance, motive for right offering, centralization of stock rights, and managerial shareholding	There is non-significant association between board meetings and the quality of financial reporting.
3	Rohaida, (2011) UK	FTSE 350	2005-2008	GLS analysis, OLS analysis and 2SLS analysis	Agency Theory	Board meetings	DAs (Jones model, Modified Jones model and Performance discretionary accruals by Kothari et al. (2005).	Managerial own, market to book value, leverage, loss, firm size, and cash flow from operations.	There is non-association between the number of board meetings and the magnitude of DAs
4	Van-Os (2011) German	262 institutions	2009-2010	OLS analysis	Positive Accounting Theory	Board meetings	DAs (Modified Jones Model)		There is a positive relationship between board meeting and DAs.
5	Gonzalez and Garcia-Meca (2014) Latin America	1740 observations	2006-2009	GLS analysis	Agency Theory	Board meetings	Absolute DAs (Modified Jones model, Kothari model, Jones Model, and Jones cash flow)	Loss, firm size, ROA, Growth, Debt, GOV index	There is a negative relationship between board meetings and DAs.
6	Abbadi et al., (2016) Jordan	121 Companies totaling 558 firm-year observations	2009-2013	OLS analysis	Stewardship Theory	Board meetings	DAs (Modified Jones model)	firm size, leverage, ROA, sales growth	A negative relationship between board meetings and DAs
7	Chemweno, (2016) Kenya	42 companies in Nairobi securities exchange	2010-2014	OLS analysis	Agency Theory, Stakeholder Theory, Stewardship Theory, RD Theory	Board meetings	Firm performance ROA	firm size, firm age, and firm leverage	The board diligence is not significantly related with performance

10) Summary of Studies Investigating the Relationship between CG, Audit Committee Size and Earnings Management

	author and country	sample	year	model	theory	independent	dependent	control	findings
1	Xie et al., (2003)	282 firms from the S&P 500 index	From 1992, 1994, and 1996	OLS regression analysis	NA	AC Size	EMs (Teoh et al. (1998a) and Jones (1991) model)	No control variables	Non-significant relationship between size of AC and occurrence of EMs.
2	Bedard et al., (2004)	300 firms	1996	Multinomial logit regression	NA	AC Composition	DAs (Modified Jones Model)	CFO, current earnings, loss, long term debt, firm size, sales growth, the previous year's ROA, IPO, Big 6 auditor, block holder Own	Non-significant relationship between AC size and DAs.
3	Abbott et al., (2004) USA	44 fraudulent and 44 non-fraudulent companies	1991-1999	OLS Regression	NA	AC size	Restatement of financial statements	Growth, Trouble, Age public, Managerial own, CEO tenure, block-holder ownership, CEO duality	There is non-significant relationship between the number of directors on AC and EMs.
4	Yang and Krishnan, (2005) USA	896 US firms	1996 to 2000.	OLS regression	NA	AC Size	DAs (Jones Model and TWR (1998) model)	Firm size, Leverage, unexpected annual earnings, Big 5, and non-discretionary earnings.	AC size is negatively associated with quarterly DAs.
5	Lin, Li, and Yang, (2006), USA	212 American publicly-held corporations	2000	logistic regression	NA	AC Size	Restatement	Loss, Leverage, Growth, Firm size, market-Book ratio, CFO	A negative association between the AC size and the occurrence of EMs.
6	Visvanathan (2008)	6,759 firm years	1996-2002	OLS regression	NA	AC size	REM (ABCFO, ABPROD, ABDISXC)	firm size, market-book value, leverage, asset turnover, ROA	There is non-significant relationship between AC size and the three measures of REM.
7	Lin et al., (2009) China	184 firms listed in Hong kong	2004-2008	OLS Regression	Agency Theory and Institutional Theory	AC size	DAs (Modified Jones Model)	ROA, Leverage, market value to book value, firm size, industry, year, and Big audit 4	A positive and significant relationship between the AC size and DAs
8	Lin and Hwang, (2010)	48 studies		Meta-analysis techniques		AC Size	EM		A Negative relationship between AC Size and EMs.
9	Ghosh et al. (2010), USA	9290 observations	1998-2005 (Pre SOX and Post SOX)	OLS regression	NA	AC size	EMs (performance adjusted discretionary accruals, special items and deferred tax)	CEO Ownership, growth, Big 4, firm size, insider ownership, and leverage	Larger ACs are less prone to EMs. Furthermore, those larger ACs are more effective in monitoring financial reporting because the level of knowledge is higher with the inclusion of additional members.
10	Rohaia (2011), UK	FTSE 350 UK companies	2005-2008	OLS regression, Stepwise regression, and GLS regression	Agency Theory And Information Asymmetric	AC Size	DAs (Modified Jones Model, and Kothari model, and Jones Model)	Leverage, CFO, Loss, market to Book Value, Block-holder ownership, Insider ownership, and Firm Size	The association between AC size and DAs is non-significant relationship.

	author and country	sample	year	model	theory	independent	dependent	control	findings
11	Aldamen et al., (2012) USA	120 listed firms on S&P during the period of The Global Financial Crisis	2008-2009	Cross-sectional logit model.	NA	AC Size	Accounting and market performance.	firm size, beta systematic risk, financial leverage and industry sector.	The number of AC members negatively impacts firm market performance.
12	Garcia et al., (2012), Spain	108 listed firms on the Madrid Stock Exchange.	2003-2006	OLS regression	NA	AC Size	DAs (Jones Model and Modified Jones Model)	Total assets, leverage, Loss, ZMJEWski FINANCIAL SCORE (1984) and BOD ownership in AC	AC size influences negatively on the EMs manipulations.
13	AL-Matari, et al., (2012) Saudi-Arabia	135 listed companies	2010	OLS regression	Agency Theory and Institutional Theory	AC size	Firm performance (Tobins'Q)	firm size and leverage	There is a significant and negative relationship between AC size and Tobins' Q.
14	Hamadan et al., (2013) Jordan	50 industrial companies	2004-2009	OLS and Binary Logit	NA	AC Size	Earning quality (Richardson et al. (2005) and the Jones model (1995)	Large audit firm, firm size, financial leverage, auditor turnover, specialization of the auditor, BOD ownership	There is negative relationship between AC size and the earnings quality as it is preferable not to increase the AC size to a great extent to perform effectively
15	Habbash et al., (2013) UK	top 350 listed firms	2006-2007	OLS Regression	NA	AC Size	DAs (Kothari et al., 2005)	leverage, Firm size, CFO, and ROA	Non-significant relation between AC size and the DAs either upward or downward EM.
16	Soliman and Ragab, (2014) Egypt	Active 40 listed Egyptian firms	2007-2010	OLS regression	NA	AC Size	DAs (Modified Jones model)	size, leverage and cash flow from operation	Non-significant relationship between size of AC and occurrence of EMs.
17	Sun, Lan and Liu (2014)	100 firm year observations	2007-2010	OLS regression	NA	AC size	REM (ABCFO, ABPROD, ABDISCX)	Firm age, CEO tenure, ROA, market-book ratio, firm size	Non-significant relationship between AC size and REM
18	Aryan, (2015), Jordan	69 listed firms	2009-2014	OLS regression	NA	AC Size	Profitability (Gross profit margin)		There is a positive relationship between AC size and firm's profitability.
19	Vlaminck and Sarens, (2015) Belgian	60 Belgian firms	2008- 2009	OLS regression	NA	AC Size	Quality of financial statement (Modified Jones Model)	firm size, leverage, firm performance, and external auditor profile	A positive and significant association between the proportion of AC members concurrently holding more than three directorships and financial statement quality.
20	Inaam, and Khamoussi , (2016)	58 articles		Meta-analysis Techniques	Agency Theory	AC Size	EMs		The AC size has a negative relationship with EMs
21	Albersmann and Hohenfels (2017) German	656 firm-year observations	2005 to 2009	OLS regression and 2SLS regression	Agency Theory	AC Size	DAs (Kothari et al., (2005)	Growth, leverage, loss, Big 4, Block-holder ownership, firm size, absolute net income, Absolute cash flow,	The AC size has no significant impact on DAs. They expect that audit composition is more important than the size of AC itself.
22	Kapoor, and Goel, (2017), India	500 listed large companies	(2007–2012).	GLS regression	Agency Theory	AC Size	DAs (Dechow and Dichev, 2002)	firm age, firm size, leverage, operating cycle	Large number of directors in AC are ineffective in their function of monitoring the managers

11) Summary of Studies Investigating the Relationship between CG, Audit Committee Independence and Earnings Management

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent Variables	Control Variables	Findings
1	Abbott et al., (2000) USA	156 firms.		OLS regression	NA	AC independence	Sanctioned and non- sanctioned	Growth, trouble, Age public, CEO tenure, Blockholder own, CEO duality	Firms with AC which are composed of independent directors and which meet at least twice per year are less likely to be sanctioned for fraudulent or misleading reporting.
2	Klein, (2002) (USA)	692 listed companies on the S&P 500	1992-1993	OLS regression	NA	AC composition	AEM is measured by Adjusted abnormal accruals (AAAC), Modified Jones model and Kasznik (1999)	No control	AC independence affect negatively on the AEM. They are capable for eliminating financial fraud in the financial statements and focus more on financial reporting process.
3	Xie et al., (2003) USA	282 firms from the S&P 500 index	From 1992, 1994, and 1996	OLS regression	NA	AC independence	DAs (Teoh et al. (1998a) and Jones (1991) model)	No control variables	There is non-significant relationship between AC independence and DAs. However, EM is less likely to occur in firms whose board and AC are equipped with a corporate and financial background and have a higher percentage of independent non-executive directors as well as higher number of meetings.
4	Bedard et al., (2004) (USA)	300 firms	1996	Multinomial logit regression	NA	AC Composition	DAs(Modified Jones Model)	CFO, current earnings, loss, long term debt, firm size, sales growth, the previous year's ROA, IPO, Big 6 auditor, block holder Own	The firms with solely independent AC that are also equipped with financial expertise are less likely to have aggressive EM
5	Abbott et al., (2004) USA	1. match-paired of 88 restatement sample firms from 1991 to 1999 2. 44 fraud and non- fraud firms under the SEC sanctions	1991-1999	OLS regression	NA	AC independence	Restatement of financial statements	Growth, Trouble, Age public, Managerial own, CEO tenure, blockholder own, CEO duality	The firms with AC that are solely independent, meet frequently and that possess at least one member with financial expertise are less likely to experience restatement and are negatively related to the incidence of fraud.

