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RESTRICTING EARNINGS MANAGEMENT THROUGH CORPORATE GOVERNANCE MECHANISMS: EVIDENCE FROM JORDAN

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RESTRICTING EARNINGS MANAGEMENT THROUGH CORPORATE GOVERNANCE MECHANISMS: EVIDENCE FROM JORDAN

D. Beatriz Aibar Guzmán y D. Modar Abdullatif

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DEDICATION

To my life-coaches, my precious mother, Mrs. Mutte, my father, Mr. Suleiman, to my brothers, my sisters and relatives: because I owe it all to you. Many Thanks.

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ABSTRACT

As a global response to the accounting failures era and to restore public confidence and credibility in the financial statements, more concerted efforts have been conducted throughout the world to improve the investment environment. Corporate governance mechanisms stand out as one of the key solutions for guaranteeing the integrity and quality of financial reporting and mitigating agency problems. In this sense, many developed and developing countries have focused the corporate governance reformations on several pivotal mechanisms such as audit quality, the board of directors' attributes and the audit committee's characteristics.

The relationship between corporate governance mechanisms and earnings management has been analyzed extensively in literature. However, most studies have been focused largely on Anglo-Saxon countries and Western European countries, narrowing the potential generalization of findings to developing markets where corporate governance mechanisms function differently. As a result, there is a lack of knowledge about the role of corporate governance mechanisms in developing countries and their effectiveness in deterring earnings management practices.

This thesis aims to explore the role of three corporate governance dimensions, namely audit quality (auditor size and audit fees), the board of directors (board size, board independence, board financial expertise, board meetings, CEO duality and political connection) and audit committees (audit committee size, audit committee independence, audit committee expertise and audit committee meetings), in restricting discretionary accruals (as a proxy for earnings management practices) in a sample of Jordanian manufacturing firms over the period 2012-2016. Jordan was selected because it provides a unique institutional setting, which is generally characterized by concentrated ownership, code law tradition, lower investor protection

and a small proportion of quoted firms, where earnings management behaviors are more likely.

The results regarding the first dimension show that audit quality attributes (auditor firm size and audit fees) have no significant effect on earnings management. We do not find evidence that auditor size works as a constraint for earnings management, neither do we find that audit fees have an impact. With regard to the second dimension, the results indicate that the board of directors' attributes (board size, board independence, board financial expertise, CEO duality and political connection) do not significantly affect earnings management activities. However, the results indicate a significantly positive relationship between the number of board meetings and earnings management suggesting that in Jordan board meetings are less effective in lessening earnings management activities. Finally, the empirical results regarding the audit committee's attributes show that the audit committee independence is the only variable which has a negative and statistically significant relationship with the absolute value of discretionary accruals while the other analyzed variables (audit committee size, audit committee expertise and audit committee meetings) do not contribute to decrease the magnitude of discretionary accruals. The primary outcomes of the thesis are hugely bolstered by a variety of sensitivity and robustness analyses.

Overall, the research contributes to previous literature, first, by providing a comprehensive assessment of the effectiveness of several corporate governance mechanisms in restricting earnings management by considering a broad range of key attributes and, second, by shedding light on the extent to which such mechanisms are able to restrict earnings management practices in a developing country, Jordan, whose cultural, economic and institutional context is very different from most previously analyzed countries' context. Results from this thesis may also be potentially significant for key related stakeholders, regulators and auditing standards setters, investors, analysts and academics, particularly on matters linking to corporate governance mechanisms and earnings management.

RESUMEN

Como respuesta global a la era de fracasos contables y para restaurar la credibilidad y la confianza del público en los estados financieros se han realizado esfuerzos concertados en todo el mundo para mejorar el entorno de inversión. Los mecanismos de gobierno corporativo destacan como una de las soluciones clave para garantizar la integridad y la calidad de los informes financieros y mitigar los problemas de la agencia. En este sentido, muchos países desarrollados y en vías de desarrollo han centrado las reformas de gobierno corporativo en varios mecanismos fundamentales, como la calidad de la auditoría, los atributos del consejo de administración y las características del comité de auditoría.

La relación entre los mecanismos de gobierno corporativo y la manipulación de resultados se ha analizado ampliamente en la literatura. Sin embargo, la mayoría de los estudios se han centrado en gran medida en países anglosajones y de Europa occidental, reduciendo la posible generalización de los resultados a mercados en desarrollo donde los mecanismos de gobierno corporativo funcionan de manera diferente. Como resultado, existe una falta de conocimiento sobre el papel de los mecanismos de gobierno corporativo en los países en desarrollo y su efectividad para disuadir las prácticas de manipulación de resultados.

Esta tesis tiene como objetivo explorar el papel de tres dimensiones de gobierno corporativo, a saber la calidad de la auditoría (tamaño del auditor y honorarios de auditoría), el consejo de administración (tamaño del consejo, independencia del consejo, experiencia financiera del consejo, reuniones del consejo, dualidad del CEO y conexión política) y los comités de auditoría (tamaño del comité de auditoría, independencia del comité de auditoría, experiencia del comité de auditoría y reuniones del comité de auditoría), para restringir los ajustes por devengo discrecionales

(como proxy de las prácticas de manipulación de resultados) en una muestra de empresas industriales jordanas durante el período 2012-2016. Jordania fue seleccionada porque ofrece un entorno institucional único, caracterizado por la propiedad concentrada, un sistema legal basado en el derecho común, una menor protección de los inversores y una pequeña proporción de empresas cotizadas, donde los comportamientos de manipulación de resultados son más probables.

Los resultados con respecto a la primera dimensión muestran que los atributos de la calidad de la auditoría (tamaño de la firma de auditoría y honorarios de auditoría) no tienen un efecto significativo en la manipulación de resultados. No encontramos evidencia de que el tamaño del auditor funcione como una restricción para la manipulación de resultados, ni tampoco encontramos que los honorarios de auditoría tengan algún impacto. Con respecto a la segunda dimensión, los resultados indican que los atributos del consejo de administración (tamaño del consejo, independencia del consejo, experiencia financiera del consejo a, dualidad del CEO y conexión política) no afectan significativamente a las actividades de manipulación de resultados. Sin embargo, los resultados indican una relación significativamente positiva entre la cantidad de reuniones del consejo y la manipulación de resultados, lo que sugiere que en Jordania las reuniones del consejo son menos efectivas para disminuir las actividades de manipulación de resultados. Finalmente, los resultados empíricos con respecto a los atributos del comité de auditoría muestran que la independencia del comité de auditoría es la única variable que tiene una relación negativa y estadísticamente significativa con el valor absoluto de los ajustes por devengo discrecionales, mientras que las otras variables analizadas (tamaño del comité de auditoría, experiencia del comité de auditoría y reuniones del comité de auditoría) no contribuyen a disminuir la magnitud de los ajustes por devengo discrecionales. Los resultados principales de la tesis se ven reforzados por una variedad de análisis de sensibilidad y robustez.

En general, la investigación contribuye a la literatura previa, primero, proporcionando una evaluación exhaustiva de la efectividad de varios mecanismos de gobierno corporativo para restringir la

manipulación de resultados al considerar una amplia gama de atributos clave y, segundo, arrojando luz sobre el grado en que dichos mecanismos pueden restringir las prácticas de manipulación de beneficios en un país en desarrollo, Jordania, cuyo contexto cultural, económico e institucional es muy diferente del contexto de los países analizados anteriormente. Los resultados de esta tesis también pueden ser potencialmente significativos para los reguladores, auditores, inversores, analistas y académicos, especialmente en asuntos relacionados con los mecanismos de gobierno corporativo y la manipulación de beneficios.

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LIST OF ACRONYMS

ASE	Amman Stock Exchange
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CG	Corporate Governance
DA	Discretionary Accruals
GAAP	The Generally Accepted Accounting Principles
GLS	Generalize Least Squares
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering(s)
JACPA	Jordanian Association of Certified Public Accountants
JCGC	Jordanian Corporate Governance Code
JSC	Jordan Securities Commission
MBOs	Management Buyouts
NDA	Non-Discretionary Accruals
NYSE	New York Stock Exchange
OLS	Ordinary Least Squares
PCAOB	Public Company Accounting Oversight Board (US)
POB	Public Oversight Board (US)
SDC	the Securities Depository Centre(Jordan)
SEC	Securities and Exchange Commission (US)
SEO	Seasoned Equity Offering(s)
SOX	Sarbanes-Oxley Act 2002 (US)
TA	Total Accruals
OECD	The Organization of Economic Cooperation and Development
UK	United Kingdom
US	United States of America
VIF	The Variance Inflation Factor

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CHAPTER 1: INTRODUCTION

1.1 OVERVIEW

Since 2001, the world has witnessed an alarming rise in corporate failures and accounting scandals such as Enron and WorldCom Inc. in the United States, Bre-X and YBM Magnex in Canada, Royal Ahold in the Netherlands, HIH Insurance Ltd. in Australia and Parmalat in Italy. These collapses caused the breakdown of investors' confidence, misleading both investors and other relevant stakeholders and losing their trust in accounting information.

In particular, the accounting scandals have raised concern about the earnings quality announced by companies (Gaio and Raposo 2011). Financial statements users have often depended on net income as the singular most significant output of the accounting system to make their decisions (Graham et al. 2005a). However, earnings quality becomes dubious when managers have a motivation to manipulate reported earnings in an opportunistic way in order to achieve self-interests (Schipper and Vincent 2003).

Both accounting flexibility and operational flexibility, through the control of some operational decisions in terms of size and timing, have a significant impact on the quality of the accounting information oriented to the related parties, which allows managers to make decisions affecting the net income. Accounting choices have provided managers with great discretion in reporting earnings. In the process of preparing financial statements, the generally accepted accounting principles (GAAP) also allow for a specific level of interpretation. However, these interpretations and the "grey area" in accounting standards, allow managers to make decisions and estimates commensurate with the business environment, as well as achieving

personal interests and increasing the wealth of the company (Watts and Zimmerman 1990; Habib et al. 2013).

As a result, accounting choices have boosted the phenomenon of earnings management, which arises from the asymmetry of information and the agency problems between companies' insiders and outsiders, which could influence the trust between them about the credibility of the financial statements. In addition, it disfigures a firm's real financial performance and misleads financial statement users concerning the future performance of the firm (Krishnan et al. 2011).

Corporate governance mechanisms stand out as one of the key solutions for guaranteeing the integrity and quality of financial reporting and mitigating agency problems. They provide the structure to ensure a greater monitoring and control of management and a greater protection of the shareholders' interests. Furthermore, they play an essential role in balancing the interests of a company's numerous stakeholders.

Thus, as a global response to the accounting failures era and to restore public confidence and credibility in the financial statements, more concerted efforts have been conducted throughout the world to improve the investment environment and the quality of corporate governance practices, such as the Report of the Committee on the Financial Aspects of Corporate Governance (Cadbury Report 1992), the recommendations of the Securities and Exchange Commission (SEC 1999), the Blue Ribbon Commission (BRC 1999) and the Sarbanes-Oxley Act in the US (SOX 2002).

Corporate deceit and financial reporting malpractices have not been limited to developed countries. Like other developing countries, Jordan also has faced several corporate frauds (Al-khabash and Al-Thuneibat 2008). As a result, Jordan has also undergone major reforms represented by adopting the full version of the IAS/IFRS, which has been incorporated in the 1997 Company Law and the 2002 Securities Law, and the issuance of a code of corporate governance for public quoted companies in 2009. Furthermore, new regulation has recently been enacted to enhance audit quality and strengthen the auditor's independence (JSC,2014) .

Various streams of literature indicate that the aim of main reformation attempts during the last decades reflected the underlying intentions to enhance earnings quality and, thus, limiting managers' opportunistic behavior. In this sense, since the late 1990s, many developed and developing countries have focused the corporate governance reformations on several pivotal mechanisms such as audit quality, board of directors' attributes and audit committee's characteristics.

In consequence, the relationship between corporate governance mechanisms (i.e. audit quality, board of directors and audit committee) and earnings management has been analyzed extensively in a large number of studies. However, most of these studies are orientated largely towards Anglo-Saxon countries and Western European countries, narrowing the potential generalization of findings to developing markets.

Corporate governance mechanisms in emerging markets can function differently from the Anglo-Saxon and Western European countries. Indeed, several authors have argued that the efficiency of a bundle of governance mechanisms differs systematically with the institutional environment at the country level (La Porta et al. 2002; Suhomlinova 2006; Lubatkin et al. 2007). In the same line, Praveen Bhasa (2004) contended that corporate governance practices are different throughout the world, which might be due to differences in legal systems and cultural backgrounds between countries, and these differences are a key obstacle in the uniformity of the corporate governance practice.

In this regard, recent studies indicate that Western corporate governance systems may be ineffective in developing countries due to their different institutional environment, characterized by highly concentrated of ownership (Fan and Wong 2002), weak enforcement of the rule of law and less transparent disclosure of financial reporting (Dharwadkar et al. 2000; Mitton 2002; Young et al. 2008).

There is a lack of knowledge about the role of corporate governance mechanisms in developing countries and their effectiveness in deterring earnings management practices. This thesis hopes to enrich the literature on the relationship between corporate

governance mechanisms and earnings management. Thus, this thesis aims to explore the role of several corporate governance attributes, namely audit quality (auditor size and audit fees), board of directors (board size, board independence, board financial expertise, board meetings, CEO duality and political connection) and audit committee (audit committee size, audit committee independence, audit committee expertise and audit committee meetings) in restricting discretionary accruals (as a proxy for earnings management practices) in a sample of Jordanian manufacturing firms over the period 2012-2016.

1.2 RESEARCH MOTIVATIONS

The motivations of this study can be summarized in four points. First, the debate stated in prior accounting literature which surrounds earnings management as one of the most frequent problems that affects accounting information quality. Indeed, despite the increased regulations, particularly in response to the various accounting scandals in the last two decades, the cases of deviant conduct due to a conflict of interests in professional accounting firms are still prevalent.

In part that debate is about the capability of corporate governance mechanisms in monitoring managerial behavior thereby ensuring the reliability and relevance of financial reporting, which helps stakeholders (such as investors, regulators and analysts) to make informed judgments about companies. Thus, this thesis is motivated by the repeated calls for a significant role of corporate governance mechanisms in maintaining the quality and integrity of financial reporting.

Previously, scholars have shown that earnings management behavior is widespread among Jordanian companies (Al-khabash and Al-Thuneibat 2008; Al-Mousawi and Al-Thuneibat, 2011). Thus, the second motivation of this thesis stems from the Jordanian institutional setting, which is generally characterized by a code law tradition, lower investor protection and a small proportion of quoted firms. Additionally, family business constitutes the usual style of business organization in Jordan and, unlike developed countries, businesses'

structure ownership is concentrated and closely tied to a small group of people.

Therefore, this scenario offers a case where the corporate governance mechanisms can function differently from the Anglo-Saxon and Western European countries, the most widely studied context, characterized by dispersed ownership. Indeed, Young et al. (2008) indicate that corporate governance tools may be corrupted or ineffective in family businesses and raise some doubts about their ability to reduce earnings management. Moreover, the family ownership model could cause a low demand for corporate governance mechanisms (e.g. high-quality external audits) given the low level of agency costs involved between owners and managers (Abdullatif and Al-Khadash 2010; Niskanen et al. 2011).

In terms of audit quality, the Jordanian audit market also offers an attractive environment to be studied for several reasons: firstly, in contrast to the Anglo-Saxon nations, the litigation environment and punishments for abuser auditors in Jordan are lower; secondly, financial bonding and personal relations between auditors and their clients' senior management positions are widespread; and, finally, the family business ownership model can cause a low demand for high-quality external audits and, consequently, audit fees are significantly lower compared with contexts characterized by dispersed ownership.

Therefore, this thesis will provide worthy insights into a deeper understanding of the universal nature of the corporate governance mechanisms, as in Jordan they definitely differ from the Anglo-Saxon and West European countries. Further, they will help Jordanian regulators and auditing standards setters in evaluating the implications of the current regulations and guidance for improving corporate governance and audit quality. It may also be beneficial to other countries with a similar economic and institutional environment.

The third reason arises from the Jordanian legislation environment, which has experienced significant changes in the last decades, including the issuance of a code of corporate governance for public quoted companies in 2009 with the aim of assuring the protection of stakeholders' interests. The Jordanian corporate governance code set a clear framework for listed firms to regulate

their relations with stakeholders and determine the duties and responsibilities of all parties (JSC, 2009). Hence, it should enhance the reliability and transparency of financial reports.

However, so far, according to the researcher's knowledge, there is insufficient evidence to identify if the regulatory improvements proposed affected the credibility of financial reports in the Jordanian context. Furthermore, the Jordan Securities Commission has recently enacted new regulation to enhance audit quality and strengthen the auditor's independence (JSC,2014).

The fourth motivation for the present study originates from the scarcity of studies about the relationship between corporate governance mechanisms (i.e. audit quality attributes, board of directors' attributes and audit committee's attributes) and earnings management in Jordan. A search of the literature revealed that most studies in the field of the corporate governance mechanisms and earnings management have mainly concentrated on samples drawn from developed markets such as the Anglo-Saxon and Western European countries. In addition, the existing evidence from the Jordan context is based on old data (before the activation of the code of corporate governance in 2009) or specific corporate governance dimensions.

Consequently, this thesis is an attempt to overcome the limitations of prior studies and to update available evidence in the Jordanian context as well as to provide a more comprehensive understanding of the nature and role of corporate governance mechanisms in the Jordanian environment.

1.3 OBJECTIVES AND RESEARCH QUESTIONS

The research focuses on the analysis of the role of corporate governance mechanisms in constraining earnings management. Specifically, this study considers three key categories of corporate governance mechanisms, namely audit quality, board of directors and audit committees. Thus, the main aim of this thesis is to examine whether earnings management by Jordanian firms listed on the Amman Securities Exchange (ASE) is restricted by corporate

governance mechanisms (i.e. audit quality attributes, the board of directors' attributes and audit committees' attributes).

In order to attain that aim, three sub-objectives were established. These objectives and their corresponding research questions are the three following: the first goal is to examine the relationship between the audit quality characteristics and the discretionary accruals as a proxy for earnings management.

Question 1: Do external audit firm characteristics contribute to restricting earnings management activities in Jordanian industrial companies listed on the ASE?

The second goal is to investigate the relationship between the board of director's characteristics and the discretionary accruals as a proxy for earnings management.

Question 2: Do board of director's characteristics contribute to restricting earnings management activities in Jordanian industrial companies listed on the ASE?

The third goal is to test the relationship between the audit committee's characteristics and the discretionary accruals as a proxy for earnings management.

Question 3: Do audit committee's characteristics contribute to restricting earnings management activities in Jordanian industrial companies listed on the ASE?

1.4 POTENTIAL CONTRIBUTION

The thesis findings contribute to the literature in the field of corporate governance and earnings management and the rapidly expanding empirical accounting research on the relationship between audit quality, the board of directors' attributes and audit committee's attributes and discretionary accruals, as a proxy for earnings management, in the following ways:

1. The thesis provides the first comprehensive assessment of corporate governance mechanisms/earnings management linkage by utilizing a broad range of key corporate governance mechanisms in the period after the enactment of the Jordanian corporate governance code of 2009. Thus, it provides a useful guide for understanding the

effectiveness of several corporate governance mechanisms (i.e. audit quality; board of directors and audit committees) in the Jordanian setting, which is characterized by concentrated ownership, a code law tradition, low risk of litigation and low penalties for abusive auditors, a lower investor protection and a small proportion of listed firms.

This new understanding should help to expand insight and shed new light on the impact of these monitoring mechanisms in constraining earnings management practices and enhancing the credibility and integrity of financial reporting in such a context. Hence, this thesis makes a significant contribution to that body of knowledge. In addition, the updated evidence gained from this study may also be of assistance to Jordanian policymakers. This thesis reveals that the earnings management activities exist and are prevalent among Jordanian companies.

2. This research provides data from a developing country – Jordan - with cultural, economic and social characteristics very different from most previously analyzed countries. Specifically, this research provides evidence about how Jordan's setting influences earnings management practices and the effect of their restricting mechanisms. Therefore, the findings could contribute to the understanding of the link between corporate governance and earnings management across different institutional contexts and, hence, provide an explanation for the inconsistent findings of previous research. Thus, this kind of empirical evidence can provide relevant and useful insights into the current debate regarding corporate governance mechanisms effectiveness.

3. This study contributes to the current knowledge by giving refreshed evidence on the relationship between corporate governance and earnings management. Besides, it also contributes to the recent debates on the importance of corporate governance in emerging markets, characterized by the predominance of family businesses. Therefore, the findings of this study could provide worthy information to regulators and auditing standards setters, investors and analysts, both in Jordan and other countries with a similar economic and institutional environment.

4. Previous research that analyzed the relationship between corporate governance mechanisms and earnings management has been mostly based on a data drawn from developed economies. Hence, this thesis increases present research by testing the relation between several corporate governance mechanisms and earnings management in developing countries, in this case, Jordan.

The first experimental study in this thesis examines the relation between audit quality attributes (auditor firm size and audit fees) and earnings management. As far as the author is aware, this study is the first one to explore this relationship in the period after the Jordanian code of corporate governance of 2009 came into force.

In terms of the second empirical study, it is distinguished from earlier attempts by employing six combined properties concerning the board of directors (i.e. board size, board independence, board financial expertise, board meetings, CEO duality and political connection). In addition, to the best of the author's knowledge, no attempt has been made to examine the relationship between the board members' political connections and earnings management in Jordan. Besides, this study employs a new gauge for measuring both the political connection proxy and board meetings (ordinal measures).

Very restricted analysis has tackled the association between audit committee attributes and earnings management. The third empirical study contributes to existing knowledge by providing new evidence and a comprehensive investigation of the relation between audit committee properties (audit committee size, audit committee independence, audit committee expertise and audit committee meetings) and earnings management. Hence, the present study provides a deeper insight into the role of the audit committee in emerging markets.

As far as the author is aware, most prior studies are based on data prior to the entry into force of the Jordanian code of corporate governance of 2009. Therefore, this thesis' results may assist developing countries, which are usually characterized by weak investor protection, to enhance corporate governance rules.

1.5 THESIS STRUCTURE

This section illustrates the structure of this study, which contains eight chapters, including this one. Table 1.1 exhibits the structure of this thesis. The thesis is organized as follows: chapter two outlines an overview of the Jordanian setting. This chapter also discusses the development and characteristics of the accounting and auditing profession in Jordan as well as the main corporate governance initiatives in the country. The chapter ends with a review of some previous empirical studies on earnings management in Jordan.

Chapter three details the related literature of the earnings management phenomenon. In particular, this chapter gathers several definitions for earnings management, its motivations (internal and external), the types of earnings management and their techniques. The chapter ends by highlighting the approaches employed to detect earnings management.

Chapter four begins by illustrating the theoretical framework underlying this research. In particular, this chapter reviews some restricting mechanisms of earnings management (i.e. audit quality, the board of directors and audit committee). Furthermore, it articulates the appropriate theories related to this research, namely agency theory, stewardship theory and stakeholders theory.

Chapter five aims to review the previous literature relevant to the empirical analysis in the thesis in order to highlight certain gaps in the prior research. This chapter focuses on three main areas of literature. The chapter starts by revising the published evidence regarding audit quality and earnings management. Later, the literature about the association between the board of directors' attributes and earnings management is examined. The chapter ends by presenting existing evidence concerning the relationship between the audit committee and earnings management.

Chapter six illustrates and justifies the sample firm collection, sources of data, and the period of study. It also includes the research methodology employed, which is multiple regression. In addition, chapter six details the definitions and measurement of the variables

under the study. Following this, the empirical research models and analysis procedures are presented.

Chapter seven addresses and details the main empirical results regarding the impact of the analyzed corporate governance mechanisms on earnings management. Chapter seven shows the descriptive statistics and correlation analysis between relevant variables for the three empirical studies. It also discusses the results of the multiple regression models for the three empirical studies. This chapter also provides several additional analyses to confirm the validity and robustness of the primary results.

Finally, chapter eight recaps a summary of this thesis. In addition, it discusses the implications of the findings. Then, the limitations of the study and potential avenues for future research are presented.

Table 1.1 Structure of the Thesis

Chapter 1 Introduction: Overviews. Research Motivations. Objectives and Research Questions. Potential Contribution. Thesis Structure.	Pages 1-11
Chapter 2 Institutional Setting in Jordan: Jordan's Background. The Environmental Factors in Jordan. Overview of the Stock Market in Jordan. Accounting and Audit Profession. Corporate governance initiatives in Jordan. A Review of Previous Empirical Studies Related To Earnings Management in Jordan.	Pages 13-24

CHAPTER 2: INSTITUTIONAL SETTING IN JORDAN

2.1 INTRODUCTION

This chapter outlines the Jordanian setting by examining the national environment in which Jordanian accounting and auditing practices are developed. This study is concerned with the topic of earnings management in the industry sector in ASE and its related restricting mechanisms.

Accounting and auditing practices differ from one country to another and this is mainly due to the different environmental factors that exist in each country. In this respect, Adhikari and Tondkar (1992) point out that the disclosure standards and accounting reporting do not develop in a vacuum but reflect the specific context in which they are developed. They also argue that differences among countries contribute to the diversity of accounting reporting and disclosure standards. Hence, studying the environmental factors will provide a good insight into present accounting and auditing practices in a country.

Prior research examining environmental influences on accounting and auditing provided empirical evidence on the asserted relationships between environmental variables and accounting disclosure and reporting requirements in different countries (Cooke and Wallace 1990; Adhikari and Tondkar 1992). Jordan has its own history, culture, politics, economic, and regulatory regimes which have to be considered when conducting any accounting research.

This chapter will be organized as follows: the next section provides a brief review of the Jordanian background. Section 2.3 addresses the national environmental factors that are expected to have an impact on accounting and auditing practices. Sections 2.4, 2.5 and

2.6 outline the development of the accounting and auditing profession and the main corporate governance initiatives in Jordan, respectively. Section 2.7 provides a review of some previous empirical studies on earnings management practices in Jordan. Finally, the last section summarizes the chapter.

2.2 JORDAN'S BACKGROUND

The Hashemite Kingdom of Jordan is in Western Asia, on the East Bank of the Jordan River. Jordan is a small Arab country, with an area of 92,342 square kilometers (DOS 2016). It shares borders with Syria to the north, Iraq to the north-east, Saudi Arabia to the east and south, Palestine and the Dead Sea to the west and the Red Sea in its extreme south-west.

Jordan has a mixed economy (private and public sectors). It is ranked as a country of "high human development" with an "upper middle income" economy. It is also considered attractive to foreign investors based upon a highly skilled workforce (Becker and El-Said 2013) .

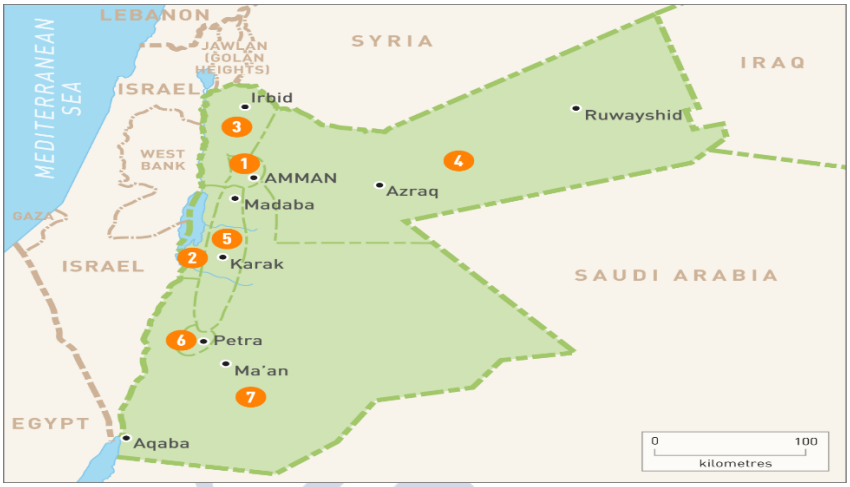
Furthermore, Jordan occupies a significant position globally being a major phosphate and potash producer. According to (Al-Akra et al. 2009):

"Jordan ranks sixth and seventh in the world in phosphate and potash production, respectively. Potash is the third highest export commodity and fifth-leading industry. Fertilizers (made from phosphate and potash) rank second among export commodities, while cement ranks fourth among industries" (p. 165).

Arabic is the official language in this nation. English is the main foreign language in the country, and it is used widely in trade and government, is taught in schools as a second language and is the language for teaching science and business in Jordanian universities.

Besides the Arabic language, Jordanian culture is characterized by the Islamic religion. Sunni Islam is the prevailing religion in Jordan, making up about 92% of the country's population. It co-exists with an indigenous Christian minority (Al-Akra et al. 2009).

Figure 2.1 Map of Jordan



Source:Patai (2015, p.4)

The Kingdom was exposed to migration streams which affected the population (Syrian refugees). Jordan's population is estimated at 9.7 million, one-third of the Kingdom's residents are non-Jordanians. The population density is 89.8 people per square kilometer (DOS 2016). However, the vast majority of the Jordan's population lives in the three major cities: Amman, Irbid and Zarqa.

2.3 THE ENVIRONMENTAL FACTORS IN JORDAN

Several studies have recognized the critical role played by a number of environmental factors on the accounting and auditing profession and its development including political, economic, legal systems, education, religion and the cultural system of country (Frank 1979; Adhikari and Tondkar 1992; Al-Farah et al. 2015). For the purpose of this chapter, a number of environmental factors which are considered most relevant will be briefly discussed.

2.3.1 **The Political System**

The political factors, among others, are an essential component in the development of the accounting and auditing profession. According to Belkaoui (1983) the political climate has a critical influence on the development of accounting practices.

Historically, Jordan has passed through four main stages since the early establishment of the state as an independent political entity. These stages are: the period of Ottoman Rule, the British mandate, the independence and the creation of the Hashemite Kingdom of Jordan (Helles 1992). The language of official documents was influenced by these political stages. Thus, at the beginning they were written in Arabic because of the Islamic influence, then in English, during the British colonialism, and after independence Arabic became dominant again on the accounting records, rules and procedures (Helles 1992).

Jordan formally became independent in 1946 but it has maintained close associations, especially "economic ties", with Britain and the West. These relations contributed to the development of the accounting and auditing profession in Jordan as well as commercial relationships with the UK and other western nations in later stages.

In this context, Al-Farah et al. (2015) suggest that *"accounting in Jordan has been influenced by the UK, both when its accounting practices were applied to Jordanian businesses during the period of British occupation and through its aid to Jordan after independence. Additionally, the US has influenced accounting practices in Jordan through its investment in Jordanian commerce and through its continuous economic assistance and the natural desire of developing economies to benefit from the US's industrial power"* (p. 169).

2.3.2 **The Economic System**

Much of the previously published literature on the development of accounting and auditing pays particular attention to economic conditions (Mashayekhi and Mashayekh 2008; Al-Farah et al. 2015). Prior literature also suggests that the stage of economic development, type of economy, and growth pattern of the economy can affect a

country's accounting practices (Mueller 1968). Al-Rai and Dahmash (1998) describe the Jordanian economy in the early stages as follows:

"*The Jordanian economy was very simple and composed mainly of agricultural business. Accounting practices, therefore, were limited or nonexistent* "(p.179).

Jordan is a small nation with limited resources. Its economy depends mainly on services, trade and tourism sectors, and on some extractive industries such as salts, natural gas, limestone and medicines.

In addition, Jordan also depends on international assistance, especially from the oil-rich rentier nations of the Gulf. In this sense, Shair (1997) pointed out that the external sources of funding such as Arab grants and workers' remittances from Jordanians working in the wealthy Gulf nations form the main contribution to the growth of reserves. Hence, these sources have helped the Jordanian economy to invest and grow.

The growth of the Jordanian economy, influenced by the establishment of large enterprises to engage in activities such as fertilizer and phosphate mines in the south of the kingdom, has made Jordan the third largest source of this substance in the world. Hence, the demands for improving accounting procedures and standards became necessary to satisfy the needs of this economic growth (El-Issa 1984).

Furthermore, several economic events have contributed to the evolution of Jordan's accounting and auditing practices such as the establishment of the Amman Financial Market (AFM) in 1978, the joining the World Trade Organization (WTO) and the privatization process which began in 1996 with the guidance and encouragement of international donor agencies such as the World Bank Group and the U.S. Agency for International Development (USAID) (Al-Akra et al. 2009).

The privatization process aims to attract new investors to engage in significant production projects and utilities, generating more job chances and safeguarding the rights of employees (Orieqat and Saymeh 2013). Thus, in order to achieve and establish the privatization process a Royal Consent on Privatization Law was

granted on 2/7/2000. This law outlines the institutional frameworks and legal for the Privatization Program in Jordan (Orieqat and Saymeh 2013).

2.3.3 **The Legal System**

Legal systems determine the orientation of companies, auditing, and accounting regulation (Assenso-Okofo et al. 2011). Legal specialists have classified legal systems into two main categories: namely, common law (known as the Anglo-Saxon model) and code law (David and Brierley 1985; Doupnik and Salter 1995). In common law countries the degree of transparency, shareholders' rights and investors' protection are more effective compared to the countries with a code law legal tradition (Radebaugh et al. 2006). In addition, the dominant source of financing in common law countries come from the stock market whereas the primary sources in code law countries comes from banks or governments (Mashayekhi and Mashayekh 2008).

Jordan shows many of the attributes of a code law country. In this respect, Al-Akra et al. (2009) argued that:

"Jordan is classified as a code-law country. Company financing has largely been through banks, basic shareholder rights to participate and vote at the Annual General Meeting were weak, and secure ownership registration was nonexistent. Nonetheless, Jordan's recent economic reforms, resulting in privatization, forced the Jordanian government to lay down a framework for corporate governance" (p. 178).

Jordan has incorporated several laws and legislations that organize accounting and auditing practice with the aim of protecting the rights of shareholders and investors, guaranteeing a fair treatment of shareholders and their role in corporate governance. Such a system is crucial to attract investors and provide capital for the development of the country. Thus, the legal system in Jordan consists of a number of laws and regulations, such as the Companies Act No. 22 (1997), the Temporary Securities Law (1997), the Insurance Regulatory Act (1999), the Securities Law No. 76 (2002), the Banks Law No. 28 (2000), the Law of regulating the accounting profession No. 73 (2003)

and their adjustment, and the Code of corporate governance (2009 and 2017).

2.3.4 **The Educational System**

Numerous studies clearly indicate that education plays a significant role for the level of education in the development of accounting and auditing practices (Mueller et al. 1987; Ali and Ahmed 2007). A high level of qualified education contributes to better understanding and practices of accounting standards.

Historically, the formal accounting education system in Jordan did not exist until the establishment of the Jordanian University in 1962. Following the opening of this university, the Faculty of Economics and Administrative Science (FEAS) of the Jordanian University was established in 1965. Previously, wealthy Jordanian students went to universities in neighboring countries or abroad to complete their business studies. Besides, the government has recognized the need for higher education and offered a number of scholarships for many students to study abroad, e.g. the USA (Helles 1992).

Over time, several business schools were established in Jordanian Universities[1] to meet national educational needs, such as the business school at Yarmouk University (1981), the Mo'tah University (1991) and the Hashemite University (1995). These universities aim to provide highly qualified graduates to serve the government and the private sectors; and contribute to the knowledge and better understanding of business subjects in Jordan in particular, and the Arab region in general (Helles 1992).

Several factors have influenced on the accounting and auditing education system e.g. the low quality of public university teaching in these subjects; characterized by a lack of modern curricula and a shortage of teachers (ROSC 2004). Moreover, undergraduate level

[1] The higher education sector in Jordan has ten public universities, seventeen private universities and fifty-one medium community colleges, in addition to the World Islamic Sciences and Education University. The vast majority of these universities offer a Bachelor's degree in accounting following the credit-hour system (see http://www.mohe.gov.jo)

accounting and auditing courses are focused on basic topics and do not include IAS/IFRS (Al-Akra et al. 2009).

2.3.5 **Religious System**

Religion is considered one of the most important factors to influence the accounting and regulation environment (Belkaoui and Picur 1991). The influence of religion in the accounting profession is more prevalent in developing countries (Nobes 1998) and, particularly, in Islamic countries.

The Islamic rules identify how Muslims should be. They organize the Muslims' life as well as their society to deal in spiritual and temporal matters (Helles 1992). In this regard, Lewis (2001) contended that:

"*Just as Islam regulates and influences all other spheres of life, so it also governs the conduct of business and commerce. Muslims ought to conduct their business activities in accordance with the requirement of their religion to be fair, honest and just towards others"* (p. 108).

In Islamic nations, business structure and financing are affected by the Shari'a law (Mellahi 2001; and Perera and Baydoun, 2007). The Islamic values recommend transparency, integrity and prohibit the concealment of information from shareholders or regulators. Therefore, these values are consistent with the current system, which demands full disclosure. The dimensions of the influence of Islam in Jordan led to the emergence of Islamic banks and an Islamic insurance company. In this respect, Al-Akra et al. (2009) conclude that:

"*The influence of Islam on accounting practice in Jordan led to the establishment of two Islamic banks and an Islamic insurance company that were successful in attracting Muslim Jordanians due to their adherence to Islamic values prohibiting interest on loans*"(p. 177).

2.3.6 **Cultural system**

The accounting and the auditing professions of a country are likely to be influenced by the cultural environment. Several scholars

indicate that cultural differences among countries have a significant impact on accounting practices (Hofstede 1990; Rahman and Ali 2006; Poudel et al. 2014).

Nobes (1998) debated that the adoption of the accounting system by a country belonging to a specific culture is inspired by countries of a similar culture. In this regard, Abd-Elsalam and Weetman (2003) mention that in the case adopting IAS, both familiarity and language appear to support countries in the Anglo-American group, essentially due to the dominating Anglo-American influence in the development of IAS and, furthermore, because of English is the language of communication in the IASB.

In the case of Jordan, unlike developed countries, family firms constitute the prevalent style of business organization. Moreover, personal relationships have a strong influence in business processes. In this sense, Beard and Al-Rai (1999) label Jordan as a high context culture where delicacy and personal loyalties are employed in business activities. They explained that:

"In high context cultures, greater emphasis is placed on personal trust between business associates than on the technical details of a written contract. Subtlety and inference are highly valued as are the creation and nurturing of personal relationships. High context cultures express a strong preference for face-to-face communication" (p.140)

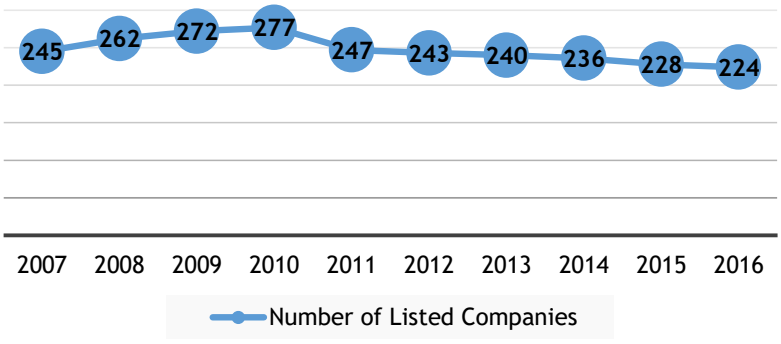
With regard to the Hofstede (1984) cultural dimensions to characterize national culture, Beard and Al-Rai (1999) and Abdullatif and Al-Khadash (2010) classify Jordan as a collectivist country, where family relations influence in businesses' operations, a country where businesses are commonly ruled under a high power distance system, with the family and main shareholder dominance and weak labor groups. In addition, they portrayed Jordanian managers as having a high degree of uncertainty avoidance and a certain level of caution and secrecy in doing business, alongside some narrow-mindedness towards divergent business ideas.

2.4 OVERVIEW OF THE STOCK MARKET IN JORDAN

The year 1976 marked an important event for the Jordanian market because the first orderly market was created. The Amman Financial Market (AFM) began tasks in 1978. Since its foundation several aims have been identified that relate to progressive development plans, e.g. to mobilize savings by encouraging investments in securities; to channel savings to serve the interest of the national economy; to regulate the issuance of and the dealing in securities in a sound and speedy manner consistent with guarding the nation's financial interests and those of small savers; and to produce needed data and statistics.

In 1978, the AFM held 57 listed firms, with a total market capitalization of around 286.12 million JD (ASE, 2017). Figure 2.2 shows the number of listed firms over the ten years on AFM, from 2007-2016. From Figure 2.2, it is clear that the number of listed firms on the AFM have continued to increase and reached a peak of 277 in 2010. From 2010 to 2016, there was a drop in the listed firms, as a result of the failure of most of these companies, and the number of listed firms went down to 224 in 2016 (ASE, 2017).

Figure 2.2 Number of Listed Companies in AFM from 2007 to 2016



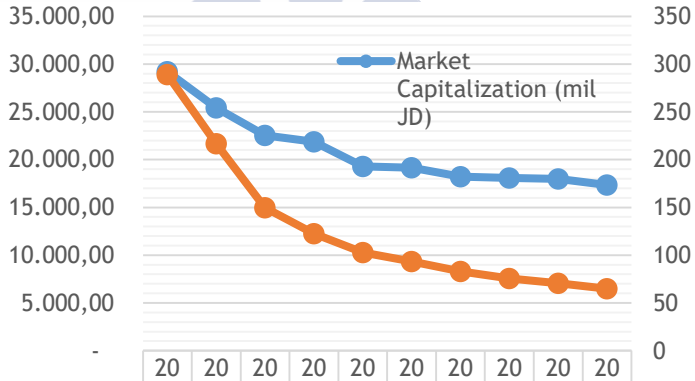
Source: Amman Stock Exchange (2017)

Figure 2.3 depicts the market capitalization of the Jordanian stock market in AFM from 2007 to 2016. There are two lines in the figure. The blue line exhibits the market capitalization of the AFM whereas the orange one deals with the percentage market capitalization to GDP.

As is illustrated by Figure 2.3, in 2007 the total market of capital was 29,214.20 million JD, the equivalent of 289.0 percent of Jordan's GDP (ASE, 2017). From 2007 to 2016, there was a gradual decline in these indicators of stock market capitalization and stock market capitalization to GDP. During these years the total market capitalization went down to about 17,339.38485 in 2016, which supposes 65.0 per cent of Jordan's GDP (ASE, 2017).

Meanwhile, the indicator of stock market capitalization to GDP in Jordan in 2016 is still large relative to the markets of other developing nations in the region[2].

Figure 2.3 Market capitalization of Jordanian stock market 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Market Capitalization (mil JD)	29.2	25.4	22.5	21.8	19.2	19.1	18.2	18.0	17.9	17.3
Market Capitalization / GDP (%)	289	216,7	149,6	122,7	102,7	93,5	83	75,8	70,7	65

Source: Amman Stock Exchange (2017)

[2] For instance, in Bahrain the value of stock market capitalization to GDP was equal to about 60.27 %; 10.01 % in Egypt; 24.44% in Lebanon; 25.3% in Palestine; 55.58% in Morocco; 35.12% in Oman; 20.09% in Tunisia; 61.14% in the United Arab Emirates; and 69.43% in Saudi Arabia (worldbank 2016)

In May 1997, a new Securities law was enacted (law No. 23), which aimed at making a vital qualitative leap in the history of the national capital market. Law No. 23 (1997) dealt with the separation of the supervisory and legislative functions from the executive role of the capital market. Subsequently, the law created three new institutions to replace the AFM, namely the Jordan Securities Commission (JSC), the Amman Stock Exchange (ASE) and the Securities Depository Centre (SDC).

The Securities law 1997 defined the functions and task of these three institutions. Thus, the ASE is concerned with providing the best possible condition to ensure the interaction of supply and demand forces for listed securities by setting up proper, clear and fair trading rules necessary to accomplish price discovery and trade. It additionally oversees preparing and distributing reports and data associated to the ASE activities. The aim of the JSC is to regulate the issuance of and managing securities. Finally, the SDC endeavors to guarantee the safe custody of ownership of securities; registering and transferring ownership of securities traded on the ASE; and settling the prices of securities among brokers (JSC,2014).

2.5 ACCOUNTING PROFESSION IN JORDAN

As discussed earlier in this chapter, the Jordanian accounting and auditing system has been influenced by many environmental factors (see section 2.3). These factors helped to develop and regulate the profession of accounting and auditing in Jordan since the declaration of independence in 1945.

Historically, the Ottoman Commercial Code enacted in 1849–1850 formed the fundamental legislation for commercial affairs in East Jordan until Independence (Al-Akra et al. 2009). After Independence in 1945, there were two essential laws passed, namely company law No. 12, enacted in 1964, and trade law No. 12, adopted in 1966 (Naser and Al-Khatib 2000; Sharar 2007; Al-Akra et al. 2009). The last one (trade law No. 12) indicated that all listed firms should keep a general journal, inventory records, and correspondence register. However, Ott et al. (1997) argued that these laws did not

increase specifications regarding the content of the information published in the accounts.

The first professional accountancy body was established in 1987 and was named the Jordanian Association of Certified Public Accountants (JACPA). The JACPA played a vital role in training qualified accountants. Also, JACPA has the authority to make recommendations about the certification and the control of accounts in Jordan (Al-Fayoumi et al. 2010). Then, in 1989 JACPA recommended that Jordanian companies adopted International Accounting Standards, established effectively in January 1990 (Al-Akra et al. 2009).

Legislatively, as part of the ongoing reforms within the accounting profession, the government enacted a number of laws, such as the 1997 Company Law, the 1997 Temporary Securities Law No.23 and the 2002 Securities Law No. 76.

According to article 184 of Company law all public shareholding companies ought to prepare their statements under International Accounting and Auditing Standards. Securities law No. 76 (2002) also states that all firms should comply with IFRS terms in the preparation of their annual report (Al-Akra et al. 2009). Moreover, the Jordanian government embarked on privatization in the framework of improving the efficiency and performance of some state-owned enterprises (SOEs).

At that point, the need arose for a new law for the accounting profession issued in 2003, which prompted the foundation of a "High Council for Accounting and Auditing" in 2004, headed by the Minister of Industry and Trade (ROSC 2004). This law, “Law of Organizing the Practice of the Public Accounting Profession - Law No. 73 (2003)”, handles a modernized foundation for practicing the public accounting profession in Jordan. This law has been enacted to operate beside prior trading laws.