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent Variables	Control Variables	Findings
6	Lin et al., (2006), USA	212 publicly-held corporations	2000	OLS regression	NA	AC independence	The earnings quality	Big-5 auditors, auditor tenure, audit fees, non-audit services, Market to book value, Leverage.	The AC characteristics (independence, financial expertise, and stock ownership) have no impact on quality of earnings.
7	Saleh et al. (2007) Malaysia	548 firms	2001	OLS regression	RD Theory	AC independence	DAs (Jones Model, 1991)	Firm size, leverage, operating performance	The presence of independent AC reduces EM practices. Firms which had more knowledgeable AC members and held more AC meetings recorded fewer EM practices compared with other firms.
8	Jackson et al., (2009)	50 firms with fraudulent financial reporting and 50 firms without fraudulent financial reporting	1994-2001	Multivariate Analysis	Agency Theory	AC independence	fraudulent financial reporting	Audit firm size	Independent AC cannot totally eliminate fraudulent financial reporting, so they suggested to consider some factors such as underlying nature of firm (growth opportunities, size) and contracting environment (managerial ownership) while examining this relationship.
9	Garcia et al., (2012) Spain	108 listed firms on the Madrid Stock Exchange.	2003-2006	OLS regression	NA	AC Independence	DAs (Jones Model and Modified Jones Model)	Total assets, leverage, Loss, financial score ZMJEWski (1984) and BOD Ownership in AC	Non-significant relationship between AC independence and DAs.
10	Aldamen et al., (2012) USA	120 listed firms on S&P during the period Of The Global Financial Crisis	2008-2009	Cross-sectional logit model.	NA	AC Independence	Firm Performance	firm size, beta systematic risk, financial leverage and industry sector.	AC with independent directors is positively associated with firm performance during the recent global financial crisis
11	Hamadan et al., (2013) Jordan	50 industrial companies	2004-2009	OLS regression	NA	AC independence	Earning quality measured by (the continuity of earnings in the future or discretionary accruals)	The director ownership, financial leverage, firm size, type of audit firm, auditor turnover, Auditor's specialization in	There is non-significant association between AC independence, professionalism and expertise of AC members and earnings quality.

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent Variables	Control Variables	Findings
								customer's industry	
12	Kamel and Elkhatib, (2013) Egypt	464 questionnaires		OLS regression	Agency Theory	AC independence	The quality of financial reporting		Independent AC with financial or accounting expertise is important in constraining the fraudulent financial reporting.
13	Hassan and Ibrahim (2014) Nigeria	20 firms	2007-2012	GLS regression	Efficient Contracting Theory and Opportunistic Theory	AC independence	REM (ABCFO)	Firm size	AC independence doesn't help in eliminating REM.
14	Madi et al., (2014), Malaysia	964 listed firms	2009	OLS regression	Agency and RD Theory	AC independence	Voluntary disclosure	firm size, profitability and leverage	AC independence affects positively the voluntary disclosure
15	Miko and Kamardin, (2015), Nigeria	in Nigeria,	2003-2011	T-test	NA	AC independence	DAs (modified Jones Model)	No control	The independent AC may contribute to reduce manipulation of accounts through discretionary accruals in the pre- and postcode 2011.
16	Aryan, (2015) Jordan	69 companies in industrial sector	2009-2014	OLS regression	Agency Theory	AC Composition	Firm Profitability		Non-significant relationship between AC composition, AC members' literacy, audit quality and company's profitability.
17	Vlaminck and Sarens, (2015) Belgium	60 Belgian firms	2008-2009	OLS regression	Agency Theory	AC Composition	Quality of reporting (Modified Jones model)	firm size, leverage, firm performance, and external auditor profile	A positive relationship between the AC independence and the quality of financial statements.
18	Salehi, and Shirazi, (2016), Tehran Stock Exchange (TSE)	100 listed companies	2013-2014	GLS regression	Agency Theory, Institutional Theory, Actor-Network Theory, Power Theory	AC Independence	Voluntary disclosure and DAs (Modified Jones model)	firm size, industry type, duration of AC activity	The relationship between the percentage of independent members on AC and quality of financial reporting and disclosure is a significant and positive.
19	Abata, and Migiro, (2016) Nigeria	24 listed companies (12 banks and 12 manufacturing companies).	2008-2013	GLS regression	Agency Theory	AC Independence	DAs (Modified Jones model)	Firm performance, form size, and leverage	AC independence is insignificantly and positively correlated with DAs.
20	Chemweno, (2016) Kenya	42 Publicly listed companies	2010-2014	GLS regression	Agency Theory, RD Theory, Stakeholder Theory,	AC Independence	Firm Performance	firm size, firm age, leverage	There is a negative relationship between AC independence and firm performance

	Author and country	Sample	year	Model	Theory	Independent Variables	Dependent Variables	Control Variables	Findings
					Stewardship Theory				

12) Summary of Studies Investigating the Relationship between CG, Audit Committee Meetings and Earnings Management.

	Author and country	Sample	Year	Model	Theory	Independent Variables	Dependent Variables	Control-variables	Findings
1	Bedard et al., (2004) (USA)	300 firms	1996	Multinomial logit regression	NA	AC meetings frequency	DAs (Modified Jones Model)	CFO, current earnings, loss, debt, firm size, sales growth, Neg CFO, the previous year's ROA, IPO, Big 6 auditor, block holder ownership	There is non-significant relationship between AC meetings and aggressive earnings management.
2	Saleh et al., (2007) Malaysia	561 firms	2001	OLS Regression	RD theory	AC meetings frequency	DAs (Jones Model)	firm size, performance and leverage	The level of AC activity and accounting knowledge jointly are negatively related with DAs.
3	Visvanathan (2008)	6,759 firm years	1996-2002	OLS regression	NA	AC meetings frequency	REM (ABCFO, ABPROD, and ABDISCX)	firm size, market to book value, leverage, ROA	The frequency of AC meeting is negatively associated with REM through reduction of discretionary expenses, but not through sales manipulation or overproduction.
4	Baxter and Cotter, (2009) Australia	72 listed companies	2001	OLS regression	NA	AC meetings frequency	Earnings quality (the Jones (1991) and Dechow and Dichev (2002) models)	firm size, leverage, operating cycle, Big Audit 4 and Loss	A greater number of AC meetings do not seem to reduce either EM or to enhance earnings quality measures.
5	Lin et al., (2009) China	184 firms listed in Hong kong	2004-2008	OLS Regression	Agency Theory and Institutional Theory	AC meetings frequency	DAs (Modified Jones Model)	ROA, Leverage, market value to book value, firm size, industry, year, and Big 4	The frequency of AC meetings is not associated with the levels of DAs
6	Garcia et al., (2012) Spanish	108 non-financial listed companies totaling 432 observations	2003-3006	OLS regression	NA	AC meetings frequency	DAs (Jones model and Modified Jones models)	Total assets, leverage, Loss, ZMIJEWSKI FINANCIAL SCORE (1984)	There is a negative relationship between the AC meetings and DAs. However, Spanish CG reports do not specify a minimum number of meetings.
7	Habbash et al., (2013) UK	392 listed firms	2006-2007	GLS regression	Agency Theory	AC meetings frequency	DAs (Kothari et al., 2005)	Leverage, Firm size, CFO, and ROA	Non-significant relation between AC meetings and DAs either upward or downward EM.
8	Hamadan et al., (2013) Jordan	50 industrial companies	2004-2009	OLS regression and Binary Logit	NA	AC meetings frequency	Earning quality (the continuity of earnings in the future and DAs)	BOD ownership, financial leverage, firm size, audit firm, the auditor turnover, auditor's specialization	There is a positive relationship between the ACs meetings and earning quality

	Author and country	Sample	Year	Model	Theory	Independent Variables	Dependent Variables	Control-variables	Findings
9	Soliman and Ragab (2014) Egypt	40 the most active companies	2007-2010	OLS regression	NA	AC meetings frequency	DAs (modified Jones Model)	Firm size, leverage and CFO	There is a significant and negative association between AC meetings and DAs.
10	Susanto and Pradipta (2016)	61 firms totaling 244 observations	2011-2014	OLS regression	Agency Theory	AC meetings	REM (ABCFO, ABPROD, ABDISCX)		There is a positive association between AC meetings and REM
11	Al-Rassas and Kamardin, (2015) Malaysia	508 listed firms	2009-2012	OLS Regression	Agency Theory and RD Theory	AC meetings frequency	DAs (Modified Jones model and extended Modified Jones Model by Yoon et al., (2006).	ROA, Leverage, firm size, Loss, Growth	There is a positive but non-significant association between frequent meetings of AC and level of DAs
12	Susanto, (2016) Indonesia	185 public manufacturing companies	2009 to 2012	OLS regression	Agency Theory	AC meetings frequency	DAs (Jones (1991) model)	firm size, Loss, and Independent commissioners	There is a positive relationship between the number of ACs meetings and DAs.
13	Albersmann and Hohenfels, (2017) German	656 firm-year observations	2005 to 2009	OLS regression and 2SLS regression analysis	Agency Theory	AC meetings frequency	DAs (Kothari et al., (2005)	Growth, leverage, loss, Big 4, Block holder ownership, firm size, absolute net income, Absolute cash flow,	The relationship between AC meetings and EM is curved (non-linear) relationship. The threshold test reveal that the 4-5 meetings annually represent the effective number of meetings that reduce the level of DAs.
14	Gebrayel et al. (2018) Oman	71 Non-financial firms totaling 139 observations.	2013-2014	OLS regression	Agency Theory	AC meetings frequency	The quality of financial reporting (DAs and Accrual quality)	leverage, firm size, loss, board independence, blockholders own, AC tenure, CEO tenure, CEO duality, industry, Litigation risk, market-book value, CEO founder, geographical segments, institutional own, Mag Own	AC meetings frequency and internal audit function have a positive impact on the quality of financial reporting.

13) Summary of Studies that examined the Relationship between CG, Quality Audit and Earnings Management.

	Author and Country	sample	year	model	Theory	Independent variables	Dependent variables	Control variables	Findings
1	Piot and Janin, (2007) Continental Europe (France)	102 listed firm on SBF 120 Index	1999, 2000, 2001	Univariate statistics, Cluster regression, and 2SLS regressions	NA	Audit quality attributes (i.e. auditor reputation Big Five audit quality and auditor tenure)	DAs (Modified Jones Model)	Leverage, Mag Own, % of board independence, CFO, and consolidated assets	There is non-significant relationship between big five- audit firm and DAs either in terms of absolute or signed abnormal accruals.
2	Hassan Che Haat, et al., (2008) Malaysia	142 listed companies	2002	Hierarchical regression analysis	Agency Theory, RD Theory and Stewardship Theory	Audit quality	Tobin's Q, quality of disclosure and transparency	Firm size	There is non-significance between audit quality and transparency and the quality of disclosure. There is a significant and negative association between the audit quality and performance.
3	Al-Ajmi (2009), Bahrain	The survey was administered to 150 credit analysts and to 150 financial analysts	2007	OLS regression	NA	Audit firm size	The quality of the financial reporting		Both groups revealed that big four audit firms can produce highly quality reports than non- big firms. There is a positive relationship between the audit firm size, and effective AC with the creditability and reliability of financial statements.
4	Habbash, (2010) UK	350 Top companies listed on the London Stock Exchange	2003- 2006	OLS regression	Agency Theory, Stakeholder Theory, Stewardship Theory and Institutional Theory.	External audit variables such as non-audit fees, audit fees and industry specialized auditor	DAs (Kothari et al., 2005) model	firm size, IFRS, leverage, firm growth, CFO, and firm performance	The external audit has a critical role in enhancing the quality of reported earnings and reducing the level of DAs.
5	Lin and Hwang, (2010)	48 studies		Meta-analysis techniques		Audit quality	EMs		An inverse relationship between auditor tenure, auditor size and specialization with DAs.