Al-Farah et al. (2015) summarized the objectives of the law as follows:

"*organizing the practice of the auditing profession; ensuring compliance by Jordanian companies with International Accounting and Auditing Standards; developing the technical and educational abilities of Jordanian auditors; ensuring compliance of the auditors*

with the code of professional ethics, and enhancing auditors' integrity and independence" (p.173).

Collectively, these laws intend to achieve harmony between the Jordanian economy and the world (in line with the globalization of the world's economies) and create an open and accountable world via the adoption of international accounting standards in order to guarantee transparency, accountability, safe trading in securities, and increase investors' confidence in the Jordanian capital market (ASE, 2007).

2.6 AUDITING PROFESSION IN JORDAN

The auditing profession in Jordan has passed through several stages, each with relevant features, where the profession was influenced by the prevailing conditions and legislation at each stage.

Historically, the beginnings of the auditing profession in Jordan dates back to 1944 via the presence of two audit firms, namely George, Kader and Co and Saba, and Saba and Co (the last moved from Jerusalem to Jordan in 1948 due to the political circumstances (Abdullah 1986; Al-Farah et al. 2015).

The auditing profession in Jordan, after gaining independence in 1945, has been influenced by a number of factors, such as establishment of public companies and economic growth. Thus, the external audit firms were encouraged to open branches in Jordan as, for example, Russel and Co and Whinney, Murray and Co in 1950 (Al-Farah et al. 2015).

Although, historically, the beginnings of the auditing profession in Jordan can be dated back to 1944 (Abdullah 1986; Al-Farah et al. 2015), the practice of auditing in Jordan was not regulated until the beginning of 1960s. The first law to regulate it was the Law of Practicing the Auditing Profession No. 10, enacted in 1961, which aimed to introduce a licensing mechanism for entry to the auditing profession by establishing some general requisites for practicing auditing. However, Abdullah (1982) pointed out that this law did not mention several significant issues such as the duties, rights and prohibited activities for an auditor.

In 1985 this law was revised and the Law of Auditing Profession - Law No. 32 - was issued which updated the conditions to be fulfilled to obtain an audit practice license as well as the rights and duties of external auditors. Furthermore, Law No. 32 allowed auditors to join an association, which contributed to developing the auditing profession and commissioned the Audit Profession Council to oversee the audit profession (Solas 1994). Also, this law prohibited external auditors from providing non audit services to their clients.

One year later, the Regulation for Classifying Auditors No. 30 was enacted which classified licensed auditors into three categories (A, B and C) according to their qualifications and expertise and defined the kind of organizations to be audited by auditors belonging to each category.

In 2003, Law No. 73 on Organizing the Practice of the Public Accounting Profession (Accountancy Law) was issued with the aim of revamping the audit profession and to improving the quality of auditing. This law established stricter educational and practical requisites for licensing auditors (such as possessing a university degree and receiving training in every aspect of the profession) as well as for continuing professional training. Moreover, it entitled the Higher Committee of the Accountancy Profession and the Jordanian Association of Certified Public Accountants (JACPA) to control the accountancy profession and look out for compliance with the auditing and ethical standards.

Moreover, in 2006, the by-law of practicing the auditing profession No. 7 was issued, according to articles 29 and 45 of Law No. 23 (2003). This by-law identified several important matters relating to the duties, requirements and areas for practicing the profession. In particular, article 3 identifies the working areas of the chartered accountant; article 5 summarizes ten duties and responsibilities that auditors should comply with; and article 6 names further tasks that auditors can fulfil. In terms of keeping abreast of profession updates, article 8 stipulates that auditors should improve skills via a continuous training and attending seminars and conferences or applying for training in specific organizations.

Finally, chapter five of the Jordanian Corporate Governance Code (2009) and the latest update for the regulations issued by the Jordan Securities Commission (JSC) cover many issues relating to instructions on Standards and Conditions to be met by qualified auditors in order to strengthen the auditor's independence (JSC,2014). Specifically, the first one does not allow external auditors to provide any additional services to their clients.

According to Abdullatif (2016), despite the previous regulations, the auditing profession in Jordan still suffers from some problems which include: a low demand for high-quality audits, the auditors' shortcomings while going up against clients on financial reporting disputes and the low audit fees, which still need to be reviewed.

Nowadays, the Jordanian audit market is mostly made up of small firms. International audit firms, including the Big N, also operate in Jordan, usually in association with a Jordanian audit firm (Abdullatif 2016). According to Abdullatif and Al-Khadash (2010) and Abdullatif (2016), the practice of auditing is affected by two main characteristics of the Jordanian market. Firstly, the majority of Jordanian firms are not publicly listed and, therefore, the Jordanian capital market is relatively small and inefficient. Secondly, the Jordanian market is mainly comprised of closely-held family firms, in which the separation of management and ownership is reduced. These characteristics generate a low demand for external auditing which, in turn, causes fierce competition between audit firms and low audit fees (SOX 2002; Abdullatif and Al-Khadash 2010; Abdullatif 2016). Moreover, the risk of litigation against auditors is also low (World Bank, 2004).

2.7 CORPORATE GOVERNANCE INITIATIVES IN JORDAN

Global investment in emerging capital markets and the global competition for capital raised the significance of corporate governance for all firms listed on the Amman Stock Exchange and for the market participants. However, Jordan has faced several accusations of corporate governance fraud (Al-khabash and Al-Thuneibat 2008). This impelled the Jordanian government to prepare a particular

legislative system to promote economic growth and ensure the efficiency of market performance. As a result, several reforms have been introduced in order to implement corporate governance mechanisms in Jordanian firms with the aim of promoting transparency and accountability.

Jordan was one of the first countries in the Middle Eastern and North African area to adopt the regulations of corporate governance (Shehata 2015). The significant governance initiative goes back to 1997, when Jordan rehashed its governance frameworks and corporate disclosure rules through the enactment of the 1997 Company law, the 2002 securities law, the banks law No. 28 (2000) and the insurance regulatory law No. 33 (1999). These laws set out the corporate governance system and concentrated on the adoption and implementation of the International Accounting Standards/International Financial Reporting Standards.

In terms of corporate governance codes, the JSC issued a code of corporate governance for public listed companies in 2009. According to its preamble, the code "*contains rules of corporate governance for shareholding companies listed at Amman Stock Exchange (ASE) for the purpose of establishing a clear framework that regulates their relations and management and defines their rights, duties and responsibilities in order to realize their objectives and safeguard the rights of all stakeholders*"

This corporate governance code sets a clear framework for listed firms to regulate the relations and identifies the duties and responsibilities of all parties, in order to achieve the company's goals and preserve the rights of related parties (JSC 2009). In particular, the code of corporate governance describes the composition and functions of the board of directors, and the committees formed by them, such as the audit committee, nominations and remuneration committee, governance committee and risk management committee.

According to the code of corporate governance 2009, the board of directors in all Jordanian joint-stock companies should consist of at least five members and not more than thirteen. In this respect, the code establishes that "*the board members must be elected by the company's general assembly in a secret ballot, by means of cumulative voting*

system, provided that at least one third of the board members are independent members. If the result in calculating the above-mentioned third is with a fraction, the fraction is removed by rounding the result to the following figure" (chapter 2, art. 1).

According to the code, a third of the members of the board of directors should be independent (chapter 2, art. 1). In this sense, in chapter one (Definitions), the Jordanian Corporate Governance Code (2009) defined the independent member as "*a member of the board of directors who is not tied to the company or any of its upper executive management, affiliate companies, or its external auditors by any financial interests or relationships other than his shareholding in the company that may be suspected to bring that member benefit, whether financial or incorporeal, or that may affect his/her decisions or lead to exploitation of his/ her position with the company*".

Moreover, the code prevents the combination of roles between the Chairman and any other executive position in the company (chapter two, art. 5). Finally, it establishes five situations in which an independent member of the board of directors can lose his/her independence (chapter one):

1. *"If he is, or has been, employed by the company or any of its affiliates during the last three years preceding his nomination for membership of the board of directors.*
2. *If any of his relatives is, or has been, employed in the executive management of the company or any of its affiliates during the last three years preceding his nomination for membership of the board.*
3. *If he or any of his relatives has direct or indirect interest in the contracts, projects and engagements signed with the company or any of its affiliates to the value of JD 50,000 (fifty thousand Jordanian Dinars) or more.*
4. *If the member or any of his relatives is a partner of the company's auditor, or if he is or has been a partner or employee of the company's external auditor during the last three years preceding his nomination for membership of the board.*
5. *If the member has a control in the company of more than 10% of the company's capital".*

According to the code, all members of the board should be equipped with financial knowledge and experience in management affairs (chapter two, art. 6).

In section three of chapter two, the code regulates the issues related to meetings of the board of directors. In this regard, it states that the board of directors should hold at least one meeting every two months, and no less than six meetings during the financial year (art. 4) Moreover, the code states that "*voting on the board of directors' decisions shall be in person. Voting by proxy, by correspondence, or by any other indirect manner shall not be permitted*" (chapter two, section 3, art. 2)

The code of corporate governance 2009 also mandated the establishment of audit committees comprising of at least three members, non-executive directors, two of them independent and one of whom chairs the committee (chapter two, section 2, art. 2). In chapter five, the Jordanian code of corporate governance of 2009 regulates the duties and powers of the audit committee.

According to the code, all members of the audit committee should have an extensive knowledge of financial and accounting affairs and at least one of them should have work experience in the field of accounting or finance and possess a qualified certificate in accounting, finance or related fields (chapter five, section 1, art. 1). Finally, this code states that the audit committee "*shall meet regularly, not less than four times a year, and minutes of its meetings must be taken appropriately*" (chapter five, section 1, art. 2) and it should meet with the external auditor of the company without the presence of any persons from executive management or their representatives, at least once a year (chapter five, section 1, art. 4).

With regard to the duties of the audit committee, according to section 2 of chapter five, it must oversee and monitor accounting and internal control and auditing activities in the firm.

The Jordanian corporate governance code (JCGC) is based primarily on the framework of governance developed by the Organization of Economic Cooperation and Development (OECD). The code follows the "comply or explain" approach, which aims to

give flexibility to the companies as well as sufficient time to adapt to the requirements of the governance rules to enhance.

However, the key problem with the Jordanian governance code or any other law is the absence of enforcement. Therefore, the Jordanian capital market still suffers difficulties in attracting investment.

More recently, the government enacted the updated corporate governance code (2017). This code stipulated that all listed firms should now form four mandatory committees instead of the two mandatory ones: the audit committee, the nomination and remuneration committee, the risk management committee and the governance committee. However, the new code still follows the "comply or explain" approach.

Table 2.1 shows a list of major regulatory reforms of the accounting and auditing profession in Jordan, with a brief description for each law.

Figure 2.4 The main regulatory reforms of the accounting and auditing profession in Jordan

Law	Main requirements
Company Law (1997)	• All public shareholding companies ought to prepare their statements (balance sheets, income statements, and cash flows statements) under International Accounting and Auditing Standards (article 184). • All public shareholding companies are obligated to appoint an auditor whose major responsibility is to audit companies' accounts in accordance with the recognized auditing rules, the auditing profession's principles and its scientific and technical standards. • Listed companies are required to form audit committees comprising three nonexecutive directors.
Temporary Securities Law (1997)	• The separation of the supervisory and legislative functions from the executive role of the capital market. • Three new institutions were created to replace the AFM: the Jordan Securities Commission (JSC), the Amman Stock Exchange (ASE) and the Securities Depository Centre (SDC).
Securities Law (2002)	• All firms should comply with IFRS terms in the preparation of their annual report. • This law aims to protect investors in securities; regulate and develop the capital market to ensure fairness, efficiency and transparency and protect the capital market from the risks that it might face.
Law of Practicing the Auditing Profession No. 10 (1961)	• This law aims to introduce a licensing mechanism for entry to the auditing profession.
Law of Auditing Profession. Law No. 32 (1985)	• The law authorizes auditors to associate for the exercise of the profession and establish the adoption of IFRS, which took effect from January 1990. • It presents an accurate framework as a guide to the profession. • The law prevents auditors from taking part in ten acts such as publishing their client's secrets, unethical publicizing, unethical competition to obtain audit work and deliberately providing wrong opinions on financial statements.

Table 2.4 (cont.) The main regulatory reforms of the accounting and auditing profession in Jordan

Law	Main requirements
Law of Organizing the Practice of the Public Accounting Profession. Law No. 73 (2003)	• Setting up the "High Council for Accounting and Auditing" in 2004 to oversight of auditing profession. • The Law monitors the performance and compliance by auditors and accountants with the law and the standards of accounting and auditing.
Corporate governance code (2009)	• It regulates the composition and functions of the Board of directors and Audit committees • It follows the "Comply or Explain" principle
Corporate governance code (2017)	• The number of mandatory committees is increased and all listed firms should form four instead of the two mandatory committees • However, this code still follows the "Comply or Explain" approach

2.8 A REVIEW OF PREVIOUS EMPIRICAL STUDIES RELATED TO EARNINGS MANAGEMENT IN JORDAN

Leuz et al (2003) examined earnings management practices across 31 countries, grouped into three clusters according to their legal and institutional characteristics, and found significant differences across them. Specifically, they noted that earnings management is usually prevalent in those economies with less-developed stock markets, weak investor protection, concentrated ownership and weak legal enforcement.

In developing countries, like Jordan, the levels of investors' protection and the effectiveness of corporate governance mechanisms provided by firms to market participants may be lower than those of developed countries (Berkowitz et al. 2003; Iatridis 2012), which, in turn, could encourage the adoption of earnings management practices (Himmelberg et al. 1999).

Considering this fact, a number of studies have investigated the existence earnings management practices among Jordanian firms. Many of these studies have analyzed the role of audit quality and corporate governance, since these two mechanisms are efficient in detecting the phenomenon of earnings management.

A study conducted by Al-khabash and Al-Thuneibat (2008) examined the presence of earnings management practices among Jordanian firms from manufacturing and service sectors. Through a postal survey based on a questionnaire distributed to internal and external auditors in Jordan, they found that external auditors believed that management engaged significantly only in legitimate earnings management that either increased or decreased incomes. In a similar way, from the perspective of internal auditors, earnings management existed legitimately merely to increase reported income.

Al-Mousawi and Al-Thuneibat (2011) investigated the effect of audit quality (auditor size) on earnings management through controlling client importance and auditor's name (as moderating variables) for a sample of 100 firms during a period of five years (2002-2006). They discovered that audit quality has a comparatively weak negative effect on earnings management practices. In a similar way, Al-Thuneibat et al. (2011) analyzed all companies listed on the Amman Stock Exchange (ASE) between 2002 and 2006 and found that the fact that an audit firm belongs to Big N (proxy for audit quality) was negatively related to discretionary accruals.

Idris (2012) investigated the effect of auditor size on earnings management. Based on a sample of all manufacturing companies listed on the ASE for a four-year period (2005 – 2008), his findings suggest that, in Jordan, non-big N auditors mitigated abnormal accruals.

Finally, Alzoubi (2016) tested the association between audit quality and earnings management in a sample made up of 86 companies listed on the ASE from 2007 to 2010. He reported that the level of earnings management is significantly lower among companies audited by a big N audit firm as compared to companies utilizing the services of a non-Big N audit firm as well as among companies using the services of independent auditors.

Regarding the studies of board of directors and audit committees, Abed et al. (2012) collected data from Jordanian non-financial firms during the period 2006-2009. They examined the relationship between earnings management and characteristics of corporate governance mechanisms (the existence of independent members within the board of directors, the size of the board of directors, CEO duality, and the percentage of insider ownership). They revealed that the size of the board of directors was the only variable that had a significant relation with earnings management.

A recent work conducted by Ghazalat et al. (2017) considered three properties (directors' financial expertise, director tenure, and multiple directorships) to explore the ability of the board members in deterring earnings management. They found that directors' financial expertise was the only variable negatively correlated with earnings management.

Hamdan et al. (2013) studied the status of forming audit committees in the Jordanian industrial companies after the issuance of a series of laws and legislation in this respect. The data was collected from 50 Jordanian industrial companies from 2004-2009. Their results indicated a negative correlation between the size of the audit committee and earnings quality, measured through continuity of future returns, neither did they find any significant relationship between size of the audit committee and quantum of discretionary accruals present in returns. They also found that both financial expertise and independence of the members of audit committees did not have a role in improving the quality of earnings, while frequent meetings did.

More recently, Abbadi et al. (2016) provide evidence that earnings management is affected negatively by overall categories of a governance index represented by the board of directors, board meetings, audit committee and nomination and compensation committee.

2.9 SUMMARY

The present chapter has provided a background for the Jordanian setting. A number of local environmental factors which are expected to affect the accounting and auditing profession in Jordan have been reviewed.

These factors have been discussed briefly to show their contribution to the development of the accounting and auditing profession. The political and economic systems show the different stages that Jordan has experienced. In addition, legal, educational and the cultural systems, which undoubtedly affect the accounting and auditing profession in Jordan, have been presented. Further, the vision of religion in a Muslim country has been highlighted.

The chapter then moves on to consider the accounting and audit profession in Jordan and the main corporate governance initiatives. Finally, a review of previous empirical studies on earnings management practices in Jordan was carried out.

Having presented a background for Jordan, in the chapter that follows, we will provide a literature review about the earnings management phenomenon and related concepts.

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CHAPTER 3: EARNINGS MANAGEMENT: AN OVERVIEW

3.1 INTRODUCTION

Chapter two provides a background for the Jordanian setting, by examining the national environment in which Jordanian accounting and auditing practice are carried out. This chapter aims to give a clear vision of earnings management by reviewing the relevant literature on the subject. Thus, this chapter presents several definitions for earnings management and discusses its internal and external motivations, the types of earnings management and their techniques. In addition, since prior research indicates that accrual-based earnings management is widely used by managers, this chapter highlights the approaches of accrual-based earnings management as well as the empirical models that are used to gauge earnings management.

The current chapter is organized as follows: section 3.2 reviews several definitions for earnings management that have been developed and applied in previous research and discusses the differences between earnings management and accounting fraud. Section 3.3 summarizes the internal and external motivations that make managers engage in earnings management practice. Section 3.4 discusses the literature on the types of earnings management and the earnings management techniques, which is then followed by a discussion of earnings management approaches and the empirical models that are used to estimate earnings management in section 3.5. The chapter concludes with a summary in section 3.6.

3.2 DEFINITIONS OF EARNINGS MANAGEMENT

Financial reporting is used as a means to communicate important internal information about an entity's economic performance to external stakeholders. In the process of preparing financial statements, the generally accepted accounting principles (GAAP) take a specific level of interpretation into consideration. To be legal, interpretation might be in keeping with the soul of the standard or, at least, to extend that soul while staying inside the letter of the law. Thus, the financial statements might be incorrect, but never fraudulent (Dechow and Skinner 2000).

While several concepts appear to describe earnings management practices (such as: income smoothing, accounting hocus-pocus, reengineering the income statement, juggling the books, aggressive accounting, the numbers game, creative accounting, financial statements manipulation, financial shenanigans, etc.), there is no standard, generally acknowledged definition for any of these concepts. In addition, the definition of earnings management varies in literature and there is no agreed definition on what constitutes earnings management (Healy and Wahlen 1999; Beneish 2001), though previous literature demonstrates that there are no significant contrasts among the meanings by various authors. Most researchers concur that the earnings management origin goes back to the middle of the twentieth century (Hepworth (1953).

According to academic literature, there have been many attempts to define earnings management. (Scott 1997, p.369) provides his definition as follow "*earnings management is the choice by a manager of accounting policies so as to achieve specific objective"*. In a similar vein, Fields et al. (2001, p.16) contend that "*although not all accounting choices include earnings management, and the term earnings management extends beyond accounting choice, the implications of accounting choice to achieve a goal are consistent with the idea of earnings management."*

However, the choice of accounting policies is interpreted quite broadly and the dividing line is not clear cut, in this case. In this sense, "cooking" reports within the limits of compliance with standards

could be either opportunistic or efficiency enhancing (Ronen and Yaari 2008). As a result, earnings management can be viewed from an opportunistic (contracting) perspective or a financial reporting perspective (Scott 1997; Ronen and Yaari 2008).

The following definitions reflect the financial reporting perspective (information perspective) which was first articulated by Holthausen and Leftwich (1983). Thus, Davidson, Stickney and Weil (1987), cited by Schipper (1989, p. 92) state that managing earnings is "*the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings*". Consistently, Holthausen and Leftwich 1983), cited by Beneish (2001, p. 3), contend that "*managerial discretion is a means for managers to reveal to investors their private expectations about the firm's future cash flows*" (Holthausen and Leftwich 1983).

From an opportunistic (contracting) perspective, managers utilize earnings management to benefit themselves at the expense of other contracting parties (Scott 1997), which supposes an opportunistic exercising of discretion.

As per the contracting perspective or opportunistic perspective, earnings management aims to misrepresent or mask a firm's true economic performance (McVay 2006).

Two widely cited definitions of earnings management are given by Schipper (1989) and Healy and Wahlen (1999).

Schipper (1989, p. 92) defines earnings management as "*a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain [as opposed to, say, merely facilitating the neutral operation of the process]… Under this definition, earnings management could occur in any part of the external disclosure process, and could take a number of forms. A minor extension of this definition would encompass 'real' earnings management, accomplished by timing investment or financing decisions to alter reported earnings or some subset of it".*

Likewise, Healy and Wahlen (1999, p. 368) state that "*earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to*

either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers".

The above definitions explain some motivations for managers to manipulate earnings, namely to obtain private gains, to mislead stakeholders, and to influence contractual outcomes.

One criticism of the literature on the definitions provided by Schipper (1989) and Healy and Whalen (1999) is that they neglect to draw a conspicuous line between lawful earnings management and fraud[3](Beneish 2001; Dechow and Skinner 2000). In this respect, Dechow and Skinner (2000) explore the reasons that lead to different perceptions among academics and practitioners regarding earnings management. Dechow and Skinner (2000) debate that the difference between choices that are fraudulent and those that can be considered aggressive, but acceptable, should be clearer in definitions used by academic scholars.

Figure 3.1 offers their view on distinguishing between earnings management and fraud.

[3] The National Association of Certified Fraud Examiners (1993, p.12) defines fraud as *"the intentional, deliberate, misstatement or omission of material facts, or accounting data, which is misleading and, when considered with all other information made available, would cause the reader to change or alter his or her judgment or decision*".

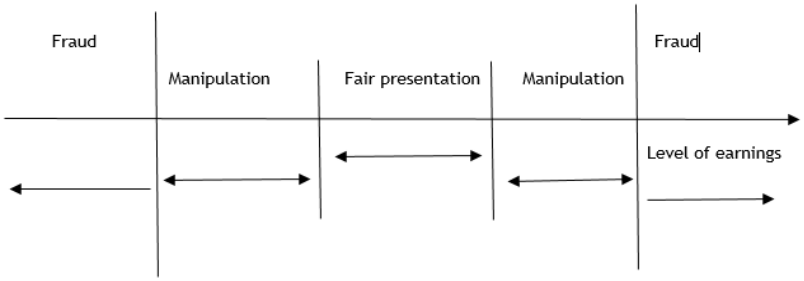
Figure 3.1 Differences between earnings management and fraud.

	Accounting Choices	Real Cash Flows Choices
	Within GAPP	
"Conservative" accounting	Overly aggressive recognition of provision or reserves.	Delaying sales.
	Overvaulting of acquired in-process R&D in purchases acquisitions.	Accelerating R&D or advertising expenditures.
	Overstatement of restructuring charges and asset write-offs.	
"Neutral" Accounting	Earnings that result from a neutral operation of the process.	
	Understatement of the provision for bad debts.	Postponing R&D or advertising expenditures.
"Aggressive" Accounting	Drawing down provisions or reserves in an overly aggressive manner.	Accelerating sales.
	Violate GAAP	
	Recording sales before they are "realizable".	
	Recording fictitious sales.	
"Fraudulent" Accounting	Backdating sales invoices.	
	Overstating inventory be recording fictitious inventory.	

Source: Dechow and Skinner (2000, p. 239).

More debate regarding the distinction between earnings management and fraudulent behavior has been provided by Stolowy and Breton (2004). They state that manipulation is not fraud, but just a matter of interpretation. The reported financial position and results of operations will still remain into the "fair presentation" zone. Figure 3.2 below shows an overview of Stolowy and Breton's (2004) attempt at the limits of fair presentation, earnings management (accounts manipulation) and fraud.

Figure 3-2 Fair presentation, earnings management (accounts manipulation) and fraud.



Source: Stolowy and Breton (2004, p. 11).

While a variety of definitions of the term "earnings management" have been suggested, this research will use Healy and Whalen's (1999) definition, which considers earnings management as opportunistic behavior aiming to mislead shareholders or any other stakeholders via misrepresentation or masking of true economic performance to achieve various motivations.

This definition does not reflect the financial reporting perspective that implies earnings management can be beneficial for shareholders. Thus, the term 'earnings management' is viewed here as relatively negative.

This view is justified because this research is about the role of corporate governance mechanisms in restricting earnings management. In this sense, corporate governance mechanisms can be seen as a supervisory system designed in order to guarantee that the shareholders' interests are protected and improve firms' accountability.

3.3 INCENTIVES TO MANAGE EARNINGS

Given the definition of earnings management as communicated by Healy and Wahlen (1999), it may be asserted that in order to exercise earnings management to influence stakeholders or contractual outcomes, management needs to have specific incentives. These

motivations could stem from both outside and inside pressures of the entity (Watts and Zimmerman 1978).

For scholars to be able to identify whether earnings have been managed or not, one must have the capacity to comprehend the conditions under which a manager has enough motivating force to engage in earnings management.

Previous literature on earnings management has suggested several reasons for managing a firm's earnings including upcoming credit changes (Kim et al. 2013), earnings decreases and loss prevention (Burgstahler and Dichev 1997; Coppens and Peek 2005; Suda and Shuto 2005; Roychowdhury 2006), initial public offering and tightly regulated market (DuCharme et al. 2001; Alhadab et al. 2016), seasoned equity offering (Rangan 1998; Teoh et al. 1998a; Shivakumar 2000; Kim and Park 2005; DuCharme et al. 2001; Chen et al. 2010; Kothari et al. 2015), tax motivations (Herrmann and Inoue 1996; Niskanen and Keloharju 2000), to benchmark targets, to report positive profits; to sustain recent performance; to meet analysts' expectations (Degeorge et al. 1999; Vander Bauwhede et al. 2003), and contractual motivation (Chung et al. 2002) .

In order to establish a clear understanding of earnings management motivations this research classified them into two main categories: internal motivations (those related to internal circumstances of firms which can be directly controlled by them) and external motivations (those related to circumstances surrounding firms which cannot be directly controlled by them).

3.3.1 **Internal Motivations of earnings management**

3.3.1.1 Capital market motivation

Extensive reliance by investors and financial analysts on accounting information to make their decisions could lead managers to manipulate earnings as a way to influence short-term stock price performance and to obtain gains from it (Healy and Wahlen 1999). In this case, management seeks to stay away from a large fluctuation in the stock prices, which occurs especially when there is a gap between

business performance and investors' or analysts' expectations. Thus, a motivation for earnings management could exist.

Based on prior studies, capital market motivations may be divided into three sub-classes, namely management buyouts (MBOs), Equity offering (IPO, SEO) and expectations financial analysts.

According to Mao and Renneboog (2013) management buyouts (MBOs) are defined as "*a leveraged buyout transaction whereby at least one of the pre-buyout managers financially participates in the transaction and stays in the company subsequent to the buyout"* (p. 50). Before MBOs, managers are motivated to reduce the earnings numbers by accounting manipulation in the hope of buying their firms' equity at as low a price as possible (Fischer and Louis 2008).

Consistent with this idea, previous literature on accounting manipulation states that downward earnings management prior to MBOs is expected (Perry and Williams 1994; Fischer and Louis 2008). For example, Perry and Williams (1994) documented evidence that firms decrease their discretionary accruals prior to a management buyout. Likewise, Fischer and Louis (2008) find that managers who depend the most on external funds to finance their MBOs tend to report less negative abnormal accrual prior to the MBOs.

Ang et al. (2014) provide more evidence by studying 163 MBOs over the period from 1997 to 2007. They discovered that managers are likely to alter earnings downwards if they continue to have a strong equity tie with the targets after the buyouts. Further, Mao and Renneboog (2013) examine accounting manipulation prior to buyout transactions during the second buyout wave from 1997 to 2007 in the UK. Mao and Renneboog (2013) found that buyout targets engage in negative earnings manipulation, through both accrual management and real earnings management.

In terms of equity offerings, a large stream of research has presented evidence that time equity offerings by going initial public offering (IPOs) or issuing Seasoned Equity (SEOs) create motivations for managers to manage earnings upward to increase their stock values (Teoh et al. 1998b; Ahmad-Zaluki et al. 2011; Shen et al. 2014; Kusumawardhani and Siregar 2016; Gao et al. 2017; Lo et al. 2017).

In a fundamental paper presented by Teoh et al. (1998b), they found evidence that issuers with high accruals around the IPO date encountered a decrease in stock return performance in the three years thereafter. Teoh et al. (1998b) interpret this as evidence that firms managed their earnings before IPO to obtain a higher offer. Meanwhile, DuCharme et al. (2001) and Roosenboom et al. (2003) reveal a significantly negative relation between abnormal accruals for the IPO year and later stock returns.

Ahmad-Zaluki et al. (2011) found that income-increased earnings management by Malaysian firms engaged in IPOs was restricted to IPOs that happened during the Asian crisis period (1997–1998). Shen et al. (2014) investigated a sample of 506 Chinese IPOs issued over the 1998–2003 period and found that Chinese IPO firms with more aggressive earnings management were likely to experience poorer long-term stock performance.

Based on a study of 39 Indonesia firms, Kusumawardhani and Siregar (2016) conclude that companies perform income-increasing earnings management by total discretionary accrual in one period preceding IPO and that earnings management was positively related to initial firm value at IPO and negatively associated with post-IPO average EVA growth.

Finally, Lo et al. (2017) investigated US IPO firms over the period from 1990 to 2013 in order to explore the roles of institutional investors in earnings management during initial public offerings (IPOs). They observe that institutional investors have incentives to opportunistically maximize their wealth by manipulating earnings when firms engage in IPOs.

Alternatively, some studies document that some firms tend to alter earnings upward amid SEOs (Rangan 1998; Teoh et al. 1998a; Shivakumar 2000; Shu and Chiang 2014). For example, Rangan (1998) documents positive abnormal accruals for SEO firms during the year around the SEO. He shows that earnings are managed in direct response to the decision to issue equity preceding the announcement of the offering.

Likewise, Teoh et al. (1998b) found that those SEO issuers who alter discretionary current accruals to report higher net income before

the offering have lower post-issue long-run abnormal stock returns and net income. Henry et al. (2013) also reveal evidence consistent with prior research. They show that managers of Australian SEO firms engage both REM and AM in the SEO- years, and earnings manipulation activity is higher in these years regarding non-SEO firms and in contrast to the non-issuing years of SEO firms.

Shu and Chiang (2014), based on a sample of 463 non-financial SEO firms listed on the Taiwan stock exchange in the period 1996–2010, noted that large and small firms adopted different approaches when placing their seasoned shares. Thus, large firms tended to use discretionary accruals, whereas small firms tended to time the market to increase their proceeds.

Finally, several studies point out that managers try to manage earnings in order to meet stock market and financial analysts' expectations (Kasznik 1999; Burgstahler and Eames 2006; Gentry and Shen 2013; Irani and Oesch 2016). In this respect, Kasznik (1999) observed that managers use positive (negative) discretionary accruals to manipulate reported earnings downward (upward) when earnings would otherwise be above (below) the management's earnings forecasts. Further, Burgstahler and Eames (2006) argued that managers tend to engage in both the cash flow and discretionary accruals components of earnings to meet or slightly beat analyst forecasts.

Bartov and Cohen (2009) also find evidence consistent with earnings management to meet analyst forecasts. They acknowledge that managers can simultaneously utilize a mix of actions like accruals management, expectation management, and real earnings management, to just meet/beat analysts' earnings expectations. Lastly, (Gentry and Shen 2013; Irani and Oesch 2016) indicate that managers may use real activities manipulation when they are under pressure to meet analyst's forecasts.

3.3.1.2 Compensation motivations

Due to the opportunistic behavior of individuals, firms endeavor to set up mechanisms that have to align the interests of the agents and the principals. For example, the management compensation plans may

be used to ensure that all parties in the firms act towards maximizing the value of the organization as well as to reduce agency costs. Prior literature reports that the executive compensation agreement may stimulate directors to manage income with the executives of the company searching to maintain and/or increase earnings-based compensation (Camara and Henderson 2009; Achilles et al. 2013; Bratten et al. 2017).

Watts and Zimmerman (1986) and Watts and Zimmerman (1990) indicate that managers of firms with bonus plans are more likely to use accounting methods that increase or maximize current period reported income. In this regard, prior academic researchers have found evidence that where managerial welfare is tied to accounting results, managers tend to manipulate earnings activities (Healy 1985; Holthausen et al. 1995).

Healy (1985) presented the original contribution in this area. He examined the relationship between bonus schemes and their income reporting incentives under these plans and found that the accounting procedures adopted by managers were related to adoption or alteration of their bonus plan. In particular, managers utilized earnings upward when earnings were expected to fall between the upper and lower limits; whereas, they chase income-decreasing accruals when earnings were expected to fall above the upper limit or below the lower limit, to augment their future compensation.

Holthausen et al. (1995) broaden Healy's (1985) work by studying what degree executives manipulate earnings to maximize the present value of bonus plan payments. By analyzing a sample of 443 firm-year observations between 1982 and 1990, Holthausen et al. (1995) uncovered evidence consistent with the hypothesis that managers practice earnings downwards when their bonuses are at their maximum. However, unlike Healy (1985), Holthausen et al. (1995) found no evidence that managers manage earnings downwards when earnings are under the minimum necessary to receive any bonus.

Another strand of research focuses on the incentives of CEO compensation and discretionary accruals (Balsam 1998; Bergstresser and Philippon 2006). For example, Balsam (1998) evaluates the aggregate effect of accounting choices on CEOs compensation, based

on US data from 3,439 companies between 1980 and 1993. His study finds evidence consistent with management responding to the incentives provided. Therefore, he concludes that the association of CEO cash compensation with reported income generally increases with the level of discretionary accruals. Further, Bergstresser and Philippon (2006) and Shuto (2007) support the previous empirical evidence and find that CEOs manage their earnings to increase executive compensation.

A similar stream of literature tests the relationship between Chief Financial Officers (CFOs) equity incentives and earnings management. For instance, Graham et al. (2005b) conducted a comprehensive survey of more than 400 financial executives, that requested CFOs to describe their decisions related to reported accounting numbers. They found that financial executives had motivations to meet earnings targets, such as analysts' forecasts, previous period's earnings, and zero earnings. In addition, they are prepared to manipulate real activities to meet these targets, despite the manipulation potentially reducing the firm value.

Jiang et al. (2010) examined the association between CFO and CEO equity incentives and earnings management separately, for a sample of 17,542 firm-years with compensation data available for both CEOs and CFOs from 1993 to 2006. They concluded that the role of the CFO equity incentives was greater than that of the CEO. They interpreted their results given the primary responsibility of the CFOs' when preparing financial reporting.

Furthermore, Feng et al. (2011) studied the causes that lead CFOs to participate in material accounting manipulations. By using a comprehensive sample of material accounting manipulations disclosed between 1982 and 2005, they found that CFOs bear large legal costs when involved in earnings management. They also documented that these CFO equity incentives were not significantly different from those of CFOs of control firms. However, CEOs of the manipulating firms had significantly higher equity incentives and power than CEOs of non-manipulating firms.

Finally, Achilles et al. (2013) found that when compensation is linked to firm performance, managers make income increasing

(decreasing) decisions when current earnings are below (above) analysts' forecasts.

3.3.1.3 Debt Contracts motivations

As discussed above, in the section 2.3.1.2, it is clear that executive compensation contracts provide incentives for managers to manage earnings to augment their compensation. Also, debt covenant contracts could provide strong incentives for managers to manipulate earnings, reducing the likelihood of debt covenant violations, which in accounting research is referred to as the debt covenant hypothesis proposed by Watts and Zimmerman (1986).

Consistent with the debt covenant hypothesis, several studies present evidence that managers exploit their accounting discretion to avoid the debt covenant violation. For instance, Sweeney (1994) examined accounting changes, costs of default, and accounting-based covenants, by using a sample of 130 firms that actually defaulted by violating debt covenants together with a matched firm control sample throughout the period 1980-1989. She notes that the defaulting firms are more likely to make income-increasing discretionary accounting changes in the periods before the violation and adopt early income-increasing mandatory accounting changes compared to the control firms. DeFond and Jiambalvo (1994) also examine the abnormal accruals of a sample of 94 firms that reported debt covenant violations for accounting choices during the fiscal years 1985 to 1988. Their empirical findings confirm the conventional view that debt agreements motivate managers to manipulate income.

However, DeAngelo et al. (1994) found evidence which contradicts the results of Sweeney (1994) and DeFond and Jiambalvo (1994). In particular, DeAngelo et al. (1994) investigated the apparent importance of actual debt covenant violations on accounting choices. They concluded that the accounting choices made by managers of 76 troubled firms mainly reflected the firms' financial problems, rather than efforts to either avoid debt covenant violation or hiding the financial problems.

Based on 135 US firms during the period 1989-1996, Jaggi and Lee (2002) investigated whether the direction of discretionary accruals

is associated with the severity of financial distress and whether this choice is also affected by the creditors' waivers of debt covenant violations. Jaggi and Lee (2002) find that the trend of earnings management depends on the extent of financial distress and the results of debt renegotiations. In particular, their results demonstrate that managers of financial distressed firms utilize income increasing discretionary accruals if they are able to get waivers for debt covenant violations, while using income-decreasing discretionary accruals if debt restructuring takes place or debts are renegotiated because waivers are denied.

Further literature on debt covenant violations has been studied with some implications for other areas of management. Jha (2013) employed a large sample of quarterly data spanning 1996 to 2007 to test how earnings are managed around debt-covenant violations. His outcomes show that distressed firms manipulate earnings upward in the quarters before a debt-covenant violation, whereas, they tend to manage earnings downward in previolation periods. Besides, Jha (2013) indicates that distressed firms continue to manage earnings downward, not upward, while the firm remains in violation. Further, Jha (2013) showed that earnings management around the debt-covenant violation is also done to enhance the manager's bargaining power in the renegotiation that follows the violation.

Franz et al. (2014) presented more evidence that the debt covenant hypothesis is valid and choices of managers, in fact, rely upon debt covenants. They examined the relation between proximity to debt covenant violation and three measures of earnings management, namely real earnings management, accounting earnings management, and total earnings management. Their sample includes 2,195 loans covering 1,009 firms and 14,816 loan quarters and spanning 1992–2007. They found companies engaged in higher levels of accounting earnings management, real earnings management, and total earnings management were closer to violate the debt covenant hypothesis or in the technical default of their debt covenants.

3.3.2 **External Motivations of earnings management**

External motivations for earnings management are mainly attributable to the elements of the environment in which a firm operates, such as tax legislation, degree of investor's protection, economic conditions, etc.

Tax legislation can adversely affect a company's performance. Numerous studies have documented an association between earnings management and tax motivations. For example, Dhaliwal et al. (2004) investigated whether firms manage tax expenses in order to achieve a particular earnings target. They found evidence that companies managed their earnings by influencing effective tax rates (ETR) up and down in order to beat the benchmark. Similarly, Goncharov and Zimmermann(2006) analyzed the effects of tax legislation on the earnings management behavior of a sample of private and public Russian firms during the years 2001 and 2002 and found that they managed earnings downward to reduce income taxes.

Maydew (1997) presented evidence that firms use shifting income across years to increased tax refunds. Finally, using a sample of Belgian business groups (holdings) Beuselinck and Deloof (2014) tested the effect of business group affiliations on earnings management decisions. They revealed that earnings management is facilitated through intra-group transactions. In particular, they pointed out that signed discretionary accruals of group companies depend more on the marginal tax rate status of the group as compared to stand-alone companies.

Regarding the institutional environment, many studies have identified that managers can exploit weaknesses in the institutional environment to achieve their goals (Leuz et al. 2003; Dyreng et al. 2012; Enomoto et al. 2015). In this respect, Leuz et al. (2003) investigate the role of legal systems as a significant determinant of earnings management activity, for a sample from 31 countries during the period 1990-1999. Their findings document that countries characterized by relatively dispersed ownership and solid investor protection regimes display lower levels of earnings management practices than countries with relatively concentrated ownership and weak investor protection regimes. Consistent with these findings,

Burgstahler et al. (2006) also showed that both public and private firms exhibit more earnings management in countries with weak legal enforcement.

In the same line, Dyreng et al. (2012) presented evidence that U.S. multinational firms with extensive foreign operations performed in countries with weak legal enforcement show more foreign earnings management than firms with subsidiaries in areas where the rule of law is strong. Further, Enomoto et al. (2015) tested the differences in earnings management between 38 countries from the perspective of investor protection. They noted that managers in countries with stronger investor protection regimes tend to engage in real earnings management instead of accrual-based earnings management.

With regard to the influence of economic situation, prior research suggests that in situations of financial distress managers may feel pressure and have incentives to make decisions aimed at avoiding or postponing the firm's bankruptcy by using tools that disguise the actual financial performance of the company (Campa and Camacho-Miñano 2014).

Rosner (2003) offers an insight into the financial reporting behavior of failing firms. Taking a sample of 293 failed US firms, he finds that they manipulate earnings upwards in pre-bankruptcy nongoing-concern years. Likewise, García Lara et al. (2009) report that managers use both accounting accruals manipulation and real activities manipulation in an attempt to conceal poor performance in the years preceding failure. In a similar vein, Campa and Camacho-Miñano (2014) also investigated accrual and sales manipulation among non-listed bankrupt firms operating in Spain. They found that bankrupt firms manage earnings upwards more than their healthy peers.

Recently, Gopalan et al. (2016) analyzed a dataset of 868 bankrupt firms from India over the period 1990-2013 in order to investigate the distortionary effects of accounting-based regulation on reported earnings. They found that firms manage earnings downward, mainly through depreciation and provisioning, to seek bankruptcy protection.

3.4 EARNINGS MANAGEMENT TYPES AND TECHNIQUES

Prior literature in the field of earnings management suggests that managers employ various manipulation strategies to meet certain earnings targets. Roychowdhury (2006) indicate that managers use two main types of actions to maintain their firm's economic performance appearances, namely accruals manipulation and real activities manipulation. This section illustrates the types of earnings management as well as various techniques of real activities manipulation and accruals manipulation.

3.4.1 Accrual-based earnings management and techniques

Ball et al. (2016) mention that accruals are the non-cash element of earnings. They represent settlement processes made to cash flows to generate a profit measure, largely uninfluenced by the timing of payments and receipts of cash. In other words, accruals-based accounting means recording expenses and revenue in the period in which they are carried out, regardless of the date of collection or payment.

The Generally Accepted Accounting Principles (GAAP) allow firms discretion when identifying these transactions as economic events, so that reported earnings reflect the real underlying business conditions of the firm's performance more accurately (Teoh et al. 1998a). However, in accruals-based earnings management, managers intervene in the financial reporting process by exercising discretion and judgment regarding accounting choices (Kothari et al. 2015). Therefore, managers may shift earnings between periods in a way that does not reflect the firm's underlying economic performance (Degeorge et al. 1999).

Much research has been focused on studying earnings management via discretionary total accruals and working capital accruals management (Healy and Wahlen 1999; Dechow and Skinner

2000; Kim et al. 2013; Gopalan et al. 2016). Managers usually use an amount of discretion over accounting judgments, for example, losses from bad debts, deferred taxes, defer expenditures (such as research and development (R&D), advertising, or maintenance), selecting inventory valuation and depreciation methods (such as LIFO, FIFO, or weighted-average methods or straight-line or accelerated depreciation methods) (Healy and Wahlen 1999).

A large body of accounting literature provides evidence that managers engage in a variety of earnings management techniques. Arthur Levitt (1998), the 25th chairman of the Securities Exchange Commission (SEC), claims that earnings management practices can be summarized into five different variants: big bath, creative acquisition accounting, cookie jar reserves, immaterial misapplications of accounting principles and premature recognition of revenue. In a related study, Scott (2003) suggested four main patterns of earnings management based on their effect on earnings, namely taking a bath, income minimization, income maximization, and income smoothing.

Furthermore, a survey conducted by Nelson et al. (2003) provides evidence about specific approaches that are used by managers when they attempt to manage earnings. Such authors classify earnings management techniques into several categories, which include: expenses recognition and other losses (e.g. capitalizing and deferring too much or too little expenses, recognizing too much or too little assets impairment, modifying depreciation or amortization life), revenue recognition and other gains (e.g. deferring too much or too little revenue, billing and holding sales prior to delivery, timing the recognition of realized or unrealized gains or losses on investments), business combinations (e.g. over or understating assets, liabilities and offset with goodwill and over or understating expenses involved in a period of acquisition). In addition, there are other approaches, such as income statement classification, off-balance-sheet financing, modifying disclosures and avoiding equity method (Nelson et al. 2003). However, it is worth mentioning that these techniques that are available to managers to manipulate earnings are not fixed over time.

In this respect, Scott (2003) points out that:

"*It should be apparent that these various earnings management patterns can be in conflict. Over time, the pattern chosen by a firm may vary due to changes in contracts, changes in levels of profitability, changes in CEO, capital needs, and changes in political visibility*" (p. 384).

Adding to the above studies, in able 3.1 we collect and briefly discuss some of techniques that have been highlighted in prior literature.

Table 3.1 Summary of the main techniques of accrual-based earnings management.

Technique	Brief description
"Big Bath" Accounting	Big bath is a managerial strategy to dispose of all the bad news in one go (Jones 2011). In this technique, management may decide to inflate the loss and put bad news associated with poor earnings into the current fiscal year, which will permit the boosting of earnings in future periods (Levitt, 1998; McKee, 2005). It is generally used in acquisition accounting and in takeovers.
Premature revenue recognition	Levitt (1998) indicate that firms try to lift income through manipulating the recognition of revenue, where firms report their earnings before the sale actually took place or be completed. Mulford and Comiskey (2011) defined premature revenue recognition as the recognition of revenue for a legitimate sale in a period preceding to that called for by GAAP. In *contrast, fictitious revenue recognition is the recording of revenue for a nonexistent sale*.
Big Bet on the Future	When a company acquires another company, GAAP require the acquirer to report the acquisition as a purchase. This technique leaves space for manipulation in earnings through Big Bet techniques in two ways (Rahman et al. 2013). • Writing off in-process R&D costs for the acquired company: this technique permits a considerable part of the purchase price to be written off against current earnings in the acquisition year, protecting future earnings from these charges. This implies that future profits will be higher than they would have been something else. • Integrating the acquired firm's profit into consolidated earnings: current earnings of an acquired company might be consolidated with parent firm's profit, giving an automatic earnings support if the subsidiary was purchased on favorable terms.

Technique	Brief description
Cookie jar reserves	This technique occurs when a company surpasses market expectations, which allows scope for the company to make inordinate provisions. Sometimes labeled rainy day reserve or contingency reserves, in periods of high financial performance cookie jar reserve permits to lessen earnings by overstating reserves, overstating expenses, and using one-time write-offs. In periods of low financial performance, cookie jar reserves can be utilized to enlarge earnings by reversing accruals and reserves to decrease current period expenses (Kokoszka (2003)
Abuse of materiality	This is another gimmick that might be used by companies to build flexibility into financial reporting. Firms intentionally make systematic mistakes in the reporting on items that are viewed as irrelevant. Consequently, firms indulging in this practice try to justify it by arguing that the effect on the net income is too small to matter (Levitt, 1998).
Abusing new standards	Usually, the FASB's standards are enacted with a two-to-three-year transition period before to mandatory adoption but with early adoption encouraged. While not all firms are influenced by every standard issued, the relative frequency of issuance of new standards combined with long adoption windows gives a chance for managers to choose the most favorable year to the company's financial picture (Ayres (1994).

3.4.2 **Real earnings management and techniques.**

Recent research proposes that in addition to accruals earnings management, managers can also use real earnings management activities to manipulate reported earnings (Graham et al. 2005b; Roychowdhury 2006; Zang 2011; Chen et al. 2015a; Leggett et al. 2016; Razzaque et al. 2016).

As it was pointed out in section 3.2 of this chapter, the term 'real earnings management' can be traced back to Schipper (1989) in her definition of earnings management. Since then, the definition of real earnings management has evolved and more recently Roychowdhury (2006) proposes the following definition of real earnings management:

"*Real activity manipulation is defined as departures 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*" (p. 337).

A more precise definition of real earnings management is given by Zang (2011), who describes real earnings management activities as "*a purposeful action to alter reported earnings in a particular direction, which is achieved by changing the timing and structuring of an operation, investment and financing transactions and which has suboptimal business consequences"* (p. 676).

Existing literature documents that real activity earnings management can lead to a reduction in future cash flow and future operating performance (Gunny 2005; Roychowdhury 2006; Leggett et al. 2016; Razzaque et al. 2016). For instance, overproduction creates overabundance inventories which must be sold in the future periods and, as a result, generates higher inventory holding costs.

Roychowdhury (2006) and Cohen and Zarowin (2010) indicate two reasons for executives' greater interest in managing earnings by real activities rather than accruals. First, accrual-based earnings management is probable to bring scrutiny of auditors or regulatory scrutiny than real choices (e.g. those related to product pricing, and expenditures on R&D or advertising). Second, relying on accrual earnings manipulation exclusively is risky.

Consistent with these reasons, a survey conducted by Graham et al. (2005b) documents evidence that managers prefer to use real earnings management to manipulate earnings rather than accruals earnings management. They found *"strong evidence that managers take real economic actions to maintain accounting appearances. In particular, 80% of survey participants report that they would decrease discretionary spending on R&D, advertising, and maintenance to meet an earnings target. More than half (55.3%) state that they would delay starting a new project to meet an earnings target, even if such a delay entailed a small sacrifice in value"* (p. 32).

Nevertheless, compared to accruals earnings management, manipulation through real activities is more costly due to the

economic consequences (Gunny 2010). In addition, managers are willing to forfeit economic value to manage reported earnings.

Previous literature on earnings management has examined various techniques of real earnings management that are available to managers including: an abnormally high production of inventory (Roychowdhury, 2006), reduction of discretionary expenditures (such as advertising; R&D; maintenance expenses and general and administrative expenses (Roychowdhury, 2006), timing the sale of fixed assets to report gains (Herrmann et al., 2003), sales price reductions and flexible credit terms (Jackson and Wilcox 2000; Roychowdhury 2006), and delay investment projects (Graham et al., 2005).

In Table 3.2 we briefly discuss the main techniques of real-activities.

Table 3.2 Summary of the main techniques of real-activities

Technique	Brief description
Abnormally high production of inventory	Managers may select manage earnings upward by production manipulation to boost current profit margins. In this case, manufacturing executives can produce more goods than necessary to meet expected demand. Consequently, the extra units spread fixed costs over a larger number of units, disclosing lower costs of goods sold (COGS). However, the company may incur marginal cost, such as inventory holding cost that are not recuperated in a similar period through sales (Roychowdhury, 2006).
Reduction of discretionary expenditures	Reduction of discretionary expenditures such as R&D and advertising expenses, maintenance expenses, selling expenses, general and administrative expenses can be another technique of manipulating reported earnings in order to increase present earnings. Further, if these discretionary expenditures are generally in the form of cash, lessening them could result in lower cash outflows and have a positive effect on abnormal cash flow from operations (CFO) in the current period. However, a reduction of discretionary expenses may compromise organizational solvency in future periods' sales (Roychowdhury, 2006).

Technique	Brief description
Timing the sale of fixed assets to report gains	Timing the sale of fixed assets could provide managers with a flexible technique to manage earnings in order to report current gains. Managers tend to use this technique when normal business activities do not achieve the desired objectives. Therefore, the sale gain (the difference between the market value and net book value) will be disclosed on the income statement at the moment of the sales (Herrmann et al. 2003; Gunny 2005; Braswell and Daniels 2017) .
Sales price reductions and flexible credit terms	Firms can grant sales price reductions and flexible credit terms to temporarily increase sales during the current period to increase reported earnings. Although this technique allows managers to generate additional sales or accelerate sales from following accounting period into the current year, sales manipulation can lead to a lower level of operating cash flows in current year and a lower level of future profitability, when the firm re-establishes the old prices (Jackson and Wilcox 2000; Roychowdhury 2006).
Delay investment projects	Managers can manipulate reported earnings through altering investment decisions to meet earnings targets. According to this technique, managers may decide to delay capital projects and defer related expenses, including supplies and depreciation on fixed assets that, otherwise, would have been placed into service prior the end of the accounting period. This permits the firm to register gains (Graham et al. 2005b).

3.5 DETECTING EARNINGS MANAGEMENT: APPROACHES AND MODELS

Previous research has identified three main approaches commonly used in detecting earnings management: the specific accruals approach (McNichols and Wilson 1988; Cecchini et al. 2012;Trejo-Pech et al. 2016); the distributional approach (Burgstahler and Dichev 1997; Degeorge et al. 1999; Kent and Routledge 2017); and the aggregate accruals approach (Jones 1991; Healy 1985; Kothari et al. 2005;

Kusumawardhani and Siregar 2016; Gopalan et al. 2016; Gao et al. 2017). These approaches are reviewed in detail in the following three subsections

3.5.1 **The Aggregate Accruals Approach**

Most researchers investigating earnings management have employed the aggregate accruals approach to estimate the existence of accruals earnings management due to offering a comprehensive picture of the managers' accounting decisions (Cecchini et al. 2012; Marai and Pavlović 2014)

As previously stated, accruals are the non-cash element of earnings which represent a settlement process made to cash flows. Following this approach, the common starting point for the estimation of earnings management is the computation of total accruals.

Total accruals consist of discretionary accruals, which are adjustments to cash flows selected by the management to alter reported earnings, and non-discretionary accruals, which are accounting adjustments to the company's cash flow enforced by the accounting standard-setting bodies (Dechow 1994).

Once the total accruals have been computed, in a next step, they should be separated into their discretionary and non-discretionary components. A large body of literature has used discretionary accruals to test accruals earnings management (e.g.Jones 1991; Healy 1985; Dechow et al. 1995; Kasznik 1999; Bartov et al. 2001; Kothari et al. 2005; Houmes and Skantz 2010; Dechow et al. 2012; Mao and Renneboog 2013; Shen et al. 2014; Shu and Chiang 2014; Beuselinck and Deloof 2014; Kusumawardhani and Siregar 2016; Gopalan et al. 2016; Gao et al. 2017).

Several advantages have been attributed to the approach of aggregate accruals, i.e. it provides a comprehensive snapshot of managers' discretionary accounting choices and allows capturing the scale of earnings management. Nevertheless, this approach has also been subject to criticism as the fact that it does not give much insight into how the earnings management is achieved neither does it identify

what accounts have been used by management (McNichols and Wilson 1988; Cecchini et al. 2012; Marai and Pavlović 2014).

A variety of models has been developed in literature to detect earnings management. The latest studies on earnings management employ two main models, namely the modified-Jones model (Dechow et al., 1995) and the performance-matched Jones model (Kothari et al., 2005). Additionally, a few other important models are also devised by academic researchers, such as the Healy model (1985), the DeAngelo model (1986), the Industry model (Dechow and Sloan 1991), the Jones model (1991) and the Dechow et al. (2012) model.

The following is a more detailed account of each of the seven models mentioned above with an explanation of the choice of the model used in this thesis to estimate earnings management.

The Healy Model (1985)

Healy's (1985) study is the first attempt to have introduced total accruals as a measure for earnings management. Based on a sample of 94 firms, from the Fortune 250 over the period 1930-1980, Healy (1985) tested the association between managers' accrual and accounting procedure decisions and their income reporting incentives under bonus plans.

Unlike prior scholars who used specific component accruals as a proxy for earnings management, Healy (1985) utilized total accruals (scaled by lagged total assets). Indeed, although he proposed that total accruals comprise non-discretionary and discretionary accrual aspects, he did not give a distinction between discretionary accruals (DA) and non-discretionary accruals (NDA).

Instead, Healy (1985) presumed that total accruals are equivalent to non-discretionary accruals when there is no presence of earnings management. His findings revealed evidence that managers use accrual policies related to income-reporting incentives of their bonus contracts, and that they introduce changes in accounting procedures when they attempt to adopt or modify their bonus plan.

The Healy model has been the foundation stone in understanding how to estimate the discretionary accruals component. However, it also underwent some criticism. For instance, Kaplan (1985) indicated

that the Healy model failed to introduce an expectation model for normal accruals and to obviously isolate total accrual into non-discretionary and discretionary, implicitly assuming that, in the absence of earnings maximization conduct of directors, total accruals will be zero. Additionally, Kaplan (1985) noticed that adjustments in a few working capital accounts, and therefore accruals, rely on the economic conditions of the firm, which frequently ought to influence non-discretionary accruals.

The Healy model is presented symbolically as highlighted below:

$$NDA_{i,t} = 1/n \sum_{\tau} (TA_{it} / TA_{i,t-1})$$

Where:
$NDA_{i,t}$: estimated non-discretionary accruals for firm i in year t.
$TA_{i,t}$: total accruals.
$A_{i,t-1}$: lagged total asset.
n: number of years in the estimation period.
τ: a year subscript as an indicator for a year in the estimation period.
t: event year.

The DeAngelo Model (1986)

DeAngelo (1986) endeavored to overcome the limitation underlying Healy's model by developing a non-zero benchmark for non-discretionary accruals. DeAngelo's (1986) study focuses on whether managers have motivations to lessen reported income in attempts to decrease the buyout compensation by using accrual accounting. Based on a sample of 64 firms from the New York Stock Exchange and other American Stock Exchanges, DeAngelo (1986) found no proof that managers manipulate earnings downward pre-management buyout using accrual accounting.

DeAngelo (1986) confirms that TA (total accruals) encompass both NDA (non-discretionary) and DA (discretionary) elements. She additionally uses total accruals as a proxy for earnings management, defining total accruals as the difference between operating cash flows and net income. Hence, she assumes that the non-discretionary element of total accruals is steady over time (roughly the change is

very close to zero). In this way, the distinction in total accruals (TA) between present year and earlier year is attributed to discretionary accruals (DA).

However, DeAngelo's (1986) assumption has been criticized for unreasonably assuming that non-discretionary accruals do not change over time (Dechow et al. 1995; Ronen and Yaari 2008). Moreover, the accruals also change with the companies' economic situation. Therefore, empirically, it cannot be valid, as Kaplan (1985) noted in his discussion and analysis of Healy's paper.

De Angelo (1986) presented the model to estimate discretionary accruals symbolically as highlighted below:

$$NDA_{i,t} = TA_{i,t-1} / A_{i,t-2}$$

Where:
$NDA_{i,t}$: non-discretionary accruals in year t scaled by lagged total assets.
$TA_{i,t-1}$: total accruals.
$A_{i,t-2}$: total assets.

The Jones model (1991)

Using a sample of 23 US firms Jones (1991) investigated whether US firms would benefit from import relief (e.g. tariff increases and quote reductions) when attempting to diminish earnings through earnings management when they are under import relief investigation by the United States International Trade Commission (ITC). Her empirical tests reported that managers make income-decreasing accruals during import relief investigations. Indeed, a major contribution of the model introduced by Jones (1991) is moderating the assumption that the firm's nondiscretionary (i.e. the normal) accruals are steady over time.

The Jones model controls the effect of various economic circumstances. It develops an expectation model that estimates the normal accruals over an estimation period. She utilizes the change in revenues (REV_t) and property, plant and equipment (PPE_t) as proxies

for the effect of the economic circumstances within her regression model.

Jones (1991) estimated non-discretionary accruals (NDA) symbolically as highlighted below:

$$NDA_{i,t} = \hat{\alpha}_1(1/A_{i,t-1}) + \hat{\alpha}_2(\Delta REV_{i,t}/A_{i,t-1}) + \hat{\alpha}_3(PPE_{i,t}/A_{i,t-1})$$

Where:
$NDA_{i,t}$: non-discretionary accruals in a year t
$A_{i,t-1}$: total assets for firms i in year t-1
$\Delta REV_{i,t-1}$: is revenue in year t less revenue in year t-1 scaled by total assets in year t.
$PPE_{i,t}$: gross property, plant, and equipment.
$\hat{\alpha}_1$, $\hat{\alpha}_2$, and $\hat{\alpha}_3$ are firm-specific parameters.

The following model is used to estimate firm specific parameters $\hat{\alpha}_1$, $\hat{\alpha}_2$, and $\hat{\alpha}_3$ during the estimation period:

$$TA_{i,t}/A_{i,t-1} = \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{i,t}/A_{i,t-1}) + \alpha_3(PPE_{i,t}/A_{i,t-1}) + \varepsilon_{i,t}$$

Where α_1, α_2, and α_3 denote the ordinary least squares estimates.
$E_{i,t}$: error term in year t, which represents discretionary accruals as a proportion of total accrual for firm i in year t.

The Modified Jones Model (Dechow et al., 1995)

Dechow et al. (1995) evaluated the relative performance of the discretionary accrual models proposed by Healy (1995), DeAngelo (1986), Dechow and Sloan (1991) and Jones (1991), with the aim of drawing a comparison between them and suggested a new amended version.

According to Dechow et al. (1995), the Jones model implicitly assumes that revenues are non-discretionary. Hence, if earnings are managed through discretionary revenues, the Jones model "*will remove part of the managed earnings from the discretionary accrual proxy*" (p. 199).

Consequently, Dechow et al. (1995) modified the Jones model by considering that the change in revenues is adjusted for the change in receivables in the event period. They introduced this modification to

eliminate an error in the measurement of discretionary accruals from the standard Jones model (1991).

Moreover, Dechow et al. (1995) assume that all changes in credit sales in the event period result from earnings management. This is attributable to the fact that earnings management through exercising discretion over the recognition of revenue on cash sales is more difficult than earnings management through exercising discretion over the recognition of revenue on credit sales. However, recent research revealed evidence that both models evaluate discretionary accruals with considerable imprecision (Guay et al. 1996; Dechow et al. 1995; Kang and Sivaramakrishnan 1995).

Dechow et al. (1995) estimate non-discretionary accruals (NDA) symbolically as follows:

$$NDA_{i,t} = \alpha 1(1/A_{i,t-1}) + \alpha 2(\Delta RE_{i,t} - \Delta REC_{i,t})/A_{i,t-1}) + \alpha 3(PPE_{i,t}/A_{i,t-1})$$

Where:
ΔREC: is net receivable in year t less than net receivable in year $_{t-1}$.
All other variables were defined above.

The Industry Model (Dechow and Sloan 1991)

The Industry model has been proposed by Dechow and Sloan (1991). Like the Jones model, the Industry model mitigates the assumption that non-discretionary accruals are constant over time.

Rather than endeavoring to model the determinants of non-discretionary accruals (NDA) straightforwardly, the Industry model assumes that the variety in the determinants of non-discretionary accruals (NDA) is common among firms in a similar industry.

Nevertheless, the Industry model has not escaped criticism either, given that its assumptions will lead to measurement errors in evaluating non-discretionary accrual since it does not control the change in a company's economic circumstances (Dechow et al., 1995).

The Industry model for non-discretionary accruals (NDA) is:

$$NDA_{i,t} - \beta 1 + \beta 2 \text{ median i } (TA_{i,t}/A_{i,t-1})$$

Where:
median $_i$ (TA $_t$): is the median of total accruals in year t scaled by lagged total assets for all non-sample firms in the same industry (two digit-SIC code) and year.
β_1 and β_2: firm specific parameters estimated by using ordinary least square (OLS) on the observations in the estimation period.

The Kothari et al. Model (2005)

Considering that evidence from the empirical research suggests that a firm's accruals correlate with its current and past performance, Kothari et al. (2005) adopted the performance-matched approach to mitigate performance-related misspecification.

According to Kothari et al. (2005) accruals models ought to control the effect of performance on measured discretionary accruals (DA). Thus, given that the accruals models, including Dechow et al. (1995) (i.e. the amended Jones model), produce biased and unspecified results (Peasnell et al. 2000), Kothari et al. (2005) tried to overcome these problems by suggesting two ways to control a firm's performance in the estimated accruals. The first way is by adding return on assets (ROA) as an additional regressor into the model used to control organizational performance and the second one is by matching each firm-year observation with another from the same two-digit SIC code and year with the closest ROA in the present year.

The Kothari et al. model (2005) succeeded in mitigating performance-related misspecification. Nonetheless, it is criticized by Dechow et al. (2012) as it causes a significant reduction in test power and is only efficient when the matching procedure utilizes the relevant omitted variable.

The model is seen symbolically as follows (Kothari et al., 2005):

$$TA_{i,t} = \alpha_{0 +} \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta SALES_{i,t} /A_{i,t-1}) + \alpha_3(PPE_{i,t} /A_{i,t-1}) + \alpha_4(ROA_{i,t\ (or\ t-1)})) + \varepsilon_{i,t}$$

Where:
$TA_{i,t}$: total accruals predicted as the change in non-cash current assets minus the change in current liabilities excluding the current portion of

long-term debt, minus depreciation and amortization, scaled by lagged total assets.
$\Delta SALES_{i,t}$: change in sales scaled by lagged total assets.
$A_{i,t} - 1$: total assets
$PPE_{i,t}$: net property, plant and equipment scaled by $A_{i,t}$ - 1
$ROA_{i,t\ (or\ t\ -\ 1):}$ return on assets

The Dechow et al. (2012) model

Dechow, Hutton, Kim, and Sloan (hereafter "DHKS") introduced a novel method to identify accruals-based earnings management. Their approach depends on the idea that "*any accruals-based earnings management in one period must reverse in another period*" (p. 276).

DHKS stated that when researchers have precedents in respect to the reversal timing, fusing them can enhance the power of tests with regard to earnings management.

DHKS's sample consists of 209,530 firm-year observations between 1950 and 2009. Their outcomes show that incorporating reversals can improve test power by more than 40%, giving an intact approach for relieving model misspecification that comes from correlated omitted variables, and actually model the dynamics of earnings and accruals.

DHKS's approach relies on earlier models to decompose accruals into non-discretionary and discretionary components. They integrate earnings management reversals within these models and analyze improvements.

In spite of the fact that DHKS's model contributes to the accounting literature by introducing a technique that enhances previous methods to identify accruals-based earnings management, it is deficient and suffers from the same problems that face traditional models used to determine accruals-based earnings management. Moreover, the DHKS model depends on researchers knowing precisely the periods in which accruals are managed and reversed (Gerakos 2012).

Despite the fact that all discretionary accruals models suffer from some methodological restrictions and display some level of misspecification, there still remains major differences between them,

particularly with respect the power and specification of each model (Marai and Pavlović 2014).

Even though there is no ideal measure for estimating earnings management, earlier research suggests that the best-specified test is the performance-matched approach (Kothari et al., 2005). Particularly, the Kothari's et al. (2005) model is an enhanced version of the modified Jones model (Dechow et al. 1995) that introduces ROA to mitigate performance-related misspecification.

Thus, this model is considered the most reliable and is broadly used in literature (Niu 2006; Ananthanarayanan 2008; Chang and Sun 2009; Jaggi et al. 2009; Sun et al. 2010; Sun and Liu 2011; Habbash and Alghamdi 2017; Vasilescu and Millo 2016; Mafrolla and D'Amico 2017; Asthana 2017). In this respect, for example, Ronen and Yaari (2008) emphasize the superiority related with adopting the Kothari et al. model compared to other models.

Therefore, based on the above discussion, this thesis adopts the Kothari et al. (2005) model as the proper estimation model of discretionary accruals.

3.5.2 **The Specific Accruals Approach**

The specific accruals approach is usually associated with a specific industry such as banks (Capalbo 2003; Gray and Clarke 2004). insurance (Adiel 1996; Beaver et al. 2003), agribusiness firms (Trejo-Pech et al. 2016) and investment property companies (Dietrich et al. 2001).

Consistent with this approach, prior research has tested accruals earnings management by employing a single account such as bad debt provisions (McNichols and Wilson 1988; Cecchini et al. 2012), the claim loss reserve account (Petroni 1992), the tax expense (Phillips et al. 2003; Dhaliwal et al. 2004), restructuring charges (Moehrle 2002) and the allowance for loan losses (Beaver and Engel 1996; Cheng 2012).

Petroni (1992), based on a sample of 1,000 stock property-casualty insurance firms operating in the United States in 1979, described the loss reserve of property and casualty insurers as an ideal accrual for the study of management influence. Her findings indicate

that managers of financially weak insurers bias downward their estimates of claim loss reserves to increase their income.

In a subsequent study, Phillips et al. (2003) assessed the usefulness of deferred tax expense in detecting earnings management. They found that this variable is more precise than the accrual measures in classifying firm-years as successful in avoiding a loss and it can discover earnings management to avoid an earnings decline.

Cecchini et al. (2012) explored whether initial public offering (IPO) companies practice discretion over a specific accrual account on the balance sheet - the allowance for uncollectible accounts - and an individual accrual account on the income statement - bad debt expense. They showed that IPO firms report conservatively rather than aggressively for uncollectible accounts and record larger bad debt expense indicating that these firms minimize receivables-related accruals.

More recently,Trejo-Pech et al. (2016) detected evidence of accruals earnings management in the U.S. agribusinesses sector. Their results show that managers might be managing earnings through specific accruals doubtful accounts receivable provisions and special items.

According to McNichols (2000), this approach provides important advantages when compared to other approaches. She states that *"one advantage is that the researcher can develop intuition for the key factors that influence the behavior of the accrual, exploiting his knowledge of GAAP. A second advantage is that a specific accrual approach can be applied in industries whose business practices cause the accrual in question to be material and a likely object of judgment and discretion*" (p. 333).

Nevertheless, McNichols (2000) also pointed out some disadvantages. She contends that examining the specific accruals approach is generally costly because of requiring more institutional knowledge than aggregate accruals approaches and, moreover, the results drawn from studying the specific accrual approach are not as comprehensive as those of the total accrual approach.

3.5.3 **The Distributional Approach**

Prior research has examined the statistical properties of earnings to identify behavior that affects earnings management (McNichols 2000). This approach suggests that the firms' motivations to meet or beat recognized earnings benchmarks constitute a strong incentive for earnings management (Degeorge et al. 1999).

Consistent with this approach, previous studies investigate discontinuities in the distribution of reported earnings different benchmarks (Burgstahler and Dichev 1997; Degeorge et al. 1999; Beaver et al. 2007; Jacob and Jorgensen 2007; Gilliam et al. 2015; Kent and Routledge 2017).

For instance, Burgstahler and Dichev (1997) and Degeorge et al. (1999) documented pronounced evidence that companies overstate their earnings to avoid reporting losses, maintain previous performance and meet analysts' earnings projections. Jacob and Jorgensen (2007) also confirmed these findings about discontinuities around zero and around prior year's earnings.

In line with previous evidence, Kent and Routledge (2017) investigate two benchmark beaters as a pointer for earnings management, namely small positive earnings and small positive earnings changes within the Australian market. For a sample of 1,325 firms in 2007, they found that the small positive earnings benchmark attracts earnings managers. Their outcomes propose that managers do not have a motivation to achieve a small positive earnings change, which suggests that small positive earnings changes are not a signal for earnings management in the Australian market.

In a longitudinal work, Gilliam et al. (2015) examined the zero-earnings discontinuity over time from 1976 to 2012. They found no evidence of a discontinuity in any year from 2003 to 2012, attributing this finding to the introduction of the Sarbanes-Oxley act.

The key advantage of the distribution approach is that it enables researchers to issue a strong forecast on the frequency of earnings realizations which is unlikely to be due to the nondiscretionary component of earnings (McNichols 2000). However, many researchers recommend caution when explaining the earnings

discontinuity as evidence of earnings management (Dechow et al. 2003; Durtschi and Easton 2005; Beaver et al. 2007).

For instance, Dechow et al. (2003) expand on Burgstahler and Dichev (1997) by reviewing the earnings management explanation. They found that small profit and small loss firms have similar levels of discretionary accruals, which permits them to propose several plausible alternative interpretations for the discontinuities near earnings benchmarks, including real activities to beat the benchmark and the influence of the denominator.

Durtschi and Easton (2005) provide evidence that the shapes cannot be utilized as ipso facto evidence of earnings management because they can be influenced by deflation, sample selection, and a difference between the characteristics of profit and loss observations (such as market pricing and analysts' optimism/pessimism).

Beaver et al. (2007) bring attention to the factors that probably impact on discontinuity in the distribution of net income. They show that a discontinuity in the earnings distribution can emerge from nondiscretionary features of earnings components.

3.6 SUMMARY

This chapter reviews the literature relating to the earnings management phenomenon and related concepts. Several definitions for earnings management and the difference within accounting fraud were discussed, and both internal and external motivations for earnings management were explained, followed by a discussion of types of earnings management and their most widely used techniques.

The current chapter also refers to the main approaches that have been identified to estimate earnings measurement as well as the advantages and disadvantages of each one. Furthermore, this chapter highlights the empirical models used in literature to gauge earnings management. Overall, prior research has identified three main approaches commonly used in detecting earnings management: the specific accruals approach, the distributional approach, and the aggregate accruals approach.

As mentioned above, the aggregate accruals approach seems the most suitable due to having important advantages when compared to other approaches. As a result, the aggregate accruals approach is recognized as being the most broadly used and capable, especially the performance model Kothari et al. (2005).

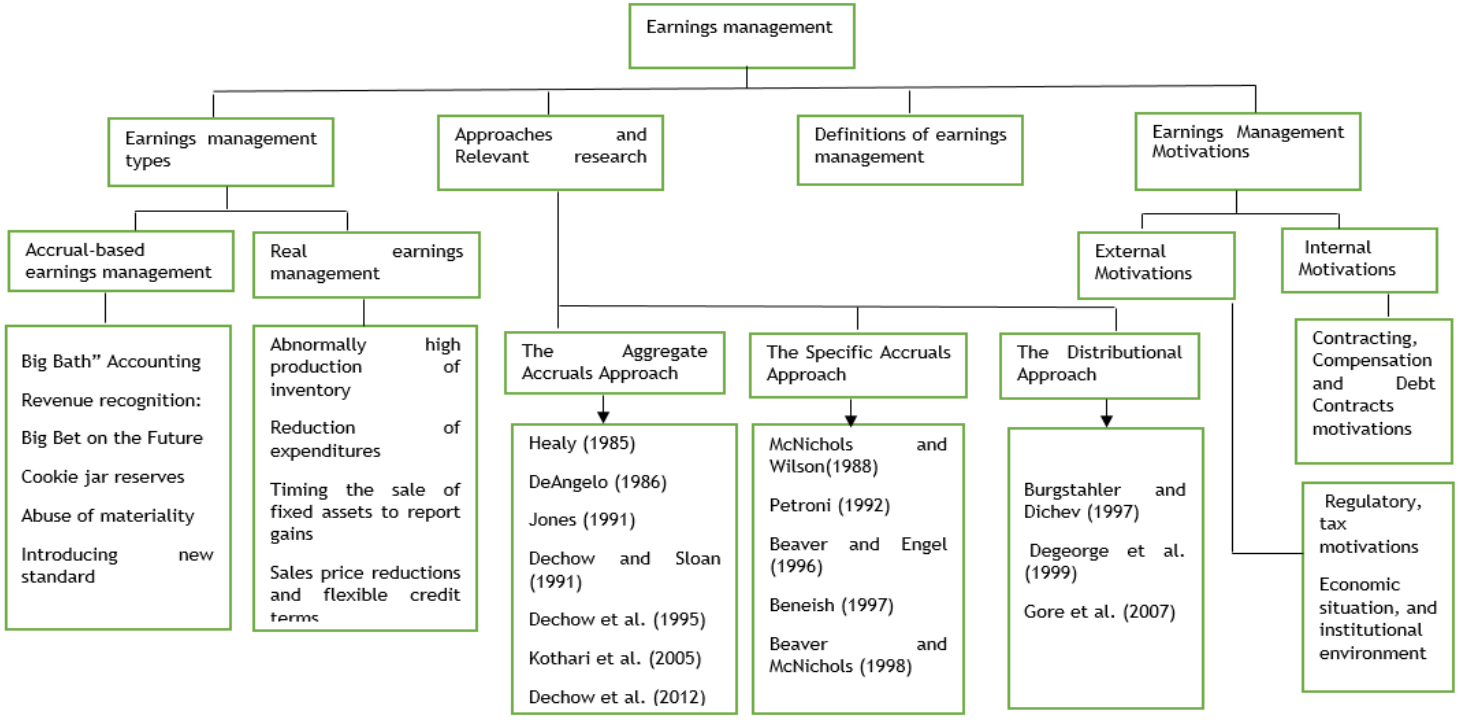
Therefore, this research uses the aggregate accruals approach to estimate total accruals by employing the cash flow approach, which will be used to separate total accruals into discretionary and non-discretionary components and subsequently using the discretionary accruals as a proxy for earnings management.

Figure 3.3 summarizes the main aspects of earnings management phenomenon

After studying the earnings management phenomenon, this research considered earnings management as an opportunistic behavior as result of agency conflicts between managers and agents. Therefore, to resolve these disputes, agency theory acknowledges the monitoring roles of corporate governance mechanisms as a solution to the reduction of agent-principal conflicts, including earnings management behavior.

The following chapter provides a review of some restricting mechanisms of earnings management and the appropriate theories related to this research. In particular, it presents and discusses the role of audit quality, the board of directors and the audit committee as mechanisms to restrict earnings management. It also explains the main theoretical frameworks related to this research, namely: agency theory, stewardship theory, and stakeholders theory.

Figure 3.2 The main aspects of earnings management phenomenon



Source: Elaborated by author

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CHAPTER 4: THEORETICAL FRAMEWORK

4.1 INTRODUCTION

Consistent with the objective of this research, the former chapter provided an overview of the earnings management phenomenon and discussed its related concepts of earnings management in-depth, as well as the approaches employed to detect earnings management.

As stated earlier, this thesis aims to examine the roles of corporate governance tools and audit quality in constraining earnings management practice in the Jordanian context. The objective of this chapter is twofold: first, reviewing the restricting mechanisms of earnings management and, second, to articulate the appropriate theories related to this research.

In particular, three restriction mechanisms of earnings management are analyzed, namely audit quality, the board of directors and audit committees. With regard to the theoretical framework to explain the relationship between earnings management and restricting governance mechanisms, three main theoretical frameworks are analyzed, namely agency theory, stewardship theory, and stakeholders theory.

This chapter will be organized as follows: section 4.2 reviews restricting mechanisms of earnings management. Section 4.3 discusses the relevant theories in this research. Finally, section 4.4 summarizes the chapter.

4.2 RESTRICTION MECHANISMS OF EARNINGS MANAGEMENT

4.2.1 The Role of Audit Quality

As Watts and Zimmerman (1983) explain, the existence of audit duties dates from the thirteenth century as a means to confirm that a company not only is being truthful in its financial reporting but also that its operations are working as intended.

The primary objective of hiring external auditors is to reduce agency conflicts among the various stakeholders and the firm (Healy and Palepu 2001), mitigating information asymmetries between inside managers and outside stakeholders by lending credibility of financial statement. In this respect, DeAngelo (1981) noted that, due to the potential conflicts of interest between principal and agents, audit services work as a monitoring mechanism.

Authors such as Jensen and Meckling (1976) and Watts and Zimmerman (1983) argued that moral hazard problems emerge from the information asymmetry between directors and outside stakeholders. This gives managers motivations to issue financial statements that enable stakeholders to monitor their activities. Hence, the need for an independent third party becomes necessary to assure that financial statements are fairly presented. In this sense, prior research generally shows that moral hazard problems and client competencies have major implications for the client's incentives to demand high audit quality (DeFond and Zhang 2014)

DeFond and Zhang (2014) define the client's competencies "*as the clients' abilities to meet their incentive driven demand for audit quality*" (p. 295). They indicate that these abilities comprise of mechanisms that encourage meeting their demand for audit quality, which normally are vital parts of the corporate governance framework, such as board of directors and audit committee characteristics. In this respect, empirical research found evidence that effective corporate mechanisms are linked with the client's decisions regarding auditor characteristics.

For instance, Abbott and Parker (2000) and Chen et al. (2005b) indicate that an audit committee with independent members is more likely to hire an industry-specialist auditor. Chen and Zhou (2007) have also revealed that firms with more effective audit committees

and boards of directors are more likely to demand higher reputation auditors (Big N auditors). In a similar vein, Carcello et al. (2002) found evidence that both high-quality audit committees and effective board of directors (estimated in terms of independence, diligence, and expertise) are more disposed to demand a high-quality audit.

Earlier scholars in this research area proposed multiple definitions of audit quality. DeAngelo (1981) defines audit quality as the possibility for auditors to discover a breach in the client's accounting system and report this violation. Thus, according to DeAngelo's (1981) definition, it is clear that audit quality comprises of two elements: the ability to detect misstatements as well as to report the misstatements revealed in an audit engagement. In a similar way, Palmrose (1988) defines audit quality as the degree of assurance provided by the auditor to the users of financial statements. Furthermore, Yu (2011) points out that audit quality can be seen as the auditor's ability to issue an appropriate report, which reflects the true circumstances of the firms.

Despite widely varying definitions of audit quality, as Kilgore (2007) points out, there is no single generally acknowledged definition of audit quality nor any single generally admitted measure. Moreover, some regulators and standard setters, such as the Financial Reporting Council (2006) and the International Organization of Securities Commissions (2009), comment that no agreed definition can be used as *"a 'gauge' to assess real audit quality"*.

Measuring audit quality is not a clear task because it is "*multidimensional and inherently unobservable*" (Balsam et al. 2003, p.71). Consequently, prior literature has used different proxies to measure audit quality. Between the most used proxies for audit quality we can cite: audit firm size (e.g. Big N firms vs. non-Big N firms) (Habbash and Alghamdi 2017), audit fees (Alali 2011), auditor's industry expertise (Krishnan 2003; Tyokoso and Tsegba 2015), auditor change (DeFond and Subramanyam 1998), auditor tenure/rotation (Hohenfels 2016), auditor opinion (Herbohn and Ragunathan 2008), and provision of non-audit services (Svanström 2013).

According to DeFond and Zhang (2014) audit quality proxies can be focused on either the outputs or the inputs of the audit process. The first group of proxies seeks to infer audit quality considering issues

related to the results of the audit work, such as restatements or audit opinion, whereas the second group considers characteristics of auditors or characteristics of the contractual relationship between client and auditor.

4.2.2 **Governance and controls**

As in the case of audit quality, corporate governance mechanisms have a significant role in restricting earnings management, through expanding the observing of management's activities and limiting managers' opportunistic behavior (Ashbaugh et al. 2004). In this respect, a large body of literature on earnings management has examined the role of the board of directors and the audit committee in restricting earnings manipulation (Bedard et al. 2004; Klein 2002b; Lo et al. 2010; Chen et al. 2015b).

Consistent with this literature, the definition of corporate governance and the role of these mechanisms will be discussed in the following sub-sections.

4.2.2.1 Definition of corporate governance

Corporate governance is basically aimed at balancing the interests of a company's numerous stakeholders. Since corporate governance provides the structure to ensure a greater monitoring and control of management and a greater protection of the shareholders' interests, it also incorporates a set of mechanisms, rules and internal controls for assessing performance and improving corporate disclosure.

Although there is no generally admitted definition of corporate governance (Abdullah and Valentine 2009; Belcredi and Ferrarini 2013; Mohamed 2016), several definitions of corporate governance have been presented in literature (e.g.Turnbull 1997; Shleifer and Vishny 1997; La Porta et al. 2002; Mansor et al. 2013). Mohamed (2016) interprets the absence of a standardized definition of corporate governance because the scholars and researchers define corporate governance from different perspectives.

The Cadbury Report (1992, p.15) defines corporate governance as: "*a system by which companies are directed and controlled"* (p.

15). La Porta et al. (2002) state that corporate governance is a set of mechanisms by which outside investors protect themselves against expropriation by insiders.

A comprehensive definition of corporate governance is given by OECD, which describes corporate governance (CG) as the "*set of relationships between a company's management, its board, its shareholders and other stakeholders. CG 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*" (OECD 2004, p.11).

Other definitions consider stakeholders' worries. For example Arsoy and Crowther (2008) defined corporate governance as the relationship between the corporation and all its stakeholders. Further, (Solomon 2007) considers corporate governance as "*a system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all their stakeholders and act in a socially responsible way in all areas of their business activity"* (p. 14).

According to Müller et al. (2016) the definitions of corporate governance may be classified into two main categories. The first one refers to the narrow views focused only on shareholder return (shareholders' perspectives in agency theory, Jensen & Meckling, 1976), such as the definitions of corporate governance outlined by the Cadbury Report (1992) and La Porta et al. (2002). The second category alludes to the broader views that balance a number of internal and external demands for various stakeholders (stakeholders perspectives in stewardship theory (Davis et al 1997) and stakeholders theory (Freeman 1984)), such as the definitions of corporate governance outlined by Arsoy and Crowther (2008) and Solomon (2007).

Since this research is about the role of corporate governance mechanisms in restricting earnings management, corporate governance mechanisms are perceived as a monitoring system that protects stakeholders' rights by setting up an effective board of directors and audit committee. Therefore, the term 'corporate governance' is seen here from a narrow view that is described appropriately in agency theory.

4.2.2.2 The Role of Board of Directors

Board of directors is one of the most important control mechanisms available which constitutes the summit of a company's internal governance structure (Fama and Jensen 1983; Mather and Ramsay 2003). Theoretically, shareholders elect the board of directors members to act on their behalf, then the board delegates authority to top management, while still overseeing its performance and checking any decision that could indicate a lack of good faith for shareholders (Man and Wong 2013).

In this respect, Fama (1980) and Fama and Jensen (1983) recommended that in order to ensure the effective observing functions in the decision making process, the initiation and execution functions ought to be isolated from the ratification and monitoring of the decisions. The board of directors is responsible for setting the objectives, strategies, and values of a company, in order to align them with the shareholders' interests. It also nominates the CEO and, in concurrence with he/she, selects the company's top management team (Mintz 2006).

According to Fama and Jensen (1983) there are two types of functions that are performed by the board of directors, namely decision management functions, such as setting the firm's long-term strategy and making investment and finance decisions, and decision control functions, such as hiring top-level managers, determining their compensation, firing them when necessary, and monitoring capital allocation decisions.

As will be detailed in chapter 5 on the literature review of this research, the effectiveness of boards of directors is largely influenced by certain characteristics. In this respect, previous empirical studies suggest that some attributes of the board of directors have an impact on earnings management. Thus, the main attributes of the board of directors which are most often documented in the literature to affect earnings management are board size (Lipton and Lorsch 1992), board independence (Chen et al. (2015b), board financial expertise (Agrawal and Chadha 2005), board meetings (Chen et al. 2006), CEO duality (PVVS and Palaniappan (2016) and political connection (Houston and Ferris (2015).

Vafeas (2000) found that effective board structures enhance the informativeness of earnings by limiting the extent of earnings

management. In a similar vein, Lo et al. (2010) examined the effect of good governance structures on accrual earnings management. By using a sample of 266 companies listed on China's stock exchange in 2014, they documented that a high percentage of independent directors are associated with a lower magnitude of manipulated transfer prices. They also find that firms that separate the duties of CEO and the chairman of the board are less inclined to engage in management's opportunistic behaviors through transfer pricing manipulations.

However, literature on family firms suggests that they may adopt different corporate governance practices and, therefore, corporate governance tools, such as board of directors, may be not an efficient internal monitoring mechanism (Kowalewski et al. 2010; Berrone et al. 2012). In this respect, Anderson and Reeb (2003) indicate that concentrated ownership lessens the traditional owner–manager conflicts (agency costs) in light of the fact that "*the family's wealth is so closely linked to firm welfare, families may have solid motivations to monitor managers and minimize the free-riding problem inherent with small, diffused shareholder*" (p. 1305).

4.2.2.3 The Role of the Audit Committee

In addition to the board of directors, the audit committee is a significant component of corporate governance and instrumental in guaranteeing the quality of financial reporting (Reporting and Treadway 1987; Kirk Panel 1994). Therefore, many regulatory bodies, such as the Public Oversight Board (POB 1993) the Securities and Exchange Commission (SEC 1999), and the Blue Ribbon Committee (BRC 1999), have emphasized the role of the audit committee.

The audit committee is one of the sub-committees of a company's board of directors which is accountable for overseeing financial reporting and disclosure. Audit committees are considered the liaison between the board of directors and the external auditor. The SOX (2002), in section 2, defines an audit committee as:

"*a committee (or equivalent body) established by and amongst the board of directors of an issuer for the purpose of overseeing the accounting and financial reporting processes of the issuer and audits of the financial statements of the issuer; and if no such committee*

exists with respect to an issuer, the entire board of directors of the issuer".

In light of the SOX's definition, it is clear that the main purpose of the audit committee is to ensure financial reporting quality, achieving high control systems and independent external auditing. In this regard, Klein (2002b) identifies the duties of the audit committees as follows "*meet regularly with the firm's outside auditors and internal financial managers to review the corporation's financial statements, audit process and internal accounting controls"* (p. 378).

In addition, the audit committee report provides a final check of the financial reporting system, the adequacy of the company's internal controls, evaluating if both the internal auditor and the external auditor are working in the best interest of the firm (BRC 1999; SOX 2002).

Prior literature suggests several attributes of the audit committee's members in order to be able to protect shareholders' interests and decrease the information asymmetry between inside managers and outsider shareholders. These attributes include audit committee size (Chen and Zhou 2007; Soliman and Ragab 2014), audit committee independence (Klein (2002b), audit committee expertise (Krishnan and Visvanathan (2008), and the meeting frequency of audit committees (Beasley et al. (2000).

4.2.2.4 Corporate Governance in developing countries and family firms

Overall, evidence from developing countries indicates that the corporate governance tools in such countries are not often an efficient internal monitoring mechanism. This is probably due to several reasons such as highly concentrated ownership (Fan and Wong 2002), weak enforcement of the rule of law and less transparent financial reporting (Dharwadkar et al. 2000; Mitton 2002; Young et al. 2008). Moreover, in most cases, the adoption of good corporate governance practices in developing markets is mainly driven by international demands rather than a genuine spirit of good corporate governance (Peng 2004; Young et al. 2008; Goh and Rasli 2014).

Some empirical studies present several arguments for why the corporate governance mechanisms, such as the board of directors, are

an inefficient internal monitoring mechanism in family firms. First, the appointment of the independent directors on the board has generally been considered as a source of expertise whose main role is advising the management on the strategic direction rather than providing them with the monitoring responsibility and controlling managerial activities (Johnson et al. 1996; Anderson and Reeb 2004; Gomez-Mejia et al. 2011; Goh and Rasli 2014). Second, usually, the independent directors are nominated by the family CEO and their appointment demands voting from the family owners; therefore, the directors independence is likely to be compromised because the outside directors may feel grateful and obliged to the family CEO (Jaggi et al. 2009; Schepker and Oh 2013; Goh and Rasli 2014). Third, family directors have a good position to control material information in owner-managed firms (Gomez-Mejia et al. 2011).

4.3 REVIEW OF THEORIES

4.3.1 The Agency theory

In agency theory, several social relationships can be usefully comprehended as including two parties: a principal and an agent. Thus, Jensen and Meckling (1976) describe agency theory as: "*a contract under which one or more persons (the principal/s) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent"* (p. 308).

According to this theory, the purpose of the contract is that the principal expects the agent to act and make decisions in the creation of a certain amount of value in the future (Bosse and Phillips 2016). Therefore, agency theory focuses on the occurrence and resolution of conflicts of interest between principals and agents.

The main idea highlighted by agency theory is ensuring that agents are acting in the best interests of the principals and not only their self-interest. In this sense, Eisenhardt (1989) indicates that the agency problem appears when the motives or aims of principal and agent conflict, and the principal cannot ensure what the agent is really doing. This disagreement occurs because the principal has incomplete information about the agent's contribution, and it is not probable for

the principal to know, in advance, how much value will result from such an agreement, due to uncertainty about the level of the agent's effort and external factors (Bosse and Phillips 2016).