	Author and Country	sample	year	model	Theory	Independent variables	Dependent variables	Control variables	Findings
6	Basiruddin, (2011) UK	FTSE 350 UK firms	2005-2008	OLS, GLS, 2SLS regression analysis	Agency Theory	Audit quality (e.g. audit fees, NAS fees and industry specialist auditors)	DAs (Jones model, Modified Jones model and Kothari et al., (2005)	Managerial own, block holder-own, Market-book value, leverage, capital structure, firm size, CFO	The combined role of independent board and the audit quality enhance their monitoring and oversight functions. The higher quality of audit (which either charge higher audit fees or are industry specialist auditors) promotes the capability of firm to detect and constrain earnings manipulations thereby enhance the reliability and credibility of financial reporting.
7	Nosheen, and Chonglertham (2013) Pakistan	406 observations	2009-2010	OLS regression analysis	Agency Theory	Audit quality	Disclosure quality is measured by disclosure score	firm size, leverage, board independence and board size	There is a positive and significant relationship between audit quality and the quality of disclosure.
8	Kouaib, and Jarboui (2014) Tunis	61 listed and unlisted firms	2007-2011	OLS regression	Agency Theory, Economic Theory and Entrenchment Theory	The auditor reputation and the auditor seniority	DAs (Modified Jones Model)	Firm size and the debt ratio	The cross effect of external audit quality variables and capital concentration has a negative and significant effect on EMs in industrial firms but it has a positive and non-significant effect in commercial firms.
9	Khalil and Ozkan (2016) Egypt.	1,005 non-financial Egyptian publicly firm year-observations	2005-2012	OLS regression	NA	Audit quality	DAs (Kothari et al (2005) model	firm size, leverage, CFO, asset tangibility, absolute current earnings	There is a significant and negative relationship between audit quality and DAs.
10	Aryan (2015). Jordan	69 companies in industrial sector	2009-2014	OLS regression	Agency Theory	Audit quality	Firm profitability		There is non- significant relationship between audit quality and company's profitability.
11	Abata, and Migiro, (2016) Nigeria	24 listed companies	2008-2013	GLS regression	Agency Theory	Audit quality	DAs (Modified Jones Model)	Leverage, size, and firm's growth	Audit quality is positively and non-statistically significant correlated with DAs.
12	Inaam, and Khamoussi , (2016)	58 articles		Meta-analysis	Agency Theory	The effectiveness of audit quality	EMs		A negative relationships exist between auditor size, auditor industry specialization and EMs.

	Author and Country	sample	year	model	Theory	Independent variables	Dependent variables	Control variables	Findings
13	Salehi et al., (2017) Iran	146 companies, totaling 730 observations	2009-2014	OLS model with applying time factor, and GLS regression	Agency Theory	Audit quality	The quality of disclosure	Firm size, Leverage, ratio of equity value to earnings before interest and taxing (EV/EBIT)	The relationship between all factors of audit quality and the quality of disclosure is positive and non-significant.
14	Alhadaba and Clachern, (2018) UK	498 all non-financial companies classified into 232 IPO clients of big-N auditors, and 266 IPO clients of non-big-N auditors	1998-2008	OLS regression analysis	NA	Audit quality	AEM (Modified Jones Model and Kothari model) and REM (ABCFO, ABPROD, and ABDISCX)		High quality auditors for IPOs firms have a significant and negative impact on DAs and on REM based on ABDISCX. However, there is no association between high quality audit and REM based on ABCFO for IPOs firm. Therefore, it is not necessary for the high quality auditor to mitigate all types of REM
15	Alzoubi, (2018) Jordan	86 companies listed totaling 344 firm-observations.	2007-2010	GLS regression	Agency Theory	Audit tenure, audit size, audit specialization, auditor independence audit fees, non-audit fees	DAs (Modified Jones Model)	Firm size, firm growth, firm age, ROA, CFO	There is a significant negative association between audit quality (audit size, audit tenure, audit specialist, and audit independence) and EMs.
16	Yasser and Soliman, (2018) Egypt	Egyptian index EGX 100 companies	2012-2016	OLS regression analysis	Agency Theory	Audit quality Audit size, auditor industry specialization and auditor tenure	DAs (Modified Jones Model)	firm size, firm leverage, and CFO	The auditor industry specialist and audit firm size do not have any significant impact on the DAs.
17	Waweru and Prot, (2018) Kenya and Tanzania	48 companies totaling 480 observation	2005-2014	OLS regression analysis	Agency Theory and Managerial hegemony Theory	Audit quality	DAs	Board meetings, board size, AC, ownership concentration, firm size, leverage, CFO	There is a negative relationship between the audit quality and DAs.

Appendix (B) Summary of the Most Significant Accrual based EM Models for Dynamic Panel Threshold

Summary of All the Most Significant accrual based EM Models.

	Modified Jones model	Kothari model	Kasznik model	Raman and shahrur model
Ownership structure				
Managerial ownership				
R-squared	0.006	0.019	0.017	0.013
Adjusted R	-0.007	0.0058	0.004	0.0001
AIC	-978.706	-1461.63	-1522.918	-1418.205
Family ownership				
R-squared	0.006	0.015	0.015	0.015
Adjusted R-squared	-.0073	0.0023	.0023	0.0017
AIC	-978.7034	-1458.866	-1521.633	-1419.484
Governmental ownership				
R-squared (Gov)	0.011	0.020	0.019	0.032
Adjusted R	-.0023	0.0069	.0067	0.0195
AIC	-982.6256	-1462.453	-1525.047	-1433.53
Institutional ownership				
R-squared	0.006	0.027	0.015	0.023
Adjusted R-squared	-.007	0.0139	.0023	0.0108
AIC	-979.0023	-1467.957	-1521.618	-1426.586
Board size				
R-squared	0.004	0.014	0.016	0.013
Adjusted R-squared	-.0090	0.0013	.0033	0.000
AIC	-977.4555	-1458.039	-1522.428	-1418.169
Board independence				
R-squared	0.011	0.017	0.017	0.016
Adjusted R-squared	-.0023	0.0045	.0043	0.0033
AIC	-982.6339	-1460.547	-1523.222	-1420.709
Board diversity				
R-squared	0.007	0.015	0.015	0.013

Adjusted R-squared	-.0061	0.0022	.0024	-.0003
AIC	-979.6463	-1458.779	-1521.706	-1417.931
Board meetings				
R-squared	0.004	0.014	0.016	0.015
Adjusted R-squared	-.0089	0.0014	.0028	.0021
AIC	-977.4709	-1458.132	-1521.996	-1419.772
Audit committee size				
R-squared	0.007	0.017	0.017	0.018
Adjusted R-squared	-.0058	0.0041	.0038	.0053
AIC	-979.9021	-1460.243	-1522.82	-1422.33
Audit committee meetings				
R-squared	0.015	0.029	0.015	0.022
Adjusted R-squared	.0023	0.0164	.0024	.0097
AIC	-986.215	-1469.938	-1521.671	-1425.741
Audit committee independence				
R-squared	0.004	0.014	0.021	0.014
Adjusted R-squared	-.0091	0.0014	.0082	.0008
AIC	-977.376	-1458.184	-1526.252	-1418.785

This Table reports the results for the association between all the most significant CG variables and aggressive EM(Modified Jones model, Kothari model, Kasznik model, and Raman and shahrur) for 78 firms from 2008-2017. The variables are defined before.

Appendix (C): Sensitivity analysis and Robustness Check (Summary of Results from Feasible Generalized Least square (FGLS) regarding relationship between CG mechanisms and Accrual-based EMs

Table1: Governance indicators and Modified Jones: FGLS estimation results

VARIABLES	(1) modifcfo	(2) modifcfo	(3) modifcfo	(4) modifcfo	(5) modifcfo	(6) modifcfo	(7) modifcfo	(8) modifcfo	(9) modifcfo	(10) modifcfo	(11) modifcfo	(12) modifcfo	(13) modifcfo
Ownership structure													
Mag	-0.000387** (0.000163)												
Fam		0.000917* (0.000528)											
Gov			-0.00028** (0.00012)										
Inst				0.000436*** (0.000149)									
B.O.D													
Bsize					-0.000884 (0.00226)								
B independence						-0.0651*** (0.0187)							
Bdiversity							0.0184 (0.0369)						
CEO duality								0.00531 (0.00918)					
B meeting									0.000133 (0.00101)				
Audit Committee													
Acsize										0.00524 (0.00585)			
Acindependence											-0.00276 (0.0594)		
Acmeeting												-0.00187 (0.00126)	
External auditing													
BG4													0.0116 (0.00953)

To be continued...