Thus, agency theory implies that the agent behavior is based on self-interest and, therefore, may conflict with the principal's interest (Madison 2014). When the interests of the principal and the agent tend to diverge, the delegation of authority from the principal to the agent permits a range of under achievement of the principal's wishes of the principal by the agent, which is named agency loss (Donaldson 1990). Further, it leads to increased costs to the firm such as the costs of observing and controlling the activities of the agents.

Prior scholars have resorted to agency theory in empirical examinations of the relationship between earnings management and corporate governance mechanisms, including the board of directors, the audit committees and external audit (Fama and Jensen 1983; Krishnan and Lee 2009; Gul et al. 2009). According to Daily et al. (2003) agency theory dominates empirical research on corporate governance, which, in their opinion, is attributed to two factors: *"First, it is an extremely simple theory, in which large corporations are reduced to two participants - managers and shareholders - and the interests of each are assumed to be both clear and consistent. Second, the notion of humans as self-interested and generally unwilling to sacrifice personal interests for the interests of others is both age old and widespread"* (p. 372).

Prior literature shows that shareholders have both internal and external governance mechanisms to help to align the interests of managers in line with their own (Walsh and Seward 1990), i.e. mitigate information asymmetry, curb agent opportunism and reduce the agency costs stemming from the separation between ownership and control. Internal mechanisms include compensation contracts that promote shareholder orientation and ownership structure that lead to active monitoring of executives (Jensen and Meckling 1976; McKnight and Weir 2009), as well as corporate governance mechanisms such as the board of directors and the audit committee (Fama and Jensen 1983; Donaldson 1990; Coles and Hesterly 2000; Daily et al. 2003; McKnight and Weir 2009; Müller et al. 2016). External mechanisms include efficient capital and labor markets

(Fama 1980) and external auditing (Piot 2001; Baker and Owsen 2002).

Overall, agency theory appears as a proper framework to explain the appointment of an external auditor (Watts and Zimmerman 1983) and the development of efficient corporate governance mechanisms, including the board of directors and the audit committees. However, family firms may create different agency problems from non-family companies because the concentrated family-ownership can reduce traditional principal-agent conflicts and is a root cause of principal-principal conflicts (Miller and Breton-Miller 2006). In this respect, Wellalage and Locke (2016) contended that family control causes lower principal-agent agency conflicts, due to close monitoring by family ownership, whereas the potential for principal-principal agency conflict is large in family companies, given moral hazard abuse by the controlling family shareholders.

Villalonga and Amit (2006) mention that the best description of the second agency problem (principal-principal conflicts) is a firm with one large shareholder and a preponderance of small shareholders. In a similar vein, Li and Qian (2013) recognized that concentration of ownership and weakness of the institutional framework as the main causes of principal-principal conflicts.

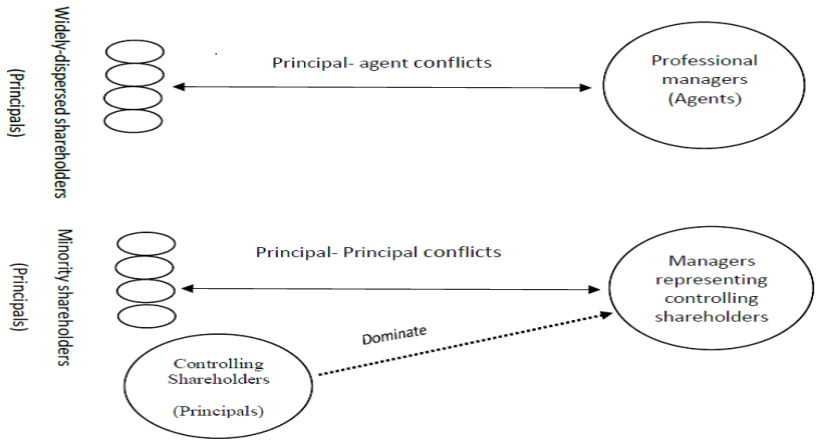
Setia-Atmaja et al. (2011) claim that family business characteristics either mitigate or exacerbate agency problems. On the one hand, some scholars, such as Ang et al. (2000), support the mitigation argument that states that family firms are one of the most effective types of organizational governance and these companies are even utilized as the zero agency cost base by some financial economists. On the other hand, different arguments state that family firms truly incur higher agency costs contrasted with non-family firms. For instance, family businesses may maintain unqualified member directors, which, in turn, leads to higher agency costs (Setia-Atmaja et al. 2011). In addition, there are problems of nepotism and managerial entrenchment, which occur in the procedures of manager selection in order to prevent the third parties from obtaining control of the firm (Anderson and Reeb 2004). Therefore, supporters of the exacerbation argument say that controlling families have motives and the capacity to obtain private benefits at the expense of minority shareholders (agency problem II) (Fama and Jensen 1983).

Furthermore, traditional principal-agent conflicts are not a common pattern among corporations in emerging markets (Anderson and Reeb 2003). Further, Young et al. (2008) explain that in emerging markets principal-principal agency conflicts occur between minority and majority shareholders as a result of concentrated ownership, business group structures, high family ownership and control and weak legal protection of minority shareholders.

Figure 4.1 illustrates the difference between principal-agent conflicts and principal-principal conflicts.

Moreover, the efficiency of a bundle of governance mechanisms differs systematically with the institutional structure at the country level (La Porta et al. 2002; Suhomlinova 2006; Lubatkin et al. 2007). In this sense, recent research has identified that, in emerging economies, recent corporate governance mechanisms may be corrupted or ineffective. As a result, from the agency theory viewpoint, the role of corporate governance mechanisms may raise some doubts about their ability to reduce earnings management which may be considered indicative of an agency problem.

Figure 4.1 Principal -principal conflicts versus principal-agent conflicts



Source: Li and Qian (2013, p. 500).

4.3.2 **The Stewardship theory**

In addition to agency theory, stewardship theory also describes the relationship between two parties, the principal and the steward-manager (Davis et al. 1997). However, in contrast to agency theory, stewardship theory gives an opposing view about the behavior of the managers which explains their role as steward rather than "*the entirely self-interested rational economic man of agency theory*" (Muth and Donaldson 1998, p.5).

Following this theory, the executive manager has long-term objectives. Thus, the aim of the agent is "*to do a good job, to be a good steward of the corporate assets*" (Donaldson and Davis 1991, p. 51). Further, the behavior of the steward is collective, in light of the fact that the steward seeks to attain the goals of the organization. This behavior in turn will benefit principals, such as outside owners and also principals who are managerial superordinates, on the grounds that their targets are furthered by the steward (Davis et al. 1997).

Thus, stewardship theory assumes a "*humanistic model of man*" according to which the steward behavior is based on serving others and thus will line up with the principal's interest (Madison 2014, p. 14). Stewardship theory hypothesizes that managers are basically dependable people and therefore good stewards of the resources entrusted to them (Donaldson 1990; Donaldson and Davis 1991).

From the stewardship theory viewpoint, governance structures enable stewards to proceed with an alignment of interests, thereby resulting in pro-organizational behavior and improved firm performance (Davis et al. 1997).

Prior researchers support the stewardship perspective. For example, Hernandez (2008) claims that stewardship-based managers will put corporate long-term development in front of self-interests, which enables firms to invest in R&D to explore new items development and new markets. In other words, when managers are seen as stewards, they are more likely to voluntarily achieve organizational objectives that aim to expand investors' long haul wealth (Eddleston and Kellermanns (2007) because doing so they may prompt open doors for desired personal outcomes, such as growth and achievement (Tosi et al. 2003).

Stewardship theory recognizes that there is no conflict of interest or opportunistic behavior at the expense of stakeholders. Therefore,

the relationship between large shareholders (as resource investors) and managers (as resource allocators) can overcome some of the deficiencies and failures of formal arrangements for corporate governance and hence to articulate and pursue future directions for a firm development (Zhang et al. 2018). Besides that, stewardship theory indicates several non-financial motives that influence manager' behavior, such as the need for achievement and recognition, the intrinsic satisfaction for successful performance, the respect for authority and the work ethic (Muth and Donaldson (1998).

According to the fundamental thoughts of the theory, there is no need to implement monitoring mechanisms. In particular, external auditing could be of value only as a means of helping the executive's stewardship. In the same line, the board of directors can be considered an instrument of help to a steward CEO instead of a supervising mechanism (Albrecht et al. 2004).

For example, Donaldson and Davis (1994) argued that senior executives will not disadvantage shareholders for fear of jeopardizing their reputation. Stewardship theory contends that the board ought to have a significant rate of inside directors to guarantee more powerful and efficient decision making (Kiel and Nicholson 2003). Likewise, Donaldson and Davis (1991) found that combining the role of the chairman and the CEO is considered a positive power prompting to better performance, because there is clear leadership for the firm.

Nevertheless, managers will not always work to align their own interests with those of shareholders, particularly in a corporate environment preoccupied with monetary success, and that implicitly or explicitly enables corporate executives to exploit/ignore regulatory controls and provides justification/rationalization for progress by any methods such as fraud (Choo and Tan 2007).

Moreover, just like, agency theory, stewardship theory cannot clarify the complicated behavior of leaders, such as their ability to commit fraud (Choo and Tan 2007). In this respect, Cohen et al. (2010) argue that psychological aspects of managers may urge them to commit fraud. Such authors emphasize the critical role of auditors on assessing the organizational culture and the ethical climate. Carpenter and Reimers (2005) also indicate the possibility of forming managers' attitudes depending on the firm's culture and the direction of top executives and the board of directors. Along these lines, it may

be more likely that someone will behave unethically if the perceived consequences will not be punished but rewarded.

Figure 4.2 illustrates the stewardship theory model.

Figure 4.2 The Stewardship theory model

Source: Elaborated by author

4.3.3 **The Stakeholders theory**

Developed by Freeman and Reed (1983), stakeholders theory describes the relationship between a range of parties (stakeholders). Freeman (1984) defines a stakeholder as "*any group or individual who can influence or is influenced by the achievement of the organization's objectives"* [quoted in Phillips (1997, p.53)]. In a similar vein, according to Sternberg (1997) the concept of stakeholder can be used to refer to either group or individual who influences or is in any way influenced by an organization. Thus, stakeholders encompass stockholders, creditors, managers, employees, customers, suppliers, local communities, and the general public (Hill and Jones 1992). Mitchell et al. (1997) contend that stakeholders possess some combination of three critical attributes: power, legitimacy, and urgency.

This theory says that stakeholders have a legitimate claim on the firms. This legitimacy is built up through the presence of an exchange relationship (Hill and Jones 1992). Prior researchers have indicated the core tenets of stakeholders theory (Freeman et al. 2010; Harrison and Wicks 2013; Jones and Felps 2013). Laude et al. (2017) point out that from the perspective of stakeholder theory organizations aim to

create value with and for a broad group of stakeholders. In a similar vein, Sternberg (1997) argue that businesses ought to be run not for their proprietors' financial benefit, but rather for the benefit of all their stakeholders. In addition, they assert that organizations are responsible to all their stakeholders, and that the optimum goal of management is to balance stakeholders' competing interests.

Consisting with these principles, Harrison and Wicks (2013) mention that the impact of the entire group of stakeholders relationships on the value created is greater than the sum of the effect of every relationship taken separately. In the same line, Tullberg (2013) contends that the basic idea of stakeholders theory is that the success of a company is very reliant on the smooth collaboration with its stakeholders.

In this respect, Laude et al. (2017) focus on a fundamental element of these relationships which is trust. They opine that distrust goes along with multiple behaviors and attitudes that impact value creation. Consequently, where doubt exists, collaboration and commitment diminish altogether as stakeholders are unwilling to share their knowledge (Connelly et al. (2012) or to develop close relationships (Cho 2006).

Stakeholders theory could expound the phenomenon of earnings management. Jensen (2001) explain that stakeholders theory gives managers who are self-interested the opportunities to achieve their motivations by leaving them to pursue their own advantages at the expense of society and the firm's financial claimants. By expanding the ability of managers to act in this unproductive way, stakeholders theory accordingly increases agency costs in the economic system.

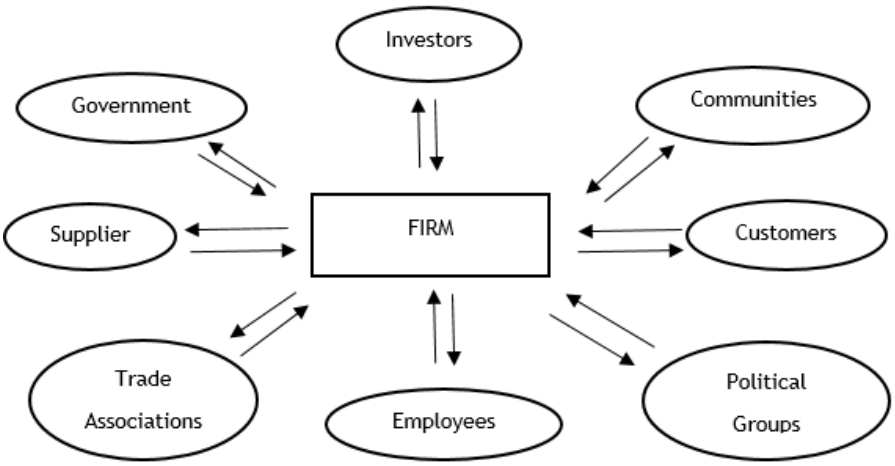
Nonetheless, stakeholders theory sees corporate governance mechanisms as effectual tools that could maintain all stakeholders' rights. In this sense, Mattingly et al. (2009) found that effective stakeholders management is associated with good corporate governance and higher earnings quality and, therefore, it is less likely to engage in discretionary earnings management.

Furthermore, Ashbaugh and Warfield (2003) documented that various stakeholders have a main role in the selection of a firm's auditor and Chen et al. (2007) found that the audit committee, as a particular stakeholder, influences the voluntary dissemination of interim financial information.

Nevertheless, this theory does not fully provide standards for what is better or what is worse. Specifically, it does not provide the company's board of directors and executives with any initial criteria for problem-solving (Jensen 2001). According to the stakeholder theory, managers are unaccountable for their stewardship of the firm's resources, which in turn, creates an assessment problem for their performance (Jensen 2001). Moreover, Deegan (2002) indicates another criticism of stakeholders theory that it is responsive only to important and key stakeholders.

Figure 4.3 illustrates the stakeholders theory model.

Figure 4.3 The stakeholders theory model



Source: Donaldson and Preston (1995, p. 69).

4.3.4 **Theory selection**

In the above subsections a discussion of every theory in isolation was provided. These theories are considered the key competing theories that underpin corporate governance practices. Although there are some commonalities for essential components making the theories complemental to each other to some degree, the difference between theories is found in their behavioral assumptions and structural prescriptions (Madison 2014).

Agency theory describes the governance structures mechanisms that are sought by shareholder activists (Daily et al. 2003). It presumes that the role of monitoring of the governance mechanisms is a key element and completely compatible with the notion that the separation of ownership from control generates situations which drive to managerial opportunism (Jensen and Meckling 1976). In this regard, agency theory informs that the monitoring roles of the board of directors and auditors are used as mechanisms that mitigate agency conflicts (Brennan et al. 2016). Similarly, agency theorists present the board of directors as a mechanism to protect shareholders from managerial self-interest (Daily et al. 2003).

Thus, agency theory is a valid theory for interpreting the director's motivations to manipulate earnings and explaining the need for corporate governance mechanisms. In this Thesis, the monitoring functions of corporate governance and audit quality are examined as mechanisms that curb agency disputes that involve the phenomenon of earnings management. Agency theory illustrates the expected association between corporate governance and external auditor as tools that restrict earnings management. Therefore, it appears as a proper framework to explain the appointment of an external auditor (Watts and Zimmerman 1983) and conceptualizing the control/monitoring role of the board of directors (Zahra and Pearce 1989; Johnson et al. 1996).

In light of the above discussion, it can be argued that agency theory offers a valid theoretical framework for this thesis in order to investigate whether the hypothesized associations exist between the monitoring properties of some corporate governance tools and earnings management.

4.4 SUMMARY

This chapter provided a discussion about the role of corporate governance tools and audit quality in constraining earnings management behavior. In addition, the current chapter presented a detailed description of the proper theories related to the scope and context of this research, namely agency theory, stewardship theory, and stakeholders theory.

The following chapter will review the evidence in empirical literature of the association between corporate governance mechanisms and earnings management in various institutional settings.

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CHAPTER 5: LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

5.1 INTRODUCTION

Prior studies on corporate governance and earnings management are extensive and there is a broad variety of empirical research. This chapter reviews the literature linked to the research topic and objectives with the aim of providing a basis for developing the research hypotheses. To achieve this aim, the review of relevant literature is focused on three areas, which are related to the three research questions of the thesis. The first area refers to the relationship between audit quality and earnings management; the second one examines the association between the board of directors and earnings management, and the third area is about the relation between audit committees and earnings management. Therefore, the purpose of this chapter is to discuss existing evidence in these three main areas and to highlight certain gaps in literature. Hence, the hypotheses are built.

This chapter is structured into three main sections. The first section begins with a review of empirical studies on audit quality attributes and earnings management. Subsections 5.2.1 and 5.2.2 examine the literature regarding auditor size and audit fees, respectively. The second section discusses the empirical research regarding earnings management and two mechanisms of corporate governance, namely the board of directors and audit committees. Subsection 5.3.1 reviews the characteristics of the board of directors which are most often documented in literature affecting earnings

manipulation activities, namely board size, board independence, board financial expertise, board meetings, CEO duality and political connection. Subsection 5.3.2 provides a review of empirical research on the effectiveness of four audit committees' attributes in restricting earnings management, namely audit committee size, audit committee independence, audit committee expertise and audit committee meeting. Then, subsection 5.3.3 presents the hypotheses development. Finally, section 5.4 summarizes and concludes the chapter.

5.2 EXTERNAL AUDIT QUALITY PROPERTIES

5.2.1 Auditor size

The audit firm size has been one of the most common proxies for audit quality in auditing literature (e.g. DeAngelo 1981; Dye 1993; Jeong and Rho 2004; Francis and Yu 2009; Jordan et al. 2010; Tsipouridou and Spathis 2012; Kitiwong 2014; Gumanti et al. 2015). Overall, prior research has documented that Big N auditors have a greater ability to constrain earnings management than non-Big N auditors (Becker et al. 1998; Huang and Hsiao 2011). These findings are attributed to several arguments: first, Big N auditors may provide high-quality audits because they apply their standardized global audit technology for all audits (Jeong and Rho 2004). Second, in larger accounting firms each customer has the same importance and, consequently, larger accounting firms are less likely to compromise their independence when compared to smaller accounting firms (DeAngelo 1981).

Nevertheless, several empirical studies have found no difference between Big N and non-Big N firms in deterring earnings management practice (Vander Bauwhede et al. 2003; Vander Bauwhede and Willekens 2004; Jeong and Rho 2004; Tsipouridou and Spathis 2012; Yasar 2013). Again, these findings have been explained based on multiple arguments. First, in some countries the legal environment does not encourage high-quality audits because the risk of litigation is low and there is no other effective disciplinary mechanism to control opportunistic behavior. Therefore, Big N auditors and non-Big N auditors tend to provide comparable audit quality (Jeong and Rho 2004). Second, since Big N and non-Big N

firms are held to the same standards and legislation, the level of audit quality should be the same (Lawrence et al. 2011). Third, in some cases non-Big firms may even be more capable than their larger peers of detecting irregularities due to their greater knowledge of local markets (Louis 2005). Moreover, as noted by Louis (2005), even though non-Big audit firms often have a close relationship with their customers, which may weaken their independence, yet the net effect of these counteracting forces is unclear.

Becker et al. (1998) conducted a leading study in this area by employing a sample of over 10,000 US firm-year observations over the years 1989 - 1992. They explored the effect of auditor size (Big N auditors versus non-Big N auditors) on discretionary accruals, as a proxy for earnings management. Becker et al. (1998) found that companies audited by non-Big N reported more substantial discretionary accruals compared to firms with Big N auditors.

Other prior salient studies in the US have also indicated a crucial role of the Big N auditors in deterring earnings manipulation (Elder and Zhou 2002; Jordan et al. 2010; Sun and Liu 2011). Jordan et al. (2010) suggest that the manipulation of earnings is less likely to be managed with companies audited by Big N auditors while signals of manipulation were found in clients of non-Big N auditors. Elder and Zhou (2002) carried out a study to investigate the relationship between audit quality (measured by audit firm size) and earnings management in the initial public offering process (IPO). Based on a sample of IPO firms from 1996-1998, Elder and Zhou (2002) found that Big N auditors showed a lower level of accrual earnings management in the IPO process. Sun and Liu (2011) studied whether client litigation risk had an impact on the variations between Big N and non-Big N auditors. They revealed that Big N auditors show a stronger degree of effectiveness in curbing earnings management for high litigation risk clients compared with low litigation risk clients. Sun and Liu (2011) conclude that high litigation risk can drive big auditors to work more efficiently.

The majority of studies pointed out that big auditors limit earnings management, especially in the United States, where there are effective mechanisms to control auditors, but they may fail in preventing earnings management practices when the institutional setting does not encourage high-quality audits (Jeong and Rho 2004).

In this respect, Maijoor and Vanstraelen (2006) investigated whether audit quality differs in the light of the distinctions of audit environment regimes in the European context. By using data for the period 1992-2000 from listed firms in three EU countries (the UK, France, and Germany), Maijoor and Vanstraelen (2006) observed that the difference between Big N and non-Big N auditors in restraining earnings management was most notable in the UK, while approximately less or not significant in France and Germany. In a similar way, Piot and Janin (2005) analyzed French data of 255 firm-years observations over the period 1999-2001 and found evidence that the presence of a Big N auditor had no impact on the magnitude of abnormal accruals.

Several non-US studies have supported the premise that there is no difference between Big N and non-Big N audit firms in mitigating earnings management (Vander Bauwhede et al. 2003; Vander Bauwhede and Willekens 2004; Jeong and Rho 2004; Tsipouridou and Spathis 2012; Yasar 2013; Yasser and Soliman 2018).

Vander Bauwhede et al. (2003) provide evidence from the Belgian institutional environment. They tested a sample of private and public firms during the period 1991-1997 and found that audit firms, either Big N and non-Big N, were usually equally competent at catching earnings management. Another study in privately held Belgian firms conducted by Vander Bauwhede and Willekens (2004) reports findings supporting prior empirical evidence. Similarly, Tsipouridou and Spathis (2012) documented a similar conclusion in Greece.

With regard to small and developing markets, Inaam et al. (2012) found that Big N auditors are associated with lower levels of accruals earnings management in Tunisia. Likewise, Tyokoso and Tsegba (2015) found that audit firm size has a negative but insignificant impact on earnings management practices by Nigerian companies.

In Korea, where the institutional setting does not motivate auditors to provide high-quality audits, Jeong and Rho (2004) found that there is no significant difference between the discretionary accruals of firms with Big N and non-Big N auditors. They also found that this result holds true for firms that switch from non-Big N to Big N auditors and vice versa.

As indicated earlier, Jordan's economic and institutional context is characterized by highly concentrated ownership and a low proportion of quoted firms, which can cause a low demand for high-quality external audits, given the low level of agency costs involved between owners and managers (Abdullatif and Al-Khadash 2010; Niskanen et al. 2011). Further, in Jordan there is a low risk of litigation and penalties for those auditors who abuse laws (Abdullatif and Al-Khadash, 2010). Accordingly, the Jordanian business context offers a unique setting where external audit can function differently from the Anglo-Saxon and West-European countries, characterized by dispersed ownership and developed stock markets.

Previous studies on Jordan are based on data prior to entry into force of the Jordanian code of corporate governance of 2009, which contains several rules that ensure greater auditor independence and integrity (e.g. Al-khabash and Al-Thuneibat 2008; Al-Thuneibat et al. 2011; Al-Mousawi and Al-Thuneibat 2011; Idris 2012; Alzoubi 2016). Moreover, those studies' findings are mixed and inconclusive.

Hence, the association between auditor size and earnings management in Jordan is still an open question. In light of the above, this study hypothesizes the following statement:

H1: Given the institutional environment in Jordan, there is no difference between Big N auditors and non-Big N auditors in mitigating the level of earnings management among industrial companies listed on the Amman Stock Exchange (ASE).

5.2.2 **Audit fees**

Frankel et al. (2002, p.74) define audit fees as *"aggregate fees billed for professional services rendered for the audit of the annual financial statements and the reviews of the quarterly financial statements".* Prior studies have found two main arguments regarding audit fees and their relationship to earnings management behavior. First, audit fees could threaten the independence of auditors and create economic bonding between an audit firm and their clients. Thus, there would be motivations for auditors to allow earnings management (Beck et al. 1988; Magee and Tseng 1990; Eshleman and Guo 2013). Second, audit fees can reflect audit effort and, therefore, diminish both intentional and unintentional estimation

errors and improve accrual quality (Srinidhi and Gul 2006). Further, high audit fees enhance the company's investment in reputational capital, providing a deterrent for auditors to allow earnings management (Frankel et al. 2002). Hence, following this arguments, low levels of audit fees have a potential to compromise the quality of audit.

A stream of prior researchers (Antle et al. 2006; Gu and Hu 2015; Donatella et al. 2018) have found audit fees to be positively correlated with earnings management practices. Antle et al. (2006) found a significant, positive and robust impact of audit fees on abnormal accruals in both the UK and the US. They interpreted these findings according to the behavioral theories of unconscious influence or bias in the auditor-client relationship.

Gu and Hu (2015) addressed the effect of audit fees according to differences in litigation environments (Japanese litigation environment vs. the U.S. litigation environment). They found that audit fees differ depending on the characteristics of the litigation environment and, thus, audit fees are higher in environments where litigation risk in higher.

More recently, using Swedish data for the period 2011–2013, Donatella et al. (2018) document that higher audit costs/fees per se do not diminish the risk for earnings management by discretionary accruals. They referred to the possibility that earnings management increased if audit fees increased. In addition, Donatella et al. (2018) indicated that an auditor worried about the potential loss of a significant client is less likely to object to earnings management.

A further group of scholars has documented a negative association between audit fees and earnings manipulation, supporting the view that suggests audit fees reflect the efforts on the engagement thereby reducing earnings management. For instance, Srinidhi and Gul (2006) based on data from 648 Australian firms found that higher audit fees are associated with higher accrual quality, showing that audit fees exhibit the effort that auditors exert to diminish both intentional and unintentional estimation mistakes. In a similar vein, Gul et al. (2003) studied the association between discretionary accruals and audit fees, by analyzing data from 648 Australian firms. Their findings demonstrate that audit fees reflected audit effort, hence deterring earnings management.

Similarly, a study on the US audit market by Alali (2011) discovered that there is a positive and significant relationship between discretionary accruals and audit fees. More evidence from the USA is also provided by Frankel et al. (2002) and Eshleman and Guo (2013) who showed that audit fees are negatively associated with earnings management indicators**.**

Recently, Martinez and Moraes (2017) provided evidence from a developing country. They investigated the relationship between audit fees and earnings management in the Brazilian market and found that audit firms that charged less for their services tended to be more relaxed concerning earnings management practices by their clients.

However, another stream of scholars did not entirely succeed in revealing a significant relationship between audit fees and earnings management (Ashbaugh et al. 2003; Ananthanarayanan 2008). Ashbaugh et al. (2003) analyzed a sample of 3,170 USA firms during November and December 2001 and found no association between total fees and earnings management. Similarly, a study undertaken by Ananthanarayanan (2008) in New Zealand concluded that there is no correlation between audit fee and earnings management.

Together, the literature cited above provides inconsistent conclusions on the relationship between audit fees and earnings management. Indeed, some authors found a negative relation between them (e.g. Frankel et al. 2002; Srinidhi and Gul 2006; Eshleman and Guo 2013), a few authors documented a positive association (e.g. Gul et al. 2003; Antle et al. 2006; Alali 2011) and other scholars have been unable to observe any relationship (e.g. Ashbaugh et al. 2003; Ananthanarayanan 2008). Moreover, most of those studies are based on data from Anglo-Saxon countries (e.g. the UK, the US, Australia and New Zealand) and West European countries.

In Jordan, as has been mentioned earlier, the low level of agency costs involved between owners and managers causes a decline in audit fees due to lack of demand for high-quality audits (Abdullatif and Al-Khadash 2010; Niskasen et al. 2011). Consequently, audit fees in Jordan are likely significantly lower compared with contexts characterized by dispersed ownership (Hay et al. 2006; Ho and Kang 2013; Ali and Lesage 2014).

Hence, audit fees may not constitute a motivation to accomplish more audit effort to confine earnings management in Jordan. Therefore, the following hypothesis is proposed:

H2: Given the institutional environment in Jordan, audit fees are not associated with the level of earnings management among industrial companies listed on the Amman Stock Exchange (ASE).

5.3 CORPORATE GOVERNANCE MECHANISMS

5.3.1 Board of directors properties

5.3.1.1 Board Size

The size of the board of directors is one of the significant factors that could contribute to the reduction of earnings management practices. In this sense, many of the previous studies have discussed the optimal size of the board to fulfill its role in surveillance effectively (Lipton and Lorsch 1992; Jensen 1993; Yermack 1996; Rahman and Ali 2006).

Lipton and Lorsch (1992) stated that the size of the board of directors sought to be constrained to a maximum of ten directors, as a smaller board will allow managers to become better acquainted with each other and to have more fruitful talks with all directors contributing to accomplish a genuine agreement from their views. Jensen (1993) supports this argument and claims that when the board of directors surpasses seven or eight members it becomes complicated for it to carry out its tasks completely, making it easier for the executive managers to control it.

In the same line, Vafea(2000) argues that market participants perceive that smaller boards (with a minimum of five members) are more efficient in monitoring the quality of financial reporting and the information content of earnings would be higher due to the commitment of every member to their duties, regarding them as a personal obligation, and the opportunity to discuss the actual figures of the financial statements. According to Vafeas (2000), by comparison, on a larger board (14-15 members) the responsibility of monitoring management is likely to become complex, due to the

division of duties and the lack of opportunity to discuss the issues in detail.

Consistent with this argument, other scholars also suggest that the smaller a board of directors the more effective (Yermack 1996; Eisenberg et al. 1998). Yermack (1996), based on a sample of 452 large U.S. public corporations observed over the period 1984 to 1991, found a negative relationship between the firms' market value and the size of the board of directors. Similarly, Eisenberg et al. (1998) using a sample of 879 Finnish firms (785 healthy firms and 94 bankrupt firms) over the period 1992-1994 discovered that there is a negative significant correlation between board size and the value of small and mid-size firms. As a result, they suggest that the ideal board size varies according to firm size.

In addition, some researchers find that smaller board size decreases the likelihood of financial statement fraud and lower incidence of restatements (Beasley 1996; Abbott et al. 2004).

Regarding earnings management studies, prior scholars have tested the relation between board size and earnings management behavior. Xie et al. (2003), based on a sample of 282 US firms, found that board size was negatively correlated with earnings management behavior. In the same context, by using the US board data from 1996, Chtourou et al. (2001) documented a lesser likelihood of income-increasing accruals when firms have a board with a larger size. In addition, they suggest that bigger boards have an enhanced decision-making capacity by representing shareholders' interests.

With regard to developing markets, Bradbury et al. (2006), employing a data of 139 firms from Singapore and 113 firms from Malaysia, found that board size was linked to lower abnormal working capital accruals.

On the contrary, another group of authors found a positive connection between board size and earnings management. Rahman and Ali (2006) analyzed the relationship between earnings management and board size for a sample of 97 Malaysian companies over the years 2002-2003. They found that the size of the board of directors was positively associated with earnings management. In Hong Kong, a country characterized by predominance of family-owned firms, Ching et al. (2006) studied the use of discretionary current accruals by firms that make seasoned equity offers (SEOs).

They discovered that SEO firms that have a bigger board size own a higher degree of earnings management around SEOs.

Finally, some scholars, such as Jaggi et al. (2009), did not entirely succeed in uncovering a significant relationship between the board size and earnings management.

5.3.1.2 Board Independence

Non-executive directors have a pivotal role in monitoring top management. Prior studies argue that the existence of non-executive directors in the board leads to more reliable financial statements (Beasley 1996; Brennan and McDermott 2004).

One stream of prior research has found a negative correlation between outside directors on the board and earnings management. For example, Beasley (1996) tested the relation between the board of director composition and the likelihood of financial statement fraud in a sample of 150 USA publicly traded firms (75 fraud and 75 no-fraud firms) over the period 1980-1991. She indicates that non-fraud firms are less inclined to fall into the mistakes of fraudulent financial reporting, as they have a larger proportion of outside members on the boards as compared with fraudulent firms.

Studies based on UK data have generally found that an independent board helps to deter earnings management practices (Peasnell et al. 2000a; Peasnell et al. 2005; Osma 2008). Peasnell et al. (2000a) studied the association between the board composition and earnings management and discovered that the firms with a higher ratio of independent board members showed a lower occurrence of income-increasing accruals to avoid earnings losses or earnings decreases. In a later study, Peasnell et al. (2005) found that firms with a high proportion of outside board members were negatively related to income-increasing abnormal accruals.

In the Canadian context, Niu (2006) based on a sample of 519 firm-year observations covering the period from 2001 to 2004, observed that the level of abnormal accruals was negatively associated with the level of independence of board composition. In a recent study, Chen et al. (2015b) tested whether recent regulatory improvements requiring majority board independence are effective in lessening the degree of earnings management. They used a sample of 1,587 firms with board data which was divided into two groups (722

are non-compliance firms and 865 are compliance firms) for the periods 2000-2001 (pre-regulation period) and 2005-2006 (post-regulation period). Their results indicated that the non-compliance firms did not show a critical diminishment in earnings management from the pre-regulation period to the post-regulation period compared to the compliance firms.

A further group of evidence comes from environments characterized by concentrated ownership. In Hong Kong, Jaggi et al. (2009) explored the association between board independence and earnings management using a sample comprised of 770 firm-year observations over the period 1998 to 2000. They reported that expanding the proportion of independent directors to strengthen board monitoring is not likely to be effective in family-controlled firms. In contrast, Chi et al. (2015) found that the amount of independent managers interacted with the family condition of firms to lessen earnings management in Taiwan

Further, Ianniello (2015) analyzed a sample of 588 firms listed on the Italian stock exchange during the years 2007–2010 and found that there is no impact of the board of directors' independence on earnings management. In a similar way, Osma (2008) demonstrated that independent boards are effective at identifying and constraining earnings managements represented by R&D cuts.

Another stream of authors discovered board independence to be insignificant or of limited significance from the perspective of reducing earnings management (Park and Shin 2004; Bradbury et al. 2006; Osma and Noguer 2007). For example, Park and Shin (2004), using data from 539 Canadian firms corresponding to the period 1991-1997, detected that a high ratio of outside board members are not highly supportive to the board in monitoring a company's management of earnings, while external directors from financial intermediaries and active institutional shareholders do decrease earnings management.

With regard to the relation between board independence and earnings management in developing countries, Bradbury et al. (2006) used data from 139 Singaporean firms and 113 Malaysian firms in order to analyze the relationship between board independence and accounting quality (measured by abnormal accruals). They did not

entirely succeed in uncovering evidence between board independence and abnormal accruals.

5.3.1.3 Board of directors' expertise

Board members' experience is not less important than other characteristics (e. g. independence and size) to ensure the supervisory role of the board is effectively discharged.

Competency and knowledge of board members may be obtained through internal or external training (Bédard and Chi 1993; Chtourou et al. 2001), making board members more able to oversee the firm's financial reporting process efficiently (Chtourou et al. 2001).

Empirical evidence from the US reveals the experience of board members to be negatively associated with earnings management practices. Chtourou et al. (2001) used a sample of 300 US firms made up of two groups, one with relatively high and one with relatively low levels of discretionary accruals in the year 1996, to investigate whether board expertise was linked with the income-increasing accruals. They found that board members with experience were more able to successfully curb earnings management.

Similarly, Xie et al. (2003) show that the board members' financial experience is a critical factor in compelling the propensity of directors to engage in earnings management. Agrawal and Chadha (2005) empirically study whether financial expertise for the board members was related to the probability of a company restating its earnings. They analyzed a sample of 159 U.S. public companies that restated their earnings in the years 2000 or 2001 and observed that the probability of restatement was significantly low in companies whose boards of directors were financially educated. In the same line, Carcello et al. (2002) reported that the board of directors' members who have more experience are more likely to request high-quality audit work.

In another context, employing data from 539 Canadian firms corresponding to the period 1991-1997, Park and Shin (2004) explored the effect of the board composition on the practice of earnings management. They used discretionary current accruals as a proxy for earnings management estimated by the modified Jones model. Park and Shin (2004) discovered that outside directors from

financial intermediaries can reduce earnings management when the unmanaged earnings are under the target.

However, other scholars did not entirely succeed in uncovering a significant relationship between the board of directors' expertise and earnings management. For instance, Jiang et al. (2013) tested whether Chinese CEOs with financial experience engage in accrual-based earnings management. They used the absolute discretionary accruals, measured by the Jones (1991) model. OLS regression results indicated no evidence that the CEO's financial experience may influence accrual-based earnings management.

5.3.1.4 Board Meetings

Board meetings are also predicted to affect the integrity of financial reporting as it enables managers to discharge their tasks as per shareholders' interests. Further, active boards allow for detecting problems immediately and reduce opportunities for managers to manipulate earnings (Xie et al. 2003).

Previously, several authors claimed that board meetings frequency is an important dimension of the board's work (Jensen 1993; Conger et al. 1998; Vafeas 1999). In this sense, Conger et al. (1998) considered that the board needs to organize the frequency of meetings as a group to fulfill its role effectively. Also, Jensen (1993) signaled the organization of meetings for board members with executive directors and CEO succession candidates to increase other top-level executives' understanding of the thinking of the board and the board process.

Prior research found board meetings to be negatively correlated with fraud. Chen et al. (2006), based on data from 169 Chinese firms, examined the relation between the board of directors' characteristics and corporate financial fraud. They found that firms with frequent board meetings were less inclined to commit fraud. Further, Vafeas (1999) studied the relationship between the meeting frequency of the board and the firm value for 307 US firms over 1990-1994. He found that operating performance improved following years of abnormal board activity.

Carcello et al. (2002) documented that the diligent board of directors is more inclined to demand high-quality audits, because they seek to protect their reputation capital, to avoid legal liability, and

promote the shareholders' interests. Xie et al. (2003) indicated that board meetings play a crucial role in monitoring the integrity of financial reporting. Their findings discovered a negative relation between the number of board meetings and earnings management. Xie et al. (2003) contend that boards that seldom meet may just have time for signing management plans and listening to presentations and, in this way, time to concentrate on issues such as earnings management will be insufficient.

However, Ebrahim (2007) detected no relationship between board activity and earnings management. Similarly, in a developing country, Rahman and Ali (2006) also failed to discover a relationship between the two. They tested the relationship between earnings management and board meetings for a sample of 97 Malaysian companies over the period 2002-2003 and found that meetings of board of directors were not significantly associated with earnings management.

5.3.1.5 CEO duality

Researchers suggest that CEO duality (dual leadership structure of CEO and chairman positions on the board) has a significant impact on the role of the board of directors and its functions (Jensen 1993).

In this sense, many scholars hold the view that CEO duality may provide several advantages for the firm such as contributing to lower monitoring costs (Yasser et al. 2011). It can also improve financial reporting quality as a single head can provide a precise direction (Chang and Sun 2009).

However, another stream of scholars supports splitting the CEO and the chairman position. For instance, Brickley et al. (1997) reported that the split board leadership structure can diminish costs (rather than duality). Goel and Thakor (2008) argue that CEO duality affects individual properties and managers behaviors, such as overconfidence, influencing both their information provision motivations as well as their investment choices. Furthermore, the CEO duality enables a single leader to possess the power and authority, which, in turn, diminishes the board's effectiveness in overseeing managerial judgment and actions (Chen and Liu 2010).

Several empirical studies provide evidence that firms that engage in earnings management may not often split board leadership

structure. For instance, Dechow et al. (1996) explored the motives for and consequences of earnings manipulation for a sample of 92 US firms targeted by the SEC for allegedly overstating earnings throughout the years 1982 to 1992. Their empirical analysis indicates that firms manipulating earnings are more likely to have a CEO who simultaneously acts as chairman of the board and have a CEO who is also the firm's founder.

In another setting, Chi et al. (2015) examined the relationship between CEO duality and earnings management in Taiwan, a country characterized by predominance of family firms. They analyzed data from a sample of 379 listed high-technology companies over seven years, obtaining evidence that CEO duality interacted with family firms to boost earnings management.

In contrast, Lo et al. (2010) examined whether good governance structures help restrain management's opportunistic behaviors estimated by transfer-pricing manipulations. They used a sample of 266 companies listed on China's stock exchange in 2004 and found that firms that separate the duties of CEO and chairman of the board have a lesser tendency to engage in management's opportunistic behaviors income through transfer-pricing manipulations.

Some Anglo Saxon researchers entirely failed to reveal a significant relationship between CEO duality and earnings management. In a sample of 282 US firms, Xie et al. (2003) found that CEO duality was unrelated to discretionary current accruals. Similarly, Ghosh et al. (2010) based on an exhaustive sample of 9,290 observations from US listed firms during the period 1998- 2005 found that board structure attributes, such as the separation of CEO/Chair positions, are mostly unrelated to earnings management. In the Australian context, Davidson et al. (2005) indicated that there is no evidence that CEO duality is linked to a reduction in the level of discretionary accruals.

In a study conducted in a developing country, Malaysia, Bradbury et al. (2006) analyzed the relation between CEO duality and accounting quality (measured by abnormal accruals). They found no relation between the CEO duality and abnormal accruals. Finally, more recently, Yasser and Mamun (2015) used data from three different countries (Australia, Malaysia, and Pakistan) to study the relationship between board leadership structure, firm financial

performance, and financial reporting quality over the period 2011-2013. Their results indicate that the board leadership structure is not correlated with the financial reporting quality.

5.3.1.6 Political connection

According to Agrawal and Knoeber (2001), directors on boards that have political connections are more likely to accomplish more, because they can assist in the political dealings of their companies by utilizing their expertise to foresee or to influence government activities. Further, the presence of politicians on the board will give advantages to their firms by helping them to properly understand the public policy process and providing legitimacy by linking their reputation and status to the firm, which will reflect on its performance in the market (Hillman 2005).

Prior research finds that politically connected directors play an imperative role in mitigating earnings management. For instance, Ball et al. (2003) analyzed a sample comprising 2726 annual earnings announcements during 1984–1996 in four Asian countries (Hong Kong, Malaysia, Singapore and Thailand) and noted that financial reporting practice is significantly influenced by political factors, particularly by the presence of extensive "crony capitalism"[4]. Their conclusions support the hypothesis that reporting quality eventually is determined by the underlying economic and political factors impacting managers' and auditors' incentives.

Another attempt to explain the relationship between board political connection and earnings management is offered by Guedhami et al. (2014), who investigate the relation between politically connected firms and financial reporting quality by examining the auditor choice. They used a sample consisting of 1,371 politically connected firms from 28 countries and found that public firms with political connections are more likely to choose a Big N auditor. Guedhami et al. (2014) confirm the intuition that insiders in these firms are eager to enhance accounting transparency to persuade outside investors to refrain from exploiting their connections to divert corporate resources.

[4] The term "crony capitalism" is frequently used to describe close connections between government or politicians and corporations in East Asia (Ball et al. 2003).

However, other scholars found that reporting quality with politically connected directors is lower than non-politically connected firms. Chaney et al. (2011) explored whether earnings quality differs systematically with political connections in a sample of 19 countries and politically connected firms by using data from over 4,500 firms. Chaney et al. (2011) documented that the quality of earnings reported by politically connected firms is significantly lower than that of similar non-connected companies. Similarly, Braam et al. (2015), based on a sample from 30 countries during the years 1997–2001, obtained evidence that politically-connected firms are more likely to use real earnings management than accrual-based earnings management, due to its higher potential to conceal political favors.

Some more recent articles conducted by Chi et al. (2016) and Hope et al. (2017) addressed the effect of politically connected directors on earnings quality in the Chinese market. Using a sample from 11,116 firm year observations spanning the period 2000-2010, Chi et al. (2016) found evidence that firms with politically connected CEOs engage in earnings management practices. Similarly, Hope et al. (2017) documented that the accounting quality of firms with politically connected directors increased after those directors leave.

A further group of empirical studies has been unable to find any correlation between politically connected directors and earnings management. Sejati (2009) studied the association between the quality of reported earnings and the firms' political connections in Malaysia during the years 1987-2007. They found that political connections have no relation with accruals quality. In the context of a developing country, Ben Rejeb Attia et al. (2016), based on a sample of Tunisian firms, observed that the executives' political connection is not directly linked to earnings management.

This review has shown that literature has been focused on specific properties of the board of directors, rather than their combined properties, and the previous research findings have been inconsistent and contradictory.

Earlier Jordanian research examining the relationship between board of directors and earnings management has been undertaken by Abed et al. (2012) and Abbadi et al. (2016). Abed et al. (2012) studied the relationship between earnings management and characteristics of board of directors (independence members, board

size, the CEO duality) during the period 2006-2009. By using data from the years 2009 to 2013, Abbadi et al. (2016) examined the impact of several board characteristics (board independence, board size and meeting frequency) on earnings management. However, the two aforementioned studies did not address financial expertise of the board of directors.

Consequently, this thesis analyzes jointly six properties of the board of directors and earnings management in Jordan with the aim to provide a more comprehensive understanding of the nature of the role of the board of directors in a developing country. In terms of political connections, to date, no previous attempt has been made to explore the relationship between political connections and earnings management in Jordan. In this sense, this work will generate fresh insight into understanding the link between the board's political connections and earnings management.

5.3.2 **Audit Committee properties**

5.3.2.1 Audit Committee Size

The audit committee must contain a suitable number of members in order to meet the regulatory role in protecting the interests of shareholders. The idea is to have a committee not so big that it becomes impractical, but big enough to guarantee efficient monitoring (Bedard et al. 2004).