Table: Continued

Roa	-0.104 (0.167)	-0.116 (0.167)	-0.127 (0.166)	-0.120 (0.165)	-0.113 (0.167)	-0.117 (0.166)	-0.115 (0.167)	-0.112 (0.167)	-0.116 (0.167)	-0.120 (0.168)	-0.117 (0.167)	-0.136 (0.167)	-0.117 (0.167)
ROE	0.130 (0.0892)	0.123 (0.0895)	0.122 (0.0894)	0.126 (0.0889)	0.127 (0.0901)	0.119 (0.0890)	0.129 (0.0895)	0.126 (0.0902)	0.130 (0.0895)	0.131 (0.0898)	0.130 (0.0895)	0.139 (0.0888)	0.135 (0.0896)
Liq	0.000134 (0.00446)	0.000249 (0.00451)	-0.000180 (0.00448)	-0.000792 (0.00442)	0.000377 (0.00450)	0.000323 (0.00445)	0.000318 (0.00450)	0.000122 (0.00451)	0.000271 (0.00450)	0.000177 (0.00452)	0.000360 (0.00452)	0.000721 (0.00468)	0.000341 (0.00450)
Lev	-0.00456 (0.0511)	-0.0145 (0.0512)	-0.0308 (0.0511)	-0.0182 (0.0506)	-0.0174 (0.0511)	-0.0137 (0.0509)	-0.0172 (0.0512)	-0.0156 (0.0518)	-0.0168 (0.0514)	-0.0181 (0.0513)	-0.0171 (0.0513)	-0.0218 (0.0514)	-0.0154 (0.0512)
Gear	0.00799 (0.0154)	0.0104 (0.0155)	0.0130 (0.0154)	0.0106 (0.0152)	0.0111 (0.0154)	0.00919 (0.0154)	0.0109 (0.0155)	0.0107 (0.0157)	0.0110 (0.0155)	0.0121 (0.0155)	0.0111 (0.0155)	0.0110 (0.0155)	0.0100 (0.0155)
Size	0.00784 (0.0191)	0.0114 (0.0192)	0.00990 (0.0191)	0.0114 (0.0192)	0.00783 (0.0193)	0.00538 (0.0190)	0.00845 (0.0192)	0.00891 (0.0193)	0.00814 (0.0193)	0.00741 (0.0193)	0.00841 (0.0192)	0.00919 (0.0194)	0.00690 (0.0193)
Asstan	0.0406 (0.0407)	0.0444 (0.0412)	0.0407 (0.0415)	0.0378 (0.0403)	0.0447 (0.0412)	0.0341 (0.0413)	0.0435 (0.0412)	0.0430 (0.0413)	0.0445 (0.0414)	0.0490 (0.0415)	0.0449 (0.0412)	0.0427 (0.0420)	0.0426 (0.0412)
OC	0.00424 (0.0252)	0.00884 (0.0252)	0.00971 (0.0250)	0.00407 (0.0249)	0.0108 (0.0254)	0.00460 (0.0251)	0.00904 (0.0253)	0.0112 (0.0255)	0.00914 (0.0253)	0.0104 (0.0254)	0.00894 (0.0253)	0.00662 (0.0255)	0.0106 (0.0253)
Emflex	-0.0189 (0.0337)	-0.0254 (0.0341)	-0.0251 (0.0339)	-0.0203 (0.0331)	-0.0246 (0.0347)	-0.0152 (0.0341)	-0.0217 (0.0344)	-0.0242 (0.0346)	-0.0225 (0.0344)	-0.0210 (0.0346)	-0.0220 (0.0344)	-0.0236 (0.0347)	-0.0224 (0.0344)
Constant	-0.0766 (0.144)	-0.125 (0.145)	-0.103 (0.143)	-0.0996 (0.143)	-0.103 (0.145)	-0.0176 (0.146)	-0.104 (0.145)	-0.116 (0.147)	-0.104 (0.145)	-0.126 (0.147)	-0.101 (0.156)	-0.0874 (0.146)	-0.106 (0.145)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	9.44	8.71	8.42	9.09	8.55	8.33	8.56	8.88	8.69	8.48	8.96	6.71	8.76
p-value	0.0021	0.003	0.0037	0.0026	0.0035	0.0039	0.0034	0.0029	0.0032	0.0036	0.0028	0.0096	0.0031
Autocorrelation test	16.193	16.346	16.535	15.100	16.668	17.621	16.792	16.270	16.699	16.552	16.443	16.258	16.637
p-value	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Wald test	225.94	220.23	226.24	234.10	218.34	228.74	217.97	217.65	217.66	217.40	218.91	215.29	219.49
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firms fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table2:Governance indicators and Khothari model: FGLS estimation results

VARIABLES	(1) Khotharie	(2) Khotharie	(3) Khotharie	(4) Khotharie	(5) Khotharie	(6) Khotharie	(7) Khotharie	(8) Khotharie	(9) Khotharie	(10) Khotharie	(11) Khotharie	(12) Khotharie	(13) Khotharie
Ownership structure													
Mag	-0.000471*** (0.000112)												
Fam		0.000823** (0.000405)											
Gov			-0.000204** (9.08e-05)										
Inst				0.000400*** (0.000112)									
B.O.D													
Bsize					-0.00132 (0.00273)								
B independence						-0.0353** (0.0146)							
Bdiversity							-0.0377 (0.0351)						
CEO duality								-0.000817 (0.00682)					
B meeting									0.000622 (0.000716)				
Audit Committee													
Acsized										0.0113*** (0.00409)			
Acindependence											0.0112 (0.0468)		
Acmeeting												-0.00328*** (0.000932)	
External auditing													
BG4													0.000527 (0.00696)

To be continued...

Table: Continued

Roa	-0.192*	0.0703	0.0598	-0.212*	-0.0808	-0.228*	-0.136	-0.228*	-0.221*	-0.220*	-0.232**	-0.242**	-0.226*
	(0.116)	(0.0977)	(0.0990)	(0.120)	(0.190)	(0.118)	(0.143)	(0.119)	(0.119)	(0.118)	(0.118)	(0.118)	(0.118)
ROE	0.132**	0.00931	0.0124	0.131**	0.0614	0.130**	0.0878	0.134**	0.135**	0.146**	0.137**	0.149**	0.133**
	(0.0627)	(0.0544)	(0.0551)	(0.0641)	(0.101)	(0.0634)	(0.0762)	(0.0643)	(0.0638)	(0.0636)	(0.0637)	(0.0633)	(0.0638)
Liq	0.00539*	-0.00113	-0.00211	0.00563*	-6.76e-06	0.00547	0.00288	0.00524	0.00511	0.00546*	0.00503	0.00554*	0.00505
	(0.00322)	(0.00306)	(0.00305)	(0.00333)	(0.00589)	(0.00333)	(0.00445)	(0.00336)	(0.00334)	(0.00329)	(0.00333)	(0.00332)	(0.00333)
Lev	-0.0194	-0.0178	-0.0284	-0.0289	-0.0308	-0.0258	-0.00943	-0.0283	-0.0250	-0.0242	-0.0273	-0.0328	-0.0266
	(0.0307)	(0.0282)	(0.0291)	(0.0321)	(0.0581)	(0.0314)	(0.0435)	(0.0324)	(0.0319)	(0.0317)	(0.0316)	(0.0316)	(0.0318)
Gear	0.0110	0.0151*	0.0166*	0.0109	0.0214	0.0132	0.00397	0.0132	0.0132	0.0147	0.0137	0.0123	0.0134
	(0.00932)	(0.00885)	(0.00902)	(0.00980)	(0.0175)	(0.00947)	(0.0131)	(0.00969)	(0.00961)	(0.00962)	(0.00960)	(0.00960)	(0.00967)
Size	0.0267**	0.00788	0.00835	0.0313**	0.00912	0.0243*	0.0453**	0.0269*	0.0261*	0.0255*	0.0263*	0.0269**	0.0266*
	(0.0132)	(0.00862)	(0.00866)	(0.0141)	(0.0237)	(0.0137)	(0.0179)	(0.0138)	(0.0138)	(0.0138)	(0.0138)	(0.0137)	(0.0139)
Asstan	0.00875	0.00145	-0.00178	-0.00269	0.0698	0.00139	0.0160	0.00584	0.00568	0.0132	0.00641	0.00277	0.00689
	(0.0305)	(0.0140)	(0.0140)	(0.0316)	(0.0506)	(0.0315)	(0.0372)	(0.0321)	(0.0319)	(0.0311)	(0.0313)	(0.0318)	(0.0313)
OC	-0.00795	-0.0159**	-0.0157*	-0.00624	0.0168	-0.00870	-0.0187	-0.00772	-0.00711	-0.00302	-0.00740	-0.00864	-0.00700
	(0.0181)	(0.00803)	(0.00809)	(0.0190)	(0.0315)	(0.0187)	(0.0231)	(0.0194)	(0.0190)	(0.0186)	(0.0187)	(0.0186)	(0.0188)
Emflex	0.0170	-0.0258	-0.0245	0.0199	0.0242	0.0242	0.0244	0.0202	0.0203	0.0196	0.0203	0.0175	0.0206
	(0.0263)	(0.0175)	(0.0174)	(0.0271)	(0.0458)	(0.0272)	(0.0333)	(0.0280)	(0.0278)	(0.0271)	(0.0273)	(0.0272)	(0.0273)
Constant	-0.0953	0.0447	0.0522*	-0.135	-0.159	-0.0558	-0.151	-0.0994	-0.105	-0.162	-0.110	-0.0823	-0.103
	(0.104)	(0.0305)	(0.0305)	(0.111)	(0.179)	(0.110)	(0.132)	(0.112)	(0.111)	(0.109)	(0.118)	(0.108)	(0.108)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	3.10	4.46	2.78	5.17	2.33	2.93	2.20	2.65	2.38	2.91	3.51	5.49	3.06
p-value	0.0785	0.0347	0.0955	0.0230	0.1271	0.0871	0.1378	0.1038	0.1225	0.0879	0.0611	0.0191	0.0805
Autocorrelation test	2.033	2.402	2.636	2.092	16.668	2.665	2.509	2.400	2.574	2.199	2.411	2.228	2.418
p-value	0.1580	0.1253	0.1086	0.1521	0.0001	0.1067	0.1173	0.1254	0.1127	0.1422	0.1246	0.1396	0.1241
Wald test	283.32	23.70	24.61	230.14	218.34	252.93	234.07	226.19	228.30	247.55	243.49	252.46	240.69
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	No	No	Yes									
Firms fixed effects	Yes	No	No	Yes									

Table 3: Governance indicators and kasznik model: FGLS estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank	Kazank
Ownership structure													
Mag	0.00555 (0.00855)												
Fam		-0.000415 (0.000367)											
Gov			0.000202* (0.000113)										
Inst				2.19e-05 (9.53e-05)									
B.O.D													
Bsize					-0.00220 (0.00166)								
B independence						-	0.0299** (0.0124)						
Bdiversity							-	0.0551** (0.0249)					
CEO duality								0.0210*** (0.00619)					
B meeting									-0.000189 (0.000666)				
Audit Committee													
Acszize										-0.00283 (0.00411)			
Acindependence											-	0.109*** (0.0421)	
Acmeeting												-0.000105 (0.000846)	
External auditing													
BG4													0.00606 (0.00814)

To be continued...