The Cadbury Report (1992) and the Blue Ribbon Committee (BRC 1999) suggested that audit committees must be composed of no less than three members as an ideal size to ensure the strength and diversity of the needed expertise for effective supervision.

Prior studies indicate that the size of the audit committee is a significant attribute that may have an impact on earnings management. Several authors have found a negative relationship between the audit committee size and earnings management (Yang and Krishnan 2005; Lin et al. 2009; Ghosh et al. 2010; Mishra and Malhotra 2016; Juhmani 2017). Yang and Krishnan (2005) search whether audit committees size curbs managers' capacity to engage in quarterly earnings management. Yang and Krishnan (2005) analyzed 896 US firm-year observations corresponding to the period 1996-

2000 and found that a larger audit committee size is negatively related with quarterly earnings management. Similarly, Ghosh et al. (2010) based on 9,290 observations from US listed firms during the period 1998-2005, found that firms with larger audit committees are less inclined to earnings management. Their findings indicate that larger audit committees are more proficient in controlling the soundness of financial reporting because knowledge is increased by including additional members.

Similar findings have also been found by scholars in developing countries. For instance, Mishra and Malhotra (2016), based on a sample of 130 Indian companies listed on the Bombay Stock Exchange (BSE) during the period 2013-2015, found that a large committee size decreases the probability of having high discretionary accruals. Likewise, more recent work by Juhmani (2017) shows that, in Bahraini corporations, audit committee size is negatively linked with discretionary accruals as a proxy for earnings management.

However, another strand of literature fails to uncover a significant relationship between the size of the audit committee and earnings management (Xie et al. 2003; Bedard et al. 2004; Baxter and Cotter 2009; Soliman and Ragab 2014; Albersmann and Hohenfels 2017). In the USA, (Bedard et al. 2004) and (Xie et al. 2003) observed that the size of audit committees is not significantly related to aggressive earnings management. Also, in the Australian context, Baxter and Cotter (2009) investigated whether the audit committee size is associated with earnings quality for a sample of 309 companies during 2001, preceding the introduction of compulsory audit committee requirements. Their outcomes show no association between audit committee size and earnings quality. A similar finding was obtained in a recent study on the Germany market conducted by Albersmann and Hohenfels (2017). Based on a sample of 1,462 firm-year observations from 401 firms listed on the Frankfurt Stock Exchange, Albersmann and Hohenfels (2017) found that the audit committee size was not related to earnings management. In a similar vein, Chen and Zhou (2007) discovered that the firms with larger audit committees are more worried about their auditors' notorieties and have a tendency to hire Big N auditors.

With regard to the empirical evidence in developing countries, Soliman and Ragab (2014) explored the connection between the audit

committee size and earnings management practices in 50 more active Egyptian companies registered on the Egyptian Stock Exchange over the years 2007 to 2010 and found no significant relationship between audit committees size and the level of discretionary accruals.

5.3.2.2 Audit Committee Independence

The independent audit committee plays a critical role in providing fair judgment and appraisal as well as having the capacity to control management efficiently. The earlier recommendations of the American Law Institute (1994) and the SOX Act (2002) underscore the importance of the independence of audit committees. In this respect, the American Law Institute, (1994) recommended that the audit committee "*should be composed exclusively of directors who are neither employed by the corporation nor were employed within the two preceding years, including at least a majority of members who have no significant relationship with the corporation's senior executives"*. In a similar vein, Section 301 of SOX requires that all members of the audit committee be independent. Moreover, corporate governance codes across the world (both in developed and developing countries) include this issue in their legislation.

In spite of these guidelines, existing empirical evidence uncovered inconsistencies regarding the effectiveness of the audit committee independence in reducing earnings management practices. Thus, using a sample of 282 US firms, Xie et al. (2003) revealed that audit committees with independent members are more inclined to move away from earnings management practices, whereas Davidson et al. (2005), based on data from 434 listed Australian firms in 2000, detected that having an independent audit committee was significantly and negatively correlated with the levels of earnings management.

Klein (2002b) considers that, in order to be able to deter earnings management, the crucial threshold of independent directors on the audit committee should be 50 percent instead of 100 percent. This contrasts with Bedard et al. (2004) opinion, who, considering that they found no important influence for a committee composed of 50-99 percent non-executive directors, claim that an audit committee comprised solely of non-related executives is adversely related with earnings management.

In the same line, Lin et al. (2009) investigated the top 184 Chinese firms listed on the Hong Kong Stock Exchange during the period 2004-2008, seeking to determine if audit committee independence is able to reduce earnings management practices. Their outcomes show that the independence of the audit committee's members has a negative correlation with earnings management. In Egypt, Soliman and Ragab (2014) document the same conclusion.

However, other researchers entirely fail to reveal a significant relationship between audit committee independence and earnings management (Baxter and Cotter 2009; Mishra and Malhotra 2016; Juhmani 2017). Baxter and Cotter (2009) explored whether audit committees are linked with improved earnings quality for a sample of Australian listed companies before the introduction of mandatory audit committee requirements in 2003 and found that audit committee independence was not associated with earnings quality. Similar findings were obtained in developing markets by Mishra and Malhotra (2016), who observed no significant influence of audit committee independence on the level of earnings management in Indian companies, and Juhmani (2017), who analyzed a sample of 95 firm-year observations from companies listed on the Bahrain Bourse (BB) during the period from 2012 to 2014 and whose results do not show a significant relationship between audit committee independence and earnings management.

5.3.2.3 Audit Committee Expertise

Adequate competence in accounting, finance, or auditing held by audit committees' members has a significant role in contributing to a powerful oversight on the management. Therefore, the experience of the members of the audit committee has been viewed as another crucial attribute that has been widely investigated by prior research.

Prior authors, such as Felo et al. (2003) and Krishnan and Visvanathan (2008), indicate that the qualified members of audit committee with financial/accounting expertise are more able to ensure the credibility of financial reporting. Krishnan and Visvanathan (2008) tested the relation between the audit committee's financial expertise and financial reporting quality, measured by the level of accounting conservatism, from a sample of 929 US firms. They detected that the audit committees with accounting financial experts can perform their monitoring function and promote conservative

accounting more efficiently than the audit committees with non-accounting or non-financial expertise.

Also, Felo et al. (2003) reported that the financial/accounting expertise of the audit committee's members is significantly and positively related to financial reporting quality. They noted that if the audit committee possesses more than one expert in accounting or financial management it may be useful because it could probably assist firms in decreasing their cost of capital.

Krishnan and Visvanathan (2008) classify the audit committees' members expertise into three categories, namely accounting financial experts (managers with experience as a certified public accountant, auditor or CFO, and controller or chief accounting officer), non-accounting financial experts (managers with experience as a for-profit corporation's firm's CEO or president), and non-financial experts (managers who are neither accounting nor non-accounting financial experts).

Regarding the first category, some studies have shown the benefits of financial experience for members of audit committees. For instance, based on a survey of chief internal auditors, Raghunandan et al. (2001) concluded that those audit committees with at least one member who has experience in accounting and auditing are more likely to relate with the internal auditing function. In this sense, DeZoort and Salterio (2001) argued that the shortage of financial expertise of the audit committee leads to disputes between management and the auditor.

Based on empirical evidence from the US, a large number of scholars have documented that the audit committee's financial expertise is adversely related to earnings management behavior (Xie et al. 2003; Bedard et al. 2004; Vafeas 2005; Chang and Sun 2009; Badolato et al. 2014). Badolato et al. (2014) studied the joint effects of audit committee financial expertise on earnings management by analyzing data from 29,073 firm-year observations during the period 2001-2008. They discovered that audit committees with financial expertise were linked with lower levels of earnings management. Similarly, in the German context, Albersmann and Hohenfels (2017) found that the participation of financial experts in audit committees was correlated with less earnings management.

Nevertheless, some investigators, like Ghosh et al. (2010), failed to detect the relationship between the audit committee's financial expertise and the magnitude of earnings management. Moreover, Van Der Zahn and Tower (2004) and Mishra and Malhotra (2016) have documented the same findings in the context of developing countries such as Singapore and India, respectively.

5.3.2.4 Audit Committee Meetings

According to the National Commission on Fraudulent Financial Reporting (NCFFR 1987), an audit committee endeavoring to complete its functions of control must keep up a consistent level of activity. In this sense, audit committees' meetings are an essential indicator of the diligence of audit committees in carrying out their responsibilities.

Previous research has found the activity of the audit committee contributes to avoid fraudulent financial reporting and earnings management behavior. For example, McMullen and Raghunandan (1996) documented that firms that have fewer meetings are more likely to face SEC enforcement actions or restating their quarterly reports. In a similar vein, Beasley et al. (2000) stressed that audit committees with fewer meetings are more likely to be involved in fraudulent financial reporting. Furthermore, Abbott et al. (2004) examined 88 restatements of annual results in the period 1991-1999 and reported that firms with audit committees that meet frequently are less likely to experience restatements.

Empirical evidence from the US found audit committee meetings to be negatively related with lower levels of earnings management (Xie et al. 2003; Vafeas 2005; Ebrahim 2007). By using data from 252 US firms during the period 1994-2000, Vafeas (2005) researched the relation between audit committees meetings and financial reporting quality. He observed that audit committee meetings frequency is associated with higher earnings quality. Xie et al. (2003) have also concluded that audit committee meeting frequency is linked with lessened levels of discretionary current accruals. In a recent paper conducted by Albersmann and Hohenfels (2017), they argue that meeting frequency is useful for deterring earnings management. In particular, Albersmann and Hohenfels (2017) found that 4–5

meetings per year represent a sufficient number of meetings to reduce the degree of earnings management.

Evidence from developing economies uncovers a negative relation between audit committee meetings and earnings management (Soliman and Ragab 2014; Mishra and Malhotra 2016).

Nevertheless, other researchers did not entirely succeed in revealing a significant relationship between the audit committee meeting and earnings management (Bedard et al. 2004; Yang and Krishnan 2005; Baxter and Cotter 2009; Lin et al. 2009; Juhmani 2017). For example, by employing a sample of 184 Chinese firms during the period 2004-2008, Lin et al. (2009) discovered that there is no significant correlation between audit committee activity and earnings management. Furthermore, in listed Bahraini firms, Juhmani (2017) obtained the same results.

With regard to Jordan, to the best of our knowledge, the only two studies in Jordan that examined the impact of the audit committee's attributes on earnings management were conducted by Hamdan et al. (2013) and Al-Sartawi et al. (2013). However, both studies are based on data prior to the entry into force of the Jordanian corporate governance code of 2009, which contains several rules that ensure strengthening the role of the audit commitee.

Moreover, examining the audit committee in the Jordanian context could provide valuable information to regulators and standard standards setters, both in Jordan and other countries with a similar institutional setting, in order to prevent earnings management practices.

5.3.3 **Hypotheses Development**

Overall, a large and growing body of literature has investigated the impact of the audit committee's attributes on earnings management. However, it is worth pointing out that the findings of such studies are mixed.

A tentative explanation of the prior research's mixed findings regarding the effectiveness of corporate governance mechanisms (the board of directors' attributes and the audit committee's attributes) in restricting earnings management behavior could lie in country-level factors. Indeed, previous studies have noted that differences in

cultural, economic, institutional and legal factors between countries can affect earnings quality (Leuz et al. 2003; Dechow et al., 2010; Gaio, 2010) and the role of corporate governance mechanisms in restraining earnings management practices (Berkowitz et al., 2003).

With regard to developing countries, evidence indicates that the corporate governance tools in such countries are not often an efficient internal monitoring mechanism and that, in many cases, their adoption is mainly driven by international demands rather than a sincere spirit of good corporate governance (Peng 2004; Young et al. 2008; Goh and Rasli 2014).

As explained earlier, Jordan is a developing country and a code law country, in which family firms constitute the prevalent style of business organization and where businesses' structure ownership is concentrated and closely tied to a small group of people, accordingly, the separation of management and ownership is reduced. Moreover, the Jordanian capital market is relatively small and inefficient and personal relationships play an important role in business (Abdullatif and Al-Khadash, 2010).

Thus, in order to shed light on the extent to which corporate governance mechanisms are able to restrict earnings management practices in a developing country, Jordan, whose cultural, economic and institutional context is very different from most previously analyzed countries' context, the following hypotheses are stated regarding the role of the board of directors' attributes and the audit committee's attributes in restricting earnings management:

H3: There is a significant negative association between board size and the level of earnings management among listed industrial companies in Jordan.

H4: There is a significant negative association between board independence and the level of earnings management among listed industrial companies in Jordan.

H5: There is a significant negative association between board financial expertise and the level of earnings management among listed industrial companies in Jordan.

H6: There is a significant negative association between board meetings and the level of earnings management among listed industrial companies in Jordan.

H7: There is a significant negative association between CEO duality and the level of earnings management among listed industrial companies in Jordan.

H8: There is a significant negative association between boards with a political connection and the level of earnings management among listed industrial companies in Jordan.

H9: There is a significant negative association between audit committee size and the level of earnings management among listed industrial companies in Jordan.

H10: There is a significant negative association between audit committee independence and the level of earnings management among listed industrial companies in Jordan.

H11: There is a significant negative association between the audit committee's financial expertise and the level of earnings management among listed industrial companies in Jordan.

H12: There is a significant negative association between audit committee meetings and the level of earnings management among listed industrial companies in Jordan.

5.4 SUMMARY

This chapter has reviewed various streams of literature relevant to this research. The chapter starts by presenting different evidence relating to the relation between audit quality attributes and earnings management. The second section outlined the findings of the studies that investigated the association between the two corporate governance mechanisms (the board of directors and the audit committee) and earnings management, focusing on six key properties of the board of directors and four attributes of the audit committee. In each section, specific gaps in the prior articles were highlighted. This chapter then ends with building the research hypotheses.

Table 5.1 exhibits, in chronological order, a summary of the main selected literature reviewed in this chapter on the relationship between audit quality, board of directors, audit committee and earnings management.

In the chapter that follows, we will discuss the research methodology employed to test the hypotheses, detailing the sample selection procedures and data sources.

Table 5.1 Summary of main selected literature on the relationship between corporate governance mechanisms and earnings management (chronological order)

Part 1: Relationship between audit quality attributes and earnings management

No	Author(s) and Year	Sample and period of study	Location	Independent Variable(s) Corporate governance mechanisms	Dependent Variable(s) Earnings management proxy	Main findings
1	Becker et al. (1998)	12,576 firm-year observations (1989–1992)	USA	Auditor size.	Discretionary accruals estimated using a cross-sectional version of the Jones (1991) model	Firms with non-Big N auditors report discretionary accruals that are significantly higher than the discretionary accruals of firms with Big N auditors.
2	Frankel et al. (2002)	3,074 firms (February 5th, 2001 and June 15th, 2001)	USA	Audit fees.	Discretionary accruals measured by the Jones (1991) model	Audit fees are negatively associated with the earnings management indicator (small earnings surprises and small earnings increases).
3	Donatella et al. (2018)	Swedish municipalities (2011–2013)	Sweden	Auditor size and audit fees.	A set of specific accruals (a) provisions except for pension obligations after 1998, (b) redemption of pension obligations before 1998 and (c) complete and partial impairments of property, plant, equipment and financial assets consisting of shares in local government corporations (PRI).	There was a difference in audit quality depending to which audit firm was engaged. They also found that higher audit fees per se do not diminish the risk for earnings management by discretionary accruals and that an auditor worried about the potential loss of a significant client is less likely to object to earnings management.
4	Alali (2011)	100,876 firm-year observations (2000-2006)	USA	Audit fees.	Discretionary accruals measured by the modified Jones (1991) model (Dechow et al., 1995)	Positive and significant association between discretionary accruals and audit fees.
5	Tsipouridou and Spathis (2012)	978 firm-year observations (2005-2009.	Greece	Auditor size.	Discretionary accruals, DACFO and DAROA, measured by two alternative models: the cross-sectional Modified Jones model with CFO (Larcker & Richardson, 2004), and the cross-sectional Modified Jones model with prior year ROA (Kothari et al., 2005).	Auditors, either Big N or non-Big N, have weak incentives to restrict earnings management practices

Part 2: Relationship between board of directors and audit committee and earnings management: chronological order.

No	Author(s) and Year	Sample and period of study	Location	Independent Variable(s) Corporate governance mechanisms	Dependent Variable(s) Earnings management proxy	Main findings
6	Chtourou et al. (2001)	300 firms in the year 1996.	USA	**Board**: size, independence expertise, the presence of multiple directorships, director's tenure and CEO duality. **AC:** size, expertise, meeting frequency, independence External auditor size (Big N).	Discretionary accruals estimated using a cross-sectional version of the Jones (1991) model	Firms with boards of directors with a larger portion of independent members in the board and meeting frequency of at least twice a year are negatively linked with income increasing earnings management, whereas income increasing earnings management decreases with the board members' financial expertise. A board with a big size and experience is less engage in income-decreasing accruals. Big N auditors are not associated with earnings management.
7	Xie at al (2003)	282 firms-years listed on the S&P 500 for 1992, 1994 and 1996	USA	**Board:** size meetings, duality of roles, expertise and independence **AC:** size, independence expertise and meetings	Current discretionary accruals computed following the Jones and Teoh et al. (1998) model	Boards of directors and audit committee with independent members, with members with corporate or financial backgrounds and who have frequent meetings are more inclined to move away from earnings management practices. They do not find a relationship between the size of the audit committee and earnings management.
8	Bedard et al. (2004)	300 firms in 1996.	USA	**AC:** size, independence expertise and meetings.	Discretionary accruals estimated by the modified Jones model (Dechow et al., 1995).	Audit committees that include members with a financial and corporate experience, and audit committees with independent members are less likely to engage in earnings management. However, the size of audit committees and the frequency of meetings are not linked with earnings management.

No	Author(s) and Year	Sample and period of study	Location	Independent Variable(s) Corporate governance mechanisms	Dependent Variable(s) Earnings management proxy	Main findings
9	Davidson *et al.*(2005)	434 listed Australian firms (2000)	Australia	**Board:** composition and CEO duality. **AC:** size, composition and meetings External auditor size	Discretionary accruals measured by the modified Jones model (Dechow et al., 1995) and small profits or small changes in earnings (Holland and Ramsay, 2003).	Firms with a large proportion of non-executive directors on the board and the audit committee are significantly related with a lower probability of earnings management. However, there is no evidence that audit committee size, audit committee meeting frequency, CEO duality and use of a Big N auditor are linked to a diminution in the level of discretionary accruals.
10	Abdul Rahman and Ali (2006)	97 top companies listed on the Main Board of Bursa Malaysia (2002-2003)	Malaysia	**Board:** size, independence expertise, CEO duality and meetings **AC:** size, independence experience, meetings and concentrated ownership.	Abnormal working capital accruals measured by using the Modified Jones model (Dechow et al., 1995)	A positive relationship between board size and earnings management, In contrast, there is no association between earnings management and the other corporate governance characteristics analyzed in the study.
11	Niu (2006)	519 firm-year observations from companies listed on the S&P/TSX composite index (from 1st September 2002 to 2005.	Canada	Board composition, management shareholding, and shareholders' rights	The quality of earnings is measured in two ways: the earnings management and earnings informativeness using the Kothari et al. (2005), and the Larcker and Richardson (2004) models.	Negative association between discretionary accruals and board independence, the extent of alignment of management compensation with interests of shareholders and the strength of shareholder rights.
12	Osma (2008)	3,438 firm-years from 29 different industries (1990-2002)	UK	Board Independence	Research and development (R&D) expenses manipulation.	Independent boards are effective in capturing and constraining earnings management practices represented by R&D cuts.
13	Jaggi et al. (2009)	770 firm-year observations (1998-2000)	Hong Kong	Board independence	Discretionary accruals measured by Kothari *et al.* (2005) and Francis *et al.* (2005).	A large proportion of independent boards is connected with more powerful monitoring to constrain earnings management. This is possible only in nonfamily-controlled firms, which suggests that an increase in the proportion of independent directors to strengthen board monitoring is unlikely to be effective in family-controlled firms.

No	Author(s) and Year	Sample and period of study	Location	Independent Variable(s) Corporate governance mechanisms	Dependent Variable(s) Earnings management proxy	Main findings
14	Lin et al. 2009	184 firms listed on the HKEX (2004-2008)	China	**AC:** size, expertise, independence and meetings	Abnormal accruals estimated using a Cross-sectional basis of the modified Jones model (Dechow et al., 1995).	There is a negative association between independence, expertise and size of audit committees with earnings management, while there is no significant association between audit committees' activity (meetings) and earnings management.
15	Baxter and Cotter (2009)	309 companies during 2001	Australia	**AC:** size expertise, independence and meetings	Discretionary accruals measure by modified Jones model, and Dechow and Dichev model (2002).	There is a relationship between audit committee members with accounting expertise and the quality of earnings, while other audit committee's properties are not related with earnings quality.
16	Chaney et al. (2011)	4,954 firms (2001–2005)	Multi-sample of 19 countries	Politically connected board members	Discretionary accruals measured by a performance-adjusted current accruals measure (REDCA) based on the method used in Ashbaugh et al. (2003).	The quality of earnings reported by politically connected firms is significantly poorer than that of similar non-connected companies.
17	Badolato et al. (2014)	29,073 firm-year observations (2001-2008)	USA	**AC:** financial expertise.	Abnormal accruals calculated using Modified Jones model with an intercept (Kothari et al., 2005).	A low level of earnings management is related to audit committees that have both financial expertise and high relative status.
18	Soliman and Ragab (2014)	50 most active companies (2007-2010)	Egypt	**AC:** size, expertise, independence and meetings Audit quality (Big-N audit firm)	Discretionary accruals measured by the modified Jones model (Dechow et al., 1995)	A negative relation between the independence and experience of the members of audit committees; audit committee meetings; and audit quality with earnings management. However, there is no significant connection between audit committees size and the discretionary accruals.
19	Ianniello (2015)	588 listed firms during (2007–2010)	Italy	Board independence	Abnormal working capital accruals measured by DeFond and Park (2001) model.	There is no influence of board of directors' independence on earnings management.

No	Author(s) and Year	Sample and period of study	Location	Independent Variable(s) Corporate governance mechanisms	Dependent Variable(s) Earnings management proxy	Main findings
20	Chi et al. (2015)	2,492 firm-year observations, representing 378 unique firms (2000-2005	Taiwan	Board independence and CEO duality.	Abnormal accruals estimated using a Cross-sectional basis of the modified Jones model (Dechow et al., 1995).	The percentage of independent directors is associated with family firms to lessen the earnings management, while CEO duality interacted with family firms to boost the earnings management.
21	Braam et al. (2015)	457 connected firms and 5,036 non-connected firms (1997–2001)	Multi-sample of 30 countries	Politically connected boards	Discretionary accruals computed using the modified Jones model (Dechow et al., 1995; Cohen et al., 2008; Cohen and Zarowin, 2010). Real earnings management computed using Roychowdhury (2006) model.	Politically-connected firms are more inclined to replace real earnings management activities for accrual-based earnings management activities than non-connected firms.
22	Mishra and Malhotra (2016)	130 companies listed on the BSE (2013-2015)	India	AC: multiple directorships, expertise, independence meetings and size.	Discretionary accruals measured by the modified Jones model (Dechow et al., 1995)	A large audit committee, a higher frequency of audit committee meetings and multiple directorships of audit committee members decreases the probability of having high discretionary accruals. On the other hand, financial expertise of audit committees and the independence of their members do not affect the quantum of earnings management.
23	Hope et al. (2017)	400 official resigned directors (pre-rule 18 period: 2012-2013 and post-Rule 18 period: 2014-2015)	China	Politically connected boards	The absolute value of discretionary accruals estimated by using the Kothari et al. (2005) model.	The accounting quality of firms with politically connected directors increases after those directors resign.
24	Albersmann and Hohenfels (2017)	1,462 firm-year observations from 401 firms (2005-2009)	Germany	**AC:** size, financial expertise and meeting.	Discretionary accruals are estimated cross-sectionally, as the residual from the Kothari et al. model (2005).	Audit committees with financial experts and that meet frequently are associated with less earnings management. In contrast, audit committee size is not related to earnings management.
25	Juhmani (2017)	95 firm-year observations from 31 companies listed on the Bahrain Bourse (BB) (2012-2014)	Bahrain	**AC:** size, independence meetings and financial expertise.	Discretionary accruals measured by the modified Jones model (Dechow et al., 1995)	Discretionary accruals as a proxy for earnings management is negatively related with AC size and AC financial expertise. However, there is no a significant relationship between AC independence and AC meetings, and earnings management.

CHAPTER 6: RESEARCH METHODOLOGY AND DATA SOURCES

6.1 INTRODUCTION

Chapter five presented the literature related to the research objectives and reviewed empirical evidence on the relationship between three corporate governance mechanisms (external auditing, the board of directors and the audit committee) and earnings management. The effect of several attributes of such mechanisms has been discussed, leading to twelve testable hypotheses.

The current chapter explains the research methodology employed to test the hypotheses outlined in the previous chapter. The subsequent section describes the sample selection process and the sources of data. The measurement of the dependent variable (earnings management), the independent variables and the control variables used in this research is then discussed. Following this, the empirical research models are presented and the data and the analysis procedures are consequently outlined. Finally, a summary of the chapter is presented.

6.2 SAMPLE SELECTION AND SOURCES OF DATA

6.2.1 Sample and period selection

The population object of study in this research is made up of listed firms in Jordan. The sample consisted of all the industrial companies listed on the Amman Stock Exchange covering 2012 to 2016 calendar years.

This period of analysis was elected as it revolves around the pivotal period in respect to corporate governance in Jordan which

involves the activation of the Jordanian Code of Corporate Governance in 2009 and the issuance of new regulations by the Jordan Securities Commission regarding the criteria and conditions that should be met by qualified auditors (JSC, 2014).

The period selected for the study begins in 2012 to ensure all sample firms are committed to the code of corporate governance of 2009. In our opinion, a period of two years is long enough to enable companies to achieve proper compliance. The period of study is restricted to the end of 2016, because the annual reports and other financial information concerning the year 2017 were not available.

The industrial sector has been chosen because it is considered one of the pillars of the Jordanian economy, which represents about a quarter of the national economy directly (25% of GDP). Financial and insurance companies were excluded from the sample since they are subjected to different regulatory and procedural requirements (Chang et al. 2010; Lee and Masulis 2011) and their financial statements have a different format. Indeed, previous authors (Chen et al. 2005a; Peasnell et al. 2000) propose that financial and insurance companies apply distinctive accounting practices leading to difficulty in capturing management's opportunistic manipulations. Service companies were also excluded due to their different nature, which could distort the results.

The initial population includes 1,282 firm-year observations from 2012 to 2016[5]. However, the sample was lessened to 395 observations after excluding financial, insurance companies and service firms (577 and 310, respectively). Moreover, 82 observations were subsequently excluded because they belonged to merged and liquidated firms and firms that did not have an available annual report. Then, to provide an unbiased estimation of discretionary accruals, another 62 firm-year observations were eliminated (DeFond and Jiambalvo 1994; Subramanaym 1996).

Collectively, these filters produce a sample of roughly 251 firm-year observations. Table 6.1 and Table 6.2 illustrate, respectively, the sample selection procedures (with a clarification of the exclusion of

[5] Although the sample period of this research is from 2012 to 2016, the data corresponding to the year 2011 has also been included in the analysis due to estimating discretionary accruals requires lagged data.

items such as financial/insurance companies and missing data) and the composition of our sample by industries.

Table 6.1 Sample size and selection procedures for the study period

Description	2012	2013	2014	2015	2016	pooled
Initial sample of all firms	264	245	263	257	253	1282
Excluded:						
Financial and insurance companies	119	106	120	119	113	577
Service Firms	66	60	64	59	61	310
Sample before data collection	79	79	79	79	79	395
Merged and liquidated firms and unavailable annual report	17	17	17	17	14	82
Firms from industries with less than six observations	11	11	11	11	18	62
Final Sample for the three used models	51	51	51	51	47	251

Table 6.2 Distribution of sample firms by industry group

Industry group	Number	Percentage
Chemical Industries	8	16
Engineering and Construction	7	14
Food and Beverages	10	20
Mining and Extraction Industries	14	27
Pharmaceutical and Medical Industries	6	12
Textiles, Leathers and Clothing	6	12
Total	51	100

6.2.2 **Sources of data**

The main source of data is the sample firms' annual reports published on the Amman Stock Exchange website (www.ase.com.jo) corresponding to the period 2012-2016. As there is no DataStream in Jordan, these reports were manually searched and analyzed to determine the variables under study (i.e. measures for audit quality, board of directors, audit committee, and earnings management as well as the control variables).

To be incorporated in the sample, each company must have a balance sheet, an income statement and a cash flow statement for all those calendar years. Moreover, some missing data was gathered by the researcher from the companies' headquarters.

6.3 MEASUREMENTS OF THE DEPENDENT VARIABLE (EARNINGS MANAGEMENT)

6.3.1 Performance adjusted model

As discussed in chapter three, there are a several models used to measure earnings management. Following prior research (Niu 2006; Ananthanarayanan 2008; Chang and Sun 2009; Jaggi et al. 2009; Sun et al. 2010; Sun and Liu 2011; Habbash and Alghamdi 2017; Vasilescu and Millo 2016; Mafrolla and D'Amico 2017; Asthana 2017), to estimate discretionary accruals as a proxy for earnings management this thesis employs the Kothari et al.'s (2005) performance adjusted model (i.e. the cross-sectional version of the Dechow et al.'s (1995) modified Jones model, using the previous year's return on assets as an additional regressor). The Kothari et al. (2005) model is utilized in this research due to its higher power of discovery of earnings management and fewer misspecification problems[6].

Kothari et al. (2005) propose adding the ROA of the prior year as an additional regressor to the cross-sectional modified Jones model in order to decrease the problems of heteroscedasticity and to avoid severe misspecification issues in estimating accruals. Following Kothari et al. (2005), a constant ($\alpha 0$) is inserted in the estimation to improve the power of the tests.

In this respect, Kothari et al. (2005) provide several reasons for including a constant in their models, which are (a) it contributes an additional control for heteroscedasticity not alleviated by using assets as the deflator; (b) it mitigates problems stemming from an omitted

[6] More elaboration on the Kothari et al. (2005) model has been debated in subsection 3.5. 1 of Chapter three.

size variable; and (c) it makes the estimated discretionary accruals measures more symmetric, through increasing the power of the tests.

Therefore, the model applied by this research to measure discretionary accruals for the tests reported in next chapter is depicted by *Equation [1]* as follows:

$$TA_{i,t} = \alpha_0 + \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta SALES_{i,t}/A_{i,t-1}) + \alpha_3(PPE_{i,t}/A_{i,t-1}) + \alpha_4(ROA_{i,t\ (or\ t-1)}) + \varepsilon_{i,t} \quad [1]$$

Where:

$TA_{i,t}$ = total accruals predicted as the change in non-cash current assets minus the change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization, scaled by lagged total assets.

$\Delta SALES_{i,t}$ = change in sales scaled by lagged total assets.

$A_{i,t-1}$ = total assets

$PPE_{i,t}$ = net property, plant and equipment scaled by $A_{i,t-1}$

$ROA_{i,t\ (or\ t-1)}$ = return on assets

$\alpha 0$ = constant

$\alpha 1$, $\alpha 2$, $\alpha 3$, $\alpha 4$ = Estimated coefficients.

ε_{it} = The error term representing discretionary accruals of firm i for time period t.

The discretionary accruals are calculated employing a cross-sectional variation of the Jones (1991) model, the modified Jones (1991) model by Dechow et al. (1995) and the performance adjusted model by Kothari et al. (2005). Previous research found that the cross-sectional version is used as it is more specific than the time version model, especially, in the small sample observations (Subramanaym 1996)[7].

[7] The time version model has been criticized by some researchers. For instance, DeFond and Jiambalvo (1994) and Jeter and Shivakumar (1999) indicate that the requirement of a long series of observations in the time-series setting diminishes sample size due to data requirements. These prerequisites limit samples to firms that have successfully survived for no less than 11 years. Therefore, this restriction biases the sample toward larger and more fruitful firms (a survivorship bias). The estimation of firm-specific parameters requires a long series of observations. However, the data stationarity is inconsistent with survival over the long haul (McNichols 2000). Consequently, this contradicts the essential assumption behind the time-series setting (that is, the coefficients are time-invariant).

6.3.2 **Approach adopted in measuring total accruals**

As mentioned in chapter three, the current research employs the aggregate/total accruals approach to measure earnings management. Total accruals consist of discretionary accruals and non-discretionary accruals. To evaluate the discretionary accruals, the total accruals shall be first computed, followed by dropping nondiscretionary accruals to come up with discretionary accruals.

According to earlier research, two methods currently exist for the measurement of total accruals: the first is the traditional balance sheet approach (e.g. Healy 1985; Jones 1991; Dechow et al. 1995; Sloan 1996; Xie 2001; Richardson et al. 2005; Vasilescu and Millo 2016; Casey et al. 2017; Orihara 2017).

Following the balance sheet approach, the accruals are measured as follows (Hribar and Collins, 2002, p.107):

$$TACC_t = \Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta DEBT - DEP \ldots\ldots\ldots [2]$$

Where:
TACC = total accruals
ΔCA_t = the change in current assets during year t
ΔCL_t = the change in current liabilities during year t
$\Delta Cash_t$ = the change in cash and cash equivalent during period t
ΔDEB_T = the change in debt included in current liabilities during period t
DEP = depreciation and amortization expenses during period t.
All variables are scaled by lagged total assets.

The second method is the cash flow approach (e.g.Becker et al. 1998; Dechow and Dichev 2002; Xie et al. 2003; Huang et al. 2007; Jaggi et al. 2009; McInnis and Collins 2011; Hu et al. 2016; Chen and Howard 2016; Vasilescu and Millo 2016; Asthana 2017).

The cash flow approach estimates the total accruals as the difference between income before extraordinary items and discontinued operations and cash from operations (Hribar and Collin, 2002, p. 109). The cash flow approach is depicted as follows:

$$TAC_{it} = NI_{it} - CFO_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots [3]$$

Where:
NI_{it} = Earnings before extraordinary items and discontinued operations of firm i in year t.
CFO_{it} = Net cash flow from operating activities of firm i in year t.

Despite the extensive use of both methods, literature indicates that the two approaches might yield various figures. For example, Hribar and Collins (2002) denote out that non-articulation events (such as reclassifications, acquisitions, divestitures, accounting changes, and foreign currency translations) introduce significant estimation mistakes to balance sheet accruals. Therefore, the cash flow approach yields a lower measurement error than the balance sheet approach. Furthermore, Ball and Shivakumar (2008) and Shi and Zhang (2011) support the argument that cash flow approach is more efficient than the balance sheet approach. Thus, following previous scholars (Hribar and Collins 2002; Hu et al. 2016; Chen and Howard 2016; Asthana 2017) this thesis employs the cash flow approach in calculating the total accruals.

In addition, given that this research does not analyze a specific occasion and focuses on the magnitude rather than a particular direction of earnings management, the absolute value of discretionary accruals (denoted as |DACit|) is utilized as the dependent variable in the three experimental models (e.g. Beck et al. 1988; Ianniello 2015; Albersmann and Hohenfels 2017; Hope et al. 2017).

The size of unsigned discretionary accruals is considered the perfect measure of the extent to which accruals are utilized to manipulate earnings in the absence of specific directional predictions. It quantifies general propensity and firms' success in manipulating earnings up or down as required (Reynolds and Francis 2000; Frankel et al. 2002).

Concerning the main analysis, this thesis applied the absolute values of residuals from Equation [1] |DAC| as the first measure of earnings management.

To check the validity and robustness of the main results, this study employs an alternative metric of earnings management, namely the Jones (1991) model and the Modified Jones model (Dechow et al. (1995). Moreover, following prior scholars (Gul et al. 2009; Alali 2011; Tsipouridou and Spathis 2012; Habbash and Alghamdi 2017;

Albersmann and Hohenfels 2017), the signed earnings management is used as a common test for a robustness and sensitivity analysis, that is centered on upwards and downwards earnings management.

6.4 MEASUREMENT OF THE INDEPENDENT VARIABLES

This section presents the independent variables for the study which have been identified in the light of what has been stated in previous studies. The explanatory variables for the regression analysis of the three empirical models are the selected properties of the corporate governance mechanisms, namely audit quality[8], the board of directors' attributes and the audit committees' attributes. The proxies for each independent variable are explained in the following three subsections.

6.4.1 The Audit Quality properties

6.4.1.1 Auditor size

Following prior scholars (Zhou and Elder 2001; Chen et al. 2005a; Sun and Liu 2011; Inaam et al. 2012), the current study utilizes auditor size as the first proxy for audit quality. Auditor Size (**AUDSIZE**) is defined as a dichotomous variable which receives the value of 1 if the financial statements of the firm i in the time period t were audited by a Big N audit firm and zero otherwise.

6.4.1.2 Audit fees

The second proxy for the audit quality is audit fees **(AFEE)**. Consistent with prior empirical studies (Gul et al. 2003; Alali 2011; Lin et al. 2018), audit fees are defined as the natural log of audit fees.

[8] The paucity of information and inconsistent reporting formats on Jordanian firms, block some variables that form part of studies conducted in developed countries, such as industry-specialist auditors, tenure and non-audit fees. Therefore, this study uses two variables that included them in the first model, namely audit size and audit fees.

This variable was adopted because the higher audit fees are more likely to reflect auditing efforts, which in turn produce better accrual quality (Srinidhi and Gul 2006), though some authors have found that high audit fees could threaten auditors independence, therefore driving auditors to provide lower audit quality (Beck et al. 1988; Magee and Tseng 1990; Eshleman and Guo 2013).

6.4.2 **The Board of Director's properties**

6.4.2.1 Board size

Consistent with prior research in this area (Yermack 1996; Abbott et al. 2004; Rahman and Ali 2006), this study measures the board size **(*BRDSIZE*)** as the total number of members on the board of directors, as reported in the annual report at the end of each calendar year.

6.4.2.2 Board Independence

Board independence **(BRDIND)** is computed as the ratio of non-executive directors on the board divided by the total board size at the end of each calendar year. This way of measurement is consistent with literature (Osma 2008; Lo et al. 2010; Chen et al. 2015b; Ianniello 2015).

As indicated in chapter two, according to chapter one of the Jordanian Corporate Governance Code (JCGC 2009) an independent member is defined as "*a member of the board of directors who is not tied to the company or any of its upper executive management, affiliate companies, or its external auditors by any financial interests or relationships other than his shareholding in the company that may be suspected to bring that member benefit, whether financial or incorporeal, or that may affect his/her decisions or lead to exploitation of his/ her position with the company*" (chapter 1 - Definitions).

6.4.2.3 Board of directors expertise

Similar to the measurement of board independence, the board of directors' expertise is computed as the ratio of directors with

accounting experience and financial qualification to the total board size. This definition of the variable has been used by Baxter and Cotter (2009).

6.4.2.4 Board meetings

Following prior studies (Vafeas 1999; Chen et al. 2006), board meetings (**BRDMEET**) is used as a proxy for catching the boards' activity degree. Board meetings are measured by the total number of board meetings held annually by the board of directors as reported in the annual report at the end of each calendar year.

As stated earlier, according to literature, the board meeting frequency gives an opportunity for managers to discuss relevant issues, such as the integrity of financial reporting and observing issues (Jensen 1993; Conger et al. 1998; Vafeas 1999). It also enables managers to discharge their tasks as per interests of shareholders.

6.4.2.5 CEO duality

In line with literature (Davidson et al. 2005; Goh and Rasli 2014; Chi et al. 2015; Yasser and Mamun 2015) the CEO duality (**DUAL**) is defined as a dummy variable that equals 1 if the general director serves as the chairman of the board and 0 otherwise, as reported in the annual report at the end of each calendar year.

6.4.2.6 Political connection

Literature proposes that a firm that has a former politician on its board does so to use their expertise to foresee or influence government activities (Agrawal and Knoeber 2001). Furthermore, board members politically connected can help their firms to properly understand the public policy process and providing legitimacy by linking their reputation and status with firm (Hillman 2005)

This variable **(POLCON)** is coded as 1 if a member of the firm's board of directors has a former political background (he/she has been the prime minister, a minister, a member of the parliament, the senate and the House of Representatives, an ambassador, a senior military officer, or a counselor in the Royal Hashemite Court), and 0

otherwise, as presented in their biographies in annual reports. These classifications are relatively consistent with (Goldman et al. 2009).

6.4.3 **The Audit committee properties**

6.4.3.1 Audit committee size

In line with other researchers in this field (Lin et al. 2009; Baxter and Cotter 2009; Albersmann and Hohenfels 2017), this study measures the audit committee size (**ACSIZE**) as the total number of members on the audit committee, as reported in the annual report at the end of each calendar year.

6.4.3.2 Audit committee Independence

The audit committee independence (**ACIND**) is defined as a dummy variable to which we assign a value of 1 if all directors on the audit committee are independent, and 0 otherwise. This definition has been used by Lin et al. (2006) and Mishra and Malhotra (2016).

6.4.3.3 Audit committee expertise

The audit committee expertise (**ACEXP**) is measured by a dummy variable to which we assign a value of 1 if at least one director in the audit committee has worked previously in accounting or financial fields, or has an academic or professional certificate in accounting, finance or related fields, and 0 otherwise. This definition is relatively consistent with other scholars such Bedard et al. (2004); Mishra and Malhotra (2016) and Albersmann and Hohenfels (2017).Moreover, this way of measurement corresponds with the rules established in the Jordanian Corporate Governance Code of 2009.

6.4.3.4 Audit committee meeting

The number of meetings of the audit committee is a crucial indicator of its diligence in carrying out its duties. The audit committee meetings (**ACMEET**) was determined using the number of audit committee meetings over the calendar year. This definition is consistent with prior researchers (Baxter and Cotter 2009; Ghosh et al. 2010; Albersmann and Hohenfels 2017).

6.5 MEASUREMENT OF THE CONTROL VARIABLES

To examine the extent to which the three mechanisms of corporate governance mechanisms discussed in the preceding chapter restrict earnings management it is important to control some variables related to the firms' performance. In line with prior literature on corporate governance and earnings management, several variables were included in the model, which reflect firm characteristics (such as firm size), and earnings management incentives (i.e. firm leverage, firm growth and firm performance). In this section literature regarding each control variable is reviewed, along with the method of measurement for each variable.

6.5.1 Firm size

Firm size has often been used by earlier earnings management research as a control variable. Johnson et al. (2002) argue that the size of a firm has an influence on its financial reporting system, in such a way that larger firms are more mature and diversified than smaller firms.

In this sense, Jensen and Meckling (1976) reported that agency costs are anticipated to increase with an increase in firm size as a consequence of higher managerial discretion and opportunism. Watts and Zimmerman (1990) and Jeong and Rho (2004) indicate that larger firms tend to manage earnings in order to report more predictable earnings and, hence, avoiding potentially adverse political actions or greater public exposure (Ianniello 2015). Further, the operational complexity leads managers in large firms to engage in aggressive earnings management behavior (Lobo and Zhou 2006). Numerous scholars also found that small companies have a lower tendency to engage in income-increasing earnings management than large firms (Jeong and Rho 2004).

However, in contrast, some prior studies (Krishnan 2003; Piot and Janin 2007) document that large companies engage less in earnings management. Park and Shin (2004) and Sánchez-Ballesta and García-Meca (2007) argue that the external capital market pays heed to larger firms, which are closely controlled by the press and

analysts, and therefore they are less ready to hide earnings malpractices.

Thus, the mixed findings suggest no directional signs were foretold for the relationship between firm size (SIZE) and earnings management (DAC).

Following previous literature (Vander Bauwhede et al. 2003; Davidson et al. 2005; Niu 2006; Chi et al. 2015; Ianniello 2015), firm size (SIZE) is computed as the natural logarithm of total assets of firm i at the end of calendar year t.

6.5.2 **Firm leverage**

LEVERG is utilized as a proxy for debt covenants violation. As we discussed in chapter three (section 3.3.1.3), managers have strong incentives to manipulate earnings in order to reduce the likelihood of debt covenant violation (debt covenant hypothesis). Jaggi and Lee (2002) indicate that the trend of earnings management depends on the extent of financial distress and the results of debt renegotiations.

On one hand, many authors show that high financially distressed firms tend to manage earnings upwards in order to avoid the technical default of their debt covenants (Sweeney 1994; DeFond and Jiambalvo 1994; Jha 2013; Franz et al. 2014). On the other hand, several scholars found financially troubled firms tend to manage earnings downwards, in order to take advantage of restructuring debt as well as renegotiating of debt agreements (DeAngelo et al. 1994; Becker et al. 1998; Jaggi and Lee 2002; Jeong and Rho 2004). Other scholars, such as Park and Shin (2004), provide another view that highly leveraged firms will be under close scrutiny from their lenders, which, in turn, decreases earnings management practices.

Due to such varying scenarios, the sign on the relation between the variable of firm leverage and earnings management is not foreseen.

Consistent with preceding literature (Park and Shin 2004; Davidson et al. 2005; Chen and Zhou 2007; Ianniello 2015; Chi et al. 2015; Lin et al. 2018) this research estimates firm leverage (LEVERG) as the ratio total long-term debt of firm i at the end of calendar year t divided by total assets of firm i at the end of calendar year t.

6.5.3 **Firm growth**

In line with prior literature (Klein 2002a; Abbott et al. 2004; Carcello and Nagy 2004; Rahman and Ali 2006; González and García-Meca 2014; Albersmann and Hohenfels 2017) this study controls the effect of firm growth. In this respect, several authors (Skinner and Sloan 2002; Carcello and Nagy 2004) claim that the managers which aim to accomplish a targeted growth degree, or alternatively to mask downturns, have more incentives to carry out aggressive earnings management activities.

Consistent with previous studies that have often documented a positive relation between a firm's growth rate and earnings management (Menon and Williams 2004; Gul et al. 2009; González and García-Meca 2014; Albersmann and Hohenfels 2017), this thesis also predicts a positive sign in such a relationship.

Following previous literature (Vander Bauwhede et al. 2003; Davidson et al. 2005; Chen and Zhou 2007; Jaggi et al. 2009; Alzoubi 2016), this study measures firm growth (GROW) as the ratio of market of firm i at the end of the calendar year t, to book value of equity of firm i at the end of the calendar year t.

6.5.4 **Firm performance**

Several authors (Kothari et al. 2005; Machuga and Teitel 2007; González and García-Meca 2014) argue that managers have incentives to manipulate the results upward (i.e., increase the obtained earnings) in order to make the company more attractive. Other authors, such as Lin et al. (2009), posit that managers who perform poorly are likely to exercise discretionary accruals to manipulate earnings due to the threat of expulsion. In addition, numerous scholars claim that firms with lower profit and higher bankruptcy and litigation risks have more incentive to participate in earnings management practices, so as to get financing facilities to overcome the cash flow crisis (Ashari et al. 1994; Rahman and Ali 2006).

However, other scholars, such as Degeorge et al. (1999), have observed that firms performing highly are more likely to manage their earnings figures, in order to match or beat earnings objectives relative to loss-making firms. Notwithstanding the present research anticipates

that firm performance is related with earnings management, the sign of such a relationship is not foreseen.

ROA is commonly used as a proxy for firm performance (Rahman and Ali 2006; Yu 2008; Lin et al. 2009; Jaggi et al. 2009; González and García-Meca 2014). Following previous literature, ROA is computed as the net income of firm i at the end of the calendar year t divided by the total assets at the beginning of the year.

Table 6.3 Summary of variables: measurement and expectations

Variables	**SHORT FORM**	**Predicted sign.**	**Measurement**
Panel A: Dependent variable: earnings management	DAC		The absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model.
Panel B : Independent Variables			
Audit Quality Attributes			
Auditor Size	AUDSIZE	?	Dummy variable, 1 if the firm is audited by a Big N auditor, 0 otherwise.
Audit fees	AFEE	?	The natural log of audit fees.
The Board of Director's Attributes			
Board Size	BRDSIZE	_	The number of directors in the board.
Board Independence	BRDIND	_	The ratio of non-executive directors on board to board size.
Board Financial Expertise	BRDEXP	_	The ratio of directors with accounting experience and financial qualification to board size.
Board Meetings	BRDMEET	_	The number of board meetings over the calendar year.
CEO Duality	DUAL	_	Dummy variable 1 if a general director is also Chairman, 0 otherwise.

Variables	SHORT FORM	Predicted sign.	Measurement
Political Connection	POLCON	_	A dummy variable, 1 if a board member has a former political background (i.e. prime ministers, ministers, member of the parliament, the senate and the House of Representatives, ambassador, senior military officer or counselor in the Royal Hashemite Court), 0 otherwise.
The Audit Committee's Attributes			
Audit Committee Size	ACSIZE	_	The number of audit committee member.
Independence of Audit Committee Members	ACIND	_	Dummy variable 1, if all directors on the audit committee are independent, and 0 otherwise.
Audit Committee's Financial Expertise	ACEXP	_	Dummy variable, 1 if at least one director on the audit committee has worked previously in accounting or financial fields, or has an academic or professional certificate in accounting, finance or related fields, and 0 otherwise
Audit Committee Meetings	ACMEET	_	The number of audit committee meetings over the calendar year.
Panel C : Control Variables			
Major firm characteristics			
Firm Size	SIZE	?	The natural logarithm of total assets of firm i at the end of calendar year t.
Earnings Management Incentives			
Firm Leverage	LEVERG	?	The ratio total long-term debt of firm i at the end of calendar year t divided by total assets of firm i at the end of calendar year t.

Variables	SHORT FORM	Predicted sign.	Measurement
Firm Growth	GROW	+	The ratio of market of firm i at the end of the calendar year t, to book value of equity of firm i at the end of the calendar year t.
Firm performance	ROA	?	The net income of firm i at the end of the calendar year t divided by the total assets at the beginning of the year.

6.6 DEVELOPMENT OF EMPIRICAL RESEARCH MODELS

This thesis employs three separate models to examine the research hypotheses. The rationale for developing three models is to overcome the multicollinearity problems that may appear in the case of all variables being combined in the same model.

Indeed, prior empirical research in this area has documented many cases of a multicollinearity problem. Such studies have found a high correlation between corporate governance variables (Benkel et al. 2006; Osma and Noguer 2007; Lee 2008; Lo et al. 2010). In this sense, one solution could be excluding the collinear variables from the regression as suggested by Baum (2006).

In the same line, Baxter and Cotter (2009) indicated that the variables that measure the attributes of the board of directors are significantly and positively related with their corresponding audit committee measures. In addition, some corporate governance literature has contended that various governance mechanisms can substitute each other (Boo and Sharma 2008).

Furthermore, Chtourou et al. (2001) documented that attributes of the audit committee are more directly associated with the level of earnings management than those of the board of directors. So, by separating this research into three models, it is possible to test the influence of the external audit quality on earnings management separately from the effect of the audit committee and the board of directors.

Accordingly, three models are set up below: the first one with audit quality variables (Jeong and Rho 2004; Antle et al. 2006), the second model with the board of directors variables (Xie et al. 2003) and the third one with the audit committees variables (Bedard et al. 2004; Baxter and Cotter 2009; Mishra and Malhotra 2016).

The regression equations of each model are as follows:

First model:

$$DAC_{i,t} = \beta 0 + \beta 1\ AUDSIZE_{i,t} + \beta 2\ AFEE_{i,t} + \beta 3\ LEVERG_{i,t} + \beta 4\ SIZE_{i,t} + \beta 5\ GROW_{i,t} + \beta 6\ ROA_{i,t} + \varepsilon_{i,t}$$

Where:

DAC = the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model.

Audit Quality proxies:

AUDSIZE = dummy variable, 1 if the firm is audited by a Big N auditor, 0 otherwise.

AFEE = the natural log of audit fees.

Control Variables:

LEVERG = the natural logarithm of total assets of firm i at the end of calendar year t.

LNASSET= the natural logarithm of total assets of firm i at the end of calendar year t.

GROW = the ratio of market of firm i at the end of the calendar year t, to book value of equity of firm i at the end of the calendar year t.

ROA= the net income of firm i at the end of the calendar year t divided by the total assets at the beginning of the year.

ε = the error term.

Second model:

$$DAC_{i,t} = \beta 0 + \beta 1\ BRDSIZE_{i,t} + \beta 2\ BRDIND_{i,t} + \beta 3\ BRDEXP_{i,t} + \beta 4\ BRDMEETT_{i,t} + \beta 5\ DUAL_{i,t} + \beta 6\ POLCON_{i,t} + \beta 7\ LEVERG_{i,t} + \beta 8\ SIZE_{i,t} + \beta 9\ GROW_{i,t} + \beta 10\ RO_{i,t} + \varepsilon_{i,t}$$

Where

DAC = the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model.
Board of directors proxies:

BRDSIZE = the number of directors in the board.

BRDIND = the ratio of non-executive directors on board to board size.

BRDEXP = the ratio of directors with accounting experience and financial qualification to board size.

BRDMEET = the number of board meetings held annually by the board of directors.

DUAL = dummy variable 1 if CEO is also Chairman, 0 otherwise.

POLCON = dummy variable, 1 if a board member has a former political background (i.e. prime ministers, ministers, member of the parliament, the senate and the House of Representatives, ambassador, a senior military officer, a counselor in the Royal Hashemite Court), 0 otherwise.

Control Variables:

LEVERG = the natural logarithm of total assets of firm i at the end of calendar year t.

LNASSET = the natural logarithm of total assets of firm i at the end of calendar year t.

GROW = the ratio of market of firm i at the end of the calendar year t, to book value of equity of firm i at the end of the calendar year t.

ROA = the net income of firm i at the end of the calendar year t divided by the total assets at the beginning of the year.

ε = the error term.

Third model:

$$DAC_{i,t} = \beta 0 + \beta 1 ACSIZE_{i,t} + \beta 2 ACIND_{i,t} + \beta 3 ACEXP_{i,t} + \beta 4 ACMEET_{i,t} + \beta 5 LEVERG_{i,t} + \beta 6 SIZE_{i,t} + \beta 7 GROW_{i,t} + \beta 8 ROA_{i,t} + \varepsilon_{i,t}$$

Where
DAC = the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model.
Audit Committee proxies:

ACSIZE = the number of audit committee member.

ACIND = dummy variable 1, if all directors in the audit committee are independent, and 0 otherwise.

ACEXP = dummy variable, 1 if at least one director in the audit committee worked previously in accounting or financial fields, and have an academic or professional certificate in accounting, finance or related fields, and 0 otherwise.

ACMEET = the number of audit committee meetings over the calendar year.

Control Variables:

LEVERG = the natural logarithm of total assets of firm i at the end of calendar year t.

LNASSET = the natural logarithm of total assets of firm i at the end of calendar year t.

GROW = the ratio of market of firm i at the end of the calendar year t, to book value of equity of firm i at the end of the calendar year t.

ROA = the net income of firm i at the end of the calendar year t divided by the total assets at the beginning of the year.

ε = the error term.

6.7 TYPE OF DATA AND ANALYSIS PROCEDURES

Since this thesis investigates the impact of multi-variables (corporate governance mechanisms) on earnings management as a dependent variable, a multiple regression is appropriated[9]. This study employs generalized least square regression (GLS) to examine the association between corporate governance mechanisms and earnings management[10].

Empirical data for regression models can be handled by the following three types of analysis (Gujarati and Porter (2003):

[9] To analyze the data, the statistical software STATA 13 is used.

[10] The Hausman test (1978) is undertaken to decide between the fixed effects (OLS) and random effects (GLS) as an alternative panel data method.

a. Time series data analysis: consists of observing a set of observations on the values that a variable takes at different times (i.e. daily, weekly, monthly or annually).
b. Cross section data analysis: lies in observing the value of variable(s) for several sample units at the same point in time.
c. Pooled (combined) data analysis: consists in observing the value of the variable(s) for several sample units over a period.

The present study contains both cross-sectional and time series data throughout the 251 firm-year observations listed on the Amman Stock Exchange during the period 2012-2016. Therefore, to examine the data, pooled cross-sectional data analysis will be carried to reflect different distributions during different time periods (Wooldridge 2003).

Panel data, by mixing the inter-individual differences and intra-individual dynamics, has several advantages over cross-sectional or time-series data, as it takes advantage of a wealthier structure. It uses large amounts of data based on dynamic behavior which increases the power of the statistical tests. Furthermore, the use of multiyear panel data helps to raise the sample size and, thus, increases the number of degrees of freedom, enhancing the efficiency of estimates (Hsiao et al. 1995). Besides, it produces more precise predictions, given that combining time series data and cross-sectional data in this way also helps to diminish the problems of multicollinearity that emerge when time series data is modeled individually (Hsiao 2007; Gebhardt and Novotny-Farkas 2011).

6.8 SUMMARY

This chapter is concerned with the methodology applied to test the research hypotheses. It also addressed the sources of data and the sample selection process. Then, the measurement of the dependent variable, the independent variables, and the control variables was explained. Finally, the chapter outlined the empirical research models and explained the choice of the data analysis method.

The next chapter will show the findings of the statistical tests and discuss the influence of the three corporate governance mechanisms (audit quality, board of directors and audit committees) on earnings management. Further, several additional analyses will be carried out to confirm the validity and robustness of the primary analysis.

CHAPTER 7: EMPIRICAL ANALYSIS AND DISCUSSIONS

7.1 INTRODUCTION

This chapter reports the main empirical results regarding the impact corporate governance mechanisms have on earnings management. Correlation analyses among relevant variables as well as the results of the multiple regression models are illustrated. Then, the main results are discussed.

This chapter also provides several additional analyses to confirm the validity and robustness of the findings. Firstly, alternative models of earnings management are employed and then the sample is partitioned by signed discretionary accruals. The chapter ends with a summary.

7.2 FIRST EMPIRICAL STUDY: AUDIT QUALITY AND EARNINGS MANAGEMENT

7.2.1 Descriptive Statistics

Table 7.1 provides descriptive statistics of the audit quality variables employed in the regression analysis for the full sample of 251 firm-year observations during the period from 2012 to 2016. The table is separated into three panels: A, B and C. The descriptive statistics of the continuous and the dichotomous variables for the full sample are summarized in panels A and B, respectively. Panel C displays the descriptive statistics categorized by audit firm size.

Panel A in Table 7.1 shows that the absolute values of discretionary accruals, estimated utilizing the Kothary et al. (2005) model (|DACKO|), have a mean (median) of 0.079 (0.054) and a standard deviation of 0.08, indicating that the total volume of earnings management is 7.9 (5.4) percent of lagged total assets.

These values are comparable with prior Jordanian and international evidence (Othman and Zeghal 2006; Alali 2011; Ianniello 2015; Alzoubi 2016). For instance, in Jordan, Alzoubi (2016) found the magnitude of value of DAC to have a mean (median) of 0.092 and (0.065). In Saudi Arabia, Habbash and Alghamdi (2017) found the value of DAC has a mean (median) value of 0.103 (0.062). With regard to developed countries, Othman and Zeghal (2006) found that DAC is closer to 0.06 and 0.03 in Canadian and French companies. In the US, Alali (2011) indicated the absolute values of discretionary accruals to have a mean (median)of 0.089 (0.038). Finally, Ianniello (2015) found the magnitude of value of DAC to have a mean (median) of 0.098 and (0.034) in Italian firms.

In terms of the independent variables, panel B in Table 7.1 reports that Big N auditors represent a 26.7% of the sampled companies, while companies audited by the non-Big N firms represent less than 73.3% of the sample. Furthermore, panel C in Table 7.1 indicates that the proportion of audit fees paid to the Big N audit firms by the client firms has a mean (median) of 4.3365 (4.0792) with a standard deviation of 0.4605, whereas the proportion of audit fees paid to the non-Big N audit firms by the client firms has a mean (median) of 3.8804 (3.8891) with a standard deviation of 0.2093

Table 7.1 Descriptive Statistics – Continuous and Dichotomous Variables

Panel A: Descriptive statistics of continuous variables (full sample, N = 251).					
Variable	Mean	SD	Min	P50	Max
|DACKO|	0.07958	0.08296	0.00041	0.05447	0.52698
AFEE	4.00251	0.35932	3	3.92942	5.27221
LEVERG	33.6211	22.8215	0.39982	30.2928	115.468
SIZE	7.23888	0.63189	5.46952	7.20824	9.08331
GROW	3.4533	31.5135	-8.4	1.02143	500.134
ROA	0.85876	10.6741	-79.328	0.84775	40.3836

Panel B: Descriptive Statistics – Dichotomous Variables				
Variable	Frequency of 1's (Yes)	Frequency of 0's (No)	Percentage of 1's (Yes)	Percentage of 0's (No)
AUDSIZE	67	184	26.70%	73.30%

Regarding to control variables, panel C in Table 7.1 displays that clients of Big N audit firms are larger in size (mean = 7.51), leverage (mean = 41.21) and growth (mean = 9.16) compared to clients of non-Big N audit firms [size (mean = 7.14), leverage (mean = 30.8867) and growth (mean = 1.39)]. In addition, panel C in Table 7.1 displays that clients of Big N audit firms have a smaller ROA (mean = -1.0552), compared to clients of non-Big N audit firms (mean = 1.55).

Panel C: Descriptive statistics of continuous variables by audit firm size.

Variables	Big 4 (N = 69)					Non Big 4 (N = 186)				
	Mean	SD	Min	P50	Max	Mean	SD	Min	P50	Max
|DACKO|	0.0791	0.0856	0.0007	0.0522	0.4495	0.0787	0.0811	0.0004	0.0543	0.527
AFEE	4.3365	0.4605	3.699	4.0792	5.2722	3.8804	0.2093	3	3.8891	4.2553
LEVERG	41.212	22.8658	6.639	39.839	99.8157	30.8867	22.2379	0.3998	27.286	115.468
SIZE	7.5096	0.8645	5.4695	7.3661	9.0833	7.1414	0.4911	5.8608	7.1786	8.0799
GROW	9.1597	60.9184	0	1.1066	500.134	1.3978	3.5747	-8.4	0.993	45.4296
ROA	-1.0552	15.0731	-79.33	1.0147	18.6594	1.5482	8.5053	-28.374	0.8039	40.3836

Where: |DACKO| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; AUDSIZE is a dummy variable which assumes the value of 1 if the firm is audited by a Big N auditor, and 0 otherwise; AFEE represents the natural log of audit fees; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; Grow is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year.

7.2.2 **Correlation Matrix Results**

The purpose of the correlation matrix is to check whether there is any high correlation between the variables under study and that any correlation is smaller than 80 (Gujarati 2003). Multicollinearity ought to be considered if the correlation is more than 80 percent, as it might threaten the regression analysis and the reliability of the estimates (Acock 2008).

Table 7.2 presents Pearson's correlation matrix for both the continuous and the dichotomous variables employed in the first model (that is, the audit quality proxies). Table 7.2 shows that whilst there are numerous statistically significant correlations between the explanatory variables, none of them are highly correlated, so it can be stated that there is a no multicollinearity problem. Besides, variance inflation factors (VIF) are low (in other words, all values are under 0.8).

A review of correlation coefficients in Table 7.2 highlights several observations. First, |DACKO| is negatively correlated with audit fees, but the correlations are not extremely strong, while |DACKO| is positively correlated with auditor size. Second, in terms of control variables, while the proxies that measure firm leverage (LEVERG) and firm growth (GROW) are positively associated with |DACKO|, SIZE and ROA are not.

It is worth mentioning that the one of the highest correlations was obtained between the variables auditor size (AUDSIZE) and audit fees (AFEE): 0.569 (at a level of significance of 0.01). This correlation was expected, as it proposes that larger auditor size implies charging higher audit fees. Another high correlation was found between audit fees (AFEE) and firm size (SIZE): 0.682 (at a level of significance of 0.01), meaning that large companies tend to pay high audit fees.

Table 7.2 Pearson's correlation matrix

	|DACKO|	AUDSIZE	AFEE	LEVERG	SIZE	GROW	ROA	VIF
|DACKO|	1							
AUDSIZE	0.007	1						1.65
AFEE	-0.140*	0.569***	1					2.78
LEVERG	0.087	0.200**	0.1	1				1.1
SIZE	-0.296***	0.254***	0.682***	0.130*	1			2.27
GROW	0.235***	0.109	-0.006	0.183**	-0.022	1		1.12
ROA	-0.042	-0.109	0.102	-0.103	0.328***	-0.267***	1	1.28

Where: |DAC| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; AUDSIZE is a dummy variable which assumes the value of 1 if the firm is audited by a Big N auditor, and 0 otherwise; AFEE represents the natural log of audit fees; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed).

7.2.3 **Regression Results**

Table 7.3 reports the findings of GLS regressions of the first model (audit quality attributes) and discretionary accruals as a proxy for earnings management. As the data set is in panel frame, we run the Hausman test (1978) in order to decide which model is best fitted to our data (fixed effects (OLS) versus random effects (GLS)). The value was not significant (P = 0.7162) and, thus, the null hypothesis cannot be rejected. Hence, the random effects model is considered as the most appropriate for our study.

Model 1 documents the basic model, which only incorporates the control variables in the formula, while the independent variables, auditor size and audit fees, are separately included in Models 2 and 3, respectively. In addition, model 4 combines all the explanatory variables, namely auditor size, audit fees and the control variables.

Table 7.3 reveals that models 2 and 4 have similar findings for the auditor size (AUDSIZE) variable (the coefficient β1 is positive

and not significant), which means that audit firms (Big N and non-Big N) are not successful in limiting earnings management in the Jordanian setting. Thus, Hypothesis 1 is accepted.

This result is consistent with the existing evidence in countries such as Korea, Belgium, Greece and Turkey, which report that there are no differences between auditors, either Big N or non-Big N, in mitigating the level of earnings management (Jeong and Rho 2004; Vander Bauwhede and Willekens 2004; Tsipouridou and Spathis 2012; Yasar 2013).

In the case of Jordan, a plausible explanation for this finding may be based on the Jeong and Rho (2004) argument, which proposes that in countries where the legal environment does not encourage high-quality audits, the risk of litigation is low and there are no other effective disciplinary mechanism to control opportunistic behavior, auditors are not motivated to apply themselves to uncover earnings management behavior. In addition, the economic factor leads them to try to maintain current customers and attract new ones at the expense of the integrity and the quality of auditing. Additionally, Lawrence et al. (2011) suggest that since Big N and non-Big N audit firms are subjected to the same standards and legislation, the level of audit quality should be the same.

With reference to H2, Table 7.3 reports that models 3 and 4 have similar results for the audit fees variable (AFEE) (the coefficient β2 is positive and not significant). This indicates that audit fees may not motivate auditors to restrict earnings management. Thus, Hypothesis H2 is supported.

Our finding is consistent with the prior studies in developed countries (Ashbaugh et al. 2003; Ananthanarayanan 2008). This result can be considered as new evidence to literature, and it proposes that audit fees are further probably not associated with earnings management in emerging economies like Jordan. We argue that, since, in general, the magnitude of audit fees is low in Jordan, auditors may not have incentives to make additional effort to prevent earnings management.

Taking the results of Hypotheses 1 and 2 together, it can be said that audit quality attributes (auditor size and audit fees) do not affect the level of earnings management by Jordanian firms. The interpretation of this conclusion is related to the particular aspects of

the Jordanian setting, which is characterized by highly concentrated ownership and low levels of agency costs involved between owners and managers. Hence, there is a low demand for high-quality external audits.

For the control variables, the findings based on model 1 to model 4 of Table 7.3 reveal that, in all models, the coefficient of firm size (SIZE) has a negative sign and is highly significant. This finding supports the argument that larger firms are subjected to more scrutiny by the authorities, the press and analysts and, therefore, they are less inclined to engage in earnings management. This finding is consistent with previous literature (Krishnan 2003; Tsipouridou and Spathis 2012).

In the second place, the coefficient of firm growth (GROW) has, as anticipated, a positive sign and is significant, suggesting that larger degrees of growth may encourage managers to use aggressive earnings management practices. Again, this finding is in line with prior research (Carcello and Nagy 2004; González and García-Meca 2014; Alzoubi 2016; Albersmann and Hohenfels 2017)

In the third place, in columns 3 and 4, the coefficient of firm performance (ROA) shows a significant and positive sign. This indicates that firms with high performance are more likely to manage their earnings figures. This result is consistent with the earlier studies in developing countries, such as Latin American markets (González and García-Meca 2014).

Finally, our findings do not exhibit any significant influence of firm leverage (LEVERG) on earnings management.

The goodness-of-fit (R-square) is around 0.171 for all models, signifying that the variables included in the regression model clarified 17.1% of the variation in the dependent variable (absolute value of discretionary accruals). The R-square reported for these models is comparable with those in related research (i.e. Chi et al. (2015) who obtained a R-square of 18%).

In the following section, we perform several extra tests to confirm the robustness of our findings.

Table 7.3 GLS regression results of audit quality and the control variables on discretionary accruals

Variables	Predicted sign.	Column 1	Column 2	Column 3	Column 4
AUDSIZE	?		0.0157		0.00489
			(1.24)		(0.36)
AFEE	?			0.0352	0.0313
				(1.51)	(1.24)
LEVERG	?	0.000335	0.00029	0.000339	0.000322
		(1.02)	(0.86)	(1.05)	(0.98)
SIZE	?	-0.0475***	-0.0506***	-0.0615***	-0.0610***
		(-3.99)	(-4.14)	(-3.53)	(-3.50)
GROW	+	0.000659***	0.000655***	0.000670***	0.000668***
		(10.02)	(9.94)	(9.78)	(9.71)
ROA	?	0.00121	0.00131	0.00137*	0.00138*
		(1.88)	(1.96)	(1.99)	(2.00)
CONSTANT		0.408***	0.429***	0.368***	0.380***
		(4.68)	(4.84)	(5.01)	(4.83)
R^2		0.166	0.171	0.177	0.177
Observation		251	251	251	251

Notes: This table displays GLS regression estimates for a pooled sample of 251 observations over five calendar years from 2012 to 2016.

The underlying regression model is:

$|DACKO_{it}| = \beta 0 + \beta 1\ AUDSIZE_{i,t} + \beta 2\ AFEEi_{i,t} + \beta 3\ LEVERGi_{i,t} + \beta 4\ SIZE_{i,t} + \beta 5\ MTBV_{i,t} + \beta 6\ ROA_{i,t} + \varepsilon_{i,t}$

Where: |DACKO| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; AUDSIZE is a dummy variable which assumes the value of 1 if the firm is audited by a Big N auditor, and 0 otherwise; AFEE represents the natural log of audit fees; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses

7.2.4 **Additional Analysis**

7.2.4.1 Further earnings management models

So far, this study depends on the Kothari et al. (2005) model, to estimate discretionary accruals as a proxy for earnings management and investigating their relationship with audit quality proxies. In order to validate the power and robustness of our findings, this research relies on other alternative metrics that have been widely used in prior literature for calculating earnings management, namely the Jones (1991) model and the Modified Jones model (Dechow et al. (1995).

Table 7.4 documents the results of the GLS regression models, where the dependent variable is the discretionary accruals calculated by the Jones (1991) model and the Modified Jones model Dechow et al. (1995). Hence, it can be noted that both models present qualitatively comparable conclusions to those obtained with the Kothari et al. (2005) model in Table 7.3. In particular, Table 7.4 shows that the coefficients of the independent variables auditor size (AUDSIZE) and audit fees (AFEE) are found to be negative and positive, respectively, and statistically insignificant, at all significance levels in both models.

These findings support Hypotheses 1 and 2. In addition the results for the control variables continue to remain similar to those reported in the primary findings in table 7.3.

The goodness-of-fit (R-square) is around 0.20 for both models, signifying that the variables included in the regression model clarified 20% of the variation in the dependent variable (absolute value of discretionary accruals).

Table 7.4 GLS regression results using additional discretionary accrual models.

Variables	Column1 Jones Modified1995	Column2 Jones Original 1991
AUDSIZE	-0.004	-0.0102
	(-0.29)	(-0.68)
AFEE	0.0503	0.0541
	(1.67)	(1.8)
LEVERG	0.00046	0.000399
	(1.15)	(1.03)
SIZE	-0.0798***	-0.0792***
	(-3.51)	(-3.51)
GROW	0.000841***	0.000855***
	(8.86)	(9.10)
ROA	0.00272*	0.00278*
	(2.29)	(2.38)
CONSTANT	0.440***	0.424***
	(4.29)	(3.99)
R^2	0.204	0.199
Observations	251	251

Models:

$|DACMJ_{i\,t}| = \beta 0 + \beta 1\ AUDSIZE_{i,t} + \beta 2\ AFEEi_{i,t} + \beta 3\ LEVERGi_{i,t} + \beta 4\ SIZE_{i,t} + \beta 5\ GROW_{i,t} + \beta 6\ ROAi,t + \varepsilon_{i,t}$;

$|DACJ_{i\,t}| = \beta 0 + \beta 1\ AUDSIZE_{i,t} + \beta 2\ AFEEi_{i,t} + \beta 3\ LEVERGi_{i,t} + \beta 4\ SIZE_{i,t} + \beta 5\ GROW_{i,t} + \beta 6\ ROAi,t + \varepsilon_{i,t}$;

where: DACMJ is the discretionary accruals measured using the Modified Jones model (Dechow et al., 1995); DACMJ is the discretionary accruals measured utilizing the Jones model (1991); AUDSIZE is defined as a dummy variable which assumes the value of 1 if the firm is audited by a Big N auditor, and 0 otherwise; AFEE represents the natural log of audit fees; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.2.4.2 Signed Accruals

Besides employing the absolute (unsigned) value of discretionary accruals |DA|, we also conducted a signed earnings management test, as a robustness and sensitivity analysis centered on upwards and downwards earnings management, by using three models, namely the Kothari et al. (2005) model, the Modified Jones model (Dechow et al., 1995), and the Jones (1991) model as did prior scholars (Gul et al. 2009; Alali 2011; Tsipouridou and Spathis 2012; Habbash and Alghamdi 2017; Albersmann and Hohenfels 2017).

This study splits the observations of the discretionary accruals sample into two sub-samples: positive (income-increasing) discretionary accruals and negative (income-decreasing) discretionary accruals. The justification of this division lies in discovering possible different discretions practiced by managers to engage in earnings management (see Ashbaugh et al. 2003; Jenkins et al. 2006).

In terms of the independent variables, the findings for auditor size (AUDSIZE) as well as for audit fees (AFEE) in Table 7.5 do not differ between both sub-samples (upwards or downwards earnings management) and remain unchanged (statistically insignificant) compared to our main results. Hence, both Hypotheses 1 and 2 are accepted.

With reference to the control variables, the coefficient of firm size (SIZE) is significantly negative in the positive discretionary accruals sample and significantly positive in the negative discretionary accruals sample, implying that larger firms are more likely to manage earnings downwards. In addition, firms with higher growth (GROW) are more averse to managing earnings downwards. Finally, Table 7.5 demonstrates that leverage (LEVERG) has no impact on either direction on earnings manipulation comparable to the documented outcomes in the main analysis.

Table 7.5 GLS regression results – signed accruals measured using the Kothari et al. (2005) model, the Modified Jones model (Dechow et al. 1995) and the Jones (1991) model.

	Positive earnings management (increasing) DAC+			Negative earnings management (decreasing)DAC-		
	Column1	Column2	Column3	Column1	Column2	Column3
Variables	DACKO	DACMJ	DACJ	DACKO	DACMJ	DACJ
AUDSIZE	-0.00243	-0.00859	-0.00952	-0.00873	-0.0175	-0.00702
	(-0.14)	(-0.49)	(-0.54)	(-0.643)	(-0.94)	(-0.34)
AFEE	0.0103	0.00792	0.00962	-0.0311	-0.00633	-0.00768
	(0.36)	(0.24)	(0.29)	(-0.402)	(-0.16)	(-0.18)
LEVERG	0.000376	0.000803	0.000701	-0.000204	-0.000146	-0.0000264
	(1.4)	(1.86)	(1.61)	(-0.703)	(-0.25)	(-0.04)
SIZE	-0.0350*	-0.0589**	-0.0636**	0.0797**	0.055	0.052
	(-2.47)	(-2.80)	(-3.02)	(0.006)	(1.77)	(1.52)
GROW	0.0104	0.00581	0.00679	-0.000669***	-0.000667***	-0.000675***
	(1.62)	(0.85)	(0.84)	(-5.90)	(-6.03)	(-5.72)
ROA	0.00145	0.00698***	0.00660***	-0.00128	-0.000268	-0.0000851
	(1.08)	(3.38)	(3.38)	(-0.311)	(-0.23)	(-0.07)
CONSTANT	.257**	0.422***	0.455***	-0.524***	-0.440**	-0.420*
	(3.06)	(3.31)	(3.64)	(-3.98)	(-3.07)	(-2.47)
R^2	0.332	0.39	0.376	0.243	0.212	0.201
Observations	134	128	130	117	123	121

Models:

$|DACKO_{i,t}| = Ƀ0 + Ƀ1\ AudSIZE_{i,t} + Ƀ2\ AFEEi_{i,t} + Ƀ3\ LEVERG_{i,t} + Ƀ4\ SIZE_{i,t} + Ƀ5\ GROW_{i,t} + Ƀ6\ ROA_{i,t} + \varepsilon_{i,t}$;

$|DACMJ_{i,t}| = Ƀ0 + Ƀ1\ AudSIZE_{i,t} + Ƀ2\ AFEEi_{i,t} + Ƀ3\ LEVERG_{i,t} + Ƀ4\ SIZE_{i,t} + Ƀ5\ GROW_{i,t} + Ƀ6\ ROA_{i,t} + \varepsilon_{i,t}$;

$|DACJ_{i,t}| = Ƀ0 + Ƀ1\ AudSIZE_{i,t} + Ƀ2\ AFEEi_{i,t} + Ƀ3\ LEVERG_{i,t} + Ƀ4\ SIZE_{i,t} + Ƀ5\ GROW_{i,t} + Ƀ6\ ROA_{i,t} + \varepsilon_{i,t}$;

Where: DACKO| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; DACMJ is the discretionary accruals measured using the Modified Jones model (Dechow et al., 1995); DACMJ is the discretionary accruals measured using the Jones model (1991); AUDSIZE is a dummy variable which assumes the value of 1 if the firm is audited by a Big N auditor, and 0 otherwise; AFEE represents the natural log of audit fees; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

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7.3 SECOND EMPIRICAL STUDY: BOARD OF DIRECTORS AND EARNINGS MANAGEMENT

7.3.1 Descriptive Statistics

Table 7.6 provides descriptive statistics of the board of directors variables employed in the regression analysis with observations during the period 2012-2016. Panel A in Table 7.6 shows that the absolute values of discretionary accruals estimated using the Kothary (2005) model (|DACKO|) have a mean (median) of 0.079 (0.054) and a standard deviation of 0.08, which indicates that the total volume of earnings management is 7.9 (5.4) percent of lagged total assets. These findings are consistent with the studies cited in the preceding section (7.2.1)

With regard to the board of directors' attributes, panel A and panel B in Table 7.6 report the descriptive statistics for the continuous independent variables and the dichotomous independent variables, respectively. To start with, panel A reports that the mean (median) value of board size (BRDSIZE) is 7.78 (7), ranging from 4 to 14. Board size in Jordan corresponds with the values reported in studies from Australia (Kiel and Nicholson (2003), Singapore (van Essen et al. (2012) and Malaysia (Wan Mohammad et al. (2016), which found the mean board size of about 7, 7.3 and 7.7 members, respectively.

Moreover, panel A reveals that the ratio of independent non-executive directors (BRDIND) on the board has a mean (median) of 33.8% (28.6%) with a standard deviation of 30%, which is approximately consonant with the figures published in prior studies such as Osma (2008), Lo et al. (2010) and van Essen et al. (2012) who recorded that the medium board size was 36.4%, 34.5% and 34%, respectively.

Panel A also discloses that the mean (median) value for the directors' financial expertise (BRDEXP) has 41.46% (42.86%), with a minimum value of 0.000 and a maximum value of 100.000, which is lower than that obtained by Park and Shin (2004) in Canada, who reported a mean of 43%.

Panel A also shows that the medium frequency of board of directors meetings (BRDMEET) is 7.3 times in a year, with a minimum value of 4.000 and a maximum value of 17.000. Thus, the

number of meetings of the board of directors in a year in Jordan seems to be greater than that obtained in studies on other developing countries such as Malaysia, where Wan Mohammad et al. (2016) found that the mean of board meetings was around five times in a year.

In relation with the dichotomous independent variables, panel B in Table 7.6 reveals that 88.58% of the sample firms have separated roles for chairman positions and CEO (DUAL), while only 11.42% of CEOs in Jordanian firms have a dual leadership structure. This figure is bigger than the percentage of CEO duality in China reported by Lo et al. (2010) (6.8%), but it is consistent with the value recorded in Japanese firms by van Essen et al. (2012) (11%). Panel B also shows that 66.54% of board directors have a former political connection (*POLCON*), whereas 33.46% of directors lack political bonds.

Finally, panel A in Table 7.6 reports the descriptive statistics for the control variables. Firstly, the mean value of firm size (SIZE) is 7.238878, with a minimum of 5.46952 and a maximum of 9.083311. Secondly, panel (A) indicates that firm leverage (LEV) has a mean value of 33.62108 (minimum of 0.3998157 and maximum of 115.4677); firm growth (GROW) has a mean value of 3.453298 (minimum of -8.4 and maximum of 500.1344), and firm performance (ROA) has a mean of 0.8587649, with minimum and maximum values of -79.32799 and 40.38356, respectively. The difference between the figures of the variables above may be due to the distinct corporate governance requirements and institutional settings in every country.

Table 7.6 Descriptive Statistics – Continuous and Dichotomous Variables

Panel A: Descriptive statistics of continuous variables (full sample, N = 251).

Variable	Mean	SD	Min	P50	Max
|DACKO|	0.0795805	0.0829606	0.0004069	0.0544669	0.526978
BRDSIZE	7.767717	2.234561	4	7	14
BRDIND	33.75555	30.22228	0	28.57143	100
BRDEXP	41.45544	21.6581	0	42.85714	100
BRDMEET	7.33913	2.146946	4	6	17
LEVERG	33.62108	22.82146	0.3998157	30.29284	115.4677
SIZE	7.23888	0.6318891	5.46952	7.208244	9.083311
GROW	3.453298	31.51349	-8.4	1.02143	500.1344
ROA	0.858765	10.67408	-79.32799	0.8477463	40.38356

Panel B: Descriptive Statistics – Dichotomous Variables

Variable	Frequency of 1's (Yes)	Frequency of 0's (No)	Percentage of 1's (Yes)	Percentage of 0's (No)
CEO DUL	29	222	11.6%	88.4%
POLITCONN	85	166	33.9%	66.1%

Where: |DACKO| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; BRDSIZE is calculated as the number of directors in the board; BRDIND is computed as the ratio of non-executive directors on board to board size; BRDEXP is measures as the ratio of directors with accounting experience and financial qualification to board size; BRDMEETT is computed as the number of board meetings over the calendar year; DUAL is a dummy variable, 1 if the general director is also the chairman, 0 otherwise; POLCON is a dummy variable, 1 if a board member has a former political background, 0 otherwise; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year.

7.3.2 **Correlation Matrix Results**

Table 7.7 presents the Pearson's correlation matrix for both the continuous and the dichotomous variables in the second model (i.e. board of directors' attributes). Table 7.7 shows that whilst there are numerous statistically significant correlations among the explanatory variables, none of them are highly correlated. So, it can be concluded that collinearity does not seem to generate a threat to the explanation of independent variables' regression coefficients in the second model. Besides, variance inflation factors (VIF) are low (in other words, all values are under 0.8).

With reference to the dependent variable, i.e. the earnings management proxy measured as the absolute value of discretionary accruals estimated using the performance adjusted model (|DACKO|), the results of the correlation test in Table 7.7 show that the majority of independent variables are negatively associated with the dependent variable as predicted. In particular, Table 7.7 indicates that five attributes of the board of directors, namely board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), CEO duality (DUAL) and political connection (POLCON), have a negative correlation with the discretionary accruals as a proxy for earnings management, while board meetings (BRDMEET) is positively associated with earnings management.

Regarding the control variables, Table 7.7 also shows that |DAC| is significantly and negatively correlated with firm size (SIZE) and significantly and positively correlated with firm growth (GROW). Furthermore, the results in Table 7.7 display that the correlation coefficients for both firm leverage (LEVERG) and firm performance (ROA) are positively correlated with |DAC |.

Finally, it is noticeable mentioning that relatively high correlations coefficients were remarked between board size (BRDSIZE) and board independence (BRDIND) with firm size (0.245; 0.315, respectively, at a level of significance of 0.01). This correlation was expected, as it implies that larger firms have larger boards and boards with a higher degree of independent members. Another high correlation 0.348 (at a level of significance of 0.01) was observed between firm size (SIZE) and firm performance (ROA), which suggests that larger companies in Jordan have a high-performance percentage.

Table 7.7 Pearson's correlation matrix

	|DACKO|	BRDSIZE	BRDIND	BRDEXP	BRDMEET	DUAL	POLCON	LEVERG	SIZE	GROW	ROA	VIF
|DACKO|	1											
BRDSIZE	-0.171**	1										1.34
BRDIND	-0.0370	0.210**	1									1.27
BRDEXP	-0.0445	0.0633	0.110	1								1.22
BRDMEET	0.0654	-0.146*	0.150*	-0.196**	1							1.21
DUAL	-0.0395	-0.0664	-0.0476	-0.0264	-0.0920	1						1.14
POLCON	-0.0141	0.224***	0.0255	-0.219***	0.168*	-0.149*	1					1.25
LEVERG	0.0431	-0.210**	0.180**	0.171**	0.0902	0.260***	-0.0377	1				1.32
SIZE	-0.279***	0.245***	0.315***	0.191**	0.152*	0.0374	0.187**	0.182**	1			1.71
GROW	0.287***	-0.0114	0.124	0.0371	-0.0701	0.0525	-0.0508	0.0759	-0.158*	1		1.09
ROA	0.00697	-0.0319	-0.0197	0.0928	-0.0747	0.0378	-0.108	-0.0623	0.348***	0.0125	1	1.28

Where : |DACKO| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; BRDSIZE is calculated as the number of directors in the board; BRDIND is computed as the ratio of non-executive directors on board to board size; BRDEXP is computed as the ratio of directors with accounting experience and financial qualification to board size; BRDMEETT is computed as the number of board meetings over the calendar year; DUAL is a dummy variable, 1 if the general director is also the chairman, 0 otherwise; POLCON is a dummy variable, 1 if a board member has a former political background, 0 otherwise; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level.

7.3.3 **Regression Results**

Table 7.8 reports the findings of GLS regressions of the board of directors' attributes (board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), board meetings (BRDMEET), CEO duality (DUAL) and political connection (POLCON)) and discretionary accruals as a proxy for earnings management. As the data set is in panel frame, we run the Hausman test (1978) in order to decide which model is best fitted to our data (the fixed effects (OLS) versus the random effects (GLS)). The value was not significant (P = 0.7513), and thus the null hypothesis cannot be rejected. Therefore, the random effects model is considered the most appropriate for our study.

Model 1 documents the basic model which only incorporates the control variables in the formula, while the independent variables (board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), board meetings (BRDMEET), CEO duality (DUAL) and political connection (POLCON)) are separately included in models 2 to 7, respectively. In addition, model 8 combines all the explanatory variables and the control variables.

To begin with, in column 1, which involves only the control variables, the coefficient of firm size (SIZE) has a negative sign and is highly significant (at a level of significance of 0.01). This finding supports the argument that larger firms, which are subjected to more scrutiny by the authorities, the press and analysts, are less inclined to engage in earnings management. This finding is consistent with preceding literature both regarding developing countries (Rahman and Ali 2006; González and García-Meca 2014; Chi et al. 2015) and developed countries (González and García-Meca 2014; Albersmann and Hohenfels 2017).

The coefficient of firm growth (GROW) has, as anticipated, a positive sign and is significant, proposing that a larger degree of growth may motivate managers to use aggressive earnings management practices. Finally, the remaining control variables (i.e. firm leverage (LEVERG) and firm performance (ROA)) do not exhibit any significant influence on the absolute value of discretionary accruals.

The goodness-of-fit (R^2) is 0.166, signifying that the variables included in the regression model clarified 16.6% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 2 in Table 7.8 reports the GLS regression findings after inserting board size (BRDSIZE) as a first explanatory variable in investigating the variation of the absolute value of discretionary accruals. The results document that the coefficient of BRDSIZE has a negative sign, but is statistically insignificant. Thus, this finding does not bolster the acceptance of Hypothesis H3. This finding may support the argument that larger board size enhances the board's decision making capacity by representing shareholders' interests (Chtourou et al. 2001) and that larger boards are more effective in monitoring financial reporting (John and Senbet 1998). However, although no statistically significant association is discovered, a negative directional indication of the coefficient is noted. This result is consistent with the existing evidence in developing countries (Jaggi et al. 2009).

A further detail from column 2 in Table 7.8 shows that the coefficients of firm size (SIZE) and firm growth (GROW) are still significant with the absolute value of discretionary accruals, as stated in column 1.

The goodness-of-fit (R^2) is 0.17, signifying that the variables included in the regression model clarified 17.4% of the variation in the dependent variable (the absolute value of discretionary accruals.

Column 3 in Table 7.8 presents the GLS regression findings after introducing board independence (BRDIND) as an explanatory variable in examining the variation of the absolute value of discretionary accruals. It reveals that board independence (BRDIND) has no relationship with earnings management (the coefficient β2 is positive and not significant), which means that board independence (BRDIND) is not effective in limiting earnings management in the Jordanian setting. Thus, Hypothesis 4 is rejected. This result is in line with Park and Shin (2004) findings in the Anglo-Saxon context and with evidence from countries characterized by concentrated ownership (Bradbury et al. 2006; Osma and Noguer 2007).

Column 3 also shows that the coefficients of firm size (SIZE), firm growth (GROW) and firm performance (ROA) are still as

documented in columns 1 and 2. The goodness-of-fit (R^2) is around 0.17, as remarked in columns 1 and 2.

Column 4 provides the GLS regression outputs after including board financial expertise (BRDEXP) as an explanatory variable in examining the variation of the absolute value of discretionary accruals. It reveals that the board's financial expertise (BRDEXP) has no relationship with earnings management (the coefficient β2 is positive and not significant), which signifies that boards with financial expertise are less efficient in restricting earnings management in the Jordanian setting. Thus, Hypothesis 5 is rejected. This result is consistent with Jiang et al. (2013).

Column 4 also shows that the control variables firm size (SIZE) and firm growth (GROW) are still significant predictors of the absolute value of discretionary accruals, as concluded in columns 1, 2 and 3. The goodness-of-fit (R^2) is 0.171, indicating that the variables included in the regression model clarified 17.1% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 5 documents the GLS regression results after including board meetings (BRDMEET) as an explanatory variable in examining the variation of the absolute value of discretionary accruals. It indicates that there is a positive and statistically significant relationship between the number of board meetings (BRDMEET) and the absolute value of discretionary accruals. Hence, Hypothesis H6 is not accepted. Thus, this result proposes that board meetings are not effective in reducing earnings management.

This finding disagrees with the notable role that both theoretical and empirical research has assigned to this attribute of the board of directors to fulfill its role effectively. Thus, in the case of emerging economies, like Jordan, this attribute does not appear to be so efficient. Board meetings in those firms characterized by concentrated ownership (family form) can be carried out informally, by phone or in special accommodation (house). Hence, in such firms, indications for board diligence, such as preparation before meetings, attentiveness, participation during meetings, and post-meeting follow up (Carcello et al. 2002), may not receive more attention from board members.

Furthermore, to the extent to which boards are usually composed of members of the same family, it is possible that they hold informal meetings in which company's issues are addressed. These informal

meetings are not considered when a company discloses information regarding the number of meetings.

More details from column 5 show that the control variables firm size (SIZE), firm growth (GROW) and firm leverage (LEVERG)) remain significant predictors of the absolute value of discretionary accruals as concluded in prior columns. The goodness-of-fit (R^2) is 0.171, indicating that the variables included in the regression model clarified 17.1% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 6 in Table 7.8 reports the GLS regression findings after inserting CEO duality (DUAL) as the fifth explanatory variable in investigating the variation of absolute value of discretionary accruals. The results document that the coefficient of DUAL has a negative sign but is statistically insignificant. Thus, this result does not support the acceptance of Hypothesis H7.

This finding confirm the argument that CEO duality may serve firm financial reporting quality, where a single head can give a clear direction (Chang and Sun 2009) and also contribute to lower monitoring costs (Yasser et al. 2011).

Although no statistically significant association is detected, a negative directional sign of the coefficient is recorded. This finding is consistent with Xie et al. (2003); Davidson et al. (2005) and Ghosh et al. (2010), who, in the Anglo Saxon context, found that CEO duality is unrelated to discretionary accruals. Further, evidence from developing markets provides similar results (Bradbury et al. 2006; Yasser and Mamun 2015).

Column 6 also shows that the coefficients of firm size (SIZE) and firm growth (GROW) are still significant with the absolute value of discretionary accruals. The goodness-of-fit (R^2) is 0.169, signifying that the variables included in the regression model clarified 16.9% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 7 provides the GLS regression outputs after introducing political connection (POLCON) as an explanatory variable in examining the variation of the absolute value of discretionary accruals. It reveals that the board members' political connection (POLCON) has no relationship with earnings management (the coefficient β6 is positive and not significant), which supports that

political connection of the board of directors' members is not effective in reducing earnings management in the Jordanian setting. Hence, Hypothesis 8 is rejected. A similar finding has been found by scholars in developing economies like Malaysia (Sejati 2009; Ben Rejeb Attia et al. 2016).

Column 7 also shows that the control variables firm size (SIZE) and firm growth (GROW) are still significant predictors of the absolute value of discretionary accruals as concluded in columns 1 to 6. Furthermore, column 7 shows that the coefficient of firm performance has a significant and positive sign, indicating that firms with high performance are more likely to manage their earnings figures. This result is in line with findings of studies in developing countries (González and García-Meca 2014). The goodness-of-fit (R^2) is about 0.18, indicating that the variables included in the regression model clarified 18% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 8 depicts the GLS regression outcomes of all the board of directors' attributes in examining the variation of absolute value of discretionary accruals. As stated in column 5, the coefficient of (BRDMEET) is still positive and statistically significant, whereas board size (BRDSIZE), in column 2, and CEO duality (DUAL), in column 6, continue to be negative and statistically insignificant. In addition, board independence (BRDIND), in column 3, board financial expertise (BRDEXP), in column 4, and political connection (POLCON), in column 7, continue to be positive and statistically insignificant.

Column 8 also indicates that the control variables firm size (SIZE) and firm growth (GROW) are still significant predictors of the absolute value of discretionary accruals, as concluded in columns 3 and 5. It is worth noticing that the goodness-of-fit (R^2) enhances marginally with the inclusion of all the board of directors' attributes as explanatory variables of the variation of the absolute value of discretionary accruals compared with the regression models in columns 1 to 8 and even it reaches the highest value. Thus, in column 8 R^2 is equal 0.181, implying that the variables incorporated into the regression model explain 18.1% of the variation in the dependent variable (the absolute value of discretionary accruals).

Taken together, the results obtained from columns 2 to 8 reported the rejection of the tested hypotheses. Those results found that board of directors' attributes (i.e. board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), CEO duality (DUAL) and political connection (POLCON)) do not significantly affect restricting earnings management activities, both in seclusion and in tandem. Furthermore, interestingly, this study documents that the frequency of board meetings (BRDMEET) is significantly and positively associated with earnings management. This conclusion means that, in the Jordanian context, board meetings are not effective in lessening earnings management activities. Finally, it must be indicated that the R^2 reported in the above columns is comparable with relevant similar research (Chi et al. 2015).

Overall, these findings present key insights into the effectiveness of the board of directors' attributes in an institutional context characterized by concentrated ownership and predominance of family firms, like Jordan. A possible explanation of these findings may be due to the differences in the environmental setting, as, unlike the situation in many Anglo-Saxon and Western European countries, the Jordanian context is characterized by concentrated ownership and low levels of agency costs involved between owners and managers, resulting in a weak demand for highly effective performance from the board of directors. Furthermore, another plausible explanation for these results may be attributed to the dissimilar stock markets and corporate governance regimes.

In this sense, some authors argue that the corporate governance reforms may be ineffective in many emerging countries because corporate governance mechanisms in those countries are often not efficient internal monitoring tools. They suggest several reasons why corporate governance mechanisms are ineffective, such as highly concentrated of ownership (Fan and Wong 2002); weak enforcement of the rule of law, less transparent disclosure of financial reporting (Dharwadkar et al. 2000; Mitton 2002; Young et al. 2008). Moreover, as indicated earlier, in many cases, the adoption of good corporate-governance practices in developing markets is mainly driven by international demands rather than a genuine spirit of good corporate governance (Peng 2004; Young et al. 2008; Goh and Rasli 2014).

Therefore, the newly adopted corporate governance legislation may be inappropriate to their institutional settings (Daniel et al. 2011).

More especially, various arguments presented by other authors explain that the board of directors as an internal monitoring mechanism is inefficient. First, the appointment of the independent directors in the board has generally been considered as a source of expertise to advise management rather than providing them with the monitoring responsibility and controlling managerial activities (Johnson et al. 1996; Anderson and Reeb 2004; Gomez-Mejia et al. 2011; Goh and Rasli 2014).

Second, in family firms the independent directors are usually nominated by the family CEO and their appointment demands voting from the family owners (Goh and Rasli 2014). As a result, the independence of the outside directors is likely to be compromised because they may feel thankful and obliged to the family CEO (Jaggi et al. 2009; Schepker and Oh 2013; Goh and Rasli 2014). In this sense, van Essen et al. (2012) reveal that the boards of directors in family firms work as a derivative of family owners. Moreover, the independent directors are often hired to legitimize business activities rather than to conduct independent monitoring of management (Haniffa and Hudaib 2006).

Finally, family directors have a good position to control material information in owner-managed firms (Gomez-Mejia et al. 2011).

In the following section, several extra tests are performed to confirm the robustness of our findings.

Table 7.8 GLS regression results of the board of directors' attributes and the control variables on discretionary accruals

Variables	Predicted sign.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column7	Column 8
BRDSIZE	_		-0.00346						-0.00259
			(-1.35)						(-0.96)
BRDIND	_			0.0000382					0.000032
				(0.23)					(0.18)
BRDEXP	_				0.000131				0.0000471
					(0.61)				(0.22)
BRDMEET	_					0.00494**			0.00413*
						(2.98)			(2.14)
DUAL	_						-0.0174		-0.0144
							(-1.44)		(-0.97)
POLCON	_							0.023	0.0113
								(1.73)	(1.1)
LEVERG	?	0.000335	0.000262	0.000328	0.000325	0.000253	0.000399	0.000379	0.000241
		(1.02)	(0.75)	(0.99)	(1)	(0.83)	(1.14)	(1.17)	(0.68)
SIZE	?	-0.0475***	-0.0437***	-0.0482***	-0.0481***	-0.0387***	-0.0487***	-0.0506***	-0.0384***

Variables	Predicted sign.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column7	Column 8
		(-3.99)	(-3.41)	(-4.04)	(-3.91)	(-4.54)	(-3.97)	(-4.23)	(-3.43)
GROW	+	0.000659***	0.000666***	0.000659***	0.000666***	0.0115*	0.000654***	0.000677***	0.0116*
		(10.02)	(10.07)	(10)	(10.31)	(2.3)	(10.15)	(10.29)	(2.2)
ROA	?	0.00121	0.00112	0.00123	0.0012	0.000938	0.00128	0.00136*	0.000954
		(1.88)	(1.74)	(1.88)	(1.89)	(1.28)	(1.96)	(2.04)	(1.25)
CONSTANT		0.408***	0.410***	0.412***	0.408***	0.294***	0.417***	0.421***	0.312***
		(4.68)	(4.62)	(4.74)	(4.68)	(4.71)	(4.66)	(4.94)	(4.55)
R2		0.166	0.174	0.166	0.167	0.171	0.169	0.18	0.181
Observations		251	251	251	251	251	251	251	251

Notes: This table displays GLS regression estimates for a pooled sample of 251 observations during the period from 2012 to 2016.

The underlying first regression model is:

$|DAC_{i,t}| = Ƃ0 + Ƃ1\ BRDSIZE_{i,t} + Ƃ2\ BRDIND_{i,t} + Ƃ3\ BRDEXP_{i,t} + Ƃ4\ BRDMEETT_{i,t} + Ƃ5\ DUAL_{i,t} + Ƃ6\ POLCON_{i,t} + Ƃ7\ LEVERG_{i,t} + Ƃ8\ SIZE_{i,t} + Ƃ9\ GROW_{i,t} + Ƃ10\ ROA_{i,t} + \varepsilon_{i,t}$

Where: |DACKO| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; BRDSIZE is calculated as the number of directors in the board; BRDIND is computed as the ratio of non-executive directors on board to board size; BRDEXP is computed as the ratio of directors with accounting experience and financial qualification to board size; BRDMEETT is calculated as the number of board meetings over the calendar year; DUAL is a dummy variable, 1 if the general director is also the chairman, 0 otherwise; POLCON is determined as a dummy variable, 1 if a director has a former political background, 0 otherwise; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.3.4 **Additional Analysis**

7.3.4.1 Further earnings management models

So far, the analysis has depended on the Kothari et al. (2005) model to estimate discretionary accruals as a proxy for earnings management and investigating their relationship with the board of directors' attributes. In order to validate the power and robustness of our findings this research relies on alternative metrics that have been widely used in literature for calculating earnings management, namely the Jones (1991) model and the Modified Jones model Dechow et al. (1995).

Table 7.9 documents the findings of the GLS regression models where the dependent variable is the discretionary accruals calculated from the Jones (1991) model and the Modified Jones model Dechow et al. (1995). Table 7.9 shows that the coefficients of board size (BRDSIZE) and CEO duality (DUAL) are negative and statistically insignificant. In addition, Table 7.9 also exhibits that the coefficient of board independence (BRDIND), board financial expertise (BRDEXP), and political connection (POLCON) are statistically insignificant, while the coefficient of board meetings (BRDMEET) is noted to be positive and statistically significant.

These results are comparable to prior findings obtained by using the discretionary accruals computed according to the Kothari et al. (2005) (Table 7.8). Furthermore, the results for the control variables, once more, continue to remain similar to those reported in the primary findings.

The goodness-of-fit (R^2) is around 0.20 (0.18) for the Jones modified (1995) (the Jones (1991) model), signifying that the variables included in the regression model clarified 20% (18%) of the variation in the dependent variable (the absolute value of discretionary accruals).

Table 7.9 GLS regression results of the board of directors using additional discretionary accrual models

Variables	Column1 Jones Modified1995	Column2 Jones Original 1991
BRDSIZE	-0.00108	-0.0014
	(-0.30)	(-0.40)
BRDIND	-0.0000591	-0.0000485
	(-0.31)	(-0.25)
BRDEXP	-0.0000274	0.00000889
	(-0.08)	(0.03)
BRDMEET	0.00568**	0.00576*
	(2.59)	(2.54)
DUAL	-0.019	-0.0164
	(-1.14)	(-0.95)
POLCON	0.0123	0.0135
	(0.96)	(1.04)
LEVERG	0.000544	0.000459
	(1.07)	(0.93)
SIZE	-0.0549**	-0.0553**
	(-2.99)	(-3.04)
GROW	0.00932	0.00723
	(1.81)	(1.3)
ROA	0.00255	0.00268
	(1.75)	(1.87)
CONSTANT	0.409***	0.417***
	(3.55)	(3.69)
R2	0.20	0.18
Observations	251	251

Models:

$|DACMJ_{i,t}| = ß0 + ß1\ BRDSIZE_{i,t} + ß2\ BRDIND_{i,t} + ß3\ BRDEXP_{i,t} + ß4\ BRDMEETT_{i,t} + ß5\ DUAL_{i,t} + ß6\ POLCON_{i,t} + ß7\ LEVERG_{i,t} + ß8\ SIZE_{i,t} + ß9\ GROW_{i,t} + ß10\ ROA_{i,t} + \varepsilon_{i,t}$

$|DACJ_{i,t}| = Ƃ0 + Ƃ1\ BRDSIZE_{i,t} + Ƃ2\ BRDIND_{i,t} + Ƃ3\ BRDEXP_{i,t} + Ƃ4\ BRDMEETT_{i,t} + Ƃ5\ DUAL_{i,t} + Ƃ6\ POLCON_{i,t} + Ƃ7\ LEVERG_{i,t} + Ƃ8SIZE_{i,t} + Ƃ9\ GROW_{i,t} + Ƃ10\ ROA_{i,t} + \varepsilon_{i,t}$

Where DACMJ is discretionary accruals measured using the Modified Jones model (Dechow et al., 1995) and DACMJ is discretionary accruals measured using the Jones model (1991); BRDSIZE is calculated as the number of directors in the board; BRDIND is computed as the ratio of non-executive directors on the board to board size; BRDEXP is computed as the ratio of directors with accounting experience and financial qualification to board size; BRDMEETT is calculated as the number of board meetings over the calendar year; DUAL is a dummy variable, 1 if the general director is also the chairman, 0 otherwise; POLCON is a dummy variable, 1 if a director has a former political background, 0 otherwise; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.3.4.2 New definitions for the board of directors and additional control variables

So as to verify whether the findings are strong, we use alternative definitions for the board of directors' attributes. These new definitions are:

- Board meetings (BRDMEET): defined as an ordinal variable that equals 0, if the number of board meeting is less than 6, 1 if it is between 7-10 and 2 if it is greater than 11.
- Board independence (BRDIND): a dummy variable equals 0, if the firm's board independence is less than the sample's median, and 1 otherwise.

The definitions of the other variables stay unaltered.

Furthermore, to evaluate the sensitivity of our control variables choice and to test whether the incorporation of these variables influences the results, this study employs some additional control variables which are usually applied in the empirical research on corporate governance. In this sense, Skinner (1993) notes that several proxies for the investment opportunity set (e.g. Tobin's q) are related to a firm's accounting procedure choice. Dechow et al. (1995) contends that cash-flows affect the magnitude of discretionary accruals, and that higher cash-flows are linked with lower discretionary accruals. Thus, we consider the following additional control variables:

- Cash-flow (CFO) computed as operating cash flow for firm i in year t scaled by lagged total assets (Vander Bauwhede et al. 2003; Peasnell et al. 2005)
- Tobin's q (Tobin's q) calculated as the market to book value of assets at beginning of year (McNichols and Stubben 2008)

Table 7.10 depicts the results for the new definitions and the additional control variables. As can be noticed, the findings in Table 7.10 reinforce prior evidence and are largely consistent with those reported in the main findings. In particular, Table 7.10 shows that the coefficient of board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), CEO duality

(DUAL) and political connection (POLCON) are uncovered to be statistically insignificant. Table 7.10 also found the board meetings (BRDMEET) to be positively significant related to all the DAC models (i.e. the Kothari et al. (2005) model; the Modified Jones model (Dechow et al., 1995) and the Jones model (1991)). The results for the control variables are completely unaltered.

Collectively, the initial findings on the board of directors' attributes are not changed by alternative definitions for board independence and board meetings. The additional control variables are probably not going to influence the outcomes.

Table 7.10 GLS regression results of the alternative variable definitions for the board of directors and additional control variables estimated by the Kothari et al. (2005) model, the Modified Jones model (Dechow et al. 1995) and the Jones (1991) model

Variables	Column1 Kothari et al. (2005)	Column2 Jones Modified1995	Column3 Jones Original 1991
BRDSIZE	-0.00214	-0.000774	-0.0013
	(-0.80)	(-0.23)	(-0.39)
BRDIND	-0.00349	-0.00948	-0.00738
	(-0.31)	(-0.69)	(-0.53)
BRDEXP	0.0000393	0.00000502	0.0000454
	(0.15)	(0.02)	(0.14)
BRDMEET	0.0126	0.0204*	0.0203*
	(1.56)	-2.08	-2.04
DUAL	-0.0194	-0.0252	-0.022
	(-0.99)	(-1.03)	(-0.89)
POLCON	0.0128	0.0109	0.012
	(1.04)	(0.71)	(0.77)
LEVERG	0.000292	0.000446	0.000303
	(0.98)	(1.23)	(0.82)
SIZE	-0.0398***	-0.0531***	-0.0525***
	(-3.86)	(-4.18)	(-4.07)
GROW	0.0136***	0.0118**	0.00995*
	(3.54)	(2.63)	(2.18)

Variables	Column1 Kothari et al. (2005)	Column2 Jones Modified1995	Column3 Jones Original 1991
ROA	0.000709	0.00246***	0.00263***
	(1.37)	(4.05)	(4.25)
CFO	0.09	-0.0233	-0.0492
	(1.74)	(-0.38)	(-0.79)
Tobin's q	-0.00648	-0.0108	-0.0126
	(-0.73)	(-1.01)	(-1.16)
CONSTANT	0.343***	0.438***	0.444***
	(5.04)	(5.18)	(5.18)
R2	0.197	0.207	0.195
Observations	251	251	251

Models:

$|DACKO_{i,t}| = ß0 + ß1\ BRDSIZE_{i,t} + ß2\ BRDIND_{i,t} + ß3\ BRDEXP_{i,t} + ß4\ BRDMEETT_{i,t} + ß5\ DUAL_{i,t} + ß6\ POLCON_{i,t} + ß7\ LEVERG_{i,t} + ß8SIZE_{i,t} + ß9\ GROW_{i,t} + ß10\ ROA_{i,t} + ß11\ CFO_{i,t} + ß12\ Tobin's\ q_{i,t} + \varepsilon_{i,t}$

$|DACMJ_{i,t}| = ß0 + ß1\ BRDSIZE_{i,t} + ß2\ BRDIND_{i,t} + ß3\ BRDEXP_{i,t} + ß4\ BRDMEETT_{i,t} + ß5\ DUAL_{i,t} + ß6\ POLCON_{i,t} + ß7\ LEVERG_{i,t} + ß8SIZE_{i,t} + ß9\ GROW_{i,t} + ß10\ ROA_{i,t} + ß11\ CFO_{i,t} + ß12\ Tobin's\ q_{i,t} + \varepsilon_{i,t}$

$|DACJ_{i,t}| = ß0 + ß1\ BRDSIZE_{i,t} + ß2\ BRDIND_{i,t} + ß3\ BRDEXP_{i,t} + ß4\ BRDMEETT_{i,t} + ß5\ DUAL_{i,t} + ß6\ POLCON_{i,t} + ß7\ LEVERG_{i,t} + ß8SIZE_{i,t} + ß9\ GROW_{i,t} + ß10\ ROA_{i,t} + ß11\ CFO_{i,t} + ß12\ Tobin's\ q_{i,t} + \varepsilon_{i,t}$

Where: |DACKO| is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; DACMJ is discretionary accruals measured using the Modified Jones model (Dechow et al., 1995); DACMJ is discretionary accruals measured using the Jones model (1991); BRDSIZE is calculated as the number of directors in the board; BRDIND is computed as the ratio of non-executive directors on the board to board size; BRDEXP is calculated as the ratio of directors with accounting experience and financial qualification to board size; BRDMEETT is computed as the number of board meetings over the calendar year; DUAL is a dummy variable, 1 if the general director is also the chairman, 0 otherwise; POLCON is a dummy variable, 1 if a director has a former political background, 0 otherwise; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year; CFO is computed as operating cash flow for firm i in year t scaled by lagged total assets; Tobin's q is calculated as market to book value of assets at beginning of year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.3.4.3 Signed Accruals

As a further check on the robustness of prior results, a signed earnings management test was also conducted, as a robustness and sensitivity analysis centered on upwards and downwards earnings management (Gul et al. 2009; Alali 2011; Tsipouridou and Spathis 2012; Habbash and Alghamdi 2017; Albersmann and Hohenfels 2017). The justification of this division lies in discovering possible different discretions practiced by directors to engage earnings management. Likewise, the key tests are re-run to present further evidence on whether or not there is any differential relationship between the corporate governance variables using a measure of discretionary accruals conditional on income-increasing or income-decreasing accruals (Ashbaugh et al. 2003; Jenkins et al. 2006).

As reported in Table 7.8 regarding the main test, Table 7.11 also exhibits that the coefficients of board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), board meetings (BRDMEET), CEO duality (DUAL) and political connection (POLCON) are disclosed to be statistically insignificant with either direction of earnings management, whilst, the coefficient of board meetings (BRDMEET) is remarked to be positive and statistically significant with positive discretionary accruals implying that audit committee meeting interacts with an upwards direction, but not in the general direction of earnings management. This leads us to believe that managers have incentives to achieve their bonus plans and future compensation via income increasing activities.

Further details from Table 7.11 display that the results of control variables (firm size (SIZE), firm growth (GROW) and firm leverage (LEVERG) in the positive sign sample, once more, behave relatively in the same manner as in the primary test. In contrast, those variables show a statically insignificant relationship with the measure of negative discretionary accruals. This might be down to the small sample of firms.

Table 7.11 GLS regression results of the board of directors – signed accruals measured using the Kothari et al. (2005) model, the Modified Jones model (Dechow et al. 1995) and the Jones (1991) model

Variables	Positive earnings management (increasing) DAC+			Negative earnings management (decreasing) DAC-		
	Column1	Column2	Column3	Column1	Column2	Column3
	DAC KO	DAC MJ	DACJ	DAC KO	DAC MJ	DACJ
BRDSIZE	-0.00186	0.000576	-0.00138	0.00241	0.00179	0.00196
	(-0.81)	-0.16	(-0.40)	-0.45	-0.36	-0.34
BRDIND	-0.000149	-0.000173	-0.000158	-0.000276	-0.000114	-0.0000835
	(-0.63)	(-0.74)	(-0.70)	(-1.22)	(-0.43)	(-0.29)
BRDEXP	0.0000515	-0.00041	-0.000326	0.000112	-0.000095	-0.000136
	-0.23	(-0.85)	(-0.71)	-0.32	(-0.28)	(-0.39)
BRDMEET	0.00433*	0.00598**	0.00552**	-0.00191	-0.00323	-0.00369
	-2.15	-2.89	-2.6	(-0.52)	(-0.92)	(-0.95)
DUAL	-0.00879	-0.0422	-0.0392	0.0115	0.0143	0.0127
	(-0.32)	(-1.26)	(-1.18)	-0.58	-0.57	-0.41
POLCON	0.0202	0.00978	0.0138	0.00112	-0.00856	-0.0131
	-1.83	-0.64	-0.95	-0.07	(-0.49)	(-0.70)
LEVERG	0.000477	0.00114*	0.000948*	0.000121	0.0000872	0.000196
	-1.68	-2.28	-1.97	-0.24	-0.14	-0.28
SIZE	-0.0311**	-0.0608***	-0.0632***	0.0474**	0.0322	0.0328
	(-2.77)	(-3.37)	(-3.60)	-2.79	-1.75	-1.57

Variables	Positive earnings management (increasing) DAC+			Negative earnings management (decreasing) DAC-		
	Column1	Column2	Column3	Column1	Column2	Column3
GROW	0.0147*	0.00538	0.00699	-0.0118	-0.0102	-0.00756
	-1.99	-0.63	-0.65	(-1.93)	(-1.72)	(-1.32)
ROA	0.00132	0.00720**	0.00678**	-0.000584	-0.0000357	-0.000022
	-0.97	-3.04	-3.03	(-0.48)	(-0.04)	(-0.02)
CONSTANT	0.237***	0.427***	0.466***	-0.411***	-0.276*	-0.282*
	-3.84	-3.7	-4.02	(-3.74)	(-2.38)	(-1.99)
R^2	0.182	0.447	0.428	0.224	0.155	0.114
Observations	134	128	130	117	123	121

Models:

$|DACKO_{i,t}| = Ƃ0 + Ƃ1\ BRDSIZE_{i,t} + Ƃ2\ BRDIND_{i,t} + Ƃ3\ BRDEXP_{i,t} + Ƃ4\ BRDMEETT_{i,t} + Ƃ5\ DUAL_{i,t} + Ƃ6\ POLCON_{i.t} + Ƃ7\ LEVERG_{i,t} + Ƃ8\ SIZE_{i,t} + Ƃ9\ GROW_{i,t} + Ƃ10\ ROA_{i,t} + Ƃ11\ CFO_{i,t} + Ƃ12\ Tobin's\ q_{i,t} + \varepsilon_{i,t}$

$|DACMJ_{i,t}| = Ƃ0 + Ƃ1\ BRDSIZE_{i,t} + Ƃ2\ BRDIND_{i,t} + Ƃ3\ BRDEXP_{i,t} + Ƃ4\ BRDMEETT_{i,t} + Ƃ5\ DUAL_{i,t} + Ƃ6\ POLCON_{i.t} + Ƃ7\ LEVERG_{i,t} + Ƃ8\ SIZE_{i,t} + Ƃ9\ GROW_{i,t} + Ƃ10\ ROA_{i,t} + Ƃ11\ CFO_{i,t} + Ƃ12\ Tobin's\ q_{i,t} + \varepsilon_{i,t}$

$|DACJ_{i,t}| = Ƃ0 + Ƃ1\ BRDSIZE_{i,t} + Ƃ2\ BRDIND_{i,t} + Ƃ3\ BRDEXP_{i,t} + Ƃ4\ BRDMEETT_{i,t} + Ƃ5\ DUAL_{i,t} + Ƃ6\ POLCON_{i.t} + Ƃ7\ LEVERG_{i,t} + Ƃ8\ SIZE_{i,t} + Ƃ9\ GROW_{i,t} + Ƃ10\ ROA_{i,t} + Ƃ11\ CFO_{i,t} + Ƃ12\ Tobin's\ q_{i,t} + \varepsilon_{i,t}$

Where: |DACKO|is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; DACMJ is discretionary accruals measured using the Modified Jones model (Dechow et al., 1995); DACMJ is discretionary accruals measured using the Jones model (1991); BRDSIZE is calculated as the number of directors in the board; BRDIND is computed as the ratio of non-executive directors on the board to board size; BRDEXP is computed as the ratio of directors with accounting experience and financial qualification to board size; BRDMEETT is calculated as the number of board meetings over the calendar year; DUAL is a dummy variable, 1 if the general director is also the chairman, 0 otherwise; POLCON is determined as a dummy variable, 1 if a director has a former political background, 0 otherwise; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.4 THIRD EMPIRICAL STUDY: AUDIT COMMITTEES AND EARNINGS MANAGEMENT

7.4.1 Descriptive Statistics

Table 7.12 provides descriptive statistics of the audit committee variables employed in the regression analysis with observations coming from the period 2012-2016. Panel A Table 7.12 shows that the absolute values of discretionary accruals estimated using the Kothary et al. (2005) model (|DACKO|) have a mean (median) of 0.079 (0.054) and a standard deviation of 0.08, which indicates that the total volume of earnings management is 7.9 (5.4) percent of lagged total assets. These findings are consistent with prior cited studies in the preceding sections.

With regard to the third model (audit committee's attributes), panels A and B in Table 7.12 report the descriptive statistics for the continuous independent variables and the dichotomous independent variables, respectively. The statistics panel A shows that the mean (and median) of audit committee size (ACSIZE) is 3.2 (3), ranging from 2 to 5, which is comparatively consistent with the figures reported in prior studies both in developed and developing countries. For instance, Baxter and Cotter (2009) and Gebrayel et al. (2018) found that the mean size of the audit committee in Australia's and Oman's firms was around 3.18, 3.37, respectively.

Panel A in Table 7.12 discloses that the mean value of audit committee meetings (ACMEET) is 4.67 (the minimum value is 0.000 and the maximum value is 10.000). This value is consistent with evidence presented by Juhmani (2017) and Gebrayel et al. (2018), who documented that the average number of meetings of the audit committee in firms from Oman and Bahrain was 4.8 and 4.5, respectively.

In term of the dichotomous independent variables, panel B in Table 7.12 shows that only 22% of the sample firms possess solely independent non-executive managers (ACIND). It is obvious that the ratio of audit committee independence is relatively low, which may be due to one or both of following reasons either the environmental context, characterized by concentrated ownership, or the sample size. Further, 83% of board of directors has at least one member who has

worked previously in accounting or finance fields, or having an academic or professional certificate in accounting and finance (ACEXP). This value is relatively consistent with Wan Mohammad et al. (2016) result, who noted that the average experience of the audit committee in Malaysian firms was around 82%.

The descriptive statistics for the control variables were discussed in section 7.3.1.

Table 7.12 Descriptive Statistics – Continuous and Dichotomous Variables

Panel A: Descriptive statistics of continuous variables (full sample, N = 251).

Variables	Mean	SD	Min	P50	Max
|DACKO|	0.079581	0.082961	0.000407	0.0545	0.52698
ACSIZE	3.15341	0.47122	2	3	5
ACMEET	4.67046	1.79664	0	4	10
LEVERG	33.6211	22.8215	0.399816	30.293	115.468
SIZE	7.23889	0.63189	5.4695	7.2082	9.08331
GROW	3.45329	31.5134	-8.4	1.0214	500.134
ROA	0.858765	10.6745	-79.32799	0.8477	40.3836

Panel B: Descriptive Statistics – Dichotomous Variables

Variables	Frequency of 1's (Yes)	Frequency of 0's (No)	Percentage of 1's (Yes)	Percentage of 0's (No)
ACIND	38	138	21.59%	78.41%
ACEXPC	148	30	82.95%	17.05%

where: DACKO is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; ACSIZE represents the number of members of the audit committee; ACIND is a dummy variable, 1 if all directors in the audit committee are independent, and 0 otherwise; ACEXP is a dummy variable, 1 if at least one director in the audit committee worked previously in accounting or finance fields, or have an academic or professional certificate in accounting, finance or related fields, and 0 otherwise; ACMEET is measured as the number of audit committee meetings over the calendar year; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year

7.4.2 **Correlation Matrix Results**

Table 7.13 presents the Pearson's correlation matrix for both the continuous and the dichotomous variables employed in the third model (audit committee's attributes). Table 7.13 shows that whilst there are numerous statistically significant correlations among the explanatory variables, none of them are highly correlated. So, it can be said that there is no multicollinearity problem. Besides, variance inflation factors (VIF) are low (in other words, all values are under 0.8).

With relation to the dependent variable (the earnings management proxy, absolute value of discretionary accruals estimated using the performance adjusted model (|DACKO|)), the results of the correlation test in Table 7.13 indicate that the association between the dependent and the independent variables was as predicted.

Table 7.13 shows that the four audit committee's attributes (audit committee size (ACSIZE), audit committee independence (ACIND), audit committee expertise (ACEXP) and audit committee meetings (ACMEET)) have a negative correlation with the discretionary accruals as a proxy for earnings management.

Regarding the control variables, Table 7.13 also exposes that |DAC| is significantly and negatively correlated with the proxy that measures firm size (SIZE) and significantly and positively correlated with the proxy that measures firm growth (GROW). Furthermore, a review of results in Table 7.13 shows that the correlation coefficients for both firm leverage and firm performance are positively correlated with |DAC |.

Finally, it is worth mentioning that a relatively high correlation coefficient was found between audit committee meetings (ACMEET) and firm size SIZE) (0.477, at a level of significance of 0.01). This correlation was expected, as it contends that larger firm size implies more frequent meetings of the audit committee during a calendar year. Another high correlation was observed between firm size (SIZE) and firm performance (ROA) (0.368, at the level of significance of 0.01), which suggests that larger companies in Jordan have a high-performance percentage.

Table 7.13 Pearson's correlation matrix

	|DACKO|	ACSIZE	ACIND	ACEXP	ACMEET	LEVERG	SIZE	GROW	ROA	VIF
|DACKO|	1									
ACSIZE	-0.0716	1								1.15
ACIND	-0.0584	0.122	1							1.23
ACEXP	-0.0696	-0.278***	-0.175*	1						1.31
ACMEET	-0.169*	0.0942	0.267***	0.0375	1					1.48
LEVERG	0.0937	-0.158*	0.0486	0.274***	0.083	1				1.21
SIZE	-0.284***	0.107	0.181*	0.182*	0.477***	0.173*	1			1.88
GROW	0.355***	0.11	0.295***	-0.228**	0.0387	0.111	-0.11	1		1.26
ROA	0.00886	-0.0473	-0.0442	0.162*	-0.0665	-0.0499	0.368***	0.0355	1	1.38

where: DACKO is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model; ACSIZE represents the number of members of the audit committee; ACIND is a dummy variable 1, if all directors in the audit committee are independent, and 0 otherwise; ACEXP is a dummy variable, 1 if at least one director in the audit committee worked previously in accounting or finance fields or have an academic or professional certificate in accounting, finance or related fields, and 0 otherwise; ACMEET is measured as the number of audit committee meetings over the calendar year; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed).

7.4.3 **Regression Results**

Table 7.14 reports the findings of GLS regressions of the third empirical model (the audit committee's attributes) and discretionary accruals as a proxy for earnings management. As the dataset is in panel frame, we run the Hausman test (1978) in order to decide which model is best fitted to our data (fixed effects (OLS) versus random effects (GLS)). The value was not significant (P = 0.3341) and thus the null hypothesis cannot be rejected. Hence, the random effects model is considered the most appropriate for our study.

Model 1 documents the basic model, which incorporates only the control variables in the formula. The independent variables (audit committee size (ACSIZE), audit committee independence (ACIND), audit committee expertise (ACEXP) and audit committee meetings (ACMEET)), are included separately in models 2 to 5, respectively. In addition, model 6 combines all explanatory variables and control variables.

In column 1, which involves only control variables, the coefficient of firm size (SIZE) has a negative sign and is highly significant (at a level of significance of 0.01), suggesting that larger firms, which are subjected to more scrutiny by the authorities, the press and analysts, are less likely to exercise more earning manipulations. This finding is consistent with preceding literature in developed and developing nations (Chi et al. 2015; Albersmann and Hohenfels 2017). Further, in line with the prior research (Carcello and Nagy 2004; González and García-Meca 2014; Alzoubi 2016; Albersmann and Hohenfels 2017), the coefficient of firm growth has, as anticipated, a positive sign and is significant, proposing that a larger degree of growth may promote managers to use aggressive earnings management practices. Finally, the remaining control variables (firm leverage (LEVERG) and firm performance (ROA)) do not exhibit any significant influence on the absolute value of discretionary accruals.

The goodness-of-fit (R^2) is around 0.166, signifying that the variables included in the regression model clarified 16.6% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 2 in Table 7.14 reports the GLS regression findings after introducing audit committee size (AUDSIZE) as the first explanatory variable in investigating the variation of absolute value of discretionary accruals. The results document that the coefficient of (ACSIZE) has a negative sign but is statistically insignificant. Thus, this finding does not bolster the acceptance of Hypothesis H9. This result is consistent with the existing evidence in developing countries, such as Egypt (Soliman and Ragab 2014), and developed countries such US (Xie et al. 2003; Bedard et al. 2004), Australia (Baxter and Cotter 2009) and Germany (Albersmann and Hohenfels 2017).

Further details from column 2 show that the coefficients of firm size (SIZE) and firm growth (GROW) are still significant with the absolute value of discretionary accruals as stated in column 1.

Column 3 in Table 7.14 present the GLS regression findings after introducing audit committee independence (ACIND) as an explanatory variable in examining the variation of the absolute value of discretionary accruals. Column 3 indicates that there is a negative and statistically significant relationship between audit committee independence (ACIND) and the absolute value of discretionary accruals. This implies that the presence of independent directors on the audit committee have a role in deterring earnings management practice due to their capacity to control management efficiently. Therefore, the Hypothesis H10 is accepted. This result is similar to findings from Anglo-Saxon countries (Xie et al. 2003; Davidson et al. 2005) and with emerging countries' evidence (Lin et al. 2009; Soliman and Ragab 2014).

Column 3 also shows that the coefficients of firm size (SIZE), firm growth (GROW) and firm performance (ROA) are still as documented in columns 1 and 2. However, column 3 also finds that the coefficient of firm leverage (LEVERG) is significantly and positively associated with earnings management, inferring that a greater degree of leverage promotes earnings management activities (Davidson et al. 2005; Alzoubi 2016; Albersmann and Hohenfels 2017).

The goodness-of-fit (R^2) is around 0.211, indicating that the variables included in the regression model clarified 21.1% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 4 provides the GLS regression outputs after entering audit committee expertise (ACEXP) as an explanatory variable in examining the variation of absolute value of discretionary accruals. The results document that the coefficient of ACEXP has a negative sign but is statistically insignificant. Thus, this result does not support the acceptance of Hypothesis H11. This result coincides with the findings obtained by Ghosh et al. (2010) in the US and Van Der Zahn and Tower (2004) and Mishra and Malhotra (2016) in two developing countries, Singapore and India, respectively.

Column 4 also shows that firm size (SIZE) and firm growth (GROW) are still significant predictors of the absolute value of discretionary accruals, as concluded in columns 1 and 2. The goodness-of-fit (R^2) is about 0.209, indicating that the variables included in the regression model clarified 20.9% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 5 documents the GLS regression results after incorporating audit committee meetings (ACMEET) as an explanatory variable in examining the variation of the absolute value of discretionary accruals. The results report that the coefficient of ACMEET has a negative sign but is statistically insignificant. Hence, Hypothesis H12 is not accepted. This finding is consistent with the existing evidence in other developed and developing countries (Bedard et al. 2004; Yang and Krishnan 2005; Baxter and Cotter 2009; Lin et al. 2009; Juhmani 2017).

Column 5 exhibits that firm size (SIZE), firm growth (GROW) and firm leverage (LEVERG) remain significant predictors of the absolute value of discretionary accruals as concluded in column 3. The goodness-of-fit (R^2) is about 0.21, indicating that the variables included in the regression model clarified 21% of the variation in the dependent variable (the absolute value of discretionary accruals).

Column 6 shows the GLS regression results including all audit committee variables as explanatory variables in examining the variation of absolute value of discretionary accruals. As stated in column 3, the coefficient of ACIND is still negative and statistically significant. In contrast, the remaining independent variables, such as audit committee size (ACSIZE) in column 2, audit committee expertise (ACEXP) in column 4 and audit committee meetings

(ACMEET) in column 5, continue to be negative and statistically insignificant.

Column 6 also shows that firm size (SIZE), firm growth (GROW) and firm leverage (LEVERG) are still significant predictors of the absolute value of discretionary accruals, as concluded in columns 3 and 5. It is worth pointing out that the goodness-of-fit (R^2) enhances appreciably with the inclusion of all the audit committee variables as explanatory variables in explaining the variation of the absolute value of discretionary accruals in the regression models from columns 1 to 5, even reaching the highest value in column 6 (0,232%). Thus, the variables incorporated in the regression model explain 23.2% of the variation in the dependent variable (the absolute value of discretionary accruals).

Taken together, the results obtained from columns 2 to 6, completely support the acceptance of Hypothesis H10. Furthermore, those results indicate that ACIND is the only audit committee's attribute that significantly affects and restricts earnings management activities, both in seclusion and in tandem. Finally, the R^2 reported in columns 2 to 6 is comparable with those in related research (Chi et al. 2015; Mishra and Malhotra 2016).

To sum up, together these results provide valuable insights concerning the effectiveness of audit committees in Jordan. In reality, although the Jordanian Code of Corporate Governance (JCGC 2009) specifies that the key role of an audit committee is to guarantee and oversee the quality of financial reporting, this study generally presents evidence that audit committees in fact have not efficiently carried out their tasks, suggesting that the establishment of an audit committee in listed companies in Jordan still cannot achieve a significant success in its monitoring role and it seems that audit committees do not accomplish their expected objectives. Thus, similar to what (Abdullatif 2006) observed, in Jordanian listed firms audit committees have a limited effectiveness as corporate governance mechanism.

Our results confirm the argument expressed by several authors (Abdullatif 2006; Abdullatif 2007; Al-Khadash and Al-Sartawi 2010) that the underlying reason behind the establishing of audit committees by Jordanian listed firms is meeting legal requirements rather than improving the firms' financial reporting system.

As in the case of the board of directors, this result may be explained by the fact that audit committees operate in an environment characterized by concentrated ownership and low levels of agency costs involved between owners and managers, resulting in a low demand for highly effective performance from the audit committees.

In this respect, Abdullatif et al. (2015) conducted a survey to explore whether audit committees in Jordanian public listed companies possess the attributes needed to enable them to perform their duties. They conclude that the audit committees hold the essential features required, but only to a limited extent. They put their findings down to the family business model and the low degree of agency costs, which affect the demand for active audit committees.

It can therefore be suggested that these variations in the quality of the audit committees in Jordan are due to some characteristics of the Jordanian context, such as the weak enforcement of the rule of law, less transparent disclosure of financial reporting (Dharwadkar et al. 2000; Mitton 2002; Young et al. 2008) and highly concentrated ownership (Fan and Wong 2002). In addition, as indicated earlier, in developing markets the corporate governance legislation seems to be primarily motivated by global demands rather than a genuine spirit of good corporate governance (Peng 2004; Young et al. 2008; Goh and Rasli 2014). Besides, audit committees are viewed by boards and directors as a legal burden that has to be fulfilled as simply as possible, rather than a beneficial mechanism for the company's success and sustainability (Abdullatif et al. 2015).

In the following section, we will perform several extra tests to confirm the robustness of our outcomes.

Table 7.14 GLS regression results of the audit committee and the control variables on discretionary accruals

Variables	Predicted sign.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
ACSIZE	_		-0.00634				-0.0147
			(-0.55)				(-1.30)
ACIND	_			-0.00113***			-0.00143***
				(-4.53)			(-3.80)
ACEXP	_				-0.00072		-0.00393
					(-0.04)		(-0.25)
ACMEET	_					-0.00197	-0.00166
						(-0.66)	(-0.54)
LEVERG	?	0.000335	0.000508	0.000657**	0.000542	0.000535*	0.000644*
		(1.02)	(1.95)	(2.79)	(1.92)	(2.12)	(2.31)
SIZE	?	-0.0475***	-0.0346***	-0.0382***	-0.0355***	-0.0324*	-0.0342*
		(-3.99)	(-3.30)	(-3.57)	(-3.39)	(-2.39)	(-2.51)
GROW	+	0.000659***	0.0131*	0.0124*	0.0128*	0.0130*	0.0129*
		(10.02)	(2.06)	(2.07)	(2.11)	(2.05)	(2.02)
ROA	?	0.00121	0.000768	0.000887	0.000801	0.000717	0.000798
		(1.88)	(0.95)	(1.1)	(0.99)	(0.82)	(0.91)
CONSTANT		0.408***	0.308***	0.312***	0.295***	0.281**	0.341**
		(4.68)	(3.59)	(3.94)	(3.64)	(3.1)	(3.13)
R2		0.166	0.211	0.222	0.209	0.21	0.232
Observations		251	175	175	175	175	175

Notes: This table discloses GLS regression estimates for a pooled sample of 175 observations from 2012 to 2016. The final sample that applied in this model is different than the primary one of 251 in the first and second models, due to missing data on audit committee variables. The underlying third regression model is:

$|DACKO_{i,t}| = Ƃ0 + Ƃ1\ ACSIZE_{i,t} + Ƃ2\ ACIND_{i,t} + Ƃ3\ ACEXP_{it} + Ƃ4\ ACMEET_{i,t} + Ƃ5\ LEVERG_{i,t} + Ƃ6\ SIZE_{i,t} + Ƃ7\ GROW_{i,t} + Ƃ8\ ROA_{i,t} + \varepsilon_{it}$

where: DACKO is the absolute value of the discretionary accruals estimated following the Kothari et al. (2005) model ; ACSIZE represents the number of members of the audit committee; ACIND is a dummy variable 1, if all directors in the audit committee are independent, and 0 otherwise; ACEXP is a dummy variable, 1 if at least one member in the audit committee worked previously in accounting or finance fields, or have an academic or professional certificate in accounting, finance or related fields, and 0 otherwise. ACMEET is measured as the number of audit committee meetings over the calendar year; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.4.4 **Additional Analysis**

7.4.4.1 Further earnings management models

So far, the analysis has depended on the Kothari et al. (2005) model to estimate discretionary accruals as a proxy for earnings management and investigating their relationship with the audit committees' attributes). In order to validate the robustness of our findings, this research relies on other alternative metrics that have been widely used in the literature for calculating earnings management, namely the Jones (1991) model and the Modified Jones model (Dechow et al. (1995).

Table 7.15 documents the results of the GLS regression models where the dependent variable is the discretionary accruals, calculated from Jones (1991) model and the Modified Jones model (Dechow et al. (1995). In columns 1 and 2 Table 7.15 shows that the coefficient of audit committee independence (AUDIND) is negative and statistically significant at the 0.001% level, indicating that the presence of independent directors on the audit committee has a role in restricting earnings management practices. The coefficients of the remaining explanatory variables (audit committee size (ACSIZE), audit committee expertise (ACEXP) and audit committee meetings (ACMEET)) are disclosed to be adverse and statistically insignificant.

These results are comparable to prior findings obtained by using the discretionary accruals computed by Kothari et al. (2005) (Table 7.13). Accordingly, these conclusions completely confirm the acceptance of Hypothesis H10 (i.e. there is a negative relationship between earnings management and audit committee independence), while fail to fully support the acceptance of Hypotheses H9, H11 and H12 (i.e. there is a negative relationship between earnings management and audit committee size, audit committee expertise and audit committee meetings).

Furthermore, the results for the control variables continue to remain similar to those reported in the primary outcomes in Table 7. 14. The goodness-of-fit (R^2) is around 0.223 for the Modified Jones model (Dechow et al. (1995) and 0.194 for the Jones (1991) model, signifying that the variables included in the regression model clarified

0.223% and the 0.194% of the variation in the dependent variable (the absolute value of discretionary accruals), respectively.

Table 7.15 GLS regression results of the audit committee using additional discretionary accrual models

Variables	Column1 Modified Jones 1995	Column2 Jones Original 1991
AUDSIZE	-0.0136	-0.0163
	(-1.17)	(-1.24)
AUDIND	-0.00164***	-0.00162***
	(-3.73)	(-3.73)
AUDEXP	0.00117	-0.0118
	(0.07)	(-0.65)
AUDMEET	-0.00112	-0.000777
	(-0.30)	(-0.20)
LEVERG	0.000757**	0.000647*
	(2.69)	(2.24)
SIZE	-0.0395*	-0.0390*
	(-2.15)	(-2.08)
GROW	0.012	0.00931
	(1.86)	(1.57)
ROA	0.00147	0.00171
	(1.23)	(1.41)
CONSTANT	0.367**	0.387**
	(2.62)	(2.73)
R^2	0.223	0.194
Observations	175	175

Models:

$|DACMJ_{i,t}| = Ƀ0 + Ƀ1\ ACSIZE_{i,t} + Ƀ2\ ACIND_{i,t} + Ƀ3\ ACEXP_{i,t} + Ƀ4\ ACMEET_{i,t} + Ƀ5\ LEVERG_{it} + Ƀ6\ SIZE_{i,t} + Ƀ7\ GROW_{i,t} + Ƀ8\ ROA_{i,t} + \varepsilon_{it}$

$|DACJ_{i,t}| = Ƀ0 + Ƀ1\ ACSIZE_{i,t} + Ƀ2\ ACIND_{i\,t} + Ƀ3\ ACEXP_{it} + Ƀ4\ ACMEET_{i,t} + Ƀ5\ LEVERG_{i,t} + Ƀ6 SIZE_{i,t} + Ƀ7\ GROW_{i,t} + Ƀ8\ ROA_{i,t} + \varepsilon_{it}$

Where DACMJ is discretionary accruals measured using the Modified Jones model (Dechow et al., 1995). and DACJ is discretionary accruals measured using the Jones model (1991); ACSIZE represents the number of members of the audit committee; ACIND is a dummy variable 1, if all members in the audit committee are independent, and 0 otherwise; ACEXP is a dummy variable, 1 if at least one director in the audit committee worked previously in accounting or finance fields, or have an academic or professional certificate in accounting, finance or related fields, and 0 otherwise. ACMEET is measured as the number of audit committee meetings over the calendar year; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; Grow is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year.* Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.4.4.2 Signed Accruals

As a further check on the robustness of prior results, this research presents an alternative method by using the signed earnings management test as a robustness and sensitivity analysis.

Table 7.16 presents the outcomes of the GLS regression models, where the dependent variable are both income-increasing and income-decreasing discretionary accruals calculated from the Kothary et al. (2005) model, the Jones (1991) model and the Modified Jones model (Dechow et al. 1995). Interestingly, table 7.16 shows that the coefficient of audit committee size (ACSIZE) has a significantly negative association at 5% level with positive discretionary accruals only, although this variable (ACSIZE) did not display a significant impact in the primary regression for absolute discretionary accruals. Accordingly, this result suggests that larger audit committees are more efficient in restraining the upwards earnings management.

Regarding audit committee independence (ACIND), Table 7.16 details that for the income-increasing sample, ACIND has an adverse and significant relationship with negative discretionary accruals, as stated in the main findings. Besides, it is interesting to note that income decreasing earnings management is positively and significantly correlated with audit committee independence (ACIND). Together these findings indicate that audit committees have a limited effectiveness in diminishing downward earnings management, which might be because of the fact that family members may not try to compel managers' behavior to benefit them.

Table 7.16 also shows that the coefficients of audit committee expertise (ACEXP) and audit committee meetings (ACMEET) have an insignificant association with each direction of discretionary accruals. These findings are consistent with the main test results for the absolute value of discretionary accruals in the Table 7.14.

As regards the results for the control variables, Table 7.16 shows that in the income-increasing sample firm size (SIZE), firm growth (GROW) and firm leverage (LEVERG) behave in the same manner as in the primary test (Table 7.14). However, in contrast, such variables show a statically insignificant relation with the measure of negative discretionary accruals, which probably due to the small sample of firms.

Table 7.16 GLS regression results of the audit committee – signed accruals measured using the Kothari et al. (2005) model, the Modified Jones model (Dechow et al (1995) and the Jones (1991) model

Variables	Positive earnings management (increasing) DAC+			Negative earnings management (decreasing) DAC-		
	Column1 DAC KO	Column2 DAC MJ	Column3 DACJ	Column1 DAC KO	Column2 DAC MJ	Column3 DACJ
ACSIZE	-0.0311*	-0.0196*	-0.0124	0.000158	0.0138	0.0206
	(-2.43)	(-1.98)	(-1.27)	-0.01	-0.81	-1.02
ACIND	-0.00125*	-0.00109*	-0.000990*	0.00143**	0.00170**	0.00177**
	(-2.55)	(-2.32)	(-2.09)	-2.62	-2.87	-2.63
ACEXP	0.000963	0.00553	0.0088	-0.0184	0.014	0.0212
	-0.05	-0.36	-0.54	-1.15	-0.61	-0.93
ACMEET	-0.00128	0.00267	0.00254	0.00254	0.00658	0.0103
	(-0.36)	-0.61	-0.54	-0.4	-1.31	-1.52
LEVERG	0.000569	0.000857*	0.000752	-0.000591	-0.00065	-0.00052
	-1.92	-2.26	-1.82	(-1.11)	(-1.15)	(-0.83)
SIZE	-0.025	-0.0472**	-0.0552***	0.0491	0.0213	0.0135
	(-1.74)	(-3.20)	(-3.51)	-1.93	-0.88	-0.47
GROW	0.0205*	0.0168	0.0207	-0.011	-0.0108	-0.00857
	-2.18	-1.76	-1.87	(-1.74)	(-1.60)	(-1.43)
ROA	0.000781	0.00501***	0.00455***	-0.000645	0.000317	0.000589
	-0.52	-3.48	-3.84	(-0.46)	-0.3	-0.49
CONSTANT	0.311**	0.399***	0.436***	-0.425*	-0.274	-0.27
	-2.89	-3.84	-4.08	(-2.47)	(-1.48)	(-1.3)
R^2	0.175	0.429	0.397	0.337	0.273	0.26
Observations	96	97	92	79	85	83

Models:

$|DACKO_{i,t}| = Ƃ0 + Ƃ1\ ACSIZE_{i,t} + Ƃ2\ ACIND_{i,t} + Ƃ3\ ACEXP_{i,t} + Ƃ4\ ACMEET_{i,t} + Ƃ5\ LEVERG_{i,t} + Ƃ6SIZE_{i,t} + Ƃ7\ GROW_{i,t} + Ƃ8\ ROA_{i,t} + \varepsilon_{it}$

$|DACMJ_{i,t}| = Ƃ0 + Ƃ1\ ACSIZE_{i,t} + Ƃ2\ ACIND_{i,t} + Ƃ3\ ACEXP_{i,t} + Ƃ4\ ACMEET_{i,t} + Ƃ5\ LEVERG_{i,t} + Ƃ6SIZE_{i,t} + Ƃ7\ GROW_{i,t} + Ƃ8\ ROA_{i,t} + \varepsilon_{it}$

$|DACJ_{i,t}| = Ƃ0 + Ƃ1\ ACSIZE_{i,t} + Ƃ2\ ACIND_{i,t} + Ƃ3\ ACEXP_{i,t} + Ƃ4\ ACMEET_{i,t} + Ƃ5\ LEVERG_{i,t} + Ƃ6SIZE_{i,t} + Ƃ7\ GROW_{i,t} + Ƃ8\ ROA_{i,t} + \varepsilon_{it}$

Where: DACKO is discretionary accruals estimated by applying the performance adjusted model introduced by Kothari et al. (2005); DACMJ is discretionary accruals measured using the Modified Jones model (Dechow et al., 1995); DACMJ is discretionary accruals measured using the Jones model (1991); ACSIZE represents the number of members of the audit committee; ACIND is a dummy variable 1, if all members in the audit committee are independent, and 0 otherwise; ACEXP is a dummy variable, 1 if at least one member in the audit committee worked previously in accounting or finance fields, or have an academic or professional certificate in accounting, finance or related fields, and 0 otherwise; ACMEET is measured as the number of audit committee meetings over the calendar year; LEVERG is computed as total long-term debt divided by total assets; SIZE represents the natural logarithm of total assets; GROW is measured as the market to book value ratio; ROA is computed as the net income divided by the total assets at the beginning of the year. * Significant at the 0.05 level (2-tailed). ** Significant at the 0.01 level (2-tailed). *** Significant at the 0.001 level (2-tailed). Note: T statistics in parentheses.

7.5 SUMMARY

This chapter presents the descriptive statistics for the variables investigated in this research. It also details the results of empirical tests carried out to analyze the relationship between three corporate governance mechanisms, namely audit quality' attributes (i.e. auditor size (AUDSIZE) and audit fees (AFEE)), the board of directors' attributes (i.e. board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), board meetings (BRDMEET), CEO duality (DUAL) and political connection (POLCON)) and the audit committees' attributes (i.e. audit committee size (AUDSIZE), audit committee independence (ACIND), audit committee expertise (ACEXP) and audit committee meetings (ACMEET)) and the magnitude of earnings management for a sample of 251 firm year observations from industrial companies listed on the Amman Stock Exchange spanning the period 2012 - 2016.

Furthermore, the current chapter shows several additional analyses carried out to validate the robustness of our findings, such as employing alternative models of earnings management (i.e. the Kothari et al. (2005) model, the Modified Jones model (Dechow et al (1995) and the Jones (1991) model) and partitioning the sample according to their signs.

The following chapter will present the main conclusions of the research and summarizes the thesis. Further, it will delineate the implications of the findings, its limitations and some potential avenues for future work.

CHAPTER 8: CONCLUSIONS

8.1 INTRODUCTION

The research has been focused on the analysis of the role of corporate governance mechanisms in constraining earnings management. Specifically, three key categories of corporate governance mechanisms have been considered, namely audit quality, board of directors and audit committees. Thus, the main aim of this Thesis was to examine whether the extent of earnings management by Jordan firms listed on the Amman Securities Exchange (ASE) is restricted by corporate governance mechanisms (i.e. audit quality attributes, the board of directors' attributes and audit committees' attributes).

In order to attain that aim, three sub-objectives and their corresponding research questions were established. The first aim was to examine the relationship between the audit quality attributes and the discretionary accruals as a proxy for earnings management. The second goal was to investigate the relationship between the board of director's attributes and the discretionary accruals as a proxy for earnings management. Finally, the third objective was to test the relationship between the audit committee's attributes and the discretionary accruals as a proxy for earnings management.

To provide responses to the above three objectives and to accomplish the aim of this research, twelve major hypotheses were developed from a broad review of previous empirical research in four major areas (earnings management, audit quality, the board of directors' attributes and, the audit committees' attributes).

To examine these hypotheses, this thesis employed the pooled data for a sample of 251 firm-year observations from a sample of 51 industrial firms listed on the Amman stock exchange during the period 2012 - 2016.

This chapter is organized as follows, the next section summarizes the main findings of the empirical research. Section Three discusses

their policy implications. Section Four presents the limitations of this research and, finally, future research avenues are presented in section Five.

8.2 SUMMARY OF FINDINGS

This thesis provides a detailed analysis of the effectiveness of three corporate governance mechanisms (audit quality's attributes, board of director's attributes and audit committee's attributes) in constraining earnings management in Jordanian industrial firms during the period 2012-2016. Chapter two outlines an overview of the Jordanian setting. It also discusses the development and characteristics of the accounting and auditing profession in Jordan as well as the main corporate governance initiatives in the country.

Later, chapter three reviews the related literature of the earnings management phenomenon. In particular, it gathers several definitions for earnings management, its motivations (internal and external), the types of earnings management and their techniques as well as the approaches employed to detect earnings management.

The theoretical framework and previous studies relevant to the empirical analysis in the thesis are presented in chapter four and chapter five, respectively.

Chapter six illustrates and justifies the sample collection, sources of data, and the period of study. It also details the research methodology and the definitions and measurement of the variables under study and presents the research models and analysis procedures. Following that, chapter seven addresses and details the main empirical results regarding the impact of the analyzed corporate governance mechanisms on earnings management. It also provides several additional analyses to confirm the validity and robustness of the primary results.

Overall, this thesis reveals that the earnings management activities exist and are prevalent among Jordanian companies. The following three subsections briefly review the main findings of the three empirical studies. Then, Table 8.1 lists the results of each testable hypothesis investigated in this thesis.

8.2.1 **Audit Quality attributes and Earnings Management**

Chapter seven has investigated whether audit quality attributes (i.e. auditor size (AUDSIZE) and audit fees (AFEE)) have an impact on discretionary accruals, as a proxy of earnings management, for a sample of 251 firm-year observations from 51 industrial firms listed on the Amman Stock Exchange during the period 2012 - 2016. Table 7.3 in Chapter seven reports the main findings of GLS regressions of the audit quality attributes and discretionary accruals, estimated utilizing the performance adjusted model (Kothari et al. 2005).

The results of this empirical study suggest that the audit quality attributes (i.e. auditor size and audit fees) do not impact on a magnitude of earnings management in the Jordanian context. In particular, these findings are consistent with prior evidence from countries such as Korea (Jeong and Rho 2004) Belgium (Vander Bauwhede and Willekens 2004), Greece (Tsipouridou and Spathis 2012) and Turkey (Yasar 2013), which report that there is no difference between auditors, either Big N or non-Big N, in mitigating the level of earnings management. Our findings are also consistent with those reported in prior audit fees literature (Ashbaugh et al. 2003; Ananthanarayanan 2008).

The additional analysis conducted in this study employing alternative models, such as the Jones (1991) model and the Modified Jones model (Dechow et al. 1995), as well as the robustness test using signed accruals confirm the primary results in Table 7.3.

These results are subject to particular aspects of the Jordanian context, which is characterized by highly concentrated ownership and low levels of agency costs involved between owners and managers. Hence, there is a low demand for high-quality external audits. In particular, a plausible explanation for auditor size firm (Big N and Non-Big N) may be based on the argument which proposes that in countries where the legal environment does not encourage high-quality audits, there is a low risk of litigation and there are no other effective disciplinary mechanisms to control opportunistic behavior, auditors are not motivated to apply themselves to uncover earnings management behavior.

Besides, the economic factor can lead them to try to maintain current customers and attract new ones, sometimes at the expense of the integrity and the quality of auditing. Thus, the findings of this

empirical study present fresh evidence that audit fees are probably not associated with earnings management in emerging economies like Jordan. Since the magnitude of audit fees is low in Jordan, auditors may not have incentives to make more effort in trying to prevent earnings management.

8.2.2 **Board of Directors attributes and Earnings Management**

Chapter seven explores whether the board of directors' attributes (i.e. board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), board meetings (BRDMEET), CEO duality (DUAL) and political connection (POLCON)) have an effect on discretionary accruals, as a proxy of earnings management.

Table 7.8 in chapter seven reports the main findings of GLS regressions of the board of directors' attributes and discretionary accruals computed employing the performance adjusted model (Kothari et al. 2005). The results indicate that five of the board of directors' attributes analyzed in this study (i.e. board size (BRDSIZE), board independence (BRDIND), board financial expertise (BRDEXP), CEO duality (DUAL) and political connection (POLCON)) have no significant effect on decreasing earnings management practices, both in seclusion and in tandem. However, interestingly, this study reports that the number of board meetings (BRDMEET) is significantly and positively associated with earnings management.

These finding are compatible with the earlier evidence in developing nations (Bradbury et al. 2006; Osma and Noguer 2007; Jaggi et al. 2009; Sejati 2009; Jiang et al. 2013; Yasser and Mamun 2015; Ben Rejeb Attia et al. 2016).

The additional analysis carried out using alternative models to compute discretionary accruals (i.e. the Jones (1991) model and the Modified Jones model (Dechow et al. (1995)) as well as the robustness analysis with signed accruals confirm the main results in Table 7.8.

The possible explanation of these conclusions may be due to the Jordanian environmental context which, unlike the situation in many Anglo-Saxon and Western European countries, is characterized by

concentrated ownership, low levels of agency costs involved between owners and managers and non-existing or underdeveloped markets for debt and equity. Hence, there is weak demand for a highly effective performance from the board of directors.

Moreover, another believable interpretation for these differing results compared with evidence from developed countries may be due to differences in stock markets and the corporate governance regimes. As a result, corporate governance reforms in developing countries may be ineffective and corporate governance mechanisms are not often an efficient internal monitoring mechanism.

8.2.3 **Audit Committees Attributes and Earnings Management**

The third empirical study in chapter seven analyzed whether the audit committees' attributes (i.e. audit committee size (AUDSIZE), audit Committee Independence (ACIND), audit committee expertise (ACEXP) and audit committee meetings (ACMEET)) influence discretionary accruals, as a proxy of earnings management. Table 7.14 in chapter seven shows the main findings of GLS regressions of the audit committees' attributes and discretionary accruals calculated using the performance adjusted model (Kothari et al. 2005).

The results indicate that audit committee independence (ACIND) is the only variable which has a negative and statistically significant relationship with the absolute value of discretionary accruals, both in seclusion and in tandem, while, the remaining variables (audit committee size (ACSIZE), audit committee expertise (ACEXP) and audit committee meetings (ACMEET)) do not contribute to a lower magnitude of discretionary accruals. These findings are consistent with the initial evidence in developing countries (Lin et al. 2009; Soliman and Ragab 2014; Mishra and Malhotra 2016; Juhmani 2017).

The additional analysis conducted in this study employing alternative models, such as the Jones (1991) model and the Modified Jones model (Dechow et al. 1995) as well as the robustness test using signed accruals confirm the primary results in Table 7.14.

These findings show that, as far as the sample companies are concerned, audit committees, in fact, do not efficiently carry out their tasks, which implies that the establishment of an audit committee in

Jordanian listed companies still cannot seem to achieve significant success in its monitoring role and presently they cannot seem to accomplish its expected aims.

These results provide important insights concerning the effectiveness of audit committees in Jordan (and, probably, in other developing countries). Again, the explanation of our findings can be found in the characteristics of the Jordanian environment.

Table 8.1 Summary of results

Hypothesis	Description	Results
H1	Given the institutional environment in Jordan, there is no difference between Big N auditors and non-Big N auditors in mitigating the level of earnings management among industrial companies listed on the Amman Stock Exchange (ASE).	Accepted
H2	Given the institutional environment in Jordan, audit fees are not associated with the level of earnings management among industrial companies listed on the Amman Stock Exchange (ASE).	Accepted
H3	There is a significant negative association between board size and the level of earnings management among listed industrial companies in Jordan.	Rejected
H4	There is a significant negative association between board independence and the level of earnings management among listed industrial companies in Jordan.	Rejected
H5	There is a significant negative association between board financial expertise and the level of earnings management among listed industrial companies in Jordan.	Rejected
H6	There is a significant negative association between board meetings and the level of earnings management among listed industrial companies in Jordan.	Rejected
H7	There is a significant negative association between CEO duality and the level of earnings management among listed industrial companies in Jordan.	Rejected
H8	There is a significant negative association between boards with a political connection and the level of earnings management among listed industrial companies in Jordan.	Rejected
H9	There is a significant negative association between audit committee size and the level of earnings management among listed industrial companies in Jordan.	Rejected

Hypothesis	Description	Results
H10	There is a significant negative association between audit committee independence and the level of earnings management among listed industrial companies in Jordan.	Accepted
H11	There is a significant negative association between the audit committee's financial expertise and the level of earnings management among listed industrial companies in Jordan.	Rejected
H12	There is a significant negative association between audit committee meetings and the level of earnings management among listed industrial companies in Jordan.	Rejected

8.3 IMPLICATIONS OF THE THESIS FINDINGS

There are several reasons why this study has been carried out. The most critical are the potential implications that this kind of investigation has for researchers, regulators and policy-makers. The following two sub-sections present several implications for literature and the related stakeholders.

8.3.1 Implications for literature and theory

In general, corporate governance mechanisms have a significant role in restricting earnings management, through expanding the monitoring and control of management's activities and limiting managers' opportunistic behavior (Ashbaugh et al. 2004). However, these findings support the view that in developing countries, like Jordan, corporate governance mechanisms may play a different role due to the institutional context, characterized by concentrated ownership and predominance of family firms, offering a setting where they work uniquely in contrast to the developed world, characterized by dispersed ownership (Kowalewski et al. 2010; Berrone et al. 2012).

Therefore, corporate governance mechanisms in such a context may not be an efficient internal monitoring mechanism. Thus, it can be said that the prediction made by agency theory about the corporate governance mechanisms in mitigating opportunistic earnings management activity is not always accurate.

In consequence, these findings contribute to a deeper understanding of the relation between corporate governance mechanisms and earnings management in emerging markets. Besides, it is expected that this study adds new insights into the efficiency of corporate governance tools in developed countries (like Jordan) to literature. Thus, this thesis adds to the continuing discussion and controversy among academics that surrounds the role of corporate governance mechanisms in restricting earnings management.

8.3.2 **Implications for related stakeholders**

The results of this thesis also provide significant implications for some key related stakeholders, namely regulators and auditing standards setters, investors and analysts.

Firstly, our findings spotlight the influence of an institutional environment characterized by shareholders' protection and strong legal regime and law implementation in the effectiveness of corporate governance mechanisms in lessening opportunistic reporting actions, such as earnings management. Specifically, the results suggest that in countries that, like Jordan, have a different institutional environment, corporate governance mechanisms may be less effective.

In particular, in the case of Jordan, the low audit fees and the lack of demand for high-quality audits should be taken into account in considering any new reform aimed at strengthening the role of external auditing in restricting earnings management. For instance, protecting auditors from clients' pressures to make compromises about audit quality under the fear of missing customers by adding laws and regulations that may strength the auditors' position.

Further, Jordanian policymakers will benefit from these findings to evaluate the implications of the current corporate governance code in fostering the role of the board of directors and the audit committee to decrease harmful practices like earnings management. In particular, as the findings stress the effectiveness of audit committees with independent members in mitigating earnings management, they may help policymakers to reinforce the corporate governance system in Jordan by strengthening this attribute. In this sense, the audit committees' duties and powers should be established by the Jordanian Corporate Governance Code in a more precise and complete way (chapter five, sections 5.2 and 5.3).

Secondly, the empirical evidence would give an important message to worldwide organizations interested in enhancing the extent of corporate-governance rules and strengthening monitoring and enforcement tools in nations, and, in particular, in emerging countries, via an understanding of the differences in institutional settings and cultural factors.

Thirdly, these findings provide valuable help for those investors and financial analysts interested in investment in developing countries, in order to enhance their decision-making. Investors and financial analysts should be completely aware of the presence of earnings management practices when they make or facilitate significant investment choices.

8.4 LIMITATIONS OF THE STUDY

Although this thesis presents several valuable and revealing insights into the role of several corporate governance mechanisms (i.e. audit quality attributes, the board of directors' attributes and audit committees' attributes) in restraining earnings management in a sample of listed industrial firms in Jordan, a number of limitations ought to be considered when explaining the findings.

Firstly, following previous research on earnings management, the current thesis applies three commonly-used accruals models, namely the Jones model (1991), the Modified Jones model (Dechow et al., 1995) and the performance-matched Jones model (Kothari et al., 2005) and uses the "aggregate accruals" to estimate earnings management. Despite the advantages of this approach, such as its capacity of capturing the scale of earnings management and allowing a complete picture of managers' discretionary accounting choices, it has been criticized due to less precise modelling (Stubben 2010). Hence, our results rely upon the accuracy of discretionary accruals as an appropriate proxy for earnings management.

Secondly, in terms of the audit quality proxies, the lack of information and irregular reporting formats of Jordanian firms impeded the use of other proxies commonly used in previous studies conducted, such as industry-specialist auditors, tenure and non-audit fees.

Thirdly, our findings may be somewhat limited by data availability. Annual reports were used as the main source for collecting all the variables utilized in this study. In addition, some missing data was collected by the researcher from companies' headquarters (especially, data related to the audit committee variables). This process of data collection could be a further constraint of the study as it restricts the amount and kind of data that can be gathered.

Finally, another potential limitation of this thesis is due to the choice of agency theory as the theoretical framework used to analyze earnings management behavior. As stated in Chapter three, this thesis considers earnings management as an opportunistic behavior which aims to mislead shareholders or any other stakeholders via misrepresentation or masking of true economic performance. Thus, interpretations of the findings are limited to the opportunistic hypothesis.

In spite of the aforementioned limitations, these do not underestimate the importance of the results and valuable insights, but give a worthy platform for future investigation. The next section highlights some of them.

8.5 POTENTIAL AVENUES FOR FUTURE RESEARCH

In view of the results and limitations debated before, this thesis calls for future research to extend the issues investigated in this thesis. Firstly, whilst this thesis employs the "aggregate accruals" approach to estimate earnings management, further research could focus on estimating the accruals earnings management amount based on a single account (one-variable approach) such as bad debt provisions, the claim loss reserve account, the tax expense, restructuring charges, inventory, accounts payable and the allowance for loan losses.

Secondly, further work in this field needs to examine the links between real earnings management and corporate governance mechanisms. This would be interesting because scholars suggest that make managers tend to prefer managing earnings through real activities than through accruals due to several reasons. First, the benefits of employing real earnings management exceed the costs if the earnings targets are met (Gunny 2010). Second, accrual-based

earnings management is more likely to draw scrutiny from auditors and regulatory than real decisions, such as those related to production, product pricing and R&D expenses (Cohen and Zarowin 2010).

Thirdly, as mentioned in chapter three, managers have incentives to manage their earnings around time equity offerings by going public (IPOs) or issuing seasoned equity (SEOs). Hence, the managers' ulterior motivates to engage in earnings management in Jordan could also be an interesting subject for future work.

Fourthly, scholars indicate that there are two views to earnings management, namely financial reporting perspective (information perspective) and the contracting perspective. This study shows that the contracting perspective of earnings management exists in the Jordanian setting. However, it does not discriminate between information and opportunistic perspectives of earnings management. Thus, further experimental work will have to be conducted in order to determine the difference between both perspectives of earnings management.

Fifthly, future studies could explore the roles of other corporate governance characteristics such as the committees' members remunerations, nomination of the committees' members, foreign ownership and managerial ownership. In addition, other explanatory variables could be added, like gender diversity in the board of directors.

To make further progress, future researchers could also expand the period of study, especially, after the issuance of the Corporate Governance Code 2017, which enforces companies to prepare a special report of the governance to be attached to the annual report containing information and details about the rules of corporate governance.

Finally, future research may also use other approaches to investigate this relationship, for instance, using qualitative research methods such as interviews or grounded theory.

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RESUMEN ESPAÑOL

Desde principios de siglo, el mundo ha sido testigo de un aumento alarmante de fracasos corporativos y escándalos contables que han causado la pérdida de confianza en la información contable por parte de los inversores y otros stakeholders. En particular, los escándalos contables han generado una preocupación por la calidad de los resultados anunciados por las compañías (Gaio y Raposo 2011), la cual se vuelve dudosa cuando los gerentes tienen alguna motivación para manipular los resultados de manera oportunista para lograr intereses personales (Schipper y Vincent, 2003). En efecto, la posibilidad de interpretación y el "área gris" en las normas contables, permiten a los gerentes hacer estimaciones acordes con el entorno empresarial, así como lograr intereses personales (Watts y Zimmerman 1990; Habib et al. 2013). Como resultado, las opciones contables han impulsado el fenómeno de la manipulación de resultados, que desfigura el desempeño financiero real de una empresa y engaña a los usuarios de los estados financieros con respecto al desempeño futuro de la misma (Krishnan et al. 2011).

Como respuesta global a la era de fracasos contables y para restaurar la credibilidad y la confianza del público en los estados financieros se han realizado esfuerzos concertados en todo el mundo para mejorar el entorno de inversión y las prácticas de gobierno corporativo. Entre las distintas iniciativas planteadas, los mecanismos de gobierno corporativo destacan como una de las soluciones clave para garantizar la integridad y la calidad de los informes financieros y mitigar los problemas de agencia mediante un mayor control de los gestores. En este sentido, muchos países, desarrollados y en vías de desarrollo, han centrado las reformas de gobierno corporativo en varios mecanismos fundamentales, como la calidad de la auditoría, los atributos del consejo de administración y las características del comité de auditoría.

Al igual que otros países en desarrollo, Jordania también ha enfrentado varios fraudes corporativos (Al-khabash y Al-Thuneibat 2008) y, como resultado, también se han realizado reformas importantes, representadas por la adopción de la versión completa de las NIC/NIIF, que se incorporó en la Ley de Sociedades de 1997 y la

Ley de Valores de 2002, y la emisión en 2009 de un código de gobierno corporativo para las empresas jordanas que cotizan en bolsa. Además, recientemente se ha promulgado una nueva regulación para mejorar la calidad de la auditoría y fortalecer la independencia de los auditores (JSC, 2014).

La relación entre los mecanismos de gobierno corporativo y la manipulación de resultados se ha analizado ampliamente en la literatura. Sin embargo, la mayoría de los estudios se han centrado, en gran medida, en países anglosajones y de Europa occidental, reduciendo la posible generalización de los resultados obtenidos a países en desarrollo, donde los mecanismos de gobierno corporativo funcionan de manera diferente. En efecto, varios autores han argumentado que la eficiencia de los mecanismos de gobierno corporativo difiere sistemáticamente con el entorno institucional a nivel de país (La Porta et al. 2002; Suhomlinova 2006; Lubatkin et al. 2007). Además, también las diferencias en los sistemas legales y los antecedentes culturales entre países dan lugar a diferentes prácticas de gobierno corporativo a nivel mundial (Praveen Bhasa 2004).

En este sentido, estudios recientes indican que los sistemas de gobierno corporativo occidentales pueden ser ineficaces en los países en desarrollo debido a su entorno institucional diferente, caracterizado, generalmente, por una alta concentración de propiedad (Fan y Wong 2002), una aplicación débil del estado de derecho y una divulgación menos transparente de informes financieros (Dharwadkar et al. 2000; Mitton 2002; Young et al. 2008). Por consiguiente, existe una falta de conocimiento sobre el papel real de los mecanismos de gobierno corporativo en los países en desarrollo y su efectividad para disuadir las prácticas de manipulación de resultados.

Conscientes de ello, esta tesis tiene como objetivo principal explorar el papel de tres dimensiones/mecanismos de gobierno corporativo, a saber la calidad de la auditoría externa (tamaño de la firma de auditoría y honorarios cobrados por el trabajo de auditoría), el consejo de administración (tamaño del consejo, independencia del consejo, experiencia financiera del consejo, reuniones del consejo, dualidad del CEO y conexión política de los miembros del consejo) y los comités de auditoría (tamaño del comité de auditoría, independencia del comité de auditoría, experiencia del comité de auditoría y reuniones del comité de auditoría), para restringir los

ajustes por devengo discrecionales (como proxy de las prácticas de manipulación de resultados) en una muestra de empresas industriales jordanas durante el período 2012-2016.

Las motivaciones de este estudio se pueden resumir en cuatro puntos. En primer lugar, el debate existente en la literatura contable en torno a la manipulación de resultados como uno de los problemas más frecuentes que afecta a la calidad de la información contable. De hecho, a pesar del aumento de regulaciones, particularmente en respuesta a los diversos escándalos contables en las últimas dos décadas, los casos de comportamientos disfuncionales debido a un conflicto de intereses entre principal y agente siguen prevaleciendo. Dicho debate, en parte, gira en torno a la capacidad de los mecanismos de gobierno corporativo para supervisar y controlar el comportamiento directivo, asegurando así la fiabilidad y relevancia de la información financiera. Por tanto, esta tesis está motivada por los reiterados llamamientos para lograr que los mecanismos de gobierno corporativo desempeñen un papel importante para mantener la calidad e integridad de la información financiera.

La segunda motivación de esta tesis proviene del interés por analizar la efectividad de mecanismos de gobierno corporativo para restringir comportamientos de manipulación de resultados en marco institucional sustancialmente distinto de aquel en el que dichos mecanismos fueron concebidos y desarrollados. En este sentido, Jordania ofrece un entorno institucional único, caracterizado por una estructura de propiedad concentrada, un sistema legal basado en el derecho común, una menor protección de los inversores y una pequeña proporción de empresas cotizadas, por lo que los comportamientos de manipulación de resultados son más probables.

Además, las empresas familiares constituyen el estilo habitual de organización empresarial en Jordania y, a diferencia de los países desarrollados, la estructura de propiedad de las empresas está concentrada y estrechamente vinculada a un pequeño grupo de personas. Por lo tanto, Jordania ofrece un caso en el que los mecanismos de gobierno corporativo pueden funcionar de manera diferente de los países anglosajones y de Europa occidental, el contexto más ampliamente estudiado en la literatura, caracterizado por la propiedad dispersa. A este respecto, Young et al. (2008) indican que en las empresas familiares las herramientas de gobierno

corporativo pueden estar corrompidas o ser ineficaces y plantean algunas dudas sobre su capacidad para reducir la manipulación de resultados en dichas empresas. Además, el modelo de propiedad familiar podría causar una baja demanda de mecanismos de gobierno corporativo (por ejemplo, auditorías externas de alta calidad) dado el bajo nivel de costes de agencia entre propietarios y gerentes (Abdullatif y Al-Khadash 2010; Niskanen et al. 2011).

En términos de calidad de la auditoría externa, el mercado de auditoría jordano también ofrece un entorno atractivo para ser estudiado por varias razones: en primer lugar, el ambiente litigador y las penas para los auditores que cometan abusos son menores en Jordania que en los países anglosajones; en segundo lugar, la vinculación financiera y las relaciones personales entre los auditores y los altos directivos de sus empresas clientes están muy extendidas en Jordania; y, finalmente, como se ha indicado, el modelo de propiedad de la empresa familiar puede causar una baja demanda de auditorías externas de alta calidad y, en consecuencia, las tarifas de auditoría son significativamente más bajas en Jordania, en comparación con los contextos caracterizados por la propiedad dispersa.

Por lo tanto, consideramos que esta tesis ayudará a una comprensión más profunda de la naturaleza universal de los mecanismos de gobierno corporativo. Además, sus resultados ayudarán a los reguladores jordanos y a los emisores de normas de auditoría a evaluar las implicaciones de las regulaciones y orientaciones actuales para mejorar el gobierno corporativo y la calidad de la auditoría externa. Asimismo, los resultados de esta tesis también pueden ser beneficiosos para otros países con un entorno económico e institucional similar al de Jordania.

La tercera motivación está relacionada con los cambios significativos introducidos en la legislación jordana en las últimas décadas con el objetivo de garantizar la protección de los intereses de los stakeholders, incluida la emisión en 2009 de un código de gobierno corporativo para las empresas que cotizan en bolsa. Dicho código de gobierno corporativo ha establecido un marco claro para regular las relaciones entre las empresas cotizadas y los stakeholders, así como los deberes y responsabilidades de todas las partes (JSC, 2009). Por tanto, debería mejorar la fiabilidad y la transparencia de los informes financieros. Además, la comisión del mercado de valores

de Jordania ha promulgado recientemente una nueva regulación para mejorar la calidad de la auditoría y fortalecer la independencia de los auditores (JSC, 2014). Sin embargo, hasta el momento, no hay suficiente evidencia disponible para identificar si dichas reformas legislativas han afectado favorablemente la calidad y credibilidad de los informes financieros divulgados por las empresas jordanas.

La cuarta motivación para el presente estudio se origina en la escasez de evidencia emopírica sobre la relación entre los mecanismos de gobierno corporativo (la auditoría externa, el consejo de administración y el comité de auditoría) y la manipulación de resultados en Jordania. Además, la evidencia existente del contexto jordano se basa en datos antiguos (antes de la activación del código de gobierno corporativo en 2009) o en dimensiones específicas de gobierno corporativo. Por consiguiente, esta tesis pretende completar y actualizar la evidencia disponible para proporcionar un conocimiento más completo de la efectividad de los mecanismos de gobierno corporativo para limitar los comportamientos de manipulación de resultados en Jordania.

Así, como se ha indicado, la presente investigación se centra en el análisis del papel de los mecanismos de gobierno corporativo para restringir los comportamientos de manipulación de resultados. Específicamente, este estudio considera tres mecanismos de gobierno corporativo (la auditoría externa, el consejo de administración y los comités de auditoría) y analiza su efectividad para limitar los comportamientos de manipulación de resultados en las empresas jordanas que cotizan en la bolsa de valores de Amán (ASE). Para lograr ese objetivo, se establecieron tres subobjetivos y sus correspondientes preguntas de investigación.

El primer objetivo es examinar la relación entre la calidad de la auditoría externa y los devengos discrecionales, como proxy de la manipulación de resultados. Así, nos preguntamos si las características de la firma de auditoría externa contribuyen a restringir las actividades de manipulación de manipulación de resultados en las empresas industriales cotizadas jordanas.

El segundo objetivo es investigar la relación entre diversos atributos/características del consejo de administración y los devengos discrecionales, como proxy de la manipulación de resultados. En este caso, nos preguntamos si las características/atributos del consejo de

administración contribuyen a restringir la manipulación de resultados en las empresas industriales cotizadas jordanas.

El tercer objetivo es comprobar la relación entre las características del comité de auditoría y los devengos discrecionales como proxy de la manipulación de resultados. Así, nos preguntamos si las características del comité de auditoría contribuyen a restringir la manipulación de resultados en las empresas industriales cotizadas jordanas.

Para responder a las tres preguntas anteriores y para lograr el objetivo principal de esta investigación, se han planteado doce hipótesis a partir de una revisión de investigaciones empíricas previas en cuatro áreas principales (manipulación de resultados, calidad de auditoría externa, atributos del consejo de administración y atributos de los comités de auditoría). Para examinar estas hipótesis, se utilizaron los datos obtenidos a partir de una muestra de 51 empresas industriales cotizadas en la bolsa de valores de Amán durante el período 2012-2016, dando lugar a un total de 251 observaciones. La principal fuente de datos han sido los informes anuales de las empresas que integran la muestra objeto de estudio, publicados en la página web de la bolsa de valores de Amán (www.ase.com.jo) correspondientes al periodo 2012-2016.

Las hipótesis planteadas son las siguientes:

H1: Dado el entorno institucional en Jordania, el tamaño de la firma de auditoría no influye en su efectividad para mitigar las prácticas de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H2: Dado el entorno institucional en Jordania, los honorarios cobrados por las firmas de auditoría no afectan a su efectividad para mitigar las prácticas de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H3: Existe una asociación negativa significativa entre el tamaño del consejo de administración y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H4: Existe una asociación negativa significativa entre la independencia del consejo de administración y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H5: Existe una asociación negativa significativa entre la experiencia financiera de los miembros del consejo de administración y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H6: Existe una asociación negativa significativa entre el número de reuniones del consejo de administración y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H7: Existe una asociación negativa significativa entre la dualidad del CEO y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H8: Existe una asociación negativa significativa entre la conexión política por parte de miembros del consejo de administración y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H9: Existe una asociación negativa significativa entre el tamaño del comité de auditoría y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H10: Existe una asociación negativa significativa entre la independencia del comité de auditoría y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H11: Existe una asociación negativa significativa entre la experiencia financiera del comité de auditoría y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

H12: Existe una asociación negativa significativa entre las reuniones del comité de auditoría y el nivel de manipulación de resultados entre las empresas industriales que cotizan en la bolsa de valores de Amán.

La tesis está organizada de la siguiente manera: el segundo capítulo proporciona una visión general del entorno jordano. Este capítulo también analiza el desarrollo y las características de la profesión contable y de auditoría en Jordania, así como las principales iniciativas de gobierno corporativo desarrolladas en el país. El capítulo termina con una revisión de algunos estudios empíricos previos sobre manipulación de resultados en Jordania.

El tercer capítulo detalla la literatura relacionada con el fenómeno de la manipulación de resultados. En particular, este capítulo recopila varias definiciones de manipulación de resultados, sus motivaciones (internas y externas), los tipos de manipulación de resultados y sus técnicas. El capítulo termina resaltando los enfoques empleados para detectar la manipulación de resultados.

El cuarto capítulo presenta el marco teórico en que se apoya esta investigación. En particular, este capítulo revisa algunos mecanismos de restricción de la manipulación de resultados (es decir, la auditoría externa, el consejo de administración y el comité de auditoría). Además, se revisan las teorías apropiadas relacionadas con esta investigación, a saber, la teoría de la agencia, la teoría de stewardship y la teoría de los stakeholders.

El quinto capítulo tiene como objetivo revisar la literatura previa relevante para el análisis empírico con el fin de poner de manifiesto ciertos vacíos o lagunas en la investigación. Este capítulo se centra en tres áreas principales: la literatura relativa a la relación entre la calidad de la auditoría externa y la manipulación de resultados; la literatura sobre la asociación entre los atributos del consejo de administración y la manipulación de resultados y, finalmente, la literatura existente sobre la relación entre el comité de auditoría y la manipulación de resultados.

El sexto capítulo explica y justifica la muestra objeto de estudio, las fuentes de datos y el período de estudio. También se incluye la metodología de investigación empleada (regresión múltiple). Además, en este capítulo se detallan las definiciones y la medición de las variables en estudio, tanto para la variable dependiente (manipulación de resultados) como para las variables independientes (atributos de la auditoría externa, atributos del consejo de administración y atributos del comité de auditoría) y las variables de control (tamaño de la empresa, apalancamiento, crecimiento y rendimiento). Por último, se presentan los modelos de investigación empírica (uno para cada mecanismo de gobierno corporativo: auditoría externa, consejo de administración y comité de auditoría) y los procedimientos de análisis empleados.

El séptimo capítulo aborda y detalla los principales resultados empíricos sobre el impacto de los tres mecanismos de gobierno corporativo analizados en la manipulación de resultados. En primer

lugar, se presentan las estadísticas descriptivas y los resultados del análisis de correlación entre las variables relevantes para los tres modelos. A continuación, se analizan los resultados de los modelos de regresión múltiple (GLS) para los tres mecanismos de gobierno corporativo. Finalmente, se realizan varios análisis adicionales para confirmar la validez y la solidez de los resultados primarios. En concreto, se ha repetido el análisis empleando dos modelos alternativos: el modelo de Jones (1991) y el modelo de Jones modificado (Dechow et al. 1995). También se ha probado la robustez de los resultados analizando el signo de los devengos discrecionales.

El último capítulo recoge las principales conclusiones alcanzadas con la investigación y discute sus implicaciones, las limitaciones que presenta y posibles líneas de investigación futura.

Para estimar los devengos discrecionales, como proxy de la manipulación de resultados, esta tesis emplea el modelo de desempeño ajustado de Kothari et al. (2005). Dicho modelo ha sido utilizado en esta investigación debido a su mayor poder para descubrir comportamientos de manipulación de resultados y porque presenta menos problemas de especificación errónea. En general, esta tesis revela que las actividades de manipulación de resultados existen y son prevalentes entre las empresas jordanas.

Los resultados con respecto a la primera dimensión muestran que los atributos de la calidad de la auditoría (tamaño de la firma de auditoría y honorarios de auditoría) no tienen un efecto significativo en la manipulación de resultados. No encontramos evidencia de que el tamaño de la firma de auditoría funcione como una restricción para la manipulación de resultados, ni tampoco encontramos que los honorarios de auditoría tengan algún impacto. Así, las hipótesis H1 y H2 son aceptadas.

Con respecto a la segunda dimensión, los resultados indican que los atributos del consejo de administración (tamaño del consejo, independencia del consejo, experiencia financiera del consejo a, dualidad del CEO y conexión política) no afectan significativamente a las actividades de manipulación de resultados. Sin embargo, los resultados indican una relación significativamente positiva entre la cantidad de reuniones del consejo y la manipulación de resultados, lo que sugiere que en Jordania las reuniones del consejo son menos efectivas para disminuir las actividades de manipulación de

resultados. En este caso, las cinco hipótesis relativas a los atributos del consejo de administración (H3, H4, H5, H6, H7 y H8) son rechazadas.

Finalmente, los resultados empíricos con respecto a los atributos del comité de auditoría muestran que la independencia del comité de auditoría es la única variable que tiene una relación negativa y estadísticamente significativa con el valor absoluto de los ajustes por devengo discrecionales, mientras que las otras variables analizadas (tamaño del comité de auditoría, experiencia del comité de auditoría y reuniones del comité de auditoría) no contribuyen a disminuir la magnitud de los ajustes por devengo discrecionales. Por tanto, se acepta la hipótesis H10 y se rechazan las hipótesis H9, H11 y H12.

En los tres casos, los resultados obtenidos en esta tesis son similares a los de estudios previos en otros países en desarrollo, aunque no con los resultados obtenidos en países desarrollados. Una posible explicación de estos resultados puede encontrarse en las características del contexto institucional y económico jordano, muy diferente de la situación en muchos países anglosajones y de Europa occidental. Otra interpretación creíble de estos resultados puede deberse a las diferencias en los mercados bursátiles y los regímenes de gobierno corporativo.

Como resultado, podemos concluir que las reformas de gobierno corporativo en los países en desarrollo pueden ser ineficaces y los mecanismos de gobierno corporativo a menudo no son un mecanismo de monitoreo interno eficiente.

En general, la investigación contribuye a la literatura previa, primero, proporcionando una evaluación exhaustiva de la efectividad de varios mecanismos de gobierno corporativo para restringir la manipulación de resultados, al considerar una amplia gama de atributos clave y, segundo, arrojando luz sobre el grado en que dichos mecanismos pueden restringir las prácticas de manipulación de resultados en un país en desarrollo, Jordania, cuyo contexto cultural, económico e institucional es muy diferente del contexto de los países analizados anteriormente. Los resultados de esta tesis también pueden ser potencialmente significativos para los reguladores, auditores, inversores, analistas y académicos, especialmente en asuntos relacionados con los mecanismos de gobierno corporativo y la manipulación de resultados.

Aunque, como hemos indicado, esta tesis presenta resultados valiosos y reveladores sobre el papel de varios mecanismos de gobierno corporativo en la restricción de manipulación de resultados en países en desarrollo, también hay algunas limitaciones que deben ser consideradas al analizar dichos resultados. En primer lugar, esta tesis utiliza los devengos discrecionales agregados, como proxy de la manipulación de resultados. A pesar de las ventajas de este enfoque, también ha sido objeto de críticas al considerarlo menos preciso (Stubben 2010). En segundo lugar, la falta de información y los formatos irregulares de los informes presentados por las empresas jordanas nos han impedido analizar otras variables comúnmente utilizadas en estudios previos (como auditores especializados o la duración de la relación de auditoría). Finalmente, nuestros resultados pueden estar algo limitados por la disponibilidad de datos. A pesar de las limitaciones mencionadas anteriormente, consideramos que no subestiman la importancia de los resultados, sino que, por el contrario, proporcionan una plataforma para futuras investigaciones.