Table: Continued

Roa	-0.136 (0.144)	-0.208* (0.110)	-0.319** (0.137)	-0.202* (0.110)	-0.205* (0.109)	-0.212* (0.110)	-0.228** (0.110)	-0.197* (0.109)	-0.212* (0.110)	-0.208* (0.110)	-0.210* (0.109)	-0.206* (0.110)	-0.317** (0.137)
ROE	0.0864 (0.0765)	0.120** (0.0581)	0.153** (0.0727)	0.115** (0.0580)	0.115** (0.0579)	0.115** (0.0584)	0.124** (0.0575)	0.106* (0.0579)	0.120** (0.0583)	0.117** (0.0581)	0.114** (0.0579)	0.118** (0.0580)	0.149** (0.0728)
Liq	0.00298 (0.00448)	-0.00495 (0.00316)	-0.00484 (0.00426)	-0.00505 (0.00316)	-0.00516 (0.00317)	-0.00487 (0.00317)	-0.0053* (0.00317)	-0.0055* (0.00315)	-0.00517 (0.00318)	-0.00495 (0.00316)	-0.00433 (0.00317)	-0.00506 (0.00316)	-0.00467 (0.00426)
Lev	-0.00984 (0.0439)	-0.0534* (0.0321)	-0.0338 (0.0419)	-0.0510 (0.0322)	-0.0504 (0.0321)	-0.0476 (0.0319)	-0.0543* (0.0319)	-0.0434 (0.0324)	-0.0521 (0.0323)	-0.0526 (0.0321)	-0.0472 (0.0320)	-0.0521 (0.0321)	-0.0402 (0.0418)
Gear	0.00299 (0.0132)	0.0186** (0.00919)	0.00943 (0.0126)	0.0178* (0.00923)	0.0173* (0.00915)	0.0182** (0.00912)	0.0188** (0.00908)	0.0165* (0.00932)	0.0183** (0.00923)	0.0181** (0.00918)	0.0177* (0.00917)	0.0183** (0.00918)	0.00994 (0.0126)
Size	0.0462** (0.0180)	-0.00787 (0.0127)	-0.0105 (0.0171)	-0.00719 (0.0127)	-0.00758 (0.0127)	-0.00941 (0.0126)	-0.00681 (0.0126)	-0.00321 (0.0126)	-0.00762 (0.0127)	-0.00731 (0.0127)	-0.00666 (0.0126)	-0.00750 (0.0127)	-0.0100 (0.0171)
Asstan	0.0137 (0.0378)	0.0257 (0.0278)	0.0281 (0.0360)	0.0251 (0.0277)	0.0283 (0.0278)	0.0207 (0.0280)	0.0274 (0.0277)	0.0177 (0.0278)	0.0269 (0.0279)	0.0251 (0.0278)	0.0262 (0.0276)	0.0264 (0.0278)	0.0264 (0.0360)
OC	-0.0172 (0.0235)	-0.0148 (0.0160)	-0.0102 (0.0224)	-0.0144 (0.0160)	-0.0132 (0.0160)	-0.0167 (0.0161)	-0.0145 (0.0159)	-0.00336 (0.0163)	-0.0152 (0.0160)	-0.0145 (0.0160)	-0.0170 (0.0160)	-0.0145 (0.0160)	-0.00955 (0.0223)
Emflex	0.0224 (0.0339)	-0.0148 (0.0234)	0.00803 (0.0324)	-0.0159 (0.0234)	-0.0195 (0.0236)	-0.00869 (0.0237)	-0.0177 (0.0234)	-0.0252 (0.0235)	-0.0154 (0.0234)	-0.0177 (0.0235)	-0.00875 (0.0236)	-0.0159 (0.0234)	0.00353 (0.0323)
Constant	-0.161 (0.134)	0.133 (0.0997)	0.108 (0.128)	0.124 (0.0999)	0.134 (0.0994)	0.165 (0.101)	0.125 (0.0990)	0.0548 (0.102)	0.130 (0.0997)	0.136 (0.101)	0.238** (0.108)	0.126 (0.0997)	0.108 (0.128)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	0.03	4.42	0.02	4.91	6.28	3.49	4.24	0.01	0.01	6.04	7.00	5.44	0.02
p-value	0.8663	0.0355	0.8777	0.0267	0.0122	0.0617	0.0395	0.9064	0.9383	0.0140	0.0082	0.0196	0.8760
Autocorrelation test	8.983	9.019	9.046	9.108	9.135	9.052	9.140	8.366	9.081	9.018	9.588	9.032	9.011
p-value	0.0037	0.0036	0.0036	0.0034	0.0034	0.0035	0.0034	0.0050	0.0035	0.0036	0.0027	0.0036	0.0036
Wald test	134.31	186.51	146.90	185.63	189.29	190.94	191.52	199.78	184.73	186.02	194.81	185.24	145.49
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	No	No	Yes									
Firms fixed effects	Yes	No	No	Yes									

Table4: Governance indicators and Raman and Shahrur model: FGLS estimation results

VARIABLES	(1) Ramshu	(2) Ramshu	(3) Ramshu	(4) Ramshu	(5) Ramshu	(6) Ramshu	(7) Ramshu	(8) Ramshu	(9) Ramshu	(10) Ramshu	(11) Ramshu	(12) Ramshu	(13) Ramshu
Ownership structure													
Mag	-0.000234** (0.000119)												
Fam		0.000521 (0.000424)											
Gov			-0.000257*** (8.91e-05)										
Inst				0.000336*** (0.000117)									
B.O.D													
Bsize					-0.000432 (0.00179)								
B independence						-0.0223 (0.0150)							
Bdiversity							-0.0247 (0.0281)						
CEO duality								-0.00516 (0.00683)					
B meeting									-0.000394 (0.000710)				
Audit Committee													
Acszize										0.00735* (0.00418)			
Acindependence											0.0807* (0.0437)		
Acmeeting												-0.00245*** (0.000946)	
External auditing													
BG4													-0.00178 (0.00684)

To be continued...

Table: Continued

Roa	-0.113 (0.118)	-0.106 (0.119)	-0.109 (0.122)	-0.113 (0.120)	-0.114 (0.118)	-0.106 (0.118)	-0.117 (0.118)	-0.111 (0.118)	-0.119 (0.118)	-0.114 (0.118)	-0.125 (0.117)	-0.116 (0.118)	-0.115 (0.118)
ROE	0.0756 (0.0640)	0.0651 (0.0649)	0.0661 (0.0664)	0.0764 (0.0652)	0.0717 (0.0647)	0.0669 (0.0643)	0.0743 (0.0644)	0.0716 (0.0647)	0.0732 (0.0644)	0.0813 (0.0642)	0.0828 (0.0641)	0.0787 (0.0638)	0.0731 (0.0644)
Liq	-0.000428 (0.00309)	-0.000356 (0.00312)	0.00105 (0.00314)	5.55e-05 (0.00310)	-0.000357 (0.00308)	-0.000247 (0.00309)	-0.000405 (0.00309)	-0.000166 (0.00309)	-0.000416 (0.00308)	-0.000105 (0.00307)	-0.000852 (0.00307)	0.000589 (0.00317)	-0.000441 (0.00308)
Lev	-0.0160 (0.0321)	-0.0177 (0.0327)	-0.0227 (0.0339)	-0.0197 (0.0328)	-0.0188 (0.0324)	-0.0173 (0.0322)	-0.0191 (0.0323)	-0.0195 (0.0329)	-0.0201 (0.0325)	-0.0169 (0.0324)	-0.0222 (0.0322)	-0.0222 (0.0324)	-0.0185 (0.0324)
Gear	0.00255 (0.00995)	0.00355 (0.0101)	0.00547 (0.0107)	0.00275 (0.0103)	0.00389 (0.0101)	0.00363 (0.0100)	0.00409 (0.0101)	0.00398 (0.0103)	0.00413 (0.0101)	0.00438 (0.0101)	0.00381 (0.0101)	0.00336 (0.0101)	0.00400 (0.0101)
Size	0.0438*** (0.0137)	0.0444*** (0.0140)	0.0405*** (0.0140)	0.0431*** (0.0139)	0.0434*** (0.0138)	0.0422*** (0.0137)	0.0441*** (0.0137)	0.0433*** (0.0138)	0.0438*** (0.0138)	0.0425*** (0.0139)	0.0421*** (0.0137)	0.0426*** (0.0138)	0.0438*** (0.0138)
Asstan	-0.0326 (0.0311)	-0.0358 (0.0313)	-0.0425 (0.0318)	-0.0393 (0.0315)	-0.0346 (0.0312)	-0.0393 (0.0313)	-0.0338 (0.0313)	-0.0318 (0.0312)	-0.0357 (0.0312)	-0.0288 (0.0311)	-0.0370 (0.0311)	-0.0380 (0.0318)	-0.0344 (0.0312)
OC	-0.0163 (0.0188)	-0.0165 (0.0189)	-0.0183 (0.0189)	-0.0194 (0.0189)	-0.0178 (0.0188)	-0.0185 (0.0187)	-0.0181 (0.0187)	-0.0204 (0.0191)	-0.0190 (0.0188)	-0.0140 (0.0188)	-0.0171 (0.0187)	-0.0193 (0.0188)	-0.0187 (0.0188)
Emflex	-0.00299 (0.0276)	-0.00177 (0.0279)	0.00488 (0.0278)	0.00156 (0.0277)	-5.46e-05 (0.0283)	0.00339 (0.0278)	-0.000182 (0.0280)	0.00381 (0.0281)	0.00148 (0.0279)	-0.000592 (0.0277)	-0.00276 (0.0278)	0.00106 (0.0280)	0.00100 (0.0279)
Constant	-0.118 (0.108)	-0.126 (0.110)	-0.0914 (0.109)	-0.109 (0.109)	-0.109 (0.109)	-0.0860 (0.110)	-0.114 (0.107)	-0.101 (0.110)	-0.106 (0.108)	-0.156 (0.111)	-0.187 (0.115)	-0.0924 (0.108)	-0.111 (0.108)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	0.97	1.636	1.08	2.13	0.73	0.54	0.63	0.48	0.68	0.55	0.99	1.24	0.64
p-value	0.3241	0.2048	0.2990	0.1442	0.3929	0.4640	0.4257	0.4866	0.4094	0.4598	0.3186	0.2659	0.4246
Autocorrelation test	1.636	0.60	1.734	1.670	1.707	1.822	1.935	1.708	2.027	1.658	1.645	1.583	1.708
p-value	0.2048	0.4385	0.1918	0.2001	0.1953	0.1810	0.1682	0.1951	0.1586	0.2018	0.2035	0.2122	0.1952
Wald test	327.42	290.21	279.95	291.47	295.00	300.57	297.62	295.88	294.74	293.85	300.89	304.06	293.77
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firms fixed effects	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix (D) Sensitivity analysis and Robustness Check (Summary of Results from Feasible Generalized Least square (FGLS) regarding relationship between CG mechanisms and Real-based activity EMs

Table 5: Governance indicators and ABCFO: FGLS estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo	oldabocfo
Ownership structure													
Mag	-1.94e-06 (0.000104)												
Fam		0.000986*** (0.000349)											
Gov			-4.83e-05 (8.60e-05)										
Inst				0.000115 (0.000101)									
B.O.D													
Bsize					2.46e-05 (0.00138)								
B independence						-0.00886 (0.0135)							
Bdiversity							0.0566** (0.0265)						
CEO duality								-0.00448 (0.00643)					
B meeting									-0.000559 (0.000626)				
Audit Committee													
Acsize										-0.00149 (0.00394)			
Acindependence											0.0819 (0.0531)		
Acmeeting												-0.000735 (0.000778)	
External auditing													
BG4													-0.00278 (0.00600)

Table: Continued

Roa	0.252** (0.124)	0.216* (0.123)	0.247** (0.124)	0.253** (0.124)	0.248** (0.125)	0.242* (0.124)	0.266** (0.126)	0.233* (0.124)	0.259** (0.125)	0.248** (0.124)	0.251** (0.124)	0.254** (0.127)	0.245** (0.125)
ROE	0.0934 (0.0661)	0.107 (0.0659)	0.0933 (0.0664)	0.0904 (0.0665)	0.0954 (0.0665)	0.0947 (0.0659)	0.0889 (0.0679)	0.108 (0.0667)	0.0921 (0.0660)	0.0938 (0.0663)	0.0983 (0.0660)	0.0976 (0.0682)	0.0957 (0.0665)
Liq	-0.00265 (0.00332)	-0.00172 (0.00325)	-0.00279 (0.00329)	-0.00270 (0.00330)	-0.00271 (0.00333)	-0.00272 (0.00329)	-0.00133 (0.00349)	-0.00270 (0.00329)	-0.00249 (0.00340)	-0.00267 (0.00330)	-0.00320 (0.00330)	-0.00285 (0.00337)	-0.00253 (0.00334)
Lev	-0.0235 (0.0333)	-0.0226 (0.0327)	-0.0223 (0.0331)	-0.0243 (0.0332)	-0.0233 (0.0336)	-0.0240 (0.0329)	-0.0310 (0.0354)	-0.0289 (0.0335)	-0.0258 (0.0347)	-0.0258 (0.0336)	-0.0232 (0.0331)	-0.0250 (0.0349)	-0.0216 (0.0337)
Gear	-0.00190 (0.0109)	-0.00231 (0.0109)	-0.00256 (0.0109)	-0.00289 (0.0109)	-0.00218 (0.0109)	-0.00181 (0.0108)	-0.00188 (0.0115)	0.000203 (0.0110)	-0.000848 (0.0111)	-0.00155 (0.0109)	-0.00238 (0.0109)	-0.00113 (0.0115)	-0.00226 (0.0110)
Size	-0.00370 (0.0124)	-0.00328 (0.0121)	-0.00358 (0.0123)	-0.00311 (0.0123)	-0.00380 (0.0123)	-0.00377 (0.0122)	-0.00111 (0.0132)	-0.00455 (0.0124)	-0.00279 (0.0126)	-0.00373 (0.0123)	-0.00362 (0.0123)	-0.00539 (0.0130)	-0.00287 (0.0124)
Asstan	-0.0666*** (0.0249)	-0.0755*** (0.0230)	-0.0696*** (0.0241)	-0.0736*** (0.0244)	-0.0674*** (0.0248)	-0.0711*** (0.0242)	-0.0687** (0.0277)	-0.0685*** (0.0243)	-0.0665** (0.0262)	-0.0696*** (0.0246)	-0.0692*** (0.0242)	-0.0679*** (0.0252)	-0.0642** (0.0261)
OC	-0.0589*** (0.0181)	-0.0672*** (0.0177)	-0.0578*** (0.0181)	-0.0562*** (0.0182)	-0.0578*** (0.0181)	-0.0616*** (0.0180)	-0.0619*** (0.0187)	-0.0617*** (0.0185)	-0.0597*** (0.0183)	-0.0595*** (0.0181)	-0.0572*** (0.0179)	-0.0578*** (0.0185)	-0.0584*** (0.0182)
Emflex	0.00676 (0.0205)	0.00915 (0.0195)	0.00371 (0.0206)	0.000472 (0.0210)	0.00559 (0.0213)	0.00852 (0.0203)	0.0123 (0.0223)	0.00875 (0.0209)	0.0100 (0.0212)	0.00608 (0.0204)	0.00470 (0.0204)	0.00329 (0.0216)	0.00713 (0.0212)
Constant	0.320*** (0.104)	0.350*** (0.102)	0.318*** (0.104)	0.309*** (0.104)	0.316*** (0.104)	0.342*** (0.105)	0.317*** (0.107)	0.338*** (0.107)	0.320*** (0.105)	0.331*** (0.106)	0.232** (0.116)	0.327*** (0.108)	0.312*** (0.104)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	35.74	38.99	35.37	35.50	36.59	36.37	40.03	38.83	35.95	36.26	35.37	37.81	35.27
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Autocorr test	15.705	15.147	15.757	15.851	15.714	15.837	15.092	16.088	15.856	16.342	15.796	16.080	15.696
p-value	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002	0.0001	0.0002
Wald test	1032.25	1115.05	1041.25	1039.42	1031.49	1045.72	984.40	1045.56	1013.24	1036.64	1044.66	1000.01	1012.14
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes												
Firms fixed effects	Yes												

Table 6: Governance indicators and ABPROD: FGLS estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro	oabnorpro
Ownership structure													
Mag	-0.000313** (0.000136)												
Fam		0.000600 (0.000464)											
Gov			5.20e-05 (0.000120)										
Inst				5.72e-05 (0.000137)									
B.O.D													
Bsize					-0.000986 (0.00330)								
B independence						-0.0104 (0.0163)							
Bdiversity							0.0115 (0.0327)						
CEO duality								-0.00349 (0.00813)					
B meeting									0.00143 (0.000879)				
Audit Committee													
Acszize										0.00176 (0.00468)			
Acindependence											-0.229*** (0.0667)		
Acmeeting												-0.00112 (0.00101)	
External auditing													
BG4													-0.00914 (0.00756)

To be continued...

Table: Continued

Roa	-0.499***	-0.543***	-0.515***	-0.509***	-0.434*	-0.511***	-0.523***	-0.515***	-0.537***	-0.549***	-0.545***	-0.545***	-0.528***
	(0.144)	(0.143)	(0.148)	(0.147)	(0.229)	(0.147)	(0.147)	(0.146)	(0.146)	(0.144)	(0.145)	(0.143)	(0.144)
ROE	0.0723	0.0967	0.112	0.105	0.0848	0.104	0.109	0.106	0.120	0.104	0.0961	0.101	0.0858
	(0.0839)	(0.0842)	(0.0863)	(0.0861)	(0.121)	(0.0855)	(0.0858)	(0.0859)	(0.0855)	(0.0842)	(0.0843)	(0.0839)	(0.0844)
Liq	0.00852*	0.00814*	0.00739*	0.00746*	0.00492	0.00744*	0.00757*	0.00732*	0.00735*	0.00771*	0.00889**	0.00817*	0.00779*
	(0.00440)	(0.00435)	(0.00440)	(0.00441)	(0.00714)	(0.00443)	(0.00442)	(0.00439)	(0.00439)	(0.00443)	(0.00452)	(0.00438)	(0.00437)
Lev	-0.0546	-0.0603	-0.0619	-0.0624	-0.150**	-0.0628	-0.0575	-0.0602	-0.0564	-0.0612	-0.0626	-0.0652	-0.0622
	(0.0517)	(0.0516)	(0.0520)	(0.0520)	(0.0703)	(0.0520)	(0.0520)	(0.0522)	(0.0526)	(0.0516)	(0.0513)	(0.0515)	(0.0513)
Gear	0.00348	0.00428	0.00791	0.00772	0.0445**	0.00800	0.00581	0.00683	0.00740	0.00499	0.00706	0.00589	0.00586
	(0.0165)	(0.0165)	(0.0166)	(0.0166)	(0.0210)	(0.0166)	(0.0167)	(0.0167)	(0.0168)	(0.0165)	(0.0164)	(0.0165)	(0.0165)
Size	0.00638	0.00793	0.00531	0.00597	0.0131	0.00515	0.00474	0.00528	0.00598	0.00493	-0.000701	0.00311	0.00441
	(0.0171)	(0.0172)	(0.0174)	(0.0173)	(0.0287)	(0.0173)	(0.0174)	(0.0173)	(0.0172)	(0.0173)	(0.0173)	(0.0173)	(0.0172)
Asstan	-0.00302	0.000311	0.00233	9.61e-05	-0.0847	-0.000716	0.000101	0.00222	0.00203	-0.00335	-0.000345	-0.00435	-0.00123
	(0.0363)	(0.0355)	(0.0369)	(0.0373)	(0.0610)	(0.0371)	(0.0374)	(0.0369)	(0.0362)	(0.0365)	(0.0363)	(0.0359)	(0.0359)
OC	0.0707***	0.0710***	0.0649***	0.0664***	0.0475	0.0658***	0.0661***	0.0664***	0.0663***	0.0761***	0.0763***	0.0719***	0.0729***
	(0.0185)	(0.0187)	(0.0200)	(0.0197)	(0.0382)	(0.0200)	(0.0200)	(0.0198)	(0.0195)	(0.0190)	(0.0191)	(0.0189)	(0.0188)
Emflex	0.0227	0.0135	0.0454	0.0419	0.148***	0.0454	0.0442	0.0427	0.0436	0.0231	0.0216	0.0199	0.0179
	(0.0327)	(0.0316)	(0.0343)	(0.0339)	(0.0555)	(0.0342)	(0.0342)	(0.0338)	(0.0343)	(0.0324)	(0.0322)	(0.0321)	(0.0320)
Constant	0.811***	0.796***	0.817***	0.810***	0.861***	0.825***	0.818***	0.815***	0.798***	0.782***	1.044***	0.823***	0.811***
	(0.139)	(0.137)	(0.149)	(0.148)	(0.218)	(0.149)	(0.148)	(0.148)	(0.147)	(0.142)	(0.155)	(0.141)	(0.139)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	40.93	29.89	40.14	40.66	39.84	21.82	40.42	40.06	41.51	43.96	53.83	22.18	45.02
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Autocorr test	15.675	16.735	16.586	16.272	16.682	17.681	16.391	16.451	16.794	16.560	18.052	17.945	16.614
p-value	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Wald test	9189.39	9220.26	7672.11	7632.69	4275.24	7753.72	7628.29	7690.99	7597.89	9314.36	9192.67	9246.65	9213.07
p-value	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	No	No	Yes									
Firms fixed effects	Yes	No	No	Yes									

Table7:Governance indicators and ABDISCX: FGLS estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi	oabdi
Ownership structure													
Mag	-1.03e-05 (2.41e-05)												
Fam		1.61e-05 (8.51e-05)											
Gov			-6.27e-06 (1.74e-05)										
Inst				6.22e-06 (2.52e-05)									
B.O.D													
Bsize					0.000506* (0.000302)								
B independence						0.00622** (0.00297)							
Bdiversity							-0.0146*** (0.00533)						
CEO duality								-0.00354*** (0.00135)					
B meeting									5.88e-05 (0.000150)				
Audit Committee													
Acszize										-0.000819 (0.000838)			
Acindependence											-0.0173* (0.00961)		
Acmeeting												4.63e-05 (0.000190)	
External auditing													
BG4													0.000473 (0.00145)

To be continued...

Table: Continued

Roa	-0.00334 (0.0259)	-0.0167 (0.0291)	-0.00322 (0.0274)	-0.0194 (0.0298)	-0.00769 (0.0262)	-0.00611 (0.0283)	0.00936 (0.0257)	-0.00395 (0.0259)	-0.00313 (0.0262)	0.00138 (0.0261)	-0.00425 (0.0263)	-0.00959 (0.0291)	0.00137 (0.0262)
ROE	0.0125 (0.0150)	0.0140 (0.0163)	0.0123 (0.0157)	0.0164 (0.0166)	0.0145 (0.0151)	0.0156 (0.0160)	0.00516 (0.0150)	0.0132 (0.0149)	0.0117 (0.0151)	0.00887 (0.0151)	0.0110 (0.0151)	0.0149 (0.0164)	0.00879 (0.0151)
Liq	0.000359 (0.000831)	0.000342 (0.000883)	0.000400 (0.000826)	0.000512 (0.000884)	0.000386 (0.000821)	0.000434 (0.000822)	0.000444 (0.000824)	0.000425 (0.000821)	0.000287 (0.000820)	0.000237 (0.000826)	0.000408 (0.000823)	0.000252 (0.000839)	0.000324 (0.000816)
Lev	0.0203** (0.00948)	0.0146 (0.0104)	0.0218** (0.00960)	0.0153 (0.0104)	0.0223** (0.00953)	0.0206** (0.00961)	0.0213** (0.00960)	0.0210** (0.00946)	0.0203** (0.00954)	0.0192** (0.00952)	0.0217** (0.00945)	0.0184* (0.00970)	0.0209** (0.00950)
Gear	- 0.00799***	-0.00650* (0.00303)	- 0.00867***	- 0.00659**	- 0.00863***	- 0.00816***	- 0.00808***	- 0.00841***	- 0.00808***	- 0.00806***	- 0.00853***	- 0.00757**	- 0.00879***
Size	0.000711 (0.00286)	0.00144 (0.00309)	0.000902 (0.00293)	0.00113 (0.00310)	0.00177 (0.00290)	0.000609 (0.00294)	0.000851 (0.00283)	0.000522 (0.00284)	0.000850 (0.00287)	0.00105 (0.00287)	0.00109 (0.00288)	0.000698 (0.00307)	0.000811 (0.00284)
Asstan	-0.00947 (0.00826)	-0.0106 (0.00903)	-0.00886 (0.00823)	-0.0102 (0.00903)	-0.00941 (0.00823)	-0.00845 (0.00829)	-0.00965 (0.00819)	-0.00950 (0.00823)	-0.00861 (0.00819)	-0.00971 (0.00826)	-0.00943 (0.00833)	-0.0107 (0.00831)	-0.00753 (0.00819)
OC	0.0131*** (0.00487)	0.0167*** (0.00609)	0.0127*** (0.00490)	0.0170*** (0.00609)	0.0118** (0.00493)	0.0125** (0.00495)	0.0131*** (0.00482)	0.00998** (0.00499)	0.0136*** (0.00484)	0.0122** (0.00492)	0.0115** (0.00496)	0.0129*** (0.00497)	0.0120** (0.00487)
Emflex	-0.00557 (0.00675)	-0.00959 (0.00754)	-0.00525 (0.00666)	-0.0102 (0.00755)	-0.00342 (0.00676)	-0.00341 (0.00668)	-0.00485 (0.00674)	-0.00209 (0.00672)	-0.00556 (0.00668)	-0.00432 (0.00674)	-0.00324 (0.00678)	-0.00471 (0.00689)	-0.00299 (0.00656)
Constant	-0.0796*** (0.0263)	- 0.0964*** (0.0312)	-0.0790*** (0.0264)	- 0.0967*** (0.0312)	-0.0829*** (0.0263)	-0.0826*** (0.0270)	-0.0805*** (0.0260)	-0.0649** (0.0268)	-0.0832*** (0.0262)	-0.0744*** (0.0265)	-0.0575** (0.0285)	- 0.0783*** (0.0268)	-0.0765*** (0.0261)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	3846.09	1505.82	3836.45	1488.65	1474.32	1504.41	3837.60	3913.77	3840.25	1486.96	1491.96	1488.88	1481.27
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Autocorr test	2.077	2.095	2.069	2.064	2.108	2.030	2.077	2.064	2.105	2.040	2.068	1.990	2.028
p-value	0.1536	0.1518	0.1544	0.1548	0.1506	0.1582	0.1536	0.1549	0.1509	0.1573	0.1544	0.1324	0.1584
Wald test	2332.48	1274.12	2306.02	1265.32	2340.46	2392.96	2344.94	2310.87	2359.03	2335.13	2306.43	2331.34	2352.69
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firms fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Governance indicators and RM1: FGLS estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1	oldrm1
Ownership structure													
Mag	-0.000307 (0.000194)												
Fam		-0.000422 (0.000644)											
Gov			0.000109 (0.000157)										
Inst				-7.05e-05 (0.000188)									
B.O.D													
Bsize					0.000841 (0.00299)								
B independence						-0.00257 (0.0245)							
Bdiversity							-0.0882* (0.0454)						
CEO duality								0.00870 (0.0115)					
B meeting									0.00199 (0.00127)				
Audit Committee													
Acszize										0.00173 (0.00718)			
Acindependence											-0.448*** (0.0803)		
Acmeeting												-0.00250* (0.00152)	
External auditing													
BG4													-0.0137 (0.0108)

To be continued...

Table: Continued

Roa	-0.778*** (0.193)	-0.796*** (0.193)	-0.776*** (0.195)	-0.788*** (0.196)	-0.794*** (0.193)	-0.792*** (0.194)	-0.769*** (0.193)	-0.765*** (0.192)	-0.833*** (0.197)	-0.782*** (0.194)	-0.785*** (0.189)	-0.781*** (0.192)	-0.794*** (0.192)
ROE	-0.0178 (0.111)	-0.0159 (0.111)	-0.0114 (0.113)	-0.0145 (0.113)	-0.0161 (0.112)	-0.0191 (0.112)	-0.0404 (0.112)	-0.0417 (0.111)	0.0219 (0.112)	-0.0223 (0.113)	-0.0274 (0.109)	-0.0223 (0.112)	-0.0293 (0.111)
Liq	0.00737 (0.00611)	0.00763 (0.00600)	0.00751 (0.00606)	0.00743 (0.00613)	0.00776 (0.00601)	0.00784 (0.00603)	0.00710 (0.00601)	0.00809 (0.00600)	0.00670 (0.00618)	0.00792 (0.00604)	0.00966 (0.00599)	0.00821 (0.00604)	0.00756 (0.00598)
Lev	-0.0290 (0.0620)	-0.0342 (0.0621)	-0.0342 (0.0622)	-0.0336 (0.0626)	-0.0296 (0.0620)	-0.0290 (0.0620)	-0.0259 (0.0616)	-0.00572 (0.0628)	-0.0276 (0.0641)	-0.0324 (0.0621)	-0.0300 (0.0584)	-0.0370 (0.0617)	-0.0276 (0.0618)
Gear	-0.00299 (0.0199)	-0.00153 (0.0201)	-0.000166 (0.0201)	-0.000268 (0.0202)	-0.00248 (0.0200)	-0.00264 (0.0200)	-0.00346 (0.0200)	-0.0101 (0.0202)	0.000196 (0.0204)	-0.00170 (0.0201)	0.000872 (0.0189)	-0.00162 (0.0199)	-0.00197 (0.0200)
Size	0.00559 (0.0221)	0.00374 (0.0221)	0.00355 (0.0222)	0.00463 (0.0224)	0.00542 (0.0222)	0.00460 (0.0221)	0.00361 (0.0219)	0.00804 (0.0222)	0.00709 (0.0226)	0.00511 (0.0222)	0.00106 (0.0219)	0.00127 (0.0222)	0.00782 (0.0221)
Asstan	0.0463 (0.0541)	0.0455 (0.0539)	0.0493 (0.0544)	0.0507 (0.0551)	0.0433 (0.0536)	0.0442 (0.0539)	0.0507 (0.0549)	0.0523 (0.0538)	0.0340 (0.0527)	0.0505 (0.0546)	0.0576 (0.0538)	0.0510 (0.0549)	0.0476 (0.0536)
OC	0.107*** (0.0321)	0.110*** (0.0318)	0.109*** (0.0320)	0.108*** (0.0322)	0.111*** (0.0318)	0.111*** (0.0320)	0.107*** (0.0317)	0.119*** (0.0324)	0.111*** (0.0324)	0.111*** (0.0320)	0.112*** (0.0312)	0.106*** (0.0319)	0.109*** (0.0317)
Emflex	0.0589 (0.0474)	0.0582 (0.0473)	0.0578 (0.0474)	0.0587 (0.0476)	0.0557 (0.0475)	0.0538 (0.0474)	0.0625 (0.0473)	0.0462 (0.0472)	0.0555 (0.0477)	0.0584 (0.0473)	0.0553 (0.0463)	0.0582 (0.0474)	0.0527 (0.0470)
Constant	-0.0987 (0.232)	-0.101 (0.230)	-0.103 (0.231)	-0.102 (0.232)	-0.121 (0.233)	-0.108 (0.232)	-0.0893 (0.230)	-0.171 (0.234)	-0.137 (0.235)	-0.124 (0.233)	0.340 (0.240)	-0.0673 (0.231)	-0.112 (0.229)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	11.30	11.38	11.00	11.17	11.06	11.14	11.55	11.38	11.54	10.61	1.85	11.49	11.17
p-value	0.0008	0.0007	0.0009	0.0008	0.0009	0.0008	0.0007	0.0007	0.0007	0.0011	0.0003	0.0007	0.0008
Autocorrelation test	18.529	18.920	18.774	18.693	18.759	19.034	18.158	18.959	19.633	19.248	20.563	20.645	18.962
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Wald test	4961.82	4912.88	4862.63	4862.35	4915.75	4904.62	4914.30	4948.20	4775.76	4984.21	5128.40	5035.25	4968.52
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firms fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 9: Governance indicators and RM2: FGLS estimation results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2	Oldrm2
Ownership structure													
Mag	2.78e-05 (0.000110)												
Fam		-0.000715* (0.000368)											
Gov			5.71e-05 (8.83e-05)										
Inst				-0.000178 (0.000109)									
B.O.D													
Bsize					-0.000333 (0.00153)								
B independence						-0.00512 (0.0145)							
Bdiversity							-0.0511* (0.0286)						
CEO duality								0.0112* (0.00659)					
B meeting									0.000425 (0.000686)				
Audit Committee													
Acsize										-0.00277 (0.00773)			
Acindependence											-0.0816 (0.0512)		
Acmeeting												0.000343 (0.000781)	
External auditing													
BG4													0.00233 (0.00637)

To be continued...

Table: Continued

Roa	-0.304** (0.132)	-0.291** (0.132)	-0.301** (0.132)	-0.307** (0.132)	-0.295** (0.132)	-0.299** (0.132)	-0.303** (0.134)	-0.281** (0.132)	-0.302** (0.132)	-0.0645 (0.205)	-0.308** (0.132)	-0.306** (0.133)	-0.295** (0.132)
ROE	-0.0808 (0.0681)	-0.0839 (0.0680)	-0.0795 (0.0685)	-0.0746 (0.0686)	-0.0851 (0.0689)	-0.0840 (0.0682)	-0.0845 (0.0706)	-0.103 (0.0687)	-0.0805 (0.0682)	-0.253** (0.109)	-0.0824 (0.0682)	-0.0859 (0.0686)	-0.0839 (0.0682)
Liq	0.00467 (0.00372)	0.00425 (0.00375)	0.00457 (0.00371)	0.00426 (0.00372)	0.00463 (0.00372)	0.00469 (0.00372)	0.00377 (0.00383)	0.00442 (0.00369)	0.00445 (0.00373)	0.00485 (0.00638)	0.00518 (0.00373)	0.00471 (0.00379)	0.00463 (0.00370)
Lev	0.0254 (0.0390)	0.0311 (0.0398)	0.0271 (0.0390)	0.0275 (0.0390)	0.0243 (0.0392)	0.0259 (0.0390)	0.0341 (0.0406)	0.0389 (0.0391)	0.0266 (0.0394)	-0.0534 (0.0624)	0.0266 (0.0390)	0.0277 (0.0403)	0.0235 (0.0389)
Gear	0.00586 (0.0124)	0.00461 (0.0125)	0.00548 (0.0123)	0.00661 (0.0123)	0.00615 (0.0124)	0.00551 (0.0123)	0.00492 (0.0127)	0.000859 (0.0124)	0.00507 (0.0124)	0.0388** (0.0188)	0.00592 (0.0123)	0.00556 (0.0127)	0.00617 (0.0123)
Size	-2.74e-05 (0.0133)	-0.00103 (0.0133)	0.000116 (0.0133)	-0.000159 (0.0133)	-0.000366 (0.0133)	1.36e-05 (0.0133)	0.000440 (0.0139)	0.00249 (0.0133)	0.000319 (0.0134)	-0.0158 (0.0256)	0.000134 (0.0132)	-0.00191 (0.0137)	-0.000356 (0.0133)
Asstan	0.112*** (0.0306)	0.113*** (0.0307)	0.116*** (0.0306)	0.118*** (0.0306)	0.115*** (0.0306)	0.113*** (0.0305)	0.111*** (0.0324)	0.118*** (0.0304)	0.112*** (0.0309)	0.0844 (0.0539)	0.114*** (0.0304)	0.118*** (0.0318)	0.114*** (0.0305)
OC	0.0388** (0.0184)	0.0409** (0.0183)	0.0386** (0.0184)	0.0373** (0.0185)	0.0382** (0.0184)	0.0384** (0.0185)	0.0374** (0.0190)	0.0483** (0.0190)	0.0388** (0.0184)	-0.00628 (0.0333)	0.0373** (0.0183)	0.0352* (0.0184)	0.0391** (0.0184)
Emflex	-0.00663 (0.0233)	-0.00370 (0.0232)	-0.00466 (0.0236)	-0.00270 (0.0235)	-0.00667 (0.0241)	-0.00585 (0.0235)	-0.00363 (0.0247)	-0.0157 (0.0239)	-0.00578 (0.0234)	0.0373 (0.0481)	-0.00511 (0.0234)	-0.00240 (0.0246)	-0.00755 (0.0236)
Constant	-0.213** (0.108)	-0.212** (0.107)	-0.215** (0.107)	-0.205* (0.108)	-0.207* (0.107)	-0.207* (0.109)	-0.204* (0.111)	-0.269** (0.111)	-0.216** (0.108)	0.0930 (0.194)	-0.126 (0.119)	-0.191* (0.109)	-0.213** (0.107)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	3.99	2.84	2.92	5.14	3.45	3.96	8.05	3.41	3.95	2.20	4.33	8.31	2.68
p-value	0.0457	0.0919	0.0873	0.0234	0.0632	0.0467	0.0046	0.0650	0.0469	0.1378	0.0375	0.0040	0.1015
Autocorrelation test	17.738	17.805	18.022	18.172	18.043	17.820	17.766	18.337	18.072	18.515	18.269	18.480	18.057
p-value	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0001	0.0000	0.0001
Wald test	1121.72	1144.92	1125.84	1126.68	1126.16	1126.14	1091.47	1135.79	1129.22	535.96	1129.33	1091.37	1125.29
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firms fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 10: Governance indicators and RM3: FGLS estimation results

VARIABLES	(1) Oldrm3	(2) Oldrm3	(3) Oldrm3	(4) Oldrm3	(5) Oldrm3	(6) Oldrm3	(7) Oldrm3	(8) Oldrm3	(9) Oldrm3	(10) Oldrm3	(11) Oldrm3	(12) Oldrm3	(13) Oldrm3
Ownership structure													
Mag	-0.000290 (0.000196)												
Fam		-0.000382 (0.000646)											
Gov			0.000105 (0.000159)										
Inst				-5.24e-05 (0.000193)									
B.O.D													
Bsize					0.00102 (0.00298)								
B independence						-0.0155 (0.0254)							
Bdiversity							-0.0959** (0.0467)						
CEO duality								0.0113 (0.0119)					
B meeting									0.00146 (0.00129)				
Audit Committee													
Acsiz										-4.24e-05 (0.00740)			
Acindependence											-0.390*** (0.0818)		
Acmeeting												-0.00236 (0.00149)	
External auditing													
BG4													-0.0121 (0.0112)

To be continued...

Table: Continued

Roa	-0.741*** (0.206)	-0.747*** (0.206)	-0.738*** (0.207)	-0.749*** (0.208)	-0.745*** (0.207)	-0.734*** (0.205)	-0.720*** (0.205)	-0.721*** (0.205)	-0.782*** (0.211)	-0.737*** (0.207)	-0.760*** (0.206)	-0.745*** (0.205)	-0.756*** (0.206)
ROE	-0.000304 (0.118)	-0.00288 (0.118)	0.00406 (0.119)	0.000686 (0.119)	-0.00164 (0.119)	-0.0126 (0.118)	-0.0223 (0.118)	-0.0281 (0.118)	0.0226 (0.119)	-0.00706 (0.119)	0.00142 (0.118)	0.000293 (0.118)	-0.00733 (0.118)
Liq	0.00968 (0.00652)	0.00984 (0.00643)	0.00952 (0.00647)	0.00969 (0.00650)	0.00991 (0.00644)	0.00999 (0.00644)	0.00920 (0.00634)	0.00968 (0.00644)	0.00906 (0.00666)	0.0101 (0.00642)	0.0123* (0.00648)	0.0104 (0.00645)	0.0100 (0.00645)
Lev	-0.0438 (0.0636)	-0.0441 (0.0634)	-0.0445 (0.0635)	-0.0438 (0.0638)	-0.0411 (0.0635)	-0.0428 (0.0634)	-0.0416 (0.0622)	-0.0243 (0.0639)	-0.0429 (0.0654)	-0.0451 (0.0633)	-0.0480 (0.0628)	-0.0478 (0.0631)	-0.0397 (0.0635)
Gear	0.00893 (0.0205)	0.00968 (0.0205)	0.0107 (0.0206)	0.0107 (0.0206)	0.00934 (0.0205)	0.0102 (0.0205)	0.0102 (0.0203)	0.00400 (0.0206)	0.0117 (0.0209)	0.00985 (0.0206)	0.0149 (0.0204)	0.00993 (0.0204)	0.0101 (0.0205)
Size	0.00657 (0.0230)	0.00507 (0.0230)	0.00620 (0.0229)	0.00664 (0.0230)	0.00723 (0.0230)	0.00631 (0.0229)	0.00441 (0.0226)	0.00916 (0.0230)	0.00839 (0.0235)	0.00727 (0.0229)	0.00331 (0.0227)	0.00496 (0.0228)	0.00898 (0.0230)
Asstan	0.113* (0.0603)	0.110* (0.0603)	0.113* (0.0607)	0.113* (0.0608)	0.111* (0.0603)	0.107* (0.0605)	0.119* (0.0616)	0.114* (0.0602)	0.108* (0.0598)	0.113* (0.0609)	0.122** (0.0600)	0.115* (0.0611)	0.113* (0.0604)
OC	0.0891*** (0.0323)	0.0911*** (0.0322)	0.0904*** (0.0322)	0.0888*** (0.0323)	0.0896*** (0.0321)	0.0873*** (0.0321)	0.0867*** (0.0318)	0.101*** (0.0333)	0.0879*** (0.0327)	0.0916*** (0.0323)	0.0893*** (0.0318)	0.0849*** (0.0321)	0.0880*** (0.0322)
Emflex	0.0345 (0.0475)	0.0341 (0.0474)	0.0345 (0.0475)	0.0355 (0.0477)	0.0358 (0.0478)	0.0381 (0.0477)	0.0401 (0.0470)	0.0210 (0.0478)	0.0340 (0.0480)	0.0368 (0.0476)	0.0339 (0.0473)	0.0395 (0.0479)	0.0331 (0.0474)
Constant	0.671*** (0.213)	0.670*** (0.211)	0.659*** (0.212)	0.668*** (0.213)	0.655*** (0.214)	0.688*** (0.213)	0.687*** (0.208)	0.598*** (0.218)	0.654*** (0.217)	0.650*** (0.215)	1.065*** (0.225)	0.697*** (0.212)	0.663*** (0.211)
Observations	780	780	780	780	780	780	780	780	780	780	780	780	780
Number of no	78	78	78	78	78	78	78	78	78	78	78	78	78
Hetero test	4.77	4.64	4.51	4.60	4.62	4.55	4.83	4.94	4.88	4.17	5.79	4.84	4.61
p-value	0.0290	0.0313	0.0338	0.0320	0.0316	0.0329	0.0279	0.0262	0.0271	0.0411	0.0161	0.0277	0.0318
Autocorrelation test	13.520	13.559	13.485	13.486	13.510	13.788	13.316	13.500	13.738	13.643	14.581	14.876	13.540
p-value	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0004	0.0004	0.0004	0.0003	0.0002	0.0004
Wald test	4965.93	4948.32	4908.57	4908.49	4946.52	4967.99	5029.71	4934.38	4791.89	5012.34	5149.93	5037.40	4936.46
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
Firms fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes						