

**Earnings Management and its Relationship with Corporate Governance Mechanisms in  
Jordanian Industrial Firms**

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*Earnings Management and its Relationship with Internal  
Control and Corporate Governance Mechanisms in Jordanian Industrial Firms*

**Abstract**

This thesis investigates the association between corporate governance mechanisms and earnings management in industrial Jordanian firms. We identify the most important corporate governance mechanisms that have an effect on accounting choices and operating decisions, investigate the tools that managers use to decrease or increase earnings in Jordanian industrial firms, and finally, determine which accruals model is more powerful to detect earnings management in Jordanian industrial companies.

Historically, corporate governance mechanisms are considered to be the most important factors in assessing and monitoring the effectiveness of financial reporting (Brown, Pottb and Wömpenerb, 2014), and may be considered to be a cornerstone of control in general. Internal and external corporate governance is established by senior managers to improve the efficiency and effectiveness of operations and reduce the incidence of error or manipulation in accounting systems (Lee, 2006). Earnings management is considered one of the most important issues related to financial reporting, particularly after the Enron and WorldCom scandals. Earnings management behaviours are also related to low levels of corporate social responsibility and improvements in both areas would be expected to lead to improvements in the quality of corporate governance.

Mixed methodology is used in this research including both quantitative and qualitative analyses. The quantitative analysis used accruals models the Standard Jones model (Jones 1991), modified Jones model (Dechow, Sloan and Sweeney, 1995), and the Peasnell, Pope and Young margin model (2000) as measures of earnings management and used these variables in conjunction with corporate governance factors. Annual financial reports that were published by the Amman stock market over the period 2005 to 2012 were used to extract the data for corporate governance characteristics of the firms. The qualitative analysis involved semi-structured interviews, conducted with general managers, financial managers and internal audit managers to provide in-depth information about corporate governance issues that we could not investigate easily through quantitative methods and to provide understanding of the context for the firm's earnings management.

The qualitative analysis identified a range of motivations for earnings management in Jordanian firms including attempts to reduce customs fees; tax avoidance; the desire to attract more investors and increase share price, and the desire to increase management compensation. We find also that the Peasnell, Pope and Young margin model (2000) is a more powerful model for explaining earnings management in Jordan than the more commonly used accruals models.

Quantitative results indicate that the ownership structure of the business plays a more significant role in constraining earnings management than characteristics relating to the board of directors or the characteristics of the audit process. Furthermore, the interviews also explored in depth a number of cultural factors and external economic factors, which were found to be related to the incidence of earnings management. Relevant cultural factors include particularly the tribal system that operates in Jordan, which creates pressures on firms

likely to increase earnings management and external economic factors include the recent Middle East revolutions and adoption of International Financial Reporting Standards.

The findings could be useful to investors, senior managers in Jordanian industrial firms, and legislators in Jordan, in relation to decisions about how to enhance the quality of monitoring mechanisms and constrain the incidence of earnings management. Our methodology and evaluation of standard accruals models in this context may also prove useful to other researchers on earnings management in developing economies.

**Keywords:** *Earnings management, corporate governance, Cultural factors, Jordanian Industrial firms.*

يكرس هذا العمل إلى روح والدي خلف، الذي كان ينتظر هذه اللحظة، ولكن إرادة الله فوق كل شيء

This work is dedicated to the soul of my Dad *Khalaf*, who was waiting for this moment but God's will, above everything.

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May Allah bless us

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## **Abbreviations**

<b>Item Name</b>	<b>Symbol</b>
<b>AAER</b>	Accounting and Auditing Enforcement Release
<b>ACCMJ</b>	Accruals Modified Jones Model
<b>ACCSJ</b>	Accruals Standard Jones Model
<b>ACEXPERTISE</b>	Audit Committee Expertise
<b>ACINDEPEND</b>	Audit Committee Independence
<b>ACMEETING</b>	Number of Audit Committee Meetings
<b>ACSIZE</b>	Audit Committee Size
<b>AICPA</b>	American Institute of Certified Public Accountants
<b>APL</b>	Accountancy Profession Law
<b>ASE</b>	Amman Stock Exchange
<b>BINDEPEND</b>	Board of Directors Independence
<b>BLOCKOWN</b>	Blockholders Ownership
<b>BMEETING</b>	Number of Board of Directors Meetings
<b>BOUTSIDE</b>	Board of Directors Outsiders
<b>BSIZE</b>	Board of Directors Size
<b>CAEU</b>	Council of Arab Economic Unity
<b>CEO</b>	Chief Executive Officer
<b>CFO</b>	Chief Financial Officer
<b>CFOA</b>	Cash Flow from Operating Activities
<b>COSO</b>	Committee of the Sponsoring Organizations of the Tread way Commission
<b>DACMJ</b>	Discretionary Accruals for Modified Jones
<b>DACSJ</b>	Discretionary Accruals for Standard Jones
<b>EM</b>	Earnings Management
<b>EPS</b>	Earnings Per Share
<b>EXACHANG</b>	External Audit Change

<b>EXAOPIN</b>	External Audit Opinion
<b>EXAREPUT</b>	External Auditor Reputation
<b>EXATENURE</b>	External Audit Tenure
<b>FAMOWN</b>	Family Ownership
<b>FDICIA</b>	Federal Depository Insurance Corporation Improvement
<b>FLVE</b>	Financial Leverage
<b>FSUB</b>	Firm Subsidiary
<b>GAAP</b>	Generally Accepted Accounting Principles
<b>GDP</b>	Gross Domestic Product
<b>GLS</b>	Generalised Least Square Regression
<b>IAS</b>	International Accounting Standards
<b>IASB</b>	International Accounting Standards Board
<b>IFAC</b>	International Federation of Accountants
<b>IFRS</b>	International Financial Reporting Standards
<b>INDOWNF</b>	Foreign Individual ownership
<b>INDOWNL</b>	Local Individual ownership
<b>IOWNFOR</b>	Foreign Institutional ownership
<b>IOWNLOC</b>	Local Institutional ownership
<b>ISA</b>	International Standard on Auditing
<b>JACPA</b>	Jordan Association of Certified Public Accountants
<b>JD</b>	Jordan Dinar
<b>JSC</b>	Jordan Securities Commission
<b>MANOWN</b>	Managerial Shareholders
<b>MJ</b>	Modified Jones Model (Dechow <i>et al</i> , 1995)
<b>OECD</b>	Organization of Economic Cooperation and Development
<b>OLS</b>	Ordinary Least Square Regression
<b>PPY</b>	Margin Model (Peasnell <i>et al</i> , 2000)
<b>ROA</b>	Firm Performance

<b>SEC</b>	Securities and Exchange Commission
<b>SDC</b>	Securities Depository Centre
<b>SJ</b>	Standard Jones Model (Jones, 1991)
<b>STATOWN</b>	State Ownership
<b>VIF</b>	Variance Inflation Factor
<b>WAPPY</b>	Working Capital Accruals

## **1. Chapter One: Introduction**

### **1.1 Preface**

Published earnings are one of the most powerful financial statements items and as such have an impact on business activities, management decisions firms and investment decisions. Because of this, the managers may be tempted to adjust earnings to achieve desirable incentives (Healy and Wahlen, 1998). The weakness of existing corporate governance mechanisms could facilitate this process. Numerous incentives motivate managers to engage in earnings management. Existing literature on earnings management has discussed these motivations to be 1) opportunistic earnings management and 2) beneficial earnings management. Managing earnings to achieve private incentives (the managers' desired goals) constitutes opportunistic earnings management, and managing earnings to achieve stockholders' incentives constitutes beneficial earnings management (Rezaei, 2012; Jiraporn, Miller, Yoon, and Kim, 2008).

The existence of strong corporate governance mechanisms in a firm can lead to improvements in professional conduct in business transactions and limit the opportunities for earnings management. In contrast, the existence of weak corporate governance may encourage manipulation, corruption and mismanagement in the business (e.g. Leventis and Dimitropoulos, 2012; Clarke, 2007; Vafeas, 2005).

Jordan is a growing country that needs to attract new investors, suppliers, lenders and other participants in business. The publication of earnings by Jordanian firms for external consumption is a relatively new phenomenon, and this new accountability brings with it requirements for corporate governance mechanisms, and the possibility of earnings management.

The aim of this thesis is to investigate the relationship between corporate governance mechanisms and earnings management in Jordanian industrial firms. We reach this aim by exploring the nature of corporate governance mechanisms and earnings management in Jordan, whether internal or external, and determining how they affect accounting choices and operating decisions. We identify the particular accounting policies and tools that managers use to manage earnings. Estimates of earnings management are made using accruals-based



models and we evaluate which model is the most effective in detecting earnings management in this context.

The analysis begins by discussing the context in which the firms operate in order to understand the differences between the economic environment of Jordan as a developing country, other developing countries, and developed countries, based on prior literature to facilitate the comparison between the results of this research and those of prior literature.

After that, we critically analyse and compare earnings management models employed in the literature, such as the work of Healy (1985), DeAngelo (1986), DeAngelo (1988), Jones (1991), Dechow, Sloan and Sweeney (1995), Peasnell, Pope, and Young (2000), and Caylor (2010), in order to understand the differences and similarities in these models' approaches to detecting earnings management, to understand the definitions of accruals used in the different models and to facilitate the process of interpretation of our empirical findings. Understanding the characteristics of earnings management in Jordan could potentially be useful to regulators in setting standards; to investors in making investment decisions; to auditors in auditing Jordanian companies and to the government in drafting legislation. Eventually, such understanding could lead, via these mechanisms, to more reliability and transparency in published financial statements (Al-fayoumi, Abuzayed and Alexander, 2010).

The literature reviews (chapters 2, 3 and 4) of the thesis is divided into two sections: (1) literature related to the role of corporate governance, (2) literature related to earnings management models, and (3) literature related to the role of corporate governance and earnings management.

The methodology section of the thesis (chapter 5) explains the rationale of our selected methodology, which is a mixed methods approach. This approach involves 1) a quantitative analysis using secondary data related to the accruals models and also other to investigate the relationships between corporate governance factors and earnings management measures and 2) a qualitative analysis involving interviews of individual firms to uncover the mechanisms by which earnings management occurs and the motivations behind it.

The rest of this introductory chapter is organized as follows: section 1.2 discusses our research objectives. Section 1.3 discusses the research questions. Section 1.4 provides a brief discussion of our research methodology and data collection. Section 1.5 discusses the expected contribution of this research and Section 1.6 explains the structure of the thesis.

## **1.2 Research Objectives**

This research aims to study the processes of corporate governance in Jordanian firms, and their relationship with earnings management. To do this, we set out a few objectives as follows:

- To explain the nature of the relationship between corporate governance mechanisms and earnings management in Jordanian industrial companies.
- To identify the characteristics of corporate governance that have the most effects on earnings management.
- To analyze the motivations that may lead managers in Jordanian industrial firms to engage in earnings management.
- To assess the econometric power and appropriateness of various accruals-based models to detect earnings management in the context of Jordanian industrial firms.

## **1.3 Research Questions**

Financial reporting manipulation (earnings management) is an important issue to researchers, industry practitioners, legislative boards, auditors and individual firms. Consequently, corporate governance mechanisms are some of the most important channels to prohibit the publication of financial statements which could be misleading or erroneous (Ashbaugh-Skaife, Collins, Kinney and LaFond, 2008).

We investigate the effects of corporate governance mechanisms on earnings management by addressing the following questions:

- Is there a relationship between corporate governance mechanisms and earnings management in Jordanian industrial firms?
- Do the independence and competence (education, training, professional experience, and professional qualifications) of internal and external auditors affect the relationship between corporate governance mechanisms and earnings management?

- Do differences in corporate governance structures affect the degree of manipulation in earnings management in Jordanian industrial firms?
- What are the most effective elements of corporate governance in reducing earnings management practices?
- What is the best model for detecting earnings management in Jordanian industrial firms?
- How do external cultural factors affect earnings management in Jordanian industrial firms?
- How do the legal and taxation systems affect earnings management in Jordanian industrial firms?
- How does firms' internal culture affect earnings management in Jordanian industrial firms?

#### **1.4 Research Methodology and Data Collection**

This thesis uses mixed methods (quantitative and qualitative) to investigate the relationship between corporate governance mechanisms and earnings management by adopting four stages to fulfill the main aim of this research, and these stages are as follows:

##### **Quantitative Methods**

In the first stage, we use the accruals-based earnings management models (Standard Jones Model, Jones, 1991; Modified Jones Model, Dechow *et al*, 1995 and the Margin Model, Peasnell *et al*, 2000) to derive estimates of earnings management for each firm. The data for these models such as operating income, cash flow from operating activities, revenue, total assets, account receivable, and short-term deferred revenue are extracted from (1) DataStream; (2) Amman Stock Exchange (<http://www.ase.com.jo>) and (3) Jordan Securities Commission (<http://www.jsc.gov.jo>). We use SPSS (22) and STATA (13) to carry out empirical studies.

In this stage we use three-way classification of earnings management and the fact that this is a novel approach, and these classification are high positive earnings management (High +ve EM, high negative earnings management (High -ve EM), and low earnings management (Low EM).

In the second stage, we use annual financial reports published by the Amman Stock Exchange and Jordan Securities Commission during the period of 2005 to 2012 to collect data on corporate governance factors such as boards of directors' characteristics, audit committees, external auditing factors, and ownership structures.

In the third stage, we use data from the first and second stages to examine the effect of corporate governance mechanisms on earnings management estimates by the application of quadratic discriminant analysis.

### **Qualitative Methods**

In the fourth stage, we conduct a semi-structured interviews carried out with 16 managers in Jordanian firms (e.g. general managers, financial managers, and internal audit managers). The interview helps to gather in-depth information in order to explore more complex and subtle issues that could not be examined using quantitative methods. The interview also aims to explore the context of the Jordanian firms, the processes through which earnings management occurs and the underlying motivations.

### **1.5 The Expected Contribution of this Research and the Gap in Literature**

The literature review reveals that most studies investigating the relationship between corporate governance, either internal or external, and earnings management tend to restrict the measures to one or two characteristics of corporate governance and relating them to earnings management. This PhD research studies the similar area in a much wider context and involve a greater range of research techniques.

In the context of corporate governance, researchers have previously assumed that their measures are representative of the firm's entire corporate governance and have then generalized these results, without considering the fact that corporate governance is an integrated system. Therefore, using this approach (testing each factor of corporate governance separately on earnings management) led to conflicting results even in the same country which is not correspondent with research reliability. In addition, they tend not to pay attention to contextual factors that could have affected the corporate governance processes such as the country's religion and culture. Consequently, most of prior studies the focused their research attention on quantitative approach by ignoring these factors that are considered from most factors that could effected business aspects in any country. In addition, the economic conditions in Jordan since 2008 (e.g. the financial crisis and the revolutions in the Middle

East) have caused problems to Jordanian industrial firms which may have led to these firms' managers engaging in earnings management. For example, the Egyptian revolution that has affected Jordan's economy with the supply of natural gas to Jordanian firms coming to an end. This PhD research presents several empirical results that are consistent with Jordanian managers engaging in earnings management.

In the context of earnings management, as far as I know, this PhD research is the first to apply Peasnell *et al's* (2000) working capital model (Margin model) to the Middle East. Numerous studies that have researched developing economies have found that the Modified Jones Model failed to detect earnings management (e.g. Islam, Ali and Ahmad (2011) for research on Bangladesh; Yoon, Miller and Jiraporn (2006) for research on Korea), consequently, based on these studies results, we made a comparison between the results of accrual models and working capital accruals models in order to determine which of them is the best at detecting earnings management in Jordanian companies.

Our PhD research also includes a number of factors, specific to the context of Jordan, which have not been identified by other studies. These include the effects of different approaches to the use of IT within the accounting system; consideration of the effects of foreign and local institutional ownership and individual ownership. According to this contribution, this research has added a new theoretical assumed that each researcher should considered all the factors that could affect earnings management in their studies by using qualitative method to determine such of these factors, which means that the researcher should start combining between quantitative and qualitative methods, which this assume is corresponded with Steckler, McLeroy, Goodman, Bird and McCormick (1992). Therefore, this PhD research uses mixed methods (quantitative and qualitative) to investigate the associations between earnings management and corporate governance mechanisms, whereas large number of studies that examine the same issue have used only quantitative methods.

This PhD study is also the first to use different techniques of categorising earnings management onto three categories: 1) high positive EM group, 2) high negative EM group, and 3) Low EM group, to reflect the nature of EM.<sup>1</sup> Where the prior studies that used standard approach (two groups (1) high positive and negative earnings management, (2) and low earnings management) fails to allow for the possibility that there may be different

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<sup>1</sup> More discussions of these categories can be found in chapter 5.

motivations underlying the two types of earnings management behaviour (Ball and Brown, 1968).

This PhD used a new quantitative method (quadratic discriminant analysis) to investigate the relationship between earnings management and corporate governance mechanisms, since the OLS/GLS regressions were poorly specified and yielded weak results in our research. This method is equivalent to regression analysis (Bramhandkar, 2011) to predict the relationship between corporate governance mechanisms and earnings management level in our sample firms.

Finally, and based on the aforementioned discussion, this PhD research contributes to the existing literature by providing an analysis of the context of and determinants of earnings management in Jordanian industrial firms. It will also add to the increasing number of studies of earnings management in emerging economies. Also, this research provided auditors and regulators in Jordan with evidence of the relationship between different characteristics of firms' corporate governance mechanisms and the likelihood of engage in earnings management.

## **1.6 Thesis Structure**

This thesis consists of seven chapters. This chapter presents an overview of this PhD research, and a summary for each chapter of the thesis.

Chapter two presents an overview of corporate governance mechanisms in the context of Jordan, UK, and World; the definitions of corporate governance in prior literature; corporate governance between developed and developing countries; corporate governance reports through UK; and chapter summary.

Chapter three reviews the literature on earnings management; a discussion of the motivations for earnings management; an introduction and critique of accrual-based earnings management models used in prior studies; an overview of the literature on earnings management and cultural factors and finally, a discussion of agency theory in the context of earnings management research.

Chapter four describes Jordan's historical background; the cultural and legal system; the taxation system; In addition, we review the relationship between earnings management and factors such as board of directors' characteristics, audit committee characteristics, the chief

financial officer (CFO), chief executive officer (CEO), external audit factors, and ownership structure.

Chapter five presents rationale for the methodology adopted for this PhD research. This chapter includes an analysis of research paradigms; paradigm incommensurability; hypothesis development based on prior literatures; and data collection methods. Finally, we present the procedures with which the quantitative (secondary) data and the qualitative data (interviews) are analyzed.

Chapters six and seven present the findings of the analysis of the secondary data and interviews in order to answer the research questions. Chapter five presents the results related to measurable corporate governance variables and their effects on earnings management in Jordanian industry firms, while chapter six provides an in-depth discussion of the 12 interviews.

Chapter eight includes interpretations of the findings; a discussion of the limitations of the methodologies used; the conclusions drawn and the contribution to knowledge made by the PhD research.

## **2. Chapter Two: Corporate Governance Mechanisms**

### **2.1 Introduction**

The previous chapter introduced the overall structure of this research including research objectives, research problems and equations, a summary of the research methodology, research hypotheses, the research model, the research contribution and the gap in the prior literature, and finally the structure of the thesis.

This chapter will review and discuss the prior literature on the attributes of corporate governance mechanisms. To this end, the review will be used to identify each attribute with which we are concerned. Corporate governance was established to solve the agency problem (Jensen and Meckling, 1976) through mechanisms that enhance the security of the return for investors. Shleifer and Vishny (1997) suggested that corporate governance mechanisms can be divided into internal and external mechanisms, which will facilitate the monitoring and measurement of these mechanisms. In addition, they found that the effectiveness of these mechanisms differs from country to another based on four factors: (1) the usual economic circumstances in which firms operate, (2) political systems, (3) the dominant industrial sectors, and (4) labour relations.

This chapter is structured as follows: section 2.2 provides a summary of corporate governance terms. Section 2.3 presents an overview of corporate governance mechanisms throughout the world. Section 2.4 sheds light on corporate governance mechanisms between developed and developing countries. Section 2.5 provides a brief summary of the corporate governance mechanisms in the UK. Section 2.6 presents an overview of corporate governance reports throughout the UK. Section 2.7 provides a brief summary of the corporate governance mechanisms in Jordan. Section 2.8 presents the chapter summary.

### **2.2 Corporate Governance Definitions**

The practices of corporate governance differ among countries and they are usually based on the individual corporate governance code and the legal system within the country. Donaldson (1990, page 376) defines corporate governance as a “structure whereby managers at the organisation apex are controlled through the board of directors, its associated structures, executive initiative, and other schemes of monitoring and bonding”. The Cadbury Report (1992) defines corporate governance as “*a system by which companies are directed and*



*controlled*”, where this definition “*highlights the roles of the main players in an organisation that is comprised of shareholders, a board of directors and the auditor*”.

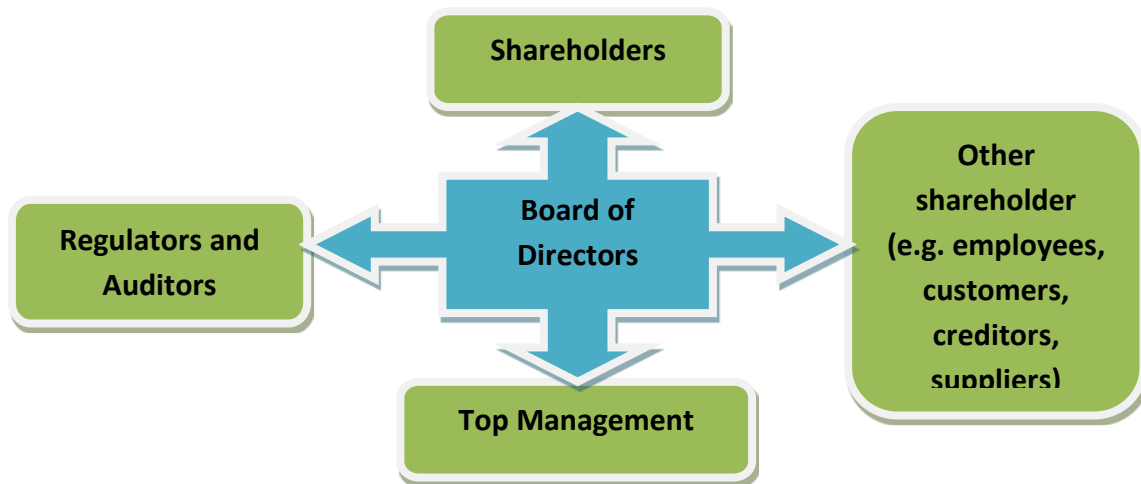
Shleifer and Vishny (1997, page 737) define corporate governance as “dealing with the ways in which suppliers of finance to corporations assure themselves of getting return on their investment”. Sternberg (2004) defines corporate governance as the methods the firms use to achieve the objectives of shareholders by directing the corporation’s transactions, agents and assets. This definition consists of two important factors: (1) the shareholders are considered to be the main factor determining the type of corporate governance in the firm by establishing their objectives, and (2) the board of directors and general managers have to direct and monitor firms' transactions in a professional way in order to achieve shareholders’ objectives in accordance with corporate systems that are applied in their country. These two points lead to a distinction between the rights and responsibilities of shareholders, board of directors and general managers deriving from the separation of ownership and control functions in limited liability companies (Jensen, 1993).

In another definition, The Organization of Economic Cooperation and Development (OECD, 2004) defines corporate governance as “*one key element in improving economic efficiency and growth as well as enhancing investor confidence. Corporate governance involves a set of relationships between a company’s management, its board, its shareholders and other stakeholders. Corporate governance 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*”. The difference between these two definitions lies in their relation to the developed and developing countries. Sternberg (2004) defines corporate governance based on the perspective in developed country, and therefore focus almost entirely on the requirements of the capital market. As an international organisation, OECD defines it based on both developed and developing countries’ perspectives and therefore consideration of other stakeholders groups are taken into account when monitoring performance.

In accordance with the aforementioned definitions of corporate governance, it was noticed that Shleifer and Vishny (1997) focused on how firms maintain returns from investments regardless of their objectives and this characteristic dominates corporate governance definitions prior to the 20<sup>th</sup> century. It can be noted that Tricker (1994) described the exact structure of corporate governance (see figure 2.1), and the main reason for ignoring this

structure could refer to the weaknesses of adopting corporate governance roles before 2000. On the other hand, all the definitions of corporate governance after 2000 such as Sternberg (2004) and OECD (2004) focused their interest on organising the relationship between shareholders and top management.

Figure 2-1 Relationships within a Corporate Governance Structure



Source: Tricker, 1994.

The various definitions of corporate governance in the prior literature presented above can be classified as deriving from two separate viewpoints:

- Corporate governance related shareholders and control, the aim of which is to increase shareholder wealth (e.g. Rohaida, 2011; Shleifer et al., 1997).
- Corporate governance which takes a wider view of accountability, and firm performance including social and environmental issues (e.g. Sternberg, 2004; OECD, 2004)

Clarke (2007) documents that the evaluation of corporate governance in developed and developing countries is usually based on concepts of accountability and the performance in the firms, and the way that they comply with corporate governance policies and procedures. Furthermore, the corporate governance system is considered to be the main guide that provides the firms with information about their rights and responsibilities in organising management processes.

### **2.3 Overview of Corporate Governance Mechanisms**

Corporate governance is a phenomenon that has received much academic interest because of the numerous incidences of corporate failures experienced by several, highly visible firms in countries around the world (Okpala, 2012). In 1999, the World Bank divided corporate governance mechanisms into two types, and these are: (1) internal corporate governance; here, internal control is concerned with the interests of shareholders and monitoring to the top level of management in the firm. (2) External corporate governance; which includes processes for assessing the credit risk for customers, investment policies; controlling the behavior of non-executive directors; and monitoring the regulations that affect the firm (The World Bank, 2013). The elements of corporate governance such as board of directors' roles, external auditor factors, and audit committee characteristics have been used to explain the association between shareholders and management in the firm (Kim, 2006).

Recently, the rules of corporate governance have become one of the most important matters that are discussed in the world economies. Applying these rules has become a priority for both private and public firms, which has driven the making of new rules of corporate governance such as instruments intended to enhance assurance; increase the transparency of policies for protecting creditors, investors and bankers and reduce corruption and encourage foreign investment (Alhaddad, Alzurqan, and Alsufy, 2011).

#### **Board of Directors' Characteristics**

The main tenet of Agency Theory the separation of firms' management and shareholders, where the management is employed as an agent to protect the interests of shareholders and increase their wealth (Klein, 2002). The board of directors is the highest level of the management hierarchy, and it has several responsibilities such as monitoring and organising senior management, ensuring the quality of financial reports and therefore reducing the manipulation of accounting information. Boards may not always be proactive in fulfilling their responsibilities, particularly in smaller organisations. A study by Schulze, Lubatkin and Dino (2003) based on a sample of 883 family firms in US, concluded that board of directors were generally passive and inactive in the firms, following rather than leading management decisions and not supervising the managers' efficiency. The situation tends to be different in larger, publicly owner organisations. Fama and Jensen (1983) and Iskander and Chambrou (2000) documented that in large companies the board of directors is considered the

cornerstone of firms' decisions systems, and this board is responsible for enhancing and monitoring management's performance.

Prior literature presents evidence that the strong board of directors' characteristics lead to improved firm performance. For example, Ebaid (2011) found the larger boards could be more effective in monitoring senior management due to an increased ability to allocate the oversight load over a greater number of observers. In a similar study in the US, Xie, Davidson and DaDalt (2003) show that larger boards lead to improved financial performance.

According to prior studies, the success of the board of directors in achieving their responsibilities could be affected by numerous characteristics such as board size, board leadership structure, board capital, board independence, and director compensation (Gkliatis, 2014; Ebaid, 2011; Abdul Rahkman and Ali, 2006; Schulze et al, 2003).

Board size whether small or large, has been found to be one of characteristics that can affect firm performance. In some cases, a large board size has been found to enhance the critical resources and expertise, and prevent the CEO from taking actions against shareholders' interests. In other studies, a small board size has been thought to lead to increase the ability of board to exercise and adopt monitoring roles more easily leading to improved board performance in the firms (Gkliatis, 2014).

Board leadership structure (CEO duality) or board independence feature in several prior studies such as Wang and Campbell (2012), particularly situations where the same person occupies CEO and board chairman positions simultaneously (Ebaid, 2011; Yermack, 1996). Firms that separate the roles of CEO and board chairman tend to perform better, to have increased financial transparency and less earnings management. Furthermore, the separation between CFO and board chairman roles is considered one of the conditions of avoiding conflict between shareholders and management interests (OECD, 2004).

Gkliatis (2014) stated that the board capital is "the capital that the members of the board bring to the firm, and this capital is often divided into two categories the human and social capital" (page 30). However, board capital is related positively with four benefits that could lead to improvement in the corporate governance mechanisms (Hillman and Dalziel, 2003). These are as classified in Gkliatis (2014, page 31) as follows:

- The first benefit that is related to board capital is the provision of advice and counsel that all directors facilitate through their knowledge, experience and expertise.
- Board of directors' capital provides legitimacy to the firm's actions.
- The board capital provides channels of communication and information between the firms and other external organisations.
- Board capital can help in accessing critical resources from the outside, such as influence in financial capital, influence with political bodies, or any other important stakeholder group.

### **Audit Committee Characteristics**

Recently, there has been renewed interest in audit committees that has occurred in light of the new regulations created because of major corporate scandals (Bhasin, 2012). In the last three decades, the audit committee has become the most popular mechanism of corporate governance. Professional and regulatory committees in many countries have recommended their more worldwide acceptance and have supported expanded roles for audit committee (Abdullatif, 2006; Turley and Zaman, 2004). In 2001, the Basel Committee encouraged firms to established audit committees in order to solve the difficulties that would arise for the board of directors if a suitable system of controls was not in operation.

DeZoort (1997) showed that a firm with a strong audit committee has incentives to avoid negative effects such as litigation and damage to reputation. Furthermore, DeZoort and Salterio (2001) presented evidence that the existence of strong independent audit committees could lead to more audit effectiveness and efficiency through mitigating external auditors' perceptions of customers' business risk.

There is a consensus from prior literature that the audit committee has learned and inquired about important issues affecting financial statements and their performance, and that these committee members should be independent. Accordingly, when the audit committee follows and applies their responsibilities appropriately, the outcomes are reliable financial reports, good corporate governance and less likelihood of firms' failure (Okpala, 2012; Datta, 2000).

Jennings (2002) indicated that the main aim of establishing independent audit committees is to provide shareholders with a high quality of assurance about the activities, behaviours and practices of firms' managers and employees. Additionally, Turley and Zaman (2004) assume

that the good corporate governance mechanisms result from the strong audit committee characteristics, wherein they found that the audit committee affect the firms through:

- Structural incentives -in this regard, the authors present several examples such as issues related to audit committee acceptance and possible reduction in agency costs linked with other governance activities.
- Audit function -here, the researchers found that the audit committee affected audit functions through the processes of selection and remuneration, ensuring the independence of external auditors, the audit process and auditor communication, and the monitoring of internal control and audit systems.
- Financial reporting quality -in this regard there are several examples such as the committee's impact of errors and irregularities, adoption of accounting standards and accounting policy choice, legal and regulatory action for defective reporting, and audit qualifications.
- Finally, firm performance -for example through influence on wealth creation and share price.

Several previous studies documented that four characteristics determine the effectiveness of the audit committee and these are: (1) audit committee size, (2) the frequency of audit committee meetings, (3) audit committee independence and (4) audit committee expertise (Bronson, Carcello, Hollingsworth and Neal, 2009; Bedard, Chtourou and Couteau, 2004).

In a recent study, Madi, Ishak and Manaf (2014) present empirical results showing that high audit committee independence and large audit committee size lead to an increase in firms' voluntary disclosure in Malaysia.

Bedard and Gendron (2010) include several arguments about audit committee characteristics. First, they argue that the existence of independent of audit committee help to mitigate the agency problem since audit committee members have no economic and personal relationship with management. Second, they assume that financial expertise leads audit committee members to identify and ask knowledgeable questions of management and external auditors which challenge them to improve financial reporting quality. Third, the authors suggest large audit committees are more likely to increase monitoring and controlling effectiveness through bringing diversity of views, expertise, experiences and skills. Furthermore, Greco (2011)

shows that a higher number of audit committee meetings would allow better examination of the firm's accounting choices, disclosures and estimates, and audit standards.

### **External Audit Factors**

Most of prior studies focus on the Agency problem, which is centred on the separation of ownership and control of firms. Lin and Hwang (2010) assume that the existence of strong external auditors will mitigate agency problems. In addition, an external audit of high quality will mean that auditors are less willing to accept uncertainty about accounting methods and are more likely to report errors and irregularities revealed during the audit work, and this leads the external auditor to be more effective in monitoring the firm's activities (Habbash, 2010).

Fan and Wong (2005) suggest that the external auditors play a significant governance role in East Asian firms, and that these firms are more likely to hire big five audit firms (now big four), particularly when their ownership structure is likely to cause agency conflict. In addition, Fan and Wong (2005) find no significant relationship between auditor choice and the incentive alignment effect measured by the controlling owners' cash flow.

Based on International Audit Standards, the external auditor should consider four key factors, and these are: "(1) internal audit objectivity in terms of the status and reporting lines of the internal audit function; (2) the technical competence of internal audit staff; (3) their exercise of due professional care; and (4) the communication between internal and external audit (Munro and Stewart, 2011, pages 466-467).

Accordingly, external audit is considered an important process for the shareholders to ensure the credibility and reliability of financial reports. Assessing the quality of external audit is based on several factors such as external auditor experience and knowledge in the industry, external auditor independence, and external auditor reputation (Alghamdi, 2012).

### **Ownership Structure**

The nature of the association between the ownership structure and the firm's top management has been the essential issue in the corporate governance mechanism. Demsetz and Lehn (1985) used the proportion of shares owned by large shareholders, particularly the five largest shareholders in the firms, to measure ownership concentration. Later studies used the proportion of shares owned by a firm's management to reflect ownership structure. However,

the types of ownership are not mutually exclusive. In a study by Demsetz and Villalonga (2001) the overlap between family ownership and the proportion of shares owned by managers was 0.67 which meant there are existing categories overlapping these two types. This in turn assumes that each one of these types of ownership represented the other one.

Based on a sample of 456 US firms, Shleifer and Vishny (1986) analyse the ownership structure and find a high level of ownership concentration. For example, they show that the 354 of these firms have at least one shareholder owning at least 5% of the firm shares.

In the 1990s, the conflict of interest between larger shareholders and smaller shareholders has received more attention from academic researchers. Where it is considered that concentrated ownership structure could lead larger shareholders to dominant minority shareholders. This is known as the expropriation-of-minority-shareholders hypothesis (Hu and Izumida, 2009).

The current literature of corporate governance also covers the agency problem where ownership is dispersed and shareholders have a more passive role (Okpara, 2011). Accordingly, Shleifer and Vishny (1997) find that an increase of ownership concentration is likely to reduce the free-rider problem and enhance firm efficiency. Ownership concentration has therefore been considered as a means by which to reduce the agency problem and improve corporate governance (Hu and Izumida, 2009).

Recently several emerging markets start following developed markets by moving from command economy, where the government own the firm totally or partially, to privatisation economy since it approved its ability to develop their corporate governance mechanisms such as US and UK (e.g. Fazlzadeh, Hendi and Mahboubi, 2011; Ghazali, 2010).

Theoretically, large shareholders could affect minority shareholders' rights and firm performance in two ways: the first is a positive way, where the large shareholders protect minority shareholders. In this regard, Shleifer and Vishny (1997) argue that ownership concentration is considered one of most important issues in corporate governance. The second is a negative way, where the large shareholders conspire with managers to achieve their personal incentives regardless of the effect on minority shareholders. For example, La Porta, Lopez-de-Silanes and Shleifer (1999) found that the poor protection of small shareholders from large shareholders is deemed to be a significant agency problem.



Overall, the evidence on ownership concentration around the world suggests that firms with high ownership concentration are the most effective in surviving natural selection (La Porta et al, 1999). As a final point, prior literature divides ownership structure into several types of ownership such as management and/or board ownership, government ownership, family ownership, foreign ownership, and institutional ownership (Almudehki and Zeitun, 2012; Gurunlu and Gursoy, 2010).

#### **2.4 Corporate Governance in Developed and Developing Countries**

The majority of published studies of corporate governance have been located in developed countries. Bleicher, Leberl and Paul (1989) is considered one of the first studies of corporate governance mechanisms. Bleicher et al (1989) conduct their study to compare corporate governance between listed firms in Germany, US and Switzerland. They find the corporate governance mechanisms in these countries are developed during the previous ten years, and this led to improving managers' professionalism, which increased their abilities to monitor the activities of the firm. Furthermore, Bleicher et al (1989) present several ways to improve corporate governance mechanisms such as: the composition of the board, imposing more duties on the boards, expanding the duties of care and to increasing the liability of monitors, and employing external auditors to conduct audits on the performance of managers.

In a recent study from a developing country, Ebaid (2011) shows that strong corporate governance is related with more favourable auditors' decisions than weak corporate governance. His results demonstrate that the voluntary adoption of corporate governance in Egyptian firms improves the quality of financial reporting procedures and, therefore, impacts upon external auditors' decisions.

Based on comparative study between developing and developed countries, Mulili (2011) relates the differences in corporate governance in developed and developing countries to culture, politics and technology, showing that each country adopts a set of corporate governance procedures based on many factors such as the culture, economic circumstances, legal and financial systems, and firm ownership structures. In the same vein, Davies and Schlitzer (2008) find corporate governance practices differ across countries.

Clarke (2004) presents several reasons for establishing corporate governance throughout the world such as the prevention of corporate failure, and the existence of growing acknowledgement in the business world. Whereas, Mulili (2011) stated that the corporate

governance became an international issue due to the business globalisation, and it plays a big role in the management of firms in both developed and developing countries.

By comparing corporate governance mechanisms between developed and developing countries, Mulili (2011) identifies eight key elements of a good corporate governance environment: (1) laying a solid foundation for management, (2) establishing a board that adds value, (3) equitable treatment of shareholders, (4) accurate and timely disclosure of financial, performance, ownership, and governance matters, (5) effective monitoring of management and the accountability of the board, (6) operating ethically and responsible decision making, (7) fairness in dealing with employees, and (8) recognising the legitimate interests of stakeholders.

Aguilera and Jackson (2010) and Reddy (2009) examine how economics, management, culture, society, law, and politics affect the development of corporate governance mechanisms over several countries, where they found that each one of them has different effect on corporate governance based on the nature of each country. Anderson and Gupta (2009) find the financial structure and legal system have affected the nature of corporate governance over sample of 1,736 unique firms representing 22 countries. In another study that covered several developed and developing countries, Doidge, Karolyi and Stulz (2007) document that the incentives to adopt good governance mechanisms in the firm are based on the countries financial and economic development. The countries with poor economic and financial development have poor incentives to develop their corporate governance mechanisms.

Based on a practical comparison analysis throughout 33 countries, Hopt (2011) states that the corporate governance is a system by which firms are controlled and directed, and that it plays a big role at the stock exchange. Furthermore, he finds that the board of directors is considered a main actor in corporate governance mechanism, shareholder protection is the major concern of corporate governance and some countries try avoiding to go to court to solve their corporate governance problems and make this choice their last solution. Unlike developing countries, developed countries such as (UK, US, and Australia) now pay less attention to studying corporate governance issues, since they believe that the corporate governance mechanisms are developed enough to affect firms performance in these countries (Nicholson and Kiel, 2004).

In another study from Greece, Lazarides and Drimpetas (2011) show that the firm size, leadership power and board characteristics lead corporate governance to be less effective in Greece compared with other countries (e.g. US and UK).

Developing countries might face restrictions which could lead to corporate governance weaknesses. For example, Okpara (2011) identifies a number of restrictions that hinder Nigerian firms in developing and applying corporate governance mechanisms, such as abuse of shareholders' rights, absence of law enforcement mechanisms, lack of obligation on the part of boards of directors, lack of commitment of the regulatory framework, weak enforcement and monitoring systems and lack of transparency and disclosure.

### **2.5 Corporate Governance Mechanisms in the UK**

The UK starts its approach from the position that strong corporate governance is considered as a means to improve the board of directors' ability to manage the firm efficiently and provide accountability to shareholders. The UK approach has been found better than other countries in achieving high standards of corporate governance with low costs. In this regard, Governance Metrics International documented that the UK ranked second in its analysis showing average governance performance by companies in different countries (Financial Reporting Council, 2010).

Following several serious, unexpected, high profile accounting scandals and corporate failures (e.g. Polly Peck International, Bank of Credit and Commerce International, and Robert Maxwell) in the UK that happened in late 1980s and early 1990s, questions were raised concerning the trustworthiness of financial reporting, and the weakness of corporate governance in UK firms was revealed (Man and Wong, 2013). The Committee on the Financial Aspects of Corporate Governance chaired by Sir Adrian Cadbury published the Cadbury Report in 1992 to improve the corporate governance mechanisms in UK. Initially, the recommendations of this report mostly tended to produce best practice regarding the board structure. Following implementation there were reviews of the effect of the Cadbury Report on board structure, investors' protection and firm performance.

The Cadbury Report was dealt with several issues such as the relationship between shareholders and board of directors, the effectiveness of the audit and how to increase its value, board of directors' responsibilities and structure, and institutional shareholders responsibilities (Dedman, 2002). Consequently, The Cadbury Report identified best practice

in terms of the quality of governance, it focused on board monitoring responsibilities and defined the roles of non-executive directors (Belcher, 1996).

In 1996, the Hampel Committee was convened in order to review and assess the extent to which the recommendations of the Cadbury and Greenbury Reports<sup>1</sup> had been applied (see section 1.6), and if the objectives for both of them had been met. In 1998, the Hampel Report led to the publication of the Combined Code of Corporate Governance, which covered several areas, including board structure, board operations of the board, directors' remuneration, accountability and audit, institutional shareholders, and the responsibilities of institutional shareholders (Mallin, 2006; Dedman, 2002).

In 1999, the Turnbull guidance was published to support the board of directors with guidance on how to develop corporate governance and internal control systems. Following the Enron and WorldCom scandals in the US 2002, the Financial Reporting Council Combined between the previous reports<sup>2</sup> in 2003 to integrate the recommendations from these reports particularly on the role of non-executive directors (the Higgs Report in 2003) and the role of the audit committee (the Smith Report in 2003). In 2006, the Financial Reporting Council updated the corporate governance code by doing limited changes for previous code (Financial Reporting Council, 2006).

Following this period, several problems appeared in the UK financial services sector, around 2010, including credit risk problems and financial dysfunction, which led the Financial Reporting Council to change the corporate governance code to overcome these problems (Financial Reporting Council, 2010). Finally, the latest update for the UK corporate governance code was in 2014, which amends auditing and ethical standards for auditors. The next section explains in more detail the main corporate governance reports in UK over the last two decades.

## **2.6 Corporate Governance Reports throughout the UK**

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<sup>1</sup> The Greenbury report was issued in 1995 by a committee under the chairmanship of Sir Richard Greenbury to improve a number of recommendations of the Cadbury report particularly related to the committee of non-executive directors, the provision of information on remuneration policy in the annual report and accounts, and the restriction of notice and contract periods to less than one year.

<sup>2</sup> Cadbury, Greenbury, Hampel and Turnbull reports

Over the past two decades, the UK has introduced several corporate governance reports to organise and improve the corporate governance in the UK listed firms. Jones and Pollitt (2004) demonstrated that there are several characteristics for each report, which is effected the corporate governance roles in the UK listed firms.

### **Cadbury Report (1992)**

This report was issued by the Financial Reporting Council, the London Stock Exchange, and the accountancy profession, to overcome several scandals that have occurred in earlier periods as shown in above section.

The Cadbury Report established several recommendations to limit the power of boards of directors (Dahya, 2007; Dedman, 2002), and these are:

- Separation between CEO and board chairman, to avoid the power of combination between these two positions.
- Minimum the number of non-executives directors - The Cadbury Report requires a minimum of three non-executives directors and one of them may be the chairman of the firm. In this regard, the Cadbury Report (1992, Para 4.11) stated that *“Non-executive directors should bring an independent judgement to bear on issues of strategy, performance, resources, including key appointments, and standards of conduct. We recommend that the calibre and number of non-executive directors on a board should be such that their views will carry significant weight in the board’s decisions. To meet our recommendations on the composition of sub-committees of the board, all boards will require a minimum of three non-executive directors, one of whom may be the chairman of the company provided he or she is not also its executive head. Additionally, two of the three should be independent in the terms set out in the next paragraph”*.
- Highlighting the importance of the audit committee characteristics such as the independence of the audit committee. This committee should include three non-executives directors. In this regard, Cadbury report (1992, Para 4.3) stated *“The board should establish an audit committee of at least 3 non-executive directors with written terms of reference which deal clearly with its authority and duties”*.
- Enhancing the role of institutional shareholders in UK, where the Cadbury report (1992, Para 6.12) stated that *“The Institutional Shareholders’ Committee’s advice to*

*its members to use their voting rights positively is important in the context of corporate governance. Voting rights can be regarded as an asset, and the use or otherwise of those rights by institutional shareholders is a subject of legitimate interest to those on whose behalf they invest. We recommend that institutional investors should disclose their policies on the use of voting rights”.*

Stiles and Taylor (1993) state that the Cadbury Code is extensively observed as an attempt to keep a regulation system under monitoring and controlling, and this report is considered as a big step of developing the corporate governance in the UK.

### **Greenbury Report (1995)**

In considering the important issues of directors' pay and share options, the Confederation of British Industry in 1995 established a committee directed by Sir Richard Greenbury to identify good practice in determining directors' remuneration for UK firms (Hughes, 1996).

Three main recommendations were discussed and developed in the Greenbury report as documented in Hampel (1998), and these are as follows:

- *The level and make-up of remuneration - Levels of remuneration should be sufficient to attract and retain the directors needed to run the company successfully. The compound parts of remuneration should be structured so as to link rewards to corporate and individual performance.*
- *Procedures - Companies should establish a formal and transparent procedure for developing policy on executive remuneration and for fixing the remuneration packages of individual directors. No director should be involved in fixing his or her own remuneration.*
- *Disclosure - The Company's annual report should contain a statement of remuneration policy and details of the remuneration of each director.*

### **Hampel Report (1998)**

The committee who produced this report was established in 1995 and directed by Sir Ronald Hampel, to review and evaluate the Cadbury Committee's recommendations on corporate governance. The Hampel Committee published the final report version in 1998 (Stapledon, 1998).

Chapman (1997) documented that there several recommendations made in the Hampel Report, and these are:

- The U.K.'s unitary board system should be retained instead of adopting German-style two-tier boards.
- Directors should submit themselves for re-election at least once every third year.
- A majority of non-executive directors should be entirely independent, and at least one-third of the board should be non-executives.
- Paying non-executives in shares is not objectionable, but share options may cloud their judgment.
- Smaller companies should not enjoy a lighter corporate governance code.
- Directors should not have to declare in annual reports that the system of internal control.
- To bolster auditor independence, regulators should consider reducing the current 10 % limit on the proportion of audit income an audit firm may earn from any one client. In addition, audit committees should keep under broad review what other services their external auditor offers the company in case their independent judgment is threatened.
- Companies should explain in the annual report how they have followed Hampel's principles.
- A final report, which will merged the committee's recommendations with those of the Cadbury committee on corporate governance and the Greenbury committee on executive pay into a single set of principles and code was planned.

### **Turnbull Report (1999)**

The committee producing this report was established in 1999 and directed by Nigel Turnbull, to identify the characteristics of internal control systems needed in order to have a good audits, ensure the quality of financial reporting, and catch any fraud before it becomes a serious problem (Page and Spira, 2004).

Mainly, the Turnbull Report focused on risk management and internal control as both of them are considered equally important. Risk management could have a large influence on the firm performance and so should be the main concern of all directors. The internal control system is therefore focused largely on protecting the firm from potential risk (Turnbull, 2000).

Three areas were covered in this report to improve firms' performance in UK, and these are:

- The importance of internal control and risk management
- Maintaining a sound system of internal control
- Reviewing the effectiveness of internal control

### **Higgs Report (2003)**

At the time of the major US accounting scandals (Enron, WorldCom and Tyco) The Secretary of State for Trade and Industry in the UK appointed Derek Higgs as a head of a committee whose remit was developing corporate governance. In early 2003, the Higgs Report was published and this report reviewed the role and effectiveness of non-executive directors. Jones and Pollitt (2004) summarised several issues that this report assessed:

- The population of non-executive directors in the UK, who are they, how are they appointed, how the pool might be widened.
- Non-executive directors' independence.
- Non-executive directors' effectiveness.
- Non-executive directors' accountability; their relationship – actual and potential – with institutional investors.
- Issues relating to non-executive directors' remuneration.
- The role of the Combined Code.
- What, if anything, could be done – by individual boards, by institutional investors, by the Government or otherwise – to strengthen the quality, independence and effectiveness of non-executive directors.

### **Smith Report (2003)**

Around the same time, the Financial Reporting Council appointed Sir Robert Smith to lead a committee established to clarify the role and responsibilities of audit committees (Smith, 2003).

Briefly, the Smith Report was interested in developing and improving three areas in the audit committee: (1) the purposes of audit committee such as monitoring the integrity of accounts, reviewing internal financial control and risk management systems, and monitoring and reviewing the effectiveness of internal audit (2) audit committee membership, with regard to which the Smith Report recommends that the minimum number of members should be at least three and all should be independent non-executive directors, and the firm chairman



should not be one of these members, (3) audit committee communication. In this regard the committee should issue a report, which includes several points such as the role and responsibilities of the committee, all members should have relevant qualifications, expertise and experience, resources available to the committee, number of meetings and details of individual directors' attendance, and remuneration of committee members.

Several prior studies have investigated the compliance of UK listed firms with corporate governance code (e.g. Sheridan, Jones and Marston, 2006; Jones et al, 2004), and they found that the introduction of the Cadbury, Greenbury and Hampel, and Higgs reports led to a significant increase and improvements in corporate governance.

Finally, the Corporate Governance Code in the UK that has been developed over last three decades, has led to improvement of the UK economy at all levels. The Financial Reporting Council (2014, page 5-6) describes the main principles of the Corporate Governance Code, and these are as follows:

#### **“Section A: Leadership**

Every company should be headed by an effective board which is collectively responsible for the long-term success of the company. There should be a clear division of responsibilities at the head of the company between the running of the board and the executive responsibility for the running of the company's business. No one individual should have unfettered powers of decision. The chairman is responsible for leadership of the board and ensuring its effectiveness on all aspects of its role. As part of their role as members of a unitary board, non-executive directors should constructively challenge and help develop proposals on strategy.

#### **Section B: Effectiveness**

The board and its committees should have the appropriate balance of skills, experience, independence and knowledge of the company to enable them to discharge their respective duties and responsibilities effectively. There should be a formal, rigorous and transparent procedure for the appointment of new directors to the board. All directors should be able to allocate sufficient time to the company to discharge their responsibilities effectively. All directors should receive induction on joining the board and should regularly update and refresh their skills and knowledge. The board should be supplied in a timely manner with

information in a form and of a quality appropriate to enable it to discharge its duties. The board should undertake a formal and rigorous annual evaluation of its own performance and that of its committees and individual directors. All directors should be submitted for re-election at regular intervals, subject to continued satisfactory performance.

### **Section C: Accountability**

The board should present a fair, balanced and understandable assessment of the company's position and prospects. The board is responsible for determining the nature and extent of the principal risks it is willing to take in achieving its strategic objectives. The board should maintain sound risk management and internal control systems. The board should establish formal and transparent arrangements for considering how they should apply the corporate reporting, risk management and internal control principles and for maintaining an appropriate relationship with the company's auditors.

### **Section D: Remuneration**

Executive directors' remuneration should be designed to promote the long-term success of the company. Performance-related elements should be transparent, stretching and rigorously applied. There should be a formal and transparent procedure for developing policy on executive remuneration and for fixing the remuneration packages of individual directors. No director should be involved in deciding his or her own remuneration.

### **Section E: Relations with shareholders**

There should be a dialogue with shareholders based on the mutual understanding of objectives. The board as a whole has responsibility for ensuring that a satisfactory dialogue with shareholders takes place. The board should use general meetings to communicate with investors and to encourage their participation".

## **2.7 Corporate Governance Mechanisms in Jordan**

The Corporate Governance Code for the Amman stock market was designed for the development of the economy at all levels. The Jordan Securities Commission (JSC) is considered the main body responsible for the development of capital markets and the regulation of corporations. This code produced by the JSC includes the rules of corporate governance that are directing firms listed at Amman Stock Exchange (ASE) to institute a clear framework to manage and control their rights, duties and responsibilities in order to

achieve the firms' objectives and protect the rights of all stakeholders. These rules are based on several pieces of legislation such as: Jordan Companies Law; Jordan Securities Law; and the international principles recognized by the Organization of Economic Cooperation and Development<sup>1</sup> (OECD). The monitoring of corporate governance rules is achieved through distinguishing the approach of the Jordanian firms that comply with these rules from other firms that do not comply with them. In the case of firms that do not comply with these rules sanctions are imposed such as moving from the first to the second market, stopping firms' shares from being listed on the stock market and the result may be a decreased in firms' share price. The Corporate Governance Code suggests that compliance with these rules will lead to several advantages such as: enhancing the performance of national economy and improves the practices in the business communities.

Boards of directors, audit committee, external auditors and shareholders are considered to be the most important within the Jordanian corporate governance code, and the following sections discuss them.

### **2.7.1 Board of Directors**

Jordan's corporate governance code includes a number of provisions related to the board of directors such as the number of board members, which is to be between five and thirteen members, and they have to be elected by a secret ballot. The board of directors has to meet no less than six times per year. In addition, the board of directors' chairman is not allowed to work in any executive position within the firm at the same time. In fact, it is not allowed that any member of the board of directors to be a member of another board, particularly in the same business or a competitor's business, and it is also not allowed for any member of the board of directors to combine more than four memberships of different board of directors. The firms do not have the right to lend money to the chairman and members of board. The Code also specifies that the firm has to provide all directors with sufficient information for them to fulfill their roles and for the firm to achieve its objectives (Corporate Governance Law for Shareholding Companies Listed on the Amman Stock Exchange, 2012).

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<sup>1</sup> Organization for Economic Cooperation and Development (OECD): it is goes back to 1960, and is an organization that acts as a meeting ground for 30 countries which believe strongly in the free market system, The OECD provides a forum for discussing issues and reaching agreements, some of which are legally binding.

Jordan's corporate governance code specifies criteria about board of directors' functions, qualifications and responsibilities as below:

**First: board of directors functions**, based on the Jordan Corporate Governance Code 2012, the board of directors held several functions, and these are:

- Managing the company particularly in the early years of the company. This applies to the first 3 or 4 years.
- The board of directors represents all shareholders
- Verifying all administrative and technical qualifications and experience for members of the executive management to make sure that they have appropriate qualifications and experience for their position
- Listening to any external consultant that might provide them with important information; this in turn leads to improving the firm's productivity.

**Second: Board of directors qualifications**

- All board of directors members have to be knowledgeable and experienced in administrative affairs.
- All board of directors' members have to be aware about government legislation and they have to be aware about their rights and duties in the board.

**Third: board of directors' responsibilities**, based on the Corporate Governance Code, the board of directors have several responsibilities (Davies, 2000; Corporate Governance Law for Shareholding Companies Listed on the Amman Stock Exchange, 2012), and these are:

- Reporting to the authorities concerning any of the following affairs: (1) if the firm was affected by any financial issues such as, a loss that will impact shareholders' rights, (2) if any one of the board of directors used his/her position or power to achieve any personal benefit, and (3) if any directors, general managers or internal auditors acted in a way that might lead to fraud, embezzlement or misrepresentation.
- Establishing the firm's policies, strategies and procedures in order to achieve shareholders' and firms' goals.
- Controlling the firm's employment by ensuring that each person in their firm complies with policies and regulations.
- Authentication of the financial reporting and making sure that these reports have been prepared in accordance with the codes and laws.
- Employing the firm's general managers and finishing his/ her services based on the evaluation of his/her progress in relation to his/her contract.

- Organising the annual general meeting, and receiving shareholders' complaints and suggestions.
- Determining the responsibilities and authorities of executive management in the firm.
- Taking any necessary procedures to ensure that the internal control work in the right way.

### **2.7.2 Audit Committee**

Jordan attempted to organise the corporate governance code by legislating several Acts. Since 1998, establishing the audit committee has become compulsory in Jordanian firms and firms must file their annual reports with the Jordan Securities Commission (Abdullatif, 2006). The audit committee is considered as the core system of corporate governance since it helps the board of directors to accomplish their responsibilities to shareholders, and corporate governance law has deemed the audit committee as one of the most important committees to assess internal control systems (Oqab, 2012).

In 2008, the trade law stipulated that in Jordan the audit committee had to contain at least 3 members and some of these should be non-executive members (Hamdan *et al*, 2013).

The audit committee has to meet at least four times per year, with these meeting spread regularly throughout the year. The firms have to offer all facilities that the audit committee needs, and provide it with expert assistance at any required time. The audit committee has to meet at least once a year with the firm's external auditors, avoiding the presence of the general manager or any person who is related to the top level of management (Corporate Governance Code for Shareholding Companies Listed on the Amman Stock Exchange, 2012).

Jordan's Corporate Governance Code details audit committee duties, qualifications and power as below:

#### **First: audit committee duties**

There are several duties that the audit committee has to carry out, and these are as follows:

- Discussing all issues that are related to external auditor work and reporting to the board of directors.
- Monitoring and reviewing all firm communication with the external auditor and assessing its issues and providing board of directors with any explanations.
- Monitoring the firm's compliance with Jordan business regulations.

- Reviewing and monitoring periodic financial reports, for internal and external use, and reporting the comments and recommendations for board of directors.
- Assessing internal control and auditing procedures, and evaluating the reports of external auditors about internal auditing procedures.
- Monitoring all financial transactions with related parties such as suppliers, customers and lenders, also, dealing with any issues that the board of directors might suggest in future.

### **Second: audit committee qualifications and power**

Jordan's corporate governance code determines the level of experience and education for audit committee members, it stipulates that all audit committee members have to be knowledgeable and experienced in accounting and finance fields, and at least one of them has to possess a professional certificate such as CMA, CPA or CIA.

In addition, corporate governance law gave the audit committee powers for monitoring all financial processes in the firm through: (1) the right to communicate directly with the external auditors about any firm issues, (2) suggesting and recommending the board of directors to choose the appropriate external auditors, and (3) recommending a candidate to be selected as the firm's internal auditor.

### **2.7.3 External Audit**

The external audit process is also deemed an important factor that affects corporate governance (Suwaidan, and Qasim, 2012). Corporate governance law has stipulated that one or more external auditors should be chosen to monitor firms' processes, and whether or not they comply with international accounting standards. External auditors are hired by shareholders for one year and renewed year by year, and they have to be independent. Finally, external auditors are responsible for an independent and impartial evaluation of the firms' processes and systems.

External auditors should not be: one of the shareholders of firms they audit, a member of board of directors or an employee in the firm. External auditors should also avoid supporting the firm with any services such as technical consultations or administrative services (Corporate Governance Law for Shareholding Companies Listed on the Amman Stock Exchange, 2012).

The Jordanian corporate governance code specifies the required level of the external auditor's knowledge and experience as below:

- Holding a valid license that allows an external auditor to practice auditing work.
- Registering as a member with the Jordan Association of Certified Public Accountants (JACPA).
- Having at least three years sequential experience as a full time worker in auditing after receiving his/ her license.
- Having in his/ her firm one partner or more, and one of these partners at least meets the aforementioned requirements.

Finally, there are several duties that the external auditors have to achieve such as, meeting all the requirements of external auditors regarding neutrality and independence, auditing all firm's operations based on the international accounting standards and the accepted profession's rules; controlling and examining internal auditing of the financial and administration system in the firm; reporting to shareholders and authorities concerning any violation of the law or if there are any issues that might impact negatively on the firm's financial situation; auditing the ownership statements issued by the firms; attending the annual general meeting and answering all the questions that the shareholders might ask (Okab, 2013; Asawalqa and Qtish, 2012).

#### **2.7.4 The Role of Shareholders**

Shareholders are owners of the firm and as such they have numerous and varied rights and responsibilities. Nevertheless, it is not permitted for shareholders to manage the firm since this responsibility is assigned to the board of directors and general managers who are responsible to shareholders, and it is not permitted for any shareholder to ask about certain information without knowing the other shareholders (Jordan Companies Control Department, 2008). Alhaddad, *et al* (2011) state that the issue of controlling shareholders managing the firm is the main problem that firms in developing countries are facing and Jordan is not isolated from this problem. More than 30% of shareholders in the world are family shareholders, where family shareholders have higher levels of internal control than other types of shareholders (La Porta, Lopez-de-Silanes and Shleifer, 1999).

In the last three decades, ownership structure is considered to have been one of the most important issues that affects firms' policies such as, accounting choices, dividends, and shares (Algharaibeh, Zurigat, and Alharahsheh, 2013). Based on a sample of 167 Jordanian firms from the Amman stock market during the period of 1989 to 2006, the empirical results

published by Zeitun (2009) reveal that the ownership structure has an effect on Jordanian firms' policies. For example government ownership (state ownership) has a negative effect on firms' accounting policies.

Jordanian company law (1997) stipulates that all firms in Amman Stock Market are obliged to publish their annual financial reports, details of the number of shareholders, members of board of directors, and the ownership percentage for each shareholder and their relatives.. Alfayoumi and Abuzayed (2009) identified three types of ownership structure in Jordanian firms that affected firms' decisions and performance and these are: insider ownership, institutional ownership, and individual block-holders ownership.

The Corporate Governance Code for (2012) has categories shareholders' rights and duties, which are detailed in the two sections below:

#### **2.7.4.1 Shareholders' Rights**

In this section, two types of rights are discussed: general shareholders' rights and rights within the powers of the general assembly.

##### **Information about shareholders:**

The firm has to keep shareholders' records that include all the information about them, such as their names, the number of shares that they hold and any restrictions on their ownership, access to shareholder records related to any shareholder for any reason, contributing and voting in general annual meetings in person or by proxy with a number of votes equal to the number of shares that he/she holds in the firm, priority to subscribe in any new share issues by the firms, before these shares are offered to other investors.

The firm must also keep records of any shareholder filing a lawsuit against the board of directors, claiming compensation for damages incurred as a result of not following the legislation, any mistake or negligence in conducting the firm processes, or disclosure the firm's secrets.

In Jordan, shareholders who hold 25% of the firm's subscribed shares are empowered to request an extraordinary general meeting for any purpose. Shareholders who hold 20% of the firm shares can request extraordinary general assembly meeting to request the resignation of any board members or board chairman. Also, the shareholders that hold 10% of firm shares can request auditing of firms' activities and records.



### **Shareholders' rights within the powers of the general annual meeting**

The specific rights of shareholders in the annual general meeting and as below:

- Discussing the firm's plans and its performance for coming period with board of directors.
- Approving the issue of corporate bonds convertible to shares.
- Authentication of the financial statements for the preceding year.
- Electing the board of directors' members and external auditors.
- Amending any matters relating to firms' objectives in accordance with the law.
- Dismissing the board chairman or any board member if that is necessary.
- Enabling the employees to own the company's shares

#### **2.7.4.2 Shareholders Responsibilities**

In this area, the Jordan Companies Control Department determined two responsibilities for shareholders in Jordanian firms, and these are: (1) shareholders have to use the forum of a general shareholders meeting to ensure that their firm tend to achieve the objectives, (2) all shareholders who are absent from the annual general meeting have to authorise another person to vote on their behalf.

### **2.8 Summary**

In the context of reviewing the literature of corporate governance, this chapter started with definition of corporate governance in the prior studies. Then, it presented and reviewed corporate governance mechanisms such as board of directors' characteristics, audit committee characteristics, external audit factors, and ownership structure, over the world.

This chapter reviewed the prior literature comparing corporate governance mechanisms in developed and developing countries in order to show the differences and similarities. Accordingly, and because this PhD thesis is conducted in the UK, we presented a brief summary about corporate governance in the UK, and showed how it developed in the last three decades particularly through viewing the main corporate governance reports in the UK such as Cadbury report, Higgs report and Smith reports. Finally, corporate governance mechanisms in Jordan were discussed.

### **3. Chapter Three: Earnings Management Models**

#### **3.1 Introduction**

Light has been shed on world corporate governance mechanisms, and how corporate governance operates in developing and developed countries. This chapter presents the earnings quality throughout the world as well as investigating earnings management as a tool to measure a firm's earnings quality. Earnings management is considered one of the most important issues in financial reporting, particularly after the Enron and WorldCom scandals. Consequently, several issues are covered in prior literature related to earnings management: earnings management definitions, managers' motivations to engage in earnings management, measuring earnings management, the tools that managers use to manipulate the earnings, and the relationship of this phenomenon with the regulation of financial reporting.

In the past three decades, numerous studies have attempted to answer these questions by employing models such as the aggregate accruals model, specific accruals model, the distribution of earnings model (McNichols, 2000; Bissessur, 2008), the discretionary revenues model (Stubben, 2010), and the earnings informativeness model (Easton and Harris, 1991), using different measures such as discretionary accruals, non-discretionary accruals, and total accruals or single accruals as proxies for earnings management. These models are analysed and evaluated in the following chapter.

The chapter is structured as follows: section 3.2 presents overview of earnings quality throughout the world. Section 3.3 explores definitions of earnings management. Section 3.4 examines earnings management types by debating opportunistic and beneficial earnings management motivations. Section 3.5 shows how earnings management models have worked in prior studies. Section 3.6 discusses and critiques all earnings management models that will be used in this research and other models that are considered important models such as, Healy (1985), DeAngelo (1988, 1986). Section 3.7 presents an overview of the literature concerning earnings management and cultural factors. Section 3.8

discusses earnings management in the context of agency theory. Finally, Section 2.9 presents an overview for this chapter.

### **3.2 Earnings quality throughout the World**

Previous studies used earnings attributes to investigate the weakness and strength of earnings quality in the firms. Dichev, Graham, Harvey and Rajgopal (2013) and Francis, LaFond, Olsson and Schipper (2004) divide earnings attributes into seven factors to measure earnings quality, and these are as follows; accrual quality, persistence, predictability, smoothness, value relevance, timeliness, and conservatism. Accordingly, they classify the first four attributes as accounting-based earnings signals and the last three attributes as market-based measures.

Until now, there has been disagreement between the researchers about earnings quality definition and measurement (Dichev, et al, 2013). A recent study by Hamdan, Sarea and Reyad (2013) state that the most prior literature revolves around two definitions of earnings quality and these are: (1) earnings quality is the capability of investors to forecast future abnormal earnings depending on the recent financial data that is published in the stock markets (Ohlson and Feltham, 1995), and (2) earnings quality is considered as indicators to measure recent earnings ability to present a real and strong picture about the firm's financial situation in present and future periods (Dechow and Schrand, 2004). Previous researchers have used different measurements to evaluate earnings quality in firms. For example, Dechow and Dichev (2002) found earnings management practices are deemed to be the most important issue that affected earnings quality level in the firms. In other words, they indicated that the firms with less earnings management practices have higher earnings quality and vice versa. Sloan (1996) states that earnings quality is based on the comparison between the cash flow and accruals components of current earnings and investors fail to adequately adjust for accruals. Dechow, Ge and Schrand (2010) point out that there is no single conclusion on what earnings quality is, since earnings quality is based on several measurements such as, persistence, accruals, smoothness, timeliness, loss avoidance, and investor responsiveness.

Dichev *et al* (2013) criticize prior studies examining earnings quality that use the quantitative methods approaches. They state that there are several questions which cannot be answered by using such approaches such as, *what opportunities and constraints do managers trade off to choose one set of earnings attributes over the other? What accounting policies promote higher quality earnings? How prevalent is earnings management? What is the typical magnitude of earnings management? How can an outside investigator tell whether ex-ante earnings quality is poor before observing ex-post outcomes such as restatements and SEC enforcement actions?* Therefore, they use large numbers of surveys and interviews, particularly with CFOs, in order to collect in-depth information that would potentially help address the issues underlying the questions more appropriately. Their findings show that the quality of financial reporting has improved over time and that avoiding long-term estimates led to high earnings quality. In addition, most of the respondents believed that the innate factors (e.g. forces outside manager's immediate control) were considered the main reason for more than 50% increasing of earnings quality.

Recently, earnings quality has been considered among the most important issues that the academic researchers paid attention to investigating, particularly after the financial crisis and the adoption of IFRS. Kousenidis, Ladas and Negakis (2013) investigate the effect of the financial crisis on earnings quality in the European Union (e.g. Spain, Greece, Ireland, Italy, and Portugal). Their findings show that the majority of firms prefer high earnings quality, and they refer that to an increase in the opportunities to attract more investors to mitigate the financial crisis effects.

As for the IFRS adoption, Wang and Campbell (2012, a) found that IFRSs are more likely to reduce earnings management more than domestic GAAP. Furthermore, Liu, Yao, Hu and Liu (2011) encourage researchers to focus their attentions on investigating the relationship among IFRS and accounting quality and earnings management in the non-English-speaking countries. They begin by first examining the influence of IFRS on accounting quality in China. Their empirical results show that the adoption of IFRS reduced earnings management, which usefully reflected on accounting quality.

Furthermore, a large number of studies also examine the relationship between earnings quality and corporate governance mechanisms. These studies reach a consensus that strong corporate governance is more likely to lead to high earnings quality (e.g. Baxter and Cotter, 2009; Xie, Davidson and DaDalt, 2003). Based on prior literature, many arguments about earnings quality issue have been put forward. Dechow *et al* (2010) document that earnings quality has three features;

- *Earnings quality is conditional on the decision-relevance of the information. Therefore, earnings quality term alone is meaningless.*
- *The quality of a reported earnings number depends on whether it is informative about the firm's financial performance, many aspects of which are unobservable.*
- *Earnings quality is jointly determined by the relevance of underlying financial performance to the decision and by the ability of the accounting system to measure performance.*

Based on the aforementioned discussion, the sections below discuss two characteristics of earnings quality.

### **3.2.1 Analysts' Forecasts Accuracy**

Earnings accuracy has gained considerable attention, where extensive prior studies investigating this issue have been based on using the accuracy of analysts' earnings forecasts (e.g. Barker and Imam, 2008; Jacob, Rock and Weber, 2008; Hussain, 1997; Wiedman, 1996). Porter and Kraut (2013) define earnings accuracy as a deviation of reported earnings from earnings forecast. Goeij, Smedts, Campenhout and Verhestraeten (2013) examine the influence of earnings quality on analysts' forecast accuracy. Their findings show that the firms with highly predictable and smooth earnings direct the analysts to proper financial information, which results in more accurate forecasts. In addition, they find that earnings attributes (four accounting-based information signals) have affected earnings accuracy forecasts more than the discretionary components.

Hussain (1997) use a set of forecasts of annual corporate earnings to investigate the influence of segmental data on earnings forecast errors in UK. The findings of this study

presented empirical results that show a negative relationship between forecasts error and firm size, and positive association with size of the change in earnings. In a recent study, Huang, Chan, Chang and Wong (2012) document that the earnings accuracy forecasts are more likely to be conservative in the firms that have high portion of insider shareholdings, higher institutional shareholdings, or that have a CEO serving as the board chairman. On the other hand, they found that earnings accuracy forecasts is less likely to be conservative for the firms that have high portion of family ownership. In addition, they stated that the 20% positive error and 20% negative error have completely different effects on investors and managers. Therefore, the main reason for using the firms' earnings accuracy forecasts is to mitigate the conflicting information between managers and investors (Verrecchia, 2001).

From the standpoint of research, Dechow, *et al* (2010) argue that the high earnings quality is deemed as a strong indicator for present and future firm performance. In this contrast earnings quality assessed by ensuring that the information that is presented is free from any error or mistake. Bédard, Coulombe and Courteau (2008) suggest that audit committees might assist managers in formulating future strategy but their existence is not considered as an indicator for earnings forecasts accuracy.

In another context, several academic researchers went further to explore the association between corporate governance mechanisms and analysts' earnings forecasts accuracy, which proxies for earnings quality. Igan and Pinheiro (2012) devise a model, which found that strong corporate governance mechanisms led to an increase in earnings forecast accuracy. Moreover, based on 235 Malaysian firms during the period of 1999 to 2006, Ahmad-Zaluki, and Wan-Hussin (2010) document that the earnings forecasts accuracy is greater for firms that had audit committees that were composed of a higher percentage of non-executive directors and were considered as large audit committees. In addition, they found that strong corporate governance is a credible signal of improving the quality of financial information. Similar findings are seen in Bhat, Hope and Kang (2006).

Only a few studies have been conducted about earnings forecasts accuracy in Jordan. For example, El-Rajabi and Gunasekaran (2006) explore the association between forecast

errors and the firms' characteristics by using 41 firms over the period of 1992 to 1995. They found that the earnings forecasts accuracy in Jordan is optimistic. Based on these results, one of their recommendations for Jordanian regulators is to give more attentions to solving this problem as it might give negative indicators for foreign and local investors about firms' performance in Jordan. Finally, the association between corporate governance and earnings accuracy is natural because strong governance is likely to lead to fewer errors in recording transactions or in valuing assets and hence reducing the likelihood of managers engaging in earnings management.

### 3.2.2 Representational Faithfulness

Most financial reports are subject to some element of risk of errors or mistakes, which means less faithful representation in the financial reports. This is not due to bias in these reports, but because it is problematic to identify and record the financial transactions under conditions of risk and uncertainty. Representational faithfulness is considered one of the fundamental qualitative characteristics of accounting information and it entails representing economic phenomena that the information purports to represent, and annual reports must be complete, neutral and free from material error (IASB, 2007). Consequently, applying the qualitative characteristics should lead to accounting standards of high quality; this in turn leads to high quality of financial reporting information, which is capable of providing the decision making process with useful information.

Spiceland, Sepe and Tomassini (2007) define representational faithfulness as *“agreement between a measure and a real-world phenomenon that the measure is supposed to represent”*. In another definition, Alexander and Archer (2003) state that the concept of *representational faithfulness is related to notions such as financial statements giving a true and fair view or presenting fairly, which form a key part of auditors' opinion statements, and to creative accounting”*.

Few studies have been completed to investigate representational faithfulness. For example, Murdoch and Krause (2010) examine which methods of evaluating inventories (FIFO and LIFO) are providing a more faithful representation of earnings, where they reach the conclusion that LIFO does this more than FIFO for a majority of firms in US.

Strong corporate governance is related to increasing the probability of faithfully represented information in the financial reports (Sloan, 2001). In a recent study, Fiador (2013) examine the effect of internal mechanisms of corporate governance on the value relevance of reported accounting earnings in Ghanaian firms during the period of 1997 to 2006. Their findings indicate that Ghanaian firms have presented the financial information fairly, even if they have small board size and CFO duality.

Based on prior literature debates, several studies measure faithful representation by using various proxies such as, an unqualified auditor's report, neutrality, completeness, freedom from material error and verifiability (Maines and Wahlen, 2006; Jonas and Blanchet, 2000; Dechow, Sloan and Sweeney, 1996; Beasley, 1996).

Only a few studies have investigated the association between accounting information quality and corporate governance mechanisms, which consider representational faithfulness as one of the accounting information quality measurements. Alsufy, Almbaideen, Alabbadi and Makhoulf (2013) document that strong corporate governance mechanisms (e.g. larger board size, more board meetings, larger audit committee size, more audit committee meetings) is positively related to the accounting information quality in Jordanian industrial firms. Based on a sample of listed firms in the Tunis Stock Exchange during the period of 1997 to 2007, Klai and Omri (2011) argue that the board of directors' characteristics and ownership structure increase the quality of accounting information. In fact, some of their findings show the firms that are controlled by foreign investors, families or blockholders reduced the reporting quality, and the firms that are controlled by state and financial institutions have good financial disclosure quality.

As with Dechow and Dichev's (2002) findings, this thesis focused on earnings management to measure earnings quality. The next sections discuss earnings management issues in detail.

### **3.3 Definitions of Earnings Management**

In order to understand more specifically about how earnings management is defined, we first consider a few definitions from previous literatures. Schipper (1989, p.92) define



earnings management as “an intervention to prepare and control the external financial reporting process, and obtain some special benefit (facilitating the operation process)”.

Healy and Wahlen (1999, page 368) argue 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”. Earnings management is considered to be one of the most important issues that affects the structure of financial statements, which may be changed to mislead the stockholders and other users of financial statements. Ronen and Yaari (2008) organise the definitions of earnings management into three clusters according to existing literatures; these are as follows:

#### Earnings management

- “... is taking advantage of the flexibility in the choice of accounting treatment to signal the manager’s private information on future cash flow”. (Dubbed “beneficial and white earnings management”.)
- “... is choosing an accounting treatment that is either opportunistic (maximizing the utility of management only) or economically efficient”. (Dubbed “neutral and grey earnings management”.)
- “... is the practice of using tricks to misrepresent or reduce transparency of the financial reports”. (Dubbed “pernicious and black earnings management”.)

Managers may manipulate their earnings via two types of accounting approach, and these are: (1) the accounting choices approach and this approach has two aspects, legal and illegal transactions. (2) Operations decisions (Dianita and Rahmawati, 2011).

Earnings management achieved via operating decisions is notoriously difficult to detect and therefore published research has tended to focus on the former category, the accounting choices approach. Distinguishing between legal and illegal accounting choices is deemed one of the most common difficulties that auditors and accountants face; the reason being that there are many gaps in the accounting standards, GAAP, and

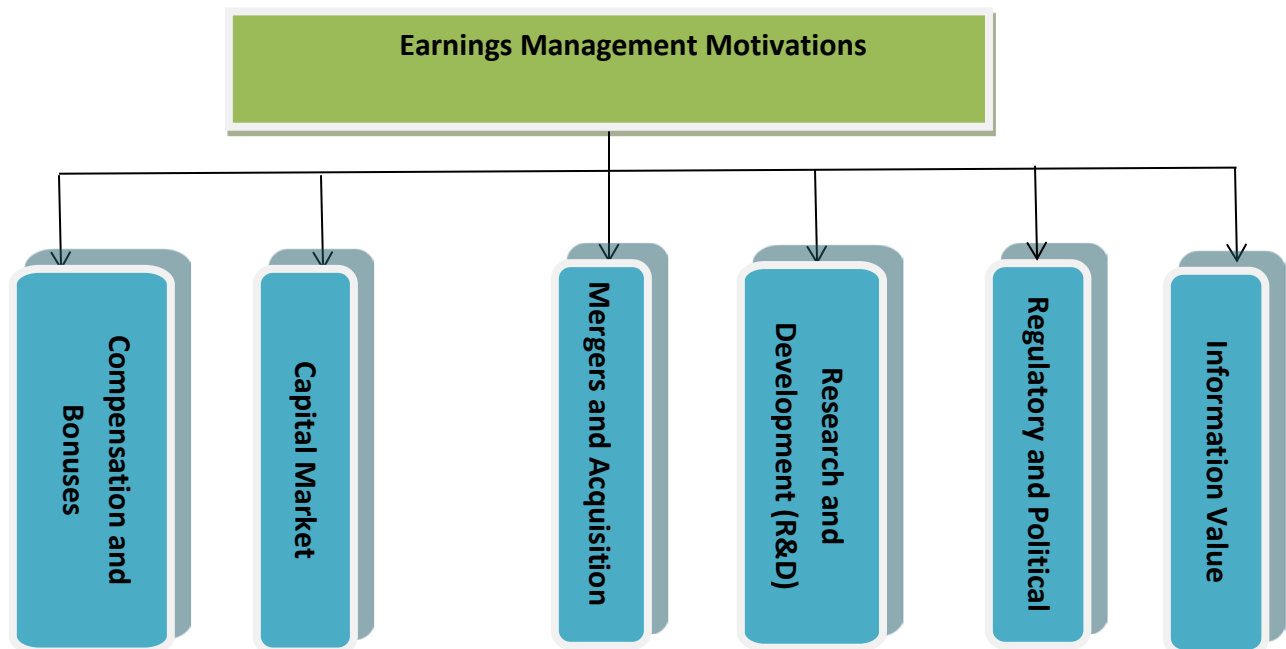
international auditing standards. This increases the opportunities for managers to manipulate the financial statements to achieve their desired goals, and also it is a daunting task to determine whether transactions are legal or illegal because there is no clear guidance on where this boundary lines.

### 3.4 Earnings Management Motivations

Numerous incentives motivate managers to engage in earnings management. Existing literature on earnings management has discussed these incentives under two headings: opportunistic earnings management and beneficial earnings management. Managing earnings to achieve private incentives (managers' desirable goals) constitutes opportunistic earnings management, and managing earnings to achieve stockholders' incentives constitutes beneficial earnings management (Rezaei, 2012; Jiraporn *et al*, 2008).

Studies have claimed that managers engaged in earnings management opportunistically in order to change revenues and expenses in different reporting periods, in order to achieve strategic reporting incentives (Omonuk, 2007). In other words, they exercise their discretion in financial reporting decisions in order to exploit an opportunity that results in gains for their own benefit (Jiraporn *et al*, 2008). Prior studies of earnings management found numerous opportunistic and beneficial incentives. Figure (2.1) presents earnings management motivations in prior literature.

Figure 3-1 Earnings Management Motivations



Based on figure (3.1), one of the primary ones being compensation and bonuses of managers; Healy (1985) present evidence to indicate that managers engaged in earnings management to increase their compensation and bonuses. His findings showed that the terms of their bonus contracts affected accounting and reporting decisions and the adoption of new bonus plans. DeAngelo (1988) found that managers exercise their accounting discretion to present an ideal picture of their performance in order to stay in their positions for longer and earn more profit-related bonuses. In addition, Veenman, Hodgson, Praag and Zhang (2011) showed that managers engage in earnings management in order to increase their own stock options

Looking at capital market expectations, McNichols and Stubben (2008) examined possible consequences of earnings management motivations from the managers' perspective, and focused on internal decisions such as capital investment. They found that the misreporting firms overinvest in property, plant, and equipment are related to overstated earnings, which in turn lead them to believe that the internal decisions strongly influence earnings management.

Investigating stock-for-stock mergers, prior studies provided several examples that explain this motivation. Louis (2004) focuses his study to present an explanation of the earnings management in acquiring firms. He concluded that the pre-merger earnings management was significantly related to the performance of stock-for-stock acquirers in both the short-term and the long-term. Also he found that acquiring firms increased their earnings in the period preceding a stock swap announcement.

Another motivation to manage earnings found in the prior literature indicates that the managers will consider the information content of particular disclosures. Graham, Harvey and Rajgopal (2005) suggest that managers believe missing information in the earnings report will lead to a decrease in the predictability of earnings, which in turn leads to decreased stock prices due to the fact that investors and analysts dislike uncertainty. For

example, they found that managers prefer to take economic actions that would result in earnings smoothing in order to avoid this uncertainty.

Furthermore, several researchers claimed that managers decrease/increase research and development expenses in order to affect the income statement and achieve their desired incentives (e.g. Baber, Fairfield, and Haggard, 1991). Bange and De Bondt (1998) and suggest that the managers could change their research and development costs in order to manage earnings to achieve several results such as reducing taxable profit taxes or increasing free cash flow. Their empirical results showed that the CEO owning a significant portion of the firm's shares resulted in less earnings management.

Regulatory and political conditions are two other issues that affect earnings management level. Based on a sample that includes 13 Europe countries, Burgstahler, Hail and Leuz (2006) showed that the countries with a weak legal system suffered a high earnings management level; additionally, they found that private and public firms react differentially to the capital market. For example, they found that the stronger alignment between the tax system and the financial reporting system resulted in more earnings management, but this result is mitigated by market pressure exerted on public firms. Chen, Wang and Zhao (2009) present evidence on the Chinese stock market showing that firms have a regulatory incentive for manipulating reversals of asset impairments in order to avoid the possibility of trading suspension or de-listing. Moyer (1990) found that managers in commercial USA banks manipulated earnings to reduce obligatory regulatory costs.

Key (1997) investigates the relationship between regulations and discretionary accruals in the US cable television industry, an industry with highly concentrated prices competition. The study concluded that firms with existing high prices, have more negative earnings management than the firms with low prices.

Several studies have also suggested different motivations for managers' to manipulate earnings in order to enhance the information content of published earnings, which leads to benefits for shareholders (Holthausen, 1981). In order to achieve optimal earnings

management, Louis and Robinson (2005) show that managers create positive abnormal accruals, particularly in the preceding period of stock split announcements.

Finally, Arya, Glover and Sunderthe (2003) suggest that the level and pattern of earnings can convey information, which in turn helps managers to direct their motivations based on the incentives that they are attempting to achieve. Moreover, based on a sample of 5318 firm-year observations in Japan during the period of 1992-1999, Habib (2004) reveal that, both earnings management measures and aggregate earnings management measures are related negatively with the combined value relevance of book values of equity and earnings.

### **3.5 Earnings Management Models in Prior literature**

In the past three decades, numerous studies have been completed to detect earnings management by employing models such as, aggregate accruals models, specific accruals models, distribution of earnings models (McNichols, 2000; Bissessur, 2008), discretionary revenues model (Stubben, 2010), and earnings informativeness model (Easton and Harris, 1991).

McNichols (2000) use three earnings management models (aggregate accruals, specific accruals and distribution of earnings model) to examine earnings growth. His findings showed that aggregate accruals models that do not consider long-term earnings growth are possibly misspecified, which in turn leads to incorrect conclusions about earnings management behavior. Therefore, McNichols (2000) conclude that the specific accruals models and distribution of earnings models are more likely to be applicable in future research than aggregate accruals models.

#### **3.5.1 Aggregate Accruals Models**

This type of earnings management research design goes back to Healy (1985) and DeAngelo's (1986) models: they used total accruals and change in total accruals to detect earnings management. Healy (1985) and DeAngelo's (1986) models focused on discretionary accruals. Thereafter, Jones (1991) introduced a new model to test and

control for non-discretionary accruals, which had not been considered by earlier authors (Bissessur, 2008). McNichols (2000) summarised the developing of aggregate accruals models in Table (3.1).

Table 3-1 Summary of Developing of Aggregate Accruals Models in the Previous Literature

Year	Author	Discretionary accrual proxy
1985	Healy	Total accruals
1986	DeAngelo	Change in total accruals
1991	Jones	Residual from regression of total accruals on change in sales and property, plant and equipment
1995	Dechow et al 1995 (DSS) Modified Jones Model	Residual from regression of total accruals on change in sales and on property, plant and equipment, where revenue is adjusted for change in receivables in the event period
1995	Kan and Sivaramarkrishnan	Residual from a regression of noncash current assets less liabilities. on lagged levels of these balances, adjusted for increases in revenues, expenses and plant and equipment

Source: McNichols (2000)

Kan and Sivaramarkrishnan (1995) adopt a new technique based on the instrumental variable method to detect earnings management using the following model:

$$DA_{i,t} = \beta PART_{i,t} + \epsilon_{i,t} \dots\dots\dots (1)$$

Where; *DA* is discretionary accruals for firm *i* and year *t*; *PART* is a partitioning variable that captures factors that allegedly motivate earnings management;  $\epsilon$  is random accruals unrelated to the specific earnings management hypothesis.

Kan and Sivaramakrishnan (1995) use the same method as Dechow *et al*, 1995 to measure Type I and Type II errors in this model, which they use to estimate the unmanaged non-discretionary accruals as below:

$$NA = NAEST + \eta \dots\dots\dots (2)$$

Where; *NAEST* is an estimate of *NA*; and  $\eta$  is the measurement error.

And modelled total accruals as;

$$A = DA + NA + \beta PART = NAEST + \varepsilon + \eta \dots\dots\dots (3)$$

Where; *A* is total accruals.

Kan and Sivaramakrishnan (1995) study concludes that these models captured a large part of managed accruals and mitigated various problems known to exist in prior models. For example, by using major components of income as regressors it will reduce the problem of omitted variables. Finally, they suggest that the instrumental variable model presents a significant augmentation to the Jones model. Also, it improves the power and robustness of the model by using a Generalised Method of Moment (GMM).

Dechow and Dichev (2002) employ a new model for measuring the quality of working capital accruals and earnings. This model distinguishes the difference between discretionary accruals and nondiscretionary accruals.

$$\Delta WC_t = b_0 + b_1 * CFO_{t-1} + b_2 * CFO_t + b_3 * CFO_{t+1} + \varepsilon_t \dots\dots\dots (1)$$

Where;  $\Delta WC$  is change in working capital; and *CFO* are proxies for cash flow.

Based on a sample of 46783 observations over the period of 1988 – 2003 in USA, Ibrahim (2005) reviews the alternative measures of discretionary accruals (accounts receivable, inventories, accounts payable, other working capital and depreciation) to improve earnings management models applicability in developing countries, since there are several published studies that have shown that modified versions of Jones’ models have failed to detect earnings management in emerging economies (e.g. Islam, et al, 2011; Yoon, et al, 2006). She elucidated that there are some differences between her

study and studies using estimated discretionary accruals and alternative measure of discretionary accruals (Healy, 1985; DeAngelo, 1986; Jones, 1991; and Jones, 1995).

Ibrahim use the Healy (1985) model, the DeAngelo (1986) model, the Jones (1991) model and the modified Jones model (1995) to determine the study variables. The results suggest that alternative measures of discretionary accruals are more likely to decrease the error in the previous measurements.

In the context of the UK, Atieh and Hussain (2012) use a sample of listed firms on the London stock exchange over the period of 1994 to 2004 to detect earnings management by using two cases: dividend-paying firms in cases where pre-managed earnings would fall below the expected dividend, and non-dividend-paying firms proposing to avoid reporting losses. The researchers use total discretionary accruals (TDA) following the cross-sectional model in Dechow et al. (1995) to identify high and low levels of earnings management in dividend-paying companies and non-dividend-paying companies.

Atieh and Hussain (2012) find that UK dividend-paying firms are more likely to manage their earnings upward than UK non-dividend-paying companies. It also shows that working capital discretionary accruals is better than total discretionary accruals in detecting earnings management in this context. Cohen and Zarowin (2010) distinguish between two types of earnings management: real earnings management and accrual-based earnings management by examining the relationship between these two types around seasoned equity offerings. They examine substitution and complementary relationships between real strategies and accrual-based strategies using a cross section modified Jones model. Finally, they state that real earnings management activities around specific corporate finance events are more important than accruals based earnings management; therefore they recommend that future research focus on this issue.

Based on a sample of 209530 US firm-year observations during the period of 1950-2009, Dechow, Hutton, Kim and Sloan (2012) provide a new approach, which they claimed would help to strengthen the power to explain earnings management. They use a number of models and four main tests to measure earnings management, and these are:



1. Tests of firms where earnings management is expected: these tests used a random sample of company-years to measure and evaluate the misspecifications that were an obstacle in the previous models.
2. Simulation tests with a sample including artificially induced earnings management: these tests are used to measure the power of the models.
3. SEC Accounting and auditing enforcement release (AAER) sample: these firms are known to have engaged in earnings management since they were subject to an SEC investigation. This sample was used to measure the power of the different models and tests to detect earnings management.
4. Tests where the earnings management year is randomly selected from portfolios with a wide range of economic characteristics (e.g. ROA, sales growth, market capitalization, operating cash flows, and forecast of long-term earnings growth): in this test they identified the specifications earnings management models that were related most closely to common economic characteristics.

Dechow, et al (2012) indicates that incorporating reversal tests increased the power of the models by around 40%, and reduced model misspecification arising from correlated omitted variables.

### 3.5.2 Specific Accruals Models

Specific accruals models in the prior literature focused on the industry model, implying that practices of non-discretionary accruals in the same industry were common (Bartov, Gul and Tsui, 2000). This type of earnings management research design goes back to McNichols and Wilson (1988).

#### **The McNichols and Wilson (1988) model:**

The model investigates whether managers manipulate earnings by using the bad debts provision:

$$DAP = \phi + \gamma PART + v \dots\dots\dots (1)$$

Where;  $\gamma = \beta + \rho PART_{\eta} * \sigma_{\eta} / \sigma PART = \beta + \text{bias in } \gamma$ .

$$\eta = NA - NAES$$

Thus,  $\gamma$  is a biased estimate of  $\beta$  when the partitioning variable and  $\eta$  are correlated, and the extent of this correlation can depend critically on the estimate of NA. DAP is discretionary accrual; NA is nondiscretionary accrual; NAEST is an estimate of NA, and PART is a dummy variable that partitions the data into two groups for which earnings management predictions are specified,

This model is based on the US generally accepted accounting principles (USGAAP) and the sample is partitioned based on the behaviors of discretionary accruals. Their findings show that the discretionary component of the provision for bad debts decreases a firm's earnings. They also found that firms with low earnings are unlikely to employ income smoothing techniques. McNichols (2000) summarizes the development of specific accrual models in Table (3.2).

Table 3-2 Summary of Development of Specific Accrual Models in the Previous Literature

Year	Author	Discretionary accrual proxy
1988	McNichols and Wilson	Residual provision for bad debt, estimated as the residual from a regression of the provision for bad debts on the provision opening balance, and current and future write-offs.
1992	Petroni	Claim loss reserve estimation error, measured over five years of loss reserves of property insurers.
1996	Beaver and Engel	Residual allowance for loan losses, estimated as the residual from a regression of the allowance for loan losses on net charge-offs, loan outstanding, nonperforming assets and one year ahead change in nonperforming assets
1997	Beneish	Days in receivables index, gross margin index, asset quality index, depreciation index, selling general and administrative expense index, total accruals to total assets index
1998	Beaver and McNichols	Serial correlation of one year development of loss reserves of property insurers

Source: McNichols (2000)

### 3.5.3 Distribution of Earnings Models

Generally, distribution of earnings models have been employed to examine the statistical properties of earnings by identifying firm's behaviours such as benchmarking (Bissessur, 2008). Distribution of earnings models have been developed by Myers, Myers and Skinner (2007), Degeorge, Patel and Zeckhauser (1999), and Burgstahler and Dichev (1997).

Degeorge, Patel and Zeckhauser (1999) investigate the implicit and explicit earnings management patterns that a firm's senior executives tend to target, on decisions about employment or compensation benefits. They outline a model that predicts how executives strategically impact upon a firm's earnings in two periods:

$$R_1 = L_1 + M_1$$

$$R_2 = L_2 - \kappa(M_1)$$

*Where; R1 is reporting earnings in period one; R2 is reporting earnings in period two; L1 is true earnings management in period one; L2 is true earnings management in period two; K is marginal cost; and M1 is the possible amount that will be added to R1 and R2 (possibly negative).*

Their findings show that senior executives tend to engage in upward earnings management when making these decisions. Additionally, Myers *et al* (2007) focus on firms that have manipulated their earnings by increasing earnings per share (EPS) for long period of consecutive years. Their findings show that managers tactically raise their firms' stock repurchases to increase EPS when it would otherwise decline.

### 3.5.4 Discretionary Revenues Models

Historically, this model dates back to the work of Plummer and Mest (2001), which Marquardt and Wiedman (2004), Stubben (2006) and Caylor (2010) developed subsequently. Caylor (2010) employed two discretionary revenue models in order to examine whether managers manipulate their revenue to avoid losses in earnings; the normal changes in gross accounts receivable model and the normal changes in deferred

revenue model.

(a) Normal changes in gross accounts receivable model:

$$\Delta \frac{\text{Gross } A}{A_{t-1}} = \alpha_0 + \alpha_1 * \left(\frac{1}{A_{t-1}}\right) + \beta_1 * \left(\frac{\Delta S_t}{A_{t-1}}\right) + \beta_2 * \left(\frac{\Delta \text{CFO}_{t+1}}{A_{t-1}}\right) + \epsilon_t$$

Where;  $\Delta \text{Gross } A/R$  is the change in gross accounts receivable during year  $t$ ;  $A_{t-1}$  is the beginning of the year total assets;  $\Delta S_t$  is the change in sales during year  $t$ ; and  $\Delta \text{CFO}_{t+1}$  is the change in cash flow from operations during year  $t + 1$ .

(b) Normal changes in deferred revenue model:

$$\Delta \text{Def } \frac{\text{Rev}_t}{A_{t-1}} = \alpha_0 + \alpha_1 * \left(\frac{1}{A_{t-1}}\right) + \beta_1 * \left(\frac{\Delta S_{t+1}}{A_{t-1}}\right) + \beta_2 * \left(\frac{\Delta \text{CFO}_t}{A_{t-1}}\right) + \epsilon_t$$

Where;  $\Delta \text{Def } \text{Rev}$  is the change in short-term deferred revenue during year  $t$ ;  $A_{t-1}$  is the beginning of the year total assets;  $\Delta S_{t+1}$  is the change in sales during year  $t + 1$ ; and  $\Delta \text{CFO}_t$  is the change in cash flow from operations.

His findings indicate that managers manage their earnings via accrued revenue and deferred revenue in order to avoid negative earnings. Stubben (2010) examine the power of accrual and revenue models to reveal simulated and actual earnings management, particularly by using these models to detect manipulations of revenues and expenses:

$$R_{it} = R_{it}^{\text{UM}} + \delta_{it}^{\text{RM}} \dots \dots \dots (1)$$

$$AR_{it} = c \times R_{it}^{\text{UM}} + \delta_{it}^{\text{RM}} \dots \dots \dots (2)$$

$$\Delta AR_{it} = c \times \Delta R_{it} + (1 - c) \times \Delta \delta_{it}^{\text{RM}} \dots \dots \dots (3)$$

$$\Delta AR_{it} = \alpha + \beta \Delta R_{it} + \epsilon_{it} \dots \dots \dots (4)$$

$$\Delta AR_{it} = \alpha + \beta_1 \Delta R1\_3_{it} + \beta_2 \Delta R4_{it} + \epsilon_{it} \dots (5)$$

Where;  $R$  is revenues;  $R^{\text{UM}}$  is the sum of non-discretionary revenues;  $\delta^{\text{RM}}$  is discretionary revenues;  $AR$  is accounts receivable;  $(c \times R^{\text{UM}})$  is the sum of uncollected non-discretionary revenues;  $(1 - c)$  is the understatement of the amount of revenue management estimated;  $R1\_3$  is revenues in the first three quarters;  $R4$  is revenues in the fourth quarter; and  $\Delta$  is annual change.

Stubben (2010) adapts the model in Caylor (2010). He makes some changes by distinguishing between two revenue periods, the first three quarters and the fourth quarter. Furthermore, Stubben (2010) show that his discretionary revenue model is similar to Jones' (1991) and Dechow et al.'s (1995) models but with three types of variation:

1. The discretionary revenue model used receivables, but the accruals models used aggregate accruals.
2. The discretionary revenue model employed receivables accruals instead of the change in cash revenues in order to show the change in reported revenues.
3. The discretionary revenue model distinguished between the change in revenues in the first three quarters and the change in fourth-quarter revenues by drawing on the change in the annual receivables.

The results of Stubben's (2010) study indicate that the discretionary revenue model is better than the accrual models in detecting earnings management, and has less bias and error than the accrual models. However, neither the discretionary revenue nor the accrual models would reveal manipulations in the expenses. Stubben (2010) also explains that the Jones's (1991) model has a different specification from the modified Jones model of Dechow et al. (1995), because the Jones model used receivables and cash revenues rather than just cash revenues, as in the modified Jones model. In addition, Stubben (2010) referred the result (a discretionary revenue model is better than an accruals model) for several reasons. One relates to the period of applying each model and another to the economic circumstances since the discretionary revenue model was used late in 2006.

In this thesis both were applied (the discretionary revenue model and the accrual model) and it was found that the accrual models were more powerful than the discretionary revenue models in the context of the Jordanian industrial firms based on the fit model test, model specification model, and the corporate governance model (See section 6.2) and (appendixes 4 and 5).

The Development of Earnings Management Models

This section provides an overview of the development of earnings management models in previous literature by discussing and critiquing the models that are used in this research: the Jones model (1991); the Modified Jones model (1995); the Margin model (2000); and the discretionary revenue model (2010), in addition we discuss Healy (1985) and DeAngelo's (1986, 1988) models, as these are of historical importance. We provide an in-depth analysis and critique of the seminal models of this kind because these are the models that form the basis of our empirical analysis. Among the models discussed in sections 2.2 to 2.5, we select these accruals based models because the results of these models are more consistent and they are widely used and understood.

### **3.6.1 The Healy Model (1985)**

#### ***Introduction***

Positive accounting theory (PAT) is one of the most important accounting theories during the last decades, largely because PAT attempts to explain real world events (Watts and Zimmerman, 1978). There are three motivations for earnings management suggested by PAT (as discussed in Watts and Zimmerman, 1978) and these are; the bonus plan hypothesis, the debt covenant hypothesis, and the political cost hypothesis. Deriving from the importance of PAT, Healy (1985) developed his model by studying the effect of bonus schemes on accounting decisions. This led Healy to state that executive managers use a number of accounting policies to maximise their earnings-based bonuses.

Healy (1985) designs his study to avoid two limitations affecting empirical results in previous literature:

- (1) Ignoring the definition of earnings that is applied in the executive bonus plan, such as earnings before tax or earnings after tax. Healy used a different approach to avoid this limitation. Firstly, using the real terms existing in bonus contracts; for instance, more than 50 % of his sample participants' bonus contracts were based on earnings before taxes. Secondly, using real variables for accounting changes; for example, this study used real accounting changes that have been

reported in Accounting Trends and Techniques<sup>1</sup>, and measure their specific effects on income and bonus payments. This makes Healy's study different from previous studies that measured the effect of accounting policies on income in each firm in general by using a dummy variable with a value of 1 if it increases, and 0 otherwise such as Hagerman and Zmijewski (1979).

(2) Existing literature assumes that managers always increase their income by using accounting procedures to raise their bonuses. Healy develops this idea to allow for behavior by managers that extended over more than one accounting period. In this context, the managers can choose to either decrease or increase earnings in the short term in order to increase their bonuses over a longer time period. For example, the managers might reduce earnings in the current period, in order to achieve their targets in future periods, by accelerating write-offs or deferring revenue.

Healy uses three different scenarios to describe the observed characteristics of the bonus schemes, and these are: (1) where earnings are above point where the upper limit of the bonus plan is binding and bonuses will be paid at their maximum level. (2) Where earnings are below the point where the lower limit of the bonus plan is binding and no bonus will be paid. (3) Where earnings are between the upper and lower limits of the bonus plan which means that a bonus will be paid at a level between the minimum and maximum specified in the bonus contract.

The model describing these three scenarios is formulated as follows:

$$B_t = p_t \left\{ \min \left\{ U_t, \max \{ (E_t - L_t), 0 \} \right\} \right\}$$

Where;  $B_t$  is the value of the bonus pool;  $P_t$  is the contract;  $E_t$  is reported earnings;  $U_t$  is the upper limit. And  $L_t$  is the earnings target.

Healy employed two measures of earnings management as follows:

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<sup>1</sup> Accounting Trends and Techniques is a prominent publication put out annually by the American Institute of Certified Public Accountants (AICPA) to update accountants on current financial reporting practices. The publication has been distributed since 1946.

### *Accruals Models*

The accruals model earnings are decomposed into:

- Cash flow from operations
- Non-discretionary accruals (NDA)
- Discretionary accruals (DA)

*Non-discretionary accruals* are “accounting adjustments to the firm's cash flows mandated by accounting standard-setting bodies (e.g., the Securities Exchange Commission and the Financial Accounting Standards Board)” (Page 89).

*Discretionary accruals* here are defined as modifications to cash flows that are organised by managers based on generally accepted procedures that are defined by accounting standard-setting bodies.

Based on this measure of DA, Healy hypothesized that the sign and magnitude of DA are a function of

- Expected earnings before DA (which are unobservable)
- The parameters of the bonus plan
- The limits on DAs (e.g. the size of the underlying accounting numbers)
- The manager’s risk preferences
- The discount rate

Since DA is an unobservable variable, Healy’s models rely on total accruals as a proxy.

Total accruals are defined as below:

$$ACC_t = -DEP_t + Extraords_t + \Delta INV_t - \Delta AP_t - \{\Delta TP_t + DEF_t\}$$

$ACC_t$  is defined as the difference between reported earnings and cash flow from operations and is specified in terms of the main accounting items for which accruals are considered. Depreciation (DEP) and extraordinary items (Extraords) are included here as they are often part of the bonus contract terms, tax payable (TP) and deferred tax (DEF).



***Accruals tests***

Following the development of the Accruals model, Healy discusses the Accruals tests and state that “managers have an incentive to select income-decreasing discretionary accruals when their bonus plan's upper and lower bounds are binding” (page 95). Therefore, he selected these tests of his hypothesis: (1) comparing the observed accruals and identifying managers' incentives in each year and firm. (2) Measuring if the different bonus plan formats lead to a divergence in accruals.

Contingency tests showed that managers decrease firm's income when the lower and upper bounds of their bonus plans are compulsory and earnings are at a level to make these constraints binding

**Limitations of the contingency test**

Healy discusses a number of limitations in his approach. Most of these limitations arise because he can only observe the earnings after earnings management had occurred.

1. The sample of firms with low earnings is based on reported earnings and this measure and total accruals both contain NDA. This makes it more likely that an association between the two will be found. For example, if NDA is negative, total accruals might be negative, earnings will be low and so the observation will be more likely to be assigned to the portfolio of firms with low earnings.
2. As TA is used as a proxy for DA the measurement errors will be correlated with firms' cash flows and earnings and these are used to assign the firm-year to a portfolio. For example, inventory accruals reflect inventory levels and the manager has the incentive to manage inventory levels as well as the power to choose policies for inventory accruals that increase the bonus payments. If demand for a product increases, inventory decreases, NDAs decrease and CFO increases. The relationship between DA and earnings is driven here by an external factor that is nothing to do with the bonus plan.
3. CFO proxies for the unobservable earnings before DA.

By definition

$$\Sigma \text{earnings before DA} + DA = \Sigma CFO + TA$$

This means that measurement errors in earnings must be perfectly negatively correlated with measurement errors in DA. Observations with a positive measurement error are more likely to be assigned to the portfolio of firms with high earnings and these will have negative measurement errors in DA, which makes it more likely that hypothesis is accepted.

Healy devised additional tests to attempt to cover some of these limitations and, in addition, performed an analysis of the firms in his sample that had undergone a change in accounting policies in the period of study.

Healy claims the results demonstrate “a strong association between accruals and managers’ income reporting incentives under their bonus contract” and a “high incidence of voluntary changes in accounting procedures” during years following changes to the bonus plan (page 106).

### **3.6.2 The DeAngelo (1986) Model**

In this paper, DeAngelo studies the accounting decisions in sixty-four US firms that proposed a management buyout of public shareholders during the period of 1973-1982). DeAngelo identified a range of relevant income-reducing accounting techniques such as, over-stating expenses, deferring revenue, and write-offs or expensing rather than capitalising items. She established her hypothesis based on the following notions: (1) agency theory is used to establish a context of information symmetry and conflict of interests wherein managers have the incentives to understate reported earnings and thus reduce the buyout compensation; (2) Regulators and business people assume that managers have the ability to manipulate earnings to understate buyout compensation; (3) Security exchange commission commissioners stating that managers are more likely to decrease a firm’s stock price by managing earnings reports, particularly before the management buyout period.

Management opportunistic behaviour through understating earnings in the pre-management buyout period is considered the main behaviour in which managers engaged, particularly in the private firms. Therefore, managers are motivated to choose earnings management techniques that are hardest for outsiders to detect, which is a disadvantage to academic researchers. Management opportunistic behaviour is seen as being constrained by a number of factors:

1. Regulation from securities exchange commission (SEC).
2. The audit process.
3. The type of auditors.
4. Stockholders' ability to appoint their own financial experts to detect earnings management.
5. Management buyout firms employing an investment bank to act as independent valuer.
6. Stockholders threatening to oppose the buyout.

DeAngelo used two bases to evaluate share price to explain why a given earnings understatement will have a substantially greater impact on buyout compensation, and these are as follows: (1) accounting base, and (2) marketing base. The Accounting base used earnings capitalisation:

$$EC = SH \times \text{average } P/E$$

*Where EC is earnings capitalisation; SH is earnings per share; P/E is price/ earnings ratio.*

The concept of earnings capitalisation derives from Lippitt and Mastracchio (1995), where DeAngelo calculates earnings capitalisation by using earnings share as shown in the model above.

As for market base, she “compare the magnitude of the above-market premium to that of average premiums paid in other (both arm’s length and nonarm's-length) acquisitions” (page 403).

### ***Accrual Tests***

Several factors lead DeAngelo to develop a normal level of expected total accruals in periods before management buyout, and these are:

- If nondiscretionary accruals are large relative to total accruals then total accruals is considered a poor proxy for discretionary accruals. To solve this problem DeAngelo suggests that nondiscretionary accruals has to be large to introduce strong proxy;
- If nondiscretionary accruals are large and systemically negative even where no discretionary accruals have occurred, then an empirical observation of total accruals less than zero ( $AC > 0$ ) could lead to the inference that managers have deliberately understated earnings when the correct explanation is that total accruals normally contain a large negative nondiscretionary accruals.
- Total accruals are likely to normally be negative due to: (1) the relative size of the depreciation charge, and (2) Healy's evidence in his study (1983) that average accruals for fortune 250 firms over a roughly contemporaneous period are (-2%) of total assets.

DeAngelo (1986) employed a new method to define total accruals by using the average changes of discretionary accruals and non- discretionary accruals:

$$(AC_1 - AC_0) = (NA_1 - NA_0) + (DA_1 - DA_0) \dots\dots\dots (1)$$

Where;  $(AC_1 - AC_0)$  is average change in total accruals;  $(NA_1 - NA_0)$  is average change in non-discretionary accruals; and  $(DA_1 - DA_0)$  is average change in discretionary accruals.

The change in total accruals is also defined as the difference between net income and operating cash flow:

$$(AC_1 - AC_0) = (NI_1 - NI_0) + (CF_1 - CF_0) \dots\dots\dots (2)$$

Where;  $(NI_1 - NI_0)$  is average change in net income; and  $(CF_1 - CF_0)$  is average change in operation cash flow.

The empirical results showed that the average value of the above formula is approximately zero, which led to the conclusions that the change in nondiscretionary accruals is not systemically positive, and the change in discretionary accruals is not systemically negative.

Furthermore, DeAngelo (1986) used a different technique from Healy (1983, 1985) and Liberty and Zimmerman (1986) to calculate total accruals by using the change in all current operating accounts instead of using some operating accounts such as depreciation, accounts receivable, income tax payable, deferred income tax, account payable and inventory. This in turn led to decreasing the noise problem that occurred in Healy (1983) and Liberty et al's (1985) models. Finally, DeAngelo (1986) utilises additional accrual tests to improve the significance of the results.

### ***Additional Accrual Tests***

DeAngelo suggested a possible reason for the result that there is no evidence of a systematic reduction in total accruals before a management buyout, and that is "managers of only a subset of sample firms have sufficient accounting discretion to understate earnings by a significant amount" (page 413). Therefore, three techniques were devised to test total accruals by dividing the research sample into three groups:

- (1) Twenty-three public firms which are mainly controlled by management, who were therefore assumed to have more discretion. In this case the results indicate negative but insignificant average accrual changes.
- (2) Fourteen firms which are neither mainly controlled nor currently subject to hostile activities (so it is assumed that managers have less discretion): the statistical results for this group showed that accruals were significant and negative.
- (3) Twenty-seven firms which are currently the subject of a hostile takeover attempt (assuming a moderate level of discretion): the statistical results are not significant and one possible reason for this was thought to be because: "the negative accrual changes in this section are not directly associated to the buyout itself" (page 415). These tests showed that the only significant results (at 10%) are in the prior year variables; so, one explanation of this result is that managers who propose a management buyout understate income by such big margin that they draw in a hostile bidder, which means that the management buyout is more likely to respond to the takeover bid rather than it being an action that was planned for several years.

The most important result in this study is that managers have the motivation to hide earnings. However, DeAngelo (1986) found that there was not enough evidence to support based on the theory of accounting choices, and she gives three possibilities for this result:

**Firstly**, the accrual methodology is not powerful enough to detect systemic income manipulation. **Secondly**, accounting earnings realization is not a major factor in management buyout and union negotiations, which means that the scenario may not be the best choice as a basis for investigating earnings management

**Finally**, buyouts may have caused a conflict in the management's interests.

### 3.6.3 The DeAngelo (1988) Model

#### *Introduction*

This study examined the extent in which the use of accounting performance measures will affect proxy contests for board seats (between previous and present managers) during the period from 1970 to 1983 in eighty-six American firms by stating two hypotheses: *(1) firms involved in proxy contests exhibit systematically poor pre-contest accounting performance; (2) firms' pre-contest accounting returns, but not their stock returns, are systematically below-market suggests that dissidents emphasize those numbers that support their cause.*

DeAngelo (1988) considered that previous and present managers are always competing to control the firm, since both of them need to achieve their desirable incentives by decreasing or increasing their earnings to control firms' resources. DeAngelo distinguished between public corporations and private corporations regarding managerial behaviours, and she found that managerial behaviour in public corporations is more likely to be subject to constraints deriving from corporate governance.

#### *Accounting performance during the election campaign*

Accounting performance in the election period has been investigated by using two hypotheses:

- Managers manage their unexpected earnings upward during the election period to increase their chances of winning the election.
- Managers use unexpected accruals to improve their earnings by utilising their accounting discretion.

Based on these hypotheses, DeAngelo (1988) use the accruals approach that was developed by Healy (1985) and DeAngelo (1986), to develop her model by using the year-earlier period. Therefore, DeAngelo’s (1988) model is as below:

To measure accruals in event period:

$$(AC_1) = (NI_1 - CF_1) \dots\dots\dots (1)$$

Where;  $AC_1$  is the accrual in the event period,  $NI_1$  is net income, and  $CF_1$  is cash flow from operating activities.

DeAngelo (1988) employs a random walk model to measure accruals in prior period:

$$E(AC_0) = (NI_0 - CF_0) \dots\dots\dots (2)$$

Where;  $E$  is denoting the expectation operator;  $AC_0$  is accruals in the year-earlier comparison period;  $NI_0$  is net income in the year-earlier comparison period; and  $CF_0$  is operating cash flow in the year-earlier comparison period.

DeAngelo (1988) used the prior period instead of time series data to reduce the possibility of the structural shifts problem that is more likely to appear during long time intervals and which may result in the models identifying false positive relationships.

Working capital measures were used instead of operating cash flow, based on the analysis provided by Bowen, Burgstahler and Daley (1986):

$$(AC_0) = (NI_0 - WK_0) \dots\dots\dots (3)$$

Where;  $WK_0$  is working capital from operations in the year-earlier comparison period.

DeAngelo (1988) utilised these models to predict that:

- Unexpected earnings are positive during the election campaign since the managers are seeking to win the election.
- Unexpected accruals are positive since the managers are seeking to achieve their incentives.

The empirical results, which were based on 43 proxy contests for board seats in listed corporations 1970-1983, supported two out of the three hypotheses:

1. Incumbent managers typically report increased earnings during an election campaign.
2. Managers exercise their accounting discretion to portray a favourable earnings picture before a contested board election.

On the other hand, the third hypothesis, which suggested that cash flows are positive since the managers are seeking to increase the profit to achieve their incentives, is not supported by the results.

The evidence as to whether the earnings manipulation affected the outcome of the election was not conclusive. To answer this question, DeAngelo (1988) divided the sample into two groups, and these are: (1) contests in which dissidents posed an especially serious threat to the incumbents (the 'close' contests), which include 28 of 43 contests. (2) The remaining contests, which includes 15 contests. The findings showed that the random walk model identified significant differences, but an alternative model did not show any difference.

DeAngelo (1988) undertook a further investigation to ascertain whether newly elected dissident managers engaged in earnings 'baths' after a successful control contest order to increase future earnings. The policies that were investigated were: (1) *reducing future expenses*, (2) *reducing the asset base for accounting returns* and (3) *gains from asset sales at reduced book values*. The findings indicate that earnings tended to reduce materially in the year of control change, which supported the above hypothesis.

#### ***Concluding Remarks of DeAngelo's (1988) Paper***

DeAngelo (1988) demonstrates that current managers attempted to manage their earnings, via accruals, particularly during the period of election in order to present a favourable earnings picture for stockholders. In addition, the dissident managers used declining earnings during the election campaign to help them to remove the current managers.



DeAngelo (1988) made a number of suggested for future research, including an assessment of whether changes in internal governance processes lead to poor earnings performance and whether current managers circumvent internal corporate governance mechanisms in an attempt to manage their earnings.

#### **3.6.4 The Jones (1991) Model**

##### ***Introduction***

Jones (1991) develops the model on basis of establishing a context for earnings management during investigations by International Trade Commission of import relief where the decisions are known to be based on accounting numbers (and industry profitability) and the incentive is for managers to decrease earnings in order to obtain/increase import relief.

Import reliefs are measures used by Governments to reduce the costs to domestic producers of cheap imports and include measures such as tariffs, quotas, marketing agreements and subsidies. The contracting parties in this situation are assumed to be the government/regulators, the producers receiving import relief and a diverse group of consumers losing an amount of wealth equal to the import reliefs.

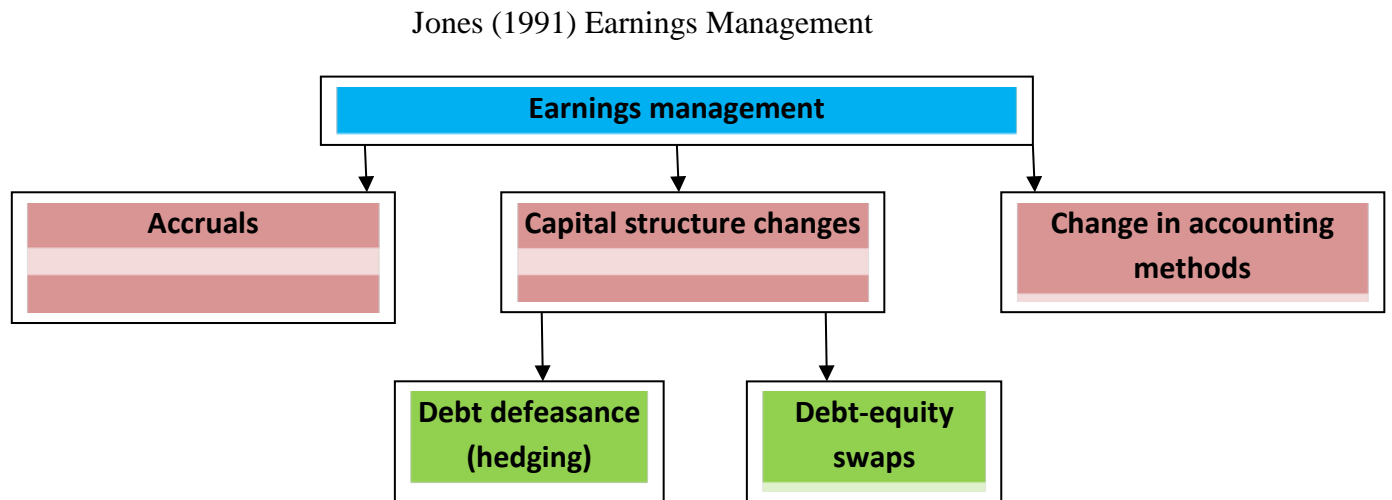
Investigations are carried out on an industry basis and relief is granted where imports are deemed to have caused “serious injury” to an industry based on assessment of “reasonable levels of profitability”, decline in sales, growing inventory and downward trends in production, profits, wages or employment. Two categories of investigation are identified: general escape clause investigations; and antidumping/countervailing duty investigations. The second category occurs where there is evidence of unfair trading practice due to imports sold at less than fair value (antidumping) or benefiting from foreign subsidies (countervailing duty). In the first category (general escape clause investigations) it is not necessary to prove unfair trading practices but there must be “serious injury” to the industry due to increased imports, and in this case a country is

temporarily released from its obligations under the General Agreement on Tariffs and Trade (GATT), hence the term “escape clause”.

Jones (1991) identifies the differences between the Total Accruals Model and the Single Accruals Model as follows

- The Total Accruals Model is preferable to the single accruals model because it is more powerful in terms of capturing earnings management.
- The Total Accruals Model measures the change in non-cash working capital before income tax payable minus depreciation expenses, and the Single Accrual Model measures cash working capital.

Jones stated that earnings management could be achieved by several means, shown in the figure below:



### ***Earnings Management Assumption***

The Jones (1991) model is based on the DeAngelo model, which assumes that the “average change in non-discretionary accruals (NA) is approximately zero so that the change in total accrual (TA) reflects change in discretionary accruals (DA)” (page 207)

However, this assumption is less reasonable in the scenario studied by Jones. Total accruals are dependent on the economic circumstances of the firm (Kaplan, 1985) and decreases in revenues (which we have by definition in this sample) are likely to cause decreases in NA.

A new model is developed to take into account changes in the economic circumstances of the firm (falling revenues and asset values). This is an OLS regression model

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_i \left[ \frac{1}{A_{i,t-1}} \right] + \beta_{1,i} \left[ \frac{\Delta REV_{i,t}}{A_{i,t-1}} \right] + \beta_{2,i} \left[ \frac{PPE_{i,t}}{A_{i,t-1}} \right] + \epsilon_{i,t}$$

Total accruals (TA) is given by

$$TA_t = [\Delta \text{Current assets} - \Delta \text{Cash} - \Delta \text{Current liabilities}] \\ - \text{depreciation and amortisation expense}$$

All variables are scaled by total assets (A) in year t-1 to reduce heteroskedasticity, and T is the estimation period used to establish the level of “normal accruals” for each firm, which ranges between 14 and 32 years.

The models of normal total accruals are estimated as time series but the significance of income-decreasing accruals is tested using cross-sectional tests in years 0 and 1 of the ITC investigation.

There are two issues related to the assumption that average change in non-discretionary accruals (NA) is approximately zero so that the change in total accrual (TA) reflects change in discretionary accruals (DA), and these are:

- REV (firm’s revenues) which is used to control for the economic environment is not a completely exogenous variable to earnings management levels.
- The relationship between NA and the independent variables is assumed to be stationary.

The residual term from this model represents discretionary accruals (DA). The overall significance of discretionary accruals is tested using a standardised prediction error.

**Measuring Earnings Management**

Jones’s (1991) model differs from prior studies such as Healy (1985), DeAngelo (1986) and McNichols and Wilson (1988), because Jones (1991) uses total accruals as a proxy for earnings management. Healy (1985) and DeAngelo (1986) measured earnings management by dividing total accruals into discretionary and non-discretionary components. McNichols et al. (1988) measured earnings management by using models of single accruals. Jones (1991) suggested that using total accruals under accruals is more appropriate for measuring earnings management in her sample than single accruals, because international trade commissioners select their cases based on earnings before tax, which will reflect total accruals. Therefore, Jones (1991) suggested that the total accrual should capture managers’ manipulation better than previous studies such as: Healy (1985), DeAngelo (1986), and McNichols et al (1988).

Jones’ version of total accruals was calculated as below:

$$TA = CNWCBT - DE \dots\dots\dots (1)$$

Where; TA is total accruals; CNWCBT is the change in non-cash working capital before income taxes payable less total depreciation expenses, and DE is total depreciation expenses.

CNWCBT was measured as below

$$CWCBT = (CA - CASI) - (CL - CMAITP) \dots\dots\dots (2)$$

Where; CA is current assets; CASI is cash and short-term investments; CL is current liabilities, and CMAITP is current maturities of long-term liabilities and income taxes payable.

Jones used the DeAngelo (1986) model (specific expectation model) to model total accruals:

$$\Delta TA_t = (TA_t - TA_{t-k}) = (DA_t - DA_{t-k}) - (NA_t - NA_{t-k}) \dots\dots\dots (3)$$

Where; (TA<sub>t</sub> - TA<sub>t-k</sub>) is the change in total accruals; (DA<sub>t</sub> - DA<sub>t-k</sub>) is the change in discretionary accruals; and (NA<sub>t</sub> - NA<sub>t-k</sub>) is the change in non-discretionary accruals

Jones (1991) explained that differences in revenue would bring variations in numerous elements in the financial statements.

Based on the results, Jones found the changes in accruals and earnings in year (+1) are positive and not significant. In addition she reported that the changes in cash flow and revenue are negative and not significant, which results from firm managers decreasing income to avoid any ex post settling up by the regulators or to avoid taxes.

**Accruals Model**

Based on the results in the above section Jones (1991) established a new model; which assumes that the relationship between non-discretionary accruals and the explanatory variables is stationary.

$$\frac{TA_{it}}{A_{it-1}} = a_i \left(\frac{1}{A_{it-1}}\right) + B_{1i} \left(\frac{\Delta REV_{it}}{A_{it-1}}\right) + B_{2i} \left(\frac{PPE_{it}}{A_{it-1}}\right) + \epsilon_{it} \dots\dots\dots (4)$$

Where; *TA* it is the total accruals for company (*i*) during period (*t*); *ΔREV* it is the change in the revenue for company (*i*) during period (*t*); *PPE* is property, Plant and Equipment; *A<sub>i t-1</sub>* is the total assets for company (*i*) for end of period (*t-1*); and *ε<sub>it</sub>* is the random error.

Total accruals included change in working capital accounts such as accounts receivable, accounts payable and inventories, which could affect revenues. However, the results showed that the change in revenues is not a significant factor.

**Tests of Model Misspecification**

Jones (1991) also investigates the relationship between abnormal accruals and change in revenue by using a sample of 459 firms that are not included in the ITC investigation sample. The findings show no systematic relationship between these two variables. This result lends support to the main hypothesis of the paper, which states that “managers of domestic producers that would benefit from import protection make accounting choices that reduce reported earnings during ITC investigation periods as compared to non-investigation periods” (page 200).

The results were refined further by additional tests completed in order to test the subsidiary hypothesis that “managers may have greater incentives to manage earnings if

the ITC investigation is being conducted under the general escape clause<sup>1</sup>” (page 202). Her results in this section showed that petitioners are engaged in downward earnings management. Furthermore, she showed that the firms in the general escape clause sample were engaged in more downward earnings management than the firms in the antidumping sample<sup>2</sup>. These results support her earnings management hypothesis.

### ***Portfolio Tests***

By using OLS regression, the Jones (1991) model implicitly assumes no correlation between prediction errors and discretionary accruals (DAs). In order to determine the effect of relaxing this assumption, the firms were grouped by industry and DAs averaged across each group. This approach also addressed the “free rider” problem that arises since all firms in the industry benefit from any relief granted. The results of these tests show that “after the problems relating to cross-sectional correlation are mitigated by grouping firms in industry portfolios (which also results in grouping by year) the DAs in year 0 are still significantly income-decreasing” (page 223).

### ***Concluding Remarks of Jones’s (1991) Paper***

The Jones (1991) study found explicit evidence showing that managers decrease their earnings in the period of import relief investigation, particularly in year zero and the motivation for this was assumed to be the desire to maximize the relief granted to their firm. The empirical tests also show improvement in the power of the Jones model to detect earnings management compared to the models in Healy (1985), DeAngelo (1986) and McNichols et al. (1988).

### **3.6.5 The Modified Jones Model (Proposed by Dechow, Sloan and Sweeney, 1995)**

This paper reports on a replication study that tests the statistical power and specification office models of discretionary accruals: Healy (1985); DeAngelo (1986); Jones (1991), a modified version of the Jones model and the Industry Model (formulated by Dechow et al

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<sup>1</sup> General escape clause designed by Trade Act of 1974, to aid domestic industries that are seriously injured by increased imports.

<sup>2</sup> Antidumping designed by Trade Act of 1974, to protect domestic industries from imports that are sold at less than fair value

themselves). These models are evaluated with reference to Type **I** and Type **II** error rates and distribution of residuals.

- A type **I** error involves incorrectly accepting a research (alternative) hypothesis when the null hypothesis is true. Here, concluding that firms have used earnings management when they have not.
- A type **II** error involves incorrectly rejecting a research (alternative) hypothesis when the null hypothesis is true. Here, not identifying earnings management when firms have managed earnings.

This study is different from previous studies because they focus on samples of firm-years with extreme financial performance because in this case there are likely to be more motivations for managers to manipulate their earnings.

Dechow, *et al* (1995) measured potential misspecification by using McNichols and Wilson (1988) analysis as follow:

$$DA_t = \alpha + \beta PART_t + \sum_{k=1}^k \gamma_k X_{kt} + \varepsilon_t \dots\dots\dots (1)$$

Where; *DA* is discretionary accruals; *PART* is the partition dummy for which earnings management prediction; *X<sub>t</sub>* are variables suggested to influence discretionary accruals; and *ε* is errors.

In most studies, **PART** is set equal to one for firm-years where the researcher believes earnings management is occurring in response to some stimulus. **X<sub>t</sub>** cannot usually be observed directly and therefore, is excluded from the model; and discretionary accruals cannot be observed and are measured using a proxy, which Dechow, *et al* (1995) call **DAP** and which measures **DA** with error.

By using this model the researchers cannot arrive at precise results because they cannot categorise relevant variables for discretionary accruals such as, (**X<sub>k</sub>**). Therefore, Dechow, *et al* (1995) measured the previous model with error:

$$DAP_t = \hat{\alpha} + \hat{\beta}PART_t + \mu_t + \varepsilon_t \dots\dots\dots (2)$$

Where;  $DAP_t$  = Discretionary accruals with error;  $\hat{b}$  = Estimated  $\beta$  with bias and the direction of the bias is the same as the correlation between PART and  $\mu$ ;  $\mu_t$  = Term that capture the omitted  $X_t$  variables and the measurement error in  $DAP_t$ ; and  $\varepsilon_t$  = an error term that is independently and identically normally distributed.

The models were run both with and without the variable  $\mu$  in order to evaluate its effect on the power of this model.

There are three generic statistical problems that occur with the models, and these are: (1) incorrectly attributing earnings management to PART (dummy variable partitioning the data for two groups for earnings management), and this problem lead to increase the probability of Type I error. “This problem will arise when (i) the proxy for discretionary accruals contains measurement error that is correlated with PART and/or (ii) other variables that cause earnings management are correlated with PART and are omitted from the analysis. In this latter case, earnings management is correctly detected by the model, but causality is incorrectly attributed to PART” (page 196).

(2) Unintentionally extracting earnings management caused by PART, which in turn leads to an increase in the probability of Type II error. “This problem will arise when the model used to generate the discretionary accrual proxy unintentionally removes some or all of the discretionary accruals” (page 196). (3) The low power of the available test statistics, leads to increasing the probability of Type II error. This problem will occur when some variables are omitted from discretionary accruals.

Dechow et al (1995) develop the Modified Jones model to address the estimation problems underlying the Jones model (1991). Dechow et al (1995) suggest that the misspecification problems in the Jones model arises due to the omission of a separate variable to reflect managers exercising their discretion over revenues. Therefore, the only difference between the Jones model and the Modified Jones model is the inclusion of the change in credit sales in the model, as a proxy for this. The Dechow *et al* (1995) model assumes that all the changes in credit sales during the period of study resulted from earnings management, and Jones (1991) includes the credit sales among total revenues.

Dechow, *et al* (1995) define total accruals as:



$$TA_{i,t} = NOPI_{i,t} - CFO_{i,t} \dots \dots \dots (3)$$

Where; TA is total accruals; NOPI is net operating income; CFO is cash flow from operating activities.

Non-discretionary accruals (NDAC) are modeled by:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1 \left( \frac{1}{A_{i,t-1}} \right) + \alpha_2 \left( \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} \right) + \alpha_3 \left( \frac{PPE_{i,t}}{A_{i,t-1}} \right) + \varepsilon_{i,t} \dots \dots \dots (4)$$

Where;  $TA_{i,t}$  is the total accruals for the company (i) during period (t);  $\Delta REV_{i,t}$  is the changes in the revenue (from credit sales) for company (i) during period (t);  $\Delta REC_{i,t}$  is the changes in account receivable for company (i) during period (t);  $PPE_{i,t}$  is Property, Plant and Equipment;  $A_{i,t-1}$  is the total assets for company (i) for end of period (t-1); and  $\varepsilon_{i,t}$  is random error.

Discretionary accruals are defined as follows:

$$DAC_{i,t} = TA_{i,t} - NDAC_{i,t} \dots \dots \dots (6)$$

Ultimately, if the null hypothesis stated that discretionary accruals are less than or equal zero is rejected, then the alternative hypothesis stated that accruals are managed upwards will be accepted (Healy, 1985).

The Modified Jones model is one of the most powerful earnings management models for two reasons:

- Since it is the first paper that used time series data to conduct the research.
- The standard errors resulting from the Jones model are lower than for other models which imply that it is a more powerful to detect earnings management.

The fifth model, Dechow et al (1991) test the Industry Model, which they devised themselves. This model is similar to the Jones model, except that it assumes that “nondiscretionary accruals are fixed all the times” and also that the difference in the components of nondiscretionary accruals is common across all firms in a given industry. Nondiscretionary accruals are defined, in this case, as below:

$$NDA_t = \gamma_1 + \gamma_2 \text{median}_I(TA_t)$$

- Where;  $TA_t$  is the median value of total accruals; and  $\gamma_{1,2}$  are the firm specific parameters.

Dechow et al (1995) use four samples to test the various earnings management models, and these are:

- The first sample is compiled from 1000 firm-years are selected from 168771 US firm-years from 1950 to 1991, to test the problem of incorrectly attributing earnings management to PART, particularly to measure the error of discretionary accruals ( $\mu$ ).
- The second sample is compiled from a pool of firms with distinctively different financial performance and where, as mentioned previously, is assumed to give greater incentives for earnings management.
- The third sample is compiled from the firm-years into which the researchers have artificially inserted synthetic accruals manipulations. These accruals include (1) expense manipulation over two periods (deferred expenses which reverse the following period). (2) Revenue manipulation: achieved by increasing accruals, revenue and accounts receivable (assuming that all costs are fixed). (3) Margin manipulation: premature recognition of revenue assuming all costs are variable.
- The last sample consists of 56 firm-years from firms subject to the securities exchange commission (SEC) enforcement actions for allegedly overstating annual earnings. This sample is established to test the earnings management in firms that violated the generally accepted accounting principles.

Dechow et al (1995) draw the following conclusions: the low explanatory power of discretionary accruals models, the problem of finding suitable proxies, the problem of confounding variables, measurement error and the low power of statistical tests suggest that the Type **II** errors are generally much more of a problem for discretionary accruals than Type **I** errors.

The models appear well specified, particularly when applied to firms with distinctively different financial performances (and these are arguably the most likely to employ earnings management). However, based on the assumption that economically plausible magnitudes of earnings management would be around 1% to 5% of total assets, the models have low power for detecting effects of this size. The modified version of the Jones model has the highest power and, in particular, is the model that produces the lowest incidence of Type **II** errors.

The researchers suggest that given the low power of the models, a sample of several hundred firms would be needed in order to provide a reasonable chance of detecting earnings management of the order of 1% of total assets. Researchers also need to be aware of the characteristics of their sample in order to avoid using a model of non-discretionary accruals that unintentionally removes some of the discretionary accruals (e.g. using the industrial model when discretionary accruals are correlated across the industry or the DeAngelo (1986) model when firms are in financial distress).

### 3.6.6 The Peasnell, Pope and Young (2000) Model

Peasnell, Pope and Young (2000) examine the power and specification for three accruals-based models (Jones model 1991, Modified Jones model 1995, their own model, the Margin Model) with a sample of UK firms in the period 1990 to 1997. This study differs from prior studies because those researchers used cross-sectional analysis instead of time series analysis. One result of this is the approach introduces noise into the estimation process to the extent firms differ structurally within a given industry.

Peasnell et al (2000) Margin Model goes back to Kang and Shivaramakrishnan (1995) who separate different discretionary components out of total accruals. This model is also different from prior models because its focus on working capital accruals, which are included as separate variables. Working capital accruals are defined as:

$$WCA = (\Delta STOCK - \Delta DEBT) - \Delta CREDIT + (NCCA + TD + CLOC) \dots \dots \dots (1)$$

Where; WCA is working capital accruals;  $\Delta STOCK$  is the difference between the purchases of materials and the cost of finished goods sold;  $\Delta DEBT$  is the difference between revenue from credit sales, cash received from customers and the bad debt expense;  $\Delta CREDIT$  is the difference between the purchases of materials and cash paid to suppliers; NCCA is non-cash current assets other than stocks; TD is trade debtors; and CLOC is all current liabilities other than creditors.

Working capital accruals are then modeled as below:

$$WCA_i = \lambda_0 + \lambda_1 REV_i + \lambda_2 CR_i + \eta_i \dots \dots \dots (2)$$

Where:

$REV_i$  is total sales,  $CR_i$  is total sales minus the change in trade debtors,  $\lambda_0$  is regression coefficients,  $\lambda_1$  is coefficient represents an estimate of the sales margin and is predicted to be positive,  $\lambda_2$  is coefficient represents an estimate of the cash margin and is predicted to be negative, and  $\eta$  is regression residual.

The main difference between the standard Jones Model, Modified Jones Model and the Margin Model is that the Margin Model divides the change in revenue into two elements in the model fitting stage, replacing cash receipts in the current period for revenues in the prior period.

In order to examine the power of the standard Jones model, Modified Jones Model and the Margin Model Peasnell et al used three types of earnings management manipulations, and these are:

- (1) expense manipulation excluding bad debt expenses; this approach is different from Dechow *et al* (1995) since this study uses a cross-sectional approach, therefore they cannot make any change adjustments for accrual reversals in future accounting periods, for example, delayed recognition of an expense.
- (2) Manipulation of the bad debt provision; this type of accrual was not included in the Modified Jones Model.
- (3) Revenue manipulation: this type is used in the Modified Jones Model.

The reported results for the Margin Model show an increase in the power to detect earnings management of 40%, for the UK sample, compared to the Modified Jones model.

Peasnell et al (2000) identify three problems related to the standard Jones and Modified Jones Models and these are: (1) certain bias issues arise naturally as a result of the models continuing to apply time series analysis. (2) The assumption that the estimates of coefficients on the change of revenue and PPE are stationary over time. (3) The self-reversing property of accruals could lead to specification problems, particularly in the form of serially-correlated residuals.

The paper showed that both the Modified Jones and Jones models are more powerful in detecting earnings management when applying them to a random sample with cross-sectional analysis than when applying them to a random sample with time series analysis. However, Peasnell, *et al* (2000) designed the Margin Model to further increase the power of the standard Jones and modified Jones Model to detect revenue manipulations in cross sectional analysis.

They found that the margin model was most powerful when the cash flow performance was extreme, and was particularly effective in terms of detecting accruals associated with bad debt. On the other hand, the researchers found that cross-sectional analysis has a significant disadvantage, in that it induces noise into the parameter estimation due to different structures of firms in the same industry. Finally, Peasnell *et al* (2000) showed that precise detection of accruals management still remains difficult, particularly at levels that are less than 5% of total assets.

### **3.6.7 The Caylor 2010 Model**

The Caylor (2010) model focuses particularly on managers using their discretion over revenue recognition, such as through accrued revenue (accounts receivable) and deferred revenue (advance from customers) Caylor (2010) structures the analysis around three earnings objectives (which he calls benchmarks):

1. Avoidance of losses
2. Avoidance of earnings decreases
3. Avoidance of negative earnings surprises.

The model is based on real business activities such as easing customer credit policies and it uses gross accounts receivable instead of net accounts receivable because abnormal changes in net accounts receivable could reflect changes in the allowance for bad debt.

The study uses three separate samples to test the different earnings benchmarks:

- To test the first hypothesis Caylor used 15,193 (7284) firm-year observations for the loss and earnings decrease (earnings surprise) benchmarks for fiscal years 2001–2005

- To test the second benchmarks he used 4846 (2664) firm-year observations for the loss and earnings decrease (earnings surprise) benchmarks for fiscal years 2001–2005.
- To test the third hypothesis the sample decreased to 1807 firm-year observations since he used the firms that have both accounts receivable and deferred revenue.

Two earnings management models are used in Caylor (2010). One of them is based on gross accounts receivable and the other one based on deferred revenues.

*The normal changes in gross accounts receivable model uses Dechow et al’s (1998) insight that gross accounts receivable are related to current period’s sales, as accounts receivable are sales accrued in the current period.*

Caylor (2010) construct the following model to examine this factor:

$$\frac{\Delta \text{Gross } A}{R_t} = \alpha_0 + \alpha_1 * \left( \frac{1}{A_{t-1}} \right) + \beta_1 * \left( \frac{\Delta S_t}{A_{t-1}} \right) + \beta_2 * \left( \frac{\Delta \text{CFO}_{t+1}}{A_{t-1}} \right) + \epsilon_t$$

*Where;  $\Delta \text{Gross } A/R_t$  = the change in gross accounts receivable during year  $t$ ;  $A_{t-1}$  is the beginning of year total assets;  $\Delta S_t$  is the change in sales during year  $t$ ;  $\Delta \text{CFO}_{t+1}$  is the change in cash flow from operations during year  $t+1$ .*

The normal changes in the deferred revenue model is specified as follows:

$$\Delta \text{Def } \frac{\text{Rev}_t}{A_{t-1}} = \alpha_0 + \alpha_1 * \left( \frac{1}{A_{t-1}} \right) + \beta_1 * \left( \frac{\Delta S_{t+1}}{A_{t-1}} \right) + \beta_2 * \left( \frac{\Delta \text{CFO}_t}{A_{t-1}} \right) + \epsilon_t$$

*Where;  $\Delta \text{Def } \text{Rev}_t$  is the change in short-term deferred revenue during year  $t$ ;  $A_{t-1}$  is the beginning of year total assets;  $\Delta S_{t+1}$  is the change in sales during year  $t+1$ ;  $\Delta \text{CFO}_t$  is the change in cash flow from operations.*

Caylor’s (2010) results indicate that “there is a significant and positive relationship between the changes of gross account receivable and the changes of current sales and future cash flow from operating with t-statistic (18.69 and 4.03 respectively)” (page 88). There is a significant and positive relationship between the changes of deferred revenue and the changes of current sales and future cash flow from operating with t-statistic (4.86

and 2.05 respectively)” (page 89). This leads to the conclusions that managers use earnings management related to accounts receivable and deferred revenue in circumstances indicated by all of the earnings benchmarks (to avoid losses and negative earnings surprises).

The followings are the three contributions from Caylor (2010) to the earnings management literature:

1. Adding new descriptive evidence on deferred revenue.
2. Using comprehensive analysis of revenue manipulation in relation to all three earnings benchmarks
3. Finally, Caylor (2010) is the first research that examined a common sample of firms that use revenue deferrals and accruals to increase revenue.

Findings from Caylor (2010) show that managers used accounts receivable and deferred revenue to avoid negative earnings surprises more than avoiding losses or earnings decreases. Two main limitations of the model of Caylor (2010) are

- The managers might employ other (non-revenue-based) accruals for achieving the earnings benchmarks.
- The managers might have different mechanisms and expectations for defining their benchmarks

Caylor (2010) also lists some differences between manipulation of accounts receivable and manipulation of deferred revenue, summarized as follows:

<b>Manipulation accounts receivable</b>	<b>Manipulation deferred revenue</b>
Cash not received yet	Cash has been received
Managers accelerate the recognition of revenue through real activities (such as changing credit terms)	Managers are less able to manipulate through real activities

### 3.6 Earnings Management and Cultural Factors

Cultural values are important factors that affect the international business world in many

areas, such as foreign investment decisions, international trade, economic growth, earnings management, and corporate governance (Desender, Castro and Escamilla De Leon, 2011).

Rohaida (2011) suggests a number of audit firm culture indicators that could lead to higher audit quality and potentially they could also constrain earnings management practices among UK firms. These are:

- creating an environment where achieving high quality is valued, invested in and rewarded;
- emphasising the importance of behaving in the public interest and the effect of doing so on the reputation of both the firm and individual auditors;
- ensuring partners and staff have sufficient time and resources to deal with difficult issues as they arise,
- ensuring that financial considerations do not drive actions and decisions having a negative effect on audit quality;
- promoting the merits of consultation on difficult issues and supporting partners in the exercise of their personal judgment,
- ensuring robust systems for client acceptance and continuation,
- fostering appraisal and reward systems for partners and staff that promote the personal characteristics essential to quality auditing, and
- ensuring audit quality is monitored within firms and across international networks and appropriate consequential action is taken.

Several studies have investigated the association between cultural values and earnings management, for example, Desender, et al (2011), who based on a sample of 8,616 non-financial firms across 31 countries during the period 1990 – 1999 to conduct his research. Desender, *et al* (2011) investigate the relationship between cultural values, particularly individualism and earnings management. Their results show that countries exhibiting high levels of individualism tended to have lower levels of earnings management.

Guan, et al (2005) examine the potential effect of cross-country differences in culture by



using variables defined by Hofstede (1983): individualism<sup>1</sup>, power distance<sup>2</sup>, uncertainty avoidance<sup>3</sup> and long-term social values on earnings management in five Asia-Pacific countries: Australia, Japan, Hong Kong, Malaysia and Singapore. Their results indicate that cultural values significantly affect earnings management. In other evidence, based on a dataset of 27 countries during the period 1987 – 2001, Guan and Pourjalali (2010) analyze the relationship of cultural values, disclosure and earnings management. They found that uncertainty avoidance influence earnings management downwards, and other cultural values, such as individualism, power distance, and masculinity<sup>4</sup> affect significantly the degree of earnings management.

Nabar and Boonlert-U-Thai (2007) produce a comparative study, examining the impact of notional culture on earnings management by using a sample from thirty countries. The study found that culture is an important factor affecting accounting choices and should have received more attention from standard setters enacting and enforcing international financial reporting standards. Additionally, they found that earnings management was relatively lower in countries in which the main language is English, and relatively higher in countries with a high score of uncertainty avoidance. Finally, their additional analysis of earnings management show that uncertainty avoidance and masculinity have a relationship with earnings management and no relationship with earnings smoothing<sup>5</sup>. Doupnik (2008) investigates the relationship between national culture and earnings management. His findings, based on a sample of thirty one countries, show that there is a stronger relationship between culture and earnings smoothing than in the relationship between culture and earnings management.

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<sup>1</sup> Individualism: The extent to which the individual expects personal freedom versus the acceptance of responsibility to family, tribal, or national groups.

<sup>2</sup> Power Distance: The degree of tolerance for inequality of wealth and power indicated by the extent to which centralization and autocratic power are permitted.

<sup>3</sup> Uncertainty Avoidance: The extent to which society avoids risk and creates security by emphasizing technology and buildings, laws and rules, and religion.

<sup>4</sup> Masculinity: The extent to which society differentiates roles between the sexes and places emphasis on masculine values of performance and visible achievement.

<sup>5</sup> They defined earnings smoothing with two dimensions, and these are: (1) the country's median ratio of firm-level standard deviations of operating income and operating cash flow (both scaled by lagged assets), (2) the country's Spearman correlation between change in accruals and change in operating cash flow (scaled by lagged assets).

### 3.7 Earnings Management and Agency Theory

Historically, agency theory has been used in previous studies as an approach that describes the relationship between companies' owners (principals) and companies' managements (agents). Agency theory has developed because of the separation between the ownership and control in firms, particularly when the owners or the board of directors have to hire a person to manage and assess their work. Two important problems are: (1) *How to align the conflicting goals of principals and agents.* (2) *How to ensure agents perform in the way principals expect them* (Jensen and Meckling, 1976). Agency theory posits that the gap between the owners interests and the manager's interests, will lead to new managerial problems such as, managerial mischief (Nyberg, Fulmer, Gerhart and Carpenter, 2010).

Eisenhardt (1989) posits that agency problems will arise when the executives or the managers manipulate financial information in the firm to achieve their motivations, such as, when a manager decides to buy a new machine with less quality and a cheaper price to reduce the cost, which in turn leads to an increase in his bonuses. The seminal paper, Demski and Feltham's study (1978) investigates the relationship between accounting and agency theory by exploring why and how budgets should be used to achieve the managers' motivation in an economic setting. They focus on three types of employment contracts in the labour market, and these are: (1) Contracting incentives. (2) Contracting in a perfect and complete market setting. (3) Contracting in an incomplete market setting. Finally, they found that agency theory that use employment contracts differently influences the financial information based on the firm's situation in the labour market, and the standards that have been used in this firm.

Several studies have investigated the relationship between earnings management and agency theory (e.g. Nyberg et al, 2010; Jiraporn et al, 2008; Davidson III, Jiraporn, Kim and Nemeč, 2004).

Nyberg *et al* (2010) investigate the relationship between CEO compensation and shareholder returns by developing a new theoretical concept. They found that agency theory was not suitable to analyse all corporate problems, but it can, nevertheless,

contribute to solving some of the individual problems such as board monitoring and the market for corporate control, which could both lead to increased agency costs, that occur from asymmetric information and lack of goal congruence between owners and managers.

On the other hand, Jiraporn *et al* (2008) use agency theory as a tool to distinguish between the opportunistic and beneficial uses of earnings management, by suggesting that the poor association between earnings management and shareholders wealth maximization leads to increased earnings management in firms, particularly when the agency costs are more acute. The empirical evidence reveals a positive relationship between earnings management and firm value, and a negative relationship between earnings management and agency costs.

Davidson III, *et al* (2004) use a sample of 173 duality-creating<sup>1</sup> succession announcements and 112 non-duality-creating succession announcements during the period 1982-1992, to examine the relationship between earnings management and agency theory. They posit that impression management (through earnings management) could be regarded as an agency cost if it leads to non-optimal decision making by shareholders. Their results show that duality-creating successions are more likely to result in earnings management than non-duality-creating successions, because the managers and the chief executive officer in the firm have the power to control earnings more than stockholders.

Palliam and Shalhoub (2003) examine the techniques that managers used to manipulate their earnings based on a sample of 74 firms during the period of 1998 to 2001. Two manipulation models used are as follows:

$$MI_1 = \frac{C_i C_o}{T S} \dots \dots \dots (1)$$

$$MI_2 = \frac{C_i}{c_o} * \left(1 - \frac{S}{T}\right) \dots \dots \dots (2)$$

where  $C_i$  is the cash inflows generated from sales,  $C_o$  is the cash outflows from purchases of the goods,  $T$  is the turnover that the company generated,  $S$  is the cost of goods sold,

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<sup>1</sup> Duality is that the position of CEO and Chairman being occupied by the same individual.

and  $(1-S/T)$  is gross profit margin.

Their findings, which are based on the above two models, show that the use of income from continuing operations, reflects permanent earnings totally.

Numerous researchers use agency theory to explain the relationship between corporate social responsibility and earnings management, such as Kim, Park and Benson (2012); Yongtao and Margaret (2011); Rahmawati and Dianita (2011); Hsiang-Lin, Chung-Hua and Feng-Ching (2008) and Prior, Surroca and Tribo (2006).

Based on a cross-sectional study of 10 Asian countries, Kim, *et al* (2012) posit that responsible social behaviour is associated with a reduction in earnings management. They find that firms exercising corporate social responsibility are less likely to manipulate their earnings by using discretionary accruals, and less likely to manage their real operating activities, thereby delivering more transparency and reliability in earnings. Yongtao, *et al* (2011) and Rahmawati *et al* (2011) also find that firms which have more social responsibility are less likely to engage in earnings management. Heltzer (2011) investigates the influence of corporate environmental responsibility on earnings management based on 2171 American firms in 2007. His findings show that firms with strong environmental policies had less earnings management

Gargouri, Shabou and Francoeur (2010) examine 109 Canadian firms over the period of 2004- 2005, to examine the association between earnings management and corporate social performance. The study shows a positive relationship between the level of corporate social performance and earnings management. Additionally, it finds a positive connection between firms' environment and employees, and earnings management activities.

In another cross-sectional study based on 1,653 firms from 46 countries over the period of 1993–2002, Hsiang-Lin, *et al* (2008) examine the impact of corporate social responsibility on three types of earnings management; earnings aggressiveness, earnings smoothing, and earnings losses and avoidance of earnings decreases. Their statistical evidence showed that firms that have more social responsibility are more likely to decrease earnings smoothing and earnings losses, and increase earnings aggressiveness.

In the same way, Prior, Surroca and Tribó (2008) examine the connection between corporate social responsibilities and earnings management based on a multi-national panel sample of 593 firms from 26 countries during the period of 2002 to 2004. The researchers used the Jones (1991) model and the Dechow, et al's (1995) model to examine discretionary accruals, and use Kothari, Leone and Wasley's (2005) model to separate between discretionary accruals and non-discretionary accruals. This study found a positive relationship between earnings management and strong corporate social responsibilities. Also, it found a combination of high earnings management and strong corporate social responsibilities to have negative effects on financial performance.

Prior, *et al* (2006) found a positive relationship exist between corporate social responsibility and discretionary accounting accruals, and a negative relationship between corporate social responsibility and financial performance, particularly in firms that used earnings management practices. The findings reveal a weak relationship between corporate social responsibility and financial performance in firms that have high earnings management.

### **3.8 Summary**

This chapter presents an overview of published studies on earnings management. It begins with discussions on a few versions of Earnings management definitions and followed up with discussion on the motivations for earnings management. This includes the analysis and debate on the opportunistic earnings management motivations and beneficial earnings management motivations. Then, it discussed how earnings management models worked in prior studies, and also provides a critique of earnings management models that have been used in this PhD research and other models that are important in measuring earnings management with an aim to provide a more comprehensive understanding. Finally, association of earnings management, agency theory and cultural values are also discussed.

## **4. Chapter Four: The Role of Corporate Governance and Earnings Management**

### **4.1 Introduction**

Several issues related to earnings management were discussed in the previous chapter. Namely, earnings management types including opportunistic earnings management motivations and beneficial earnings management motivations and how earnings management models have worked in prior studies. The chapter discussed and provided a critique of earnings management models that are used in this research and other models that are considered important such as, Healy (1985), DeAngelo (1988, 1986); an overview of the literature on earnings management and cultural values, and the use of agency theory to explain earnings management. Following on from this, the current chapter discusses the research methodologies used in the prior literature and methods of collecting primary and secondary data, which were adopted for this research.

This chapter presents an outline of the Jordanian context in order to give an insight into: Jordan's political and economic history, internal control practices, the legal system, the auditing profession and corporate governance mechanisms. The existence of strong corporate governance mechanisms and high quality disclosure of financial data could in fact lead to improved professional conduct in business transactions. This in turn would facilitate the firm's access to capital and support economic growth. In contrast, the existence of weak corporate governance could encourage manipulation, corruption and mismanagement. Leventis *et al* (2012) find that banks using good corporate governance mechanisms have a strong ability to reduce aggressive earnings management compared to other banks.

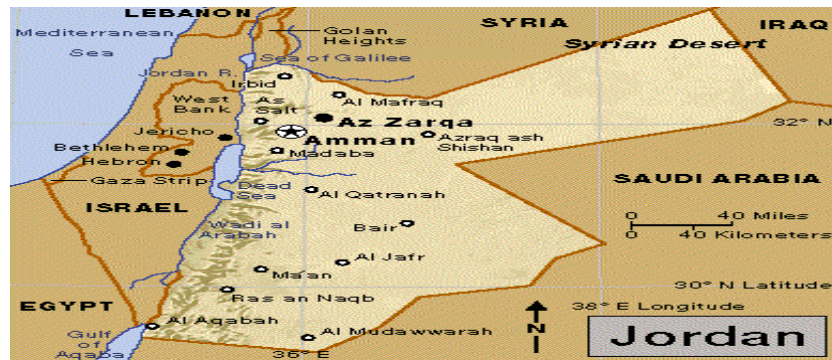
Understanding the background to these underlying issues would help to provide potential support or evidence on interpreting the empirical results from the quantitative analysis and interviews conducted, which aim at reaching out to a wider context. Accordingly, we structured this chapter as follows: Section 4.2 presents a background of Jordan; Section 4.3 sheds light on earnings quality; particularly earnings quality and representational

faithfulness; Section 4.4 provides an overview of issues relevant to internal control in Jordanian firms; Section 4.5 presents overview of corporate governance mechanisms in Jordan; Section 4.6 offers a brief historical view of the legal system and culture in Jordan; Section 4.7 provides a brief summary of the taxation system in Jordan; Section 4.8 analysis the nature of the relationship between internal control, corporate governance mechanisms and earnings management; and Section 4.9 presents an overall chapter summary.

## 4.2 The Political and Economic Context of Jordan

Jordan, whose capital city is Amman, is a developing country in the Middle East. The foundation of Jordan dates back to 1921, when Prince Abdullah ben Al-Hossen ben Ali (1921) announced the birth of the Emirate of Transjordan, which at the time was under British mandate. On 22 March 1946 a treaty was signed with Britain which recognised the independence of Jordan. The system of government in Jordan is a constitutional monarchy that is restricted to the male descendants of the Hashemite family. Arabic is the official language of the state, but English is used widely, particularly in the field of business (Ministry of Education, 2012; Ministry of Tourism, 2012).

Figure 4-1 Map of Jordan



Source: The Royal Jordanian Geographic Centre (2012)

As Figure 4.1 shows, Jordan is located at the confluence of Europe, Asia and Africa, and located between latitudes 29 and 32 north, and between longitudes 35 and 39 east and the Syrian Arab Republic is bordered to the north, and Palestine from the west, and Saudi

Arabia to the south and east, and Iraq to the east. Jordan location contains an area of 89.3 thousand kilometres square.

Jordan is a generally resource-poor country compared with Middle East countries, but it does contain significant deposits of both oil shale and sources of uranium. These potential sources of indigenous energy have been the focus of renewed interest in recent years. However, despite difficulties regarding regional political problems, Jordan keeps its status by continuing with increasing economic growth compared to other developing countries, particularly in the Middle East region. The most important industries in Jordan are cement, fertilizers, petroleum refining, the iron and steel industry, electricity, foodstuffs, textiles and fabrics, leather industries in addition to potash and phosphate (The Royal Jordanian Geographic Centre, 2012). Until early 1970, Jordan followed the British financial reporting system. In early 1973, Jordan began to convert to the US financial reporting system, particularly after the establishment of the FASB in 1973.

The official currency in Jordan is the Jordanian dinar (JD) which is divided into 1000 fils, or 100 piastres. The Jordanian dinar takes two forms: paper currency with a value of 50, 20, 10, 5, 1, and 0.5 dinars, and metal currency (coins) with a value of 10, 5, 1, 0.5, 0.25 dinars or 100, 50, 25, 10 and 5 fils (Central Bank of Jordan, 2012). One Jordanian dinar and eleven piastres is equivalent to one UK pound (2012).

The Jordanian government focused on developing the industrial sectors to develop its economy. This provides new jobs and produces much of the creativity and innovation that fuels economic progress. The country is very attractive to foreign investments due to its political stability and central location in the Middle East. Industries in Jordan can be divided into the following two types:

- The Manufacturing Sector: this sector includes several industrial areas such as: leather and footwear manufacturing, and the chemical industry. This sector contributes to about 18% of Jordanian Gross Domestic Product (GDP).
- The Mining Sector, this sector contributes about 2% of Jordanian Gross Domestic Product (Ministry of Industry and Trade, 2012).



The Jordan business environment has recently been changed to bring corporate financial reporting systems in line with international standards on auditing (ISA), and International Accounting Standards (IAS). Accordingly, several bodies have been made responsible for achieving this:

- The Ministry of Industry and Trade.
- Jordan securities commission (JSC).
- Amman stock exchange (ASE).
- Securities depository center (SDC).
- Jordan Companies Law (1997).

Table (4.1) describes the characteristics of the Amman Stock Market under securities law No. 76 in 2002. This table sheds light on the decreasing growth in ASE during the period of this study. Firms' capitalisations, as shown in Table (2.1), tended to decrease in the period of 2007 to 2012. Even increasing the numbers of firms in years 2008, 2009 and 2010 did not make any significant difference to the increase in firms' capitalisations.

Table 4-1 Characteristics of Amman Stock Market under Securities law No. 76 in 2002  
(Major Financial Indicators)

Year	Number of Firms	Market Capitalisation (JD million)	Book Value (JD million)	Dividends (JD million)	No. of Shares (million)
2006	227	21,078	10,095	506	4,561
2007	245	29,214	11,654	609	5,393
2008	262	25,406	12,837	617	6,395
2009	272	22,527	13,627	577	6,726
2010	277	21,858	692	608	7,006
2011	247	19,273	1,087	843	6,951
2012	243	19,142	N.A	N.A	7,074

Source: Amman Stock Market 2013.

The Amman Stock Market consists of three main sectors, and these are: (1) industrial firms; (2) financial firms, which include banking and insurance firms, and (3) service firms. This study focuses on the industrial sectors since the other two sectors have different accountings methods and regulations. Each firm, regardless of its sector of the Amman Stock Market, has to register under one of the Amman Stock Markets. There are

three markets based on different conditions, and the following section explains the conditions for each market:

### **First Market**

There are several conditions that firms have to achieve to be inserted under the first market (ASE 2014), and these are:

- A full year at least must have elapsed during which its shares were listed on the second market.
- The net shareholders' equity in the firm must not be less than 100% of its paid-in capital.
- The firm must have realised net pre-tax profits for two financial years at least of the last three preceding the listing transfer, provided the company's average net pre-tax profit for the last three years is not less than 5% of the company's paid-in capital.
- The ratio of the Free Float in the firm to the number of subscribed shares at the end of its financial year must not be less than 10% of its paid-in capital (if less than 50 million Jordanian Dinars, excluding firms whose paid-in capital equals or exceeds 50 million Jordanian Dinars).
- The number of the company's shareholders at the end of its financial year must not be less than 100.
- The company's paid-in capital must not be less than 5 million Jordanian Dinars.

### **Second Market**

There are also several conditions that firms have to achieve in order to enter the second market (ASE 2014), and these are:

- A full year at least must have elapsed during which its shares were listed on the third market.

- The net shareholders' equity in the firm must not be less than 50% of its paid-in capital.
- The percentage of the Free Float in the firm must not be less than 5% of the paid-in capital of such firms whose paid-in capital is less than 10 million Jordanian Dinars, excluding firms whose capital equals or exceeds 10 million Jordanian Dinars.

### **Third Market**

There are several conditions that firms have to achieve to be inserted into the third market (ASE 2014), and these are:

- The new firms, which must have been established for a year at least, must gain the right to initiate work.
- Firms that do not meet the conditions to be included in either the first or second.
- Efficacy in the third market
- The firms that will be inserted into the third market are various and include mismatch distressed firms, low liquidity firms, firms that do not comply with instructions of disclosure or modern additions to corporate governance, and others.

### **4.3 Overview of Internal Control**

The top management in the firm is responsible for establishing strong internal control systems, which may include complying with internal auditing standards, international accounting standards, and Sarbanes-Oxley Act of 2002. In order to understand internal control systems, this research presents several definitions. For example, Romney and Steinbart (2003) define internal control as “a plan or method that will be used from the organisations to preserve their assets, provide accurate and reliable information, promote and improve operational efficiency, and encourage adherence to prescribed managerial policies”. In another definition, Amudo and Inanga (2009) describe internal control as “a system to monitor and control the manipulation, and accounting scandals in the financial statements in the developed and emerging markets”. Hayes, Dassen, Schilder and Wallage (2005) define internal control as “a procedure that guides the board of directors

and management to monitor and achieve all the performance and profitability goals in the firms”.

Aforementioned definitions document that the main aim of internal control is to prevent any potential errors, mistakes or fraud that might occur during the preparation of financial statements, which means that the strong internal controls are more likely to increase the transparency and reliability in financial statements (Doyle, Ge and McVa, 2007). Internal control and management control act as a combined system and work together to control business affairs. In other words, it is not possible to separate internal control from management functions (i.e. planning, organizing, staffing, directing, leading, controlling and coordinating), where both of them are working to achieve firm objectives (Chambers and Rand, 1997).

The Committee of Sponsoring Organizations of the Treadway Commission, the Public Oversight Board and the Board of Directors of the AICPA document that the reports of internal control would lead to the improvement of internal control systems for two reasons: (1) good internal control will lead the firms to comply with the operating and financial objectives that have issued by accounting institutions, and (2) reporting the quality of internal control in financial reporting could lead to improvements in the quality of firm’s disclosures by providing financial reporting users, whether internal or external, with proper information (COSO, 2009). On the other hand, there are some writers who believe that internal control reporting does not affect internal control systems. This debate makes internal control reporting an important issue to the accounting profession, and generates significant controversy in the context of internal control (McMullen, Roghunandan and Rama, 1996).

Several studies in prior literature document that internal control is considered as one of the most important factors that prevent the errors and mistakes or manipulations that might occur during the preparation of financial statements. Altamuro and Beatty (2010) find a positive relationship between the application of internal control regulations and quality of financial reporting. In another research study, Karagiorgos, Drogalas, Gotzamanis and Tampakoudis (2010) investigate the roles of internal audit contribution to corporate governance from the theoretical side in which three variables were used to

measure internal auditing quality (audit committee composition, external auditor, and internal audit process). This study finds that the audit committees contributed to corporate governance by providing information about internal controls, risk management processes, fraudulent activities or irregularities, managing and reviewing annual and periodic audits reporting. They also found that external audit and internal audit processes contributed to corporate governance by conducting and reviewing ethics policies and the organization's code and communicating to employees. Finally, their empirical evidence indicates that external audit and internal audits are considered to be a cornerstone of corporate governance by detecting any error or mistake or manipulation that might arise during the preparation of financial statements.

Based on a sample of 13,395 firms from Germany, Australia, Switzerland, France and the UK over the period 1994-2002, Brown, Pottb and Wömpenerb (2014) argue that greater effectiveness and efficiency in internal control could lead to increased earnings quality in these firms. They used two models to examine their argument; (1) the returns-based model, and (2) the accruals-based model. Cross-sectional regressions were used to compare German firms with UK, Swiss, French and Australian firms. Thus, they made a comparison between legislation of SOX and KTG for German companies in order to reflect internal control variables. Their findings show that the effectiveness and efficiency of internal control leads to increased earnings quality in the financial statements in these countries.

Prior studies have also investigated the impact of internal control on different issues such as financial reporting, earnings quality and financial institutions taking lending decisions. For example, Altamuro and Beatty (2010) examine the impact of internal control regulations on financial reporting in the US. Their results show a positive relationship between the application of internal control regulations and financial reporting disclosure. Based on interviews with 111 loan officers, Schneider and Church (2008) investigate the relationship between internal control systems and lending officers' assessments of company's creditworthiness. Measures such as an adverse internal control opinion, unqualified internal control opinion and employing a "big four" firm as external auditor were used to assess the quality of the internal control system. Their results show the firms

that receive unqualified internal control opinions by external auditors could easily get bank loans.

#### 4.4 Culture and Legal System in Jordan

Prior studies document that legal and regulatory issues play a different role in corporate governance mechanisms based on the cultural, economic and political circumstances in each country (Denisa and McConnella, 2003). The current legal system in Jordan derives from several periods in legal history, the Ottoman Empire law, British laws particularly during the period of their mandate on Jordan, and Islamic law (Sharia'a). Hence, numerous legal systems exist together such as Sharia'a law and tribal law (Furr and Alserhan, 2008). This is in addition to corporate and commercial laws; and these laws include three main types of laws; (1) the civil code law No. 43 of 1976, (2) companies law No. 22 of 1997, and (3) financial papers law No. 23 of 1997. In general, the legal system in Jordan is a combination of policies and influences.

The Sharia'a law is applied in all aspects of social life (e.g. marriage, divorce, and inheritance) and some business aspects, particularly in the firms that have a religious character such as, Jordan Islamic bank and Islamic Insurance firms.

As for *Tribal* law, this law is not written but each *Sheikh* of a clan must memorize the rules, which are common across the different tribes, and nominate another person to succeed him, whom he can train. Tribal law is still applied in different aspects of life in Jordan, including business. In theory, the tribe should be a supporter of the government in relation to policies such as access to jobs, economic opportunity, schooling and social privileges (Alon, 2005). Rowland, Altabini and Almomani (2009) states “..... *The tribal law is still used in Jordan officially to smooth things over, and unofficially just as a form of social identification. In rural areas of Jordan, the tribal system is much more palpable and plays a larger part in people’s lives than it does in the urban centres*”.

In addition to the tribal system in Jordan, there exists a common practice among business community, known as favouritism or nepotism called *Wasta*<sup>1</sup>. Culture is an important

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<sup>1</sup> Wasta is a system that involves requesting help and assistance from a connected party who has the power and influence to achieve a particular interest for someone who cannot achieve it alone.

factor that affects businesses, through different means including social structure, political, religion, language, and education (Maitah, 2013). These are normally very difficult to identify and therefore make it even harder to ascertain their effects.

#### **4.5 Taxation System in Jordan**

This section includes preliminary points that are designed to assist in the understanding of the taxation system in Jordan. The taxation system is deemed amongst the most sensitive issues for firms' investors and for governments, as the fiscal policy applied by the government must strike a balance between taxing corporations to raise revenue and leaving profit in the firms to generate future economic growth and maintain healthy capital markets.

The Income Tax system in Jordan was instituted in 1951. It has been applied under the Law No. (50) since the year 1950. Nowadays, Jordan still applies the Income Tax Law, No. 57 of 1985 that deals with tax issues. As in other jurisdictions, taxes in Jordan are collected in two ways: direct taxes and indirect taxes.

As for the tax rates for the corporations in Jordan, there are different rates and these rates are based on the firms' activities (e.g. communication firms, mediation and financial exchange firms, bank and financial firms and industrial and commercial firms), and are subject to a lot of variations based on government objectives. Table (4.2) provides the tax rates that are imposed on each type of activity:

Table 4-2 Tax Rates in Jordanian Industrial Firms (2013/2014)

Number	Sector	Tax Rate
1	Banks and Financial firms	30%
2	Commercial firms	14%
3	Industrial firms	14%
4	Communication	24%
5	Mediation firms	24%
6	Financial exchange firms	24%

Source: Income and Sales Tax Law, 1985.

Depreciation is a tax allowable expense in Jordan and therefore firms select their depreciation policy with this in mind, since it allows them to reduce their tax bill. Also, the Income and Sales Tax law (1985) allows firms to deduct expenses from their income for purpose of net income tax, including the following:

*“ ..... punitive and civil penalties, penalties paid as civil compensation, capital expenditures, expenditures related to income from years for which the tax year has been finalized with the Income and Sales Tax Department, expenditures related to income exempted from income tax, provisions and reserves, personal expenses and expenses not related to work activities, income losses from investments, donations to governmental parties that exceed net income, donations to charities that exceed 25% of net income (Ernst and Young, 2011)”.*

The existence of these deductible expenses may well provide an incentive to managers to manipulate earnings downwards in order to reduce the amount of tax they pay (Healy and Whalen, 1999),

#### **4.6 Internal Control, Corporate Governance Mechanisms and Earnings Management**

Proceeding from the importance of corporate governance that has been discussed, several prior studies have investigated if the corporate governance mechanisms would affect earnings management practices. Numerous empirical results presented in prior literature show that a weakness of corporate governance mechanisms could lead to managers engaging in earnings management to achieve some of their desired objectives such as, increasing their bonuses and compensation (e.g. Healy, 1985; Deangelo, 1988; Dechow, *et al* 1996; Rohaida, 2011; Alghamdi, 2010).

Dechow *et al* (1996) investigate the effect of internal corporate governance and earnings management. Their findings reveal firms engaged in earnings management in several situations such as: (1) when the firm's board of directors were controlled by executive directors; (2) when the firm has a Chief Executive Officer who is also working as Chairman of the Board; (3) when the firm has a Chief Executive Officer who is also one of the firm founders, (4) when the firm has a weak audit committee; and (5) when the



firm has small numbers of outside block-holders. In addition, they found that the main incentive to manipulate earnings management in this study is attracting more external investors at low cost.

#### **4.6.1 The Characteristics of the Board of Directors and Earnings Management**

According to Fama and Jensen (1983), financial transactions must be controlled; and the validity and credibility of these operations are imperative in order for boards of directors to achieve the objectives of shareholders, while protecting their rights. In 2002, Klein found a negative association between the characteristics of the board of directors (e.g. board independence and the number of outside directors) and earnings management, particularly earnings management involving the use of abnormal accruals. In addition, the empirical results of Vafeas (2005) found that board characteristics (e.g. length of board tenure) are related to small earnings management.

##### **4.6.1.1 Board Size and Earnings management**

In the context of accounting and financial issues, the effect of board size is different from one field to another. Yermack (1996) and Xie *et al* (2003) document that the larger board is more likely to prevent earnings management.

In another context, Abdul Rahkman and Ali (2006) examine how the board of directors' size affects the earnings management level by using a sample of 97 firms listed in the main board of Bursa Malaysia, during the period of 2002-2003. Here, their findings show a positive association between board of directors' size and level of earnings management. In contrast, Ahmed, Hossain and Adams (2006) also provide evidence that the board size is negatively related to earnings management in New Zealand during the period 1991 to 1997. The possible explanations for the difference between these two results could be related to: (1) the nature of Corporate Governance Code in each country, and (2) the difference between the periods covered by each study.

A few studies have also investigated into the relationship between board size and earnings management in the US after applying the Sarbanes-Oxley Act (SOX). This includes, Ghosh, Marra and Moon (2010) and Alves (2011) who find the bigger boards tends to discourage earnings management. In contrast, and based on a sample of 180

French and Canadian listed firms' data over the period 2006 – 2008, Joubert and Fakhfakh (2012) found no relationship between board of directors' size and earnings management level. In the case of Jordan, Abed, Al-Attar, and Suwaidan (2012), they found a significant relationship. However, their findings show that earnings management varied significantly between sectors, being higher in the service sector than the industrial sector. Based on the aforementioned mixed results, the association between earnings management and board size is still considered to be a controversial issue (Ghosh *et al*, 2010).

#### **4.6.1.2 Board Meeting and Earnings management**

In the last three decades, the need for frequent board meetings has been disputed since it involves high expenditure such as preparation fees, hotels expenses, and travel expenses, which increase the firm's expenses and decrease shareholders' profit (Vafeas, 1999). Accordingly, prior literature document that the frequency of board meetings has affected earnings management in a positive and negative way. For example, Vafeas (1999) argue that, if the number of board meetings exceeded the normal annual rate compared with other years, then this would tend to lead to more earnings management which is a negative effect. On the other hand, he states that if the number of board meetings corresponded with corporate governance law and did not exceed the normal annual rate, then there is less manipulation. This is a positive effect.

The effect of board meeting frequency may vary depending on two other factors. Firstly, the existence of strong internal corporate governance mechanisms; secondly, the existence of qualified board members in the main firms' activity. In other studies, Anglin, Edelstein, Geo and Tsang (2013) and Xie, *et al* (2003) provide evidence that, in the presence of strong corporate governance, earnings management is reduced when directors hold more frequent board meetings.

In contrast, in firms with weaker corporate governance mechanisms researchers found that more frequent board meetings are associated with more earnings managements, particularly in firms that have been dominated by unqualified board of directors. In this regard, Awais and Wang (2011) test the influence of board meeting frequency on earnings management practices, by using 1009 listed firms on the Shanghai and

Shenzhen stock exchange during the period of 2002 to 2004. Their empirical results show a significant positive association between board meeting and earnings management, where they interpret that as the weakness of corporate governance in this regard.

#### **4.6.1.3 Board Outsiders and Earnings management**

Agency theory suggests that board independence would be increased by the presence of a higher proportion of outside directors on the board (Abed *et al*, 2012). An extensive number of studies have argued that firms whose boards are controlled by outsiders are more likely to be in a better situation to monitor and control firms' transactions and limit managerial discretion (e.g. Bikki, and Tsui, 2009; Cornett, Marcus and Tehranian, 2008; Beasley, 1996).

Dechow *et al* (1996) report that a higher percentage of board outside members is related to a low level of earnings management and this in turn led to more financial reporting credibility in the firms. In other studies, Craven and Wallace (2001) and Xie, *et al* (2003) argue outside members on the board of directors created an independent controlling mechanism over the board process, which mitigated earnings management practices.

Furthermore, Agrawal and Knoeber (1996), Beasley (1996), Peasnell, Pope and Young (2005) and Bushman, Chen, Engel and Smith (2004) found a negative relationship between earnings management and outside members on the board of directors. In a contrary finding, Mather and Ramsay (2006) in their study of Australian firms, found the existence of a high proportion of outsiders among board of directors members to be positively related to unexpected accruals. The studies periods could be the potential reason for the differences between these results.

Other studies found no significant relationship between board outsiders and earnings management practices (e.g. Yang, Chun, and Ramadili, 2009; Osma *et al*, 2007; Klein, 2002; Klein, 1998). Two issues in relation to this findings were raised. Firstly, if firms have higher proportion of institutional shareholders. Secondly, there may be no clear guidance in Corporate Governance Code about electing outside directors, which may result in the appointment of directors who are less effective in their roles.

On the other hand, large numbers of studies have examined the relation between earnings management and the proportion of board insiders (corporate employees). Based on a study with a sample of 500 large firms over 2003 and 2004, Sarkar, Sarkar and Sen (2008) examine the influence of board insiders on opportunistic earnings management. Their results indicate that the board insiders led to an increased level of earnings management practices, particularly opportunistic earnings management.

In a study of 78 non-financial firms from Spain during the period of 1999–2001, Osma and Noguer (2007) found that a higher proportion of insiders among board members is more likely to lead to increased earnings management practices.

In contrast, Nugroho and Eko (2011) provide empirical results for Indonesian companies showing no significant relationship between the number of board insiders and earnings management practices. They attribute this to the nature of the Indonesian market; since it is considered as one of emerging markets that still have weakness in their Corporate Governance Code.

#### **4.6.1.4 Board Independence and Earnings Management**

Beasley (1996) explains that the ability of the board of directors to actively achieve and control their responsibilities in firms was based on the separation of the board from management. However, earlier studies have chosen to focus on the influence of the board independence on the level of earnings management, and this is usually defined with reference to the separation of the roles of CFOs and CEOs. Davidson, Goodwin-Stewart and Kent (2005) examine a sample of 434 listed Australian firms in 2000 and study the impact of the operation of the board of directors on earnings management. They found that independent board members mitigated earnings management. However, Prencipe and Bar-Yosef (2011) found that an independent board has little effect on earnings management in family-controlled firms, particularly if the CEO is one of the members of the board of directors, or is the chairman of the board. In addition, Chtourou Bedard and Courteau (2001) are unable to find a relationship between board independence and earnings management in their sample of US firms.

In addition, and in the context of the UK, Peasnell *et al* (2005) suggest that an independent board of directors is more likely to be related to a decline in earnings management. In another study, Joubert, *et al* (2012) use a sample of 180 firms from both France and Canada between 2006 and 2008. They explore whether the strongest corporate governance mechanism (e.g. board independence, institutional ownership) could lead to a mitigation of earnings at management level. In the USA, Anglin, *et al* (2013) found that an independent board led to a constrained level of earnings management, using a sample of 153 real-estate investment trusts firms between 2004 and 2008.

The aforementioned studies have been expanded to study the influence of the independent board on earnings management both before and after adopting IFRS. Callao and Jarne (2010) found that earnings management increased after the adoption of IFRS in Europe, where the discretionary accruals increased in the period following the implementation. They refer this result to be arising from the difference between the local (GAAP) and the international standards (IAS, IFRS), which then leads to the manipulation. Marra, Mazzolab, and Prencipea (2011) found that the independent board, after adopting the IFRS in Italy, has a negative impact on earnings management. Wang and Campbell (2012) also found that the independent board impacted negatively on the level of earnings management once China had adopted IFRS.

#### **4.6.2 The Characteristics of Audit Committee and Earnings Management**

The importance of this issue arises from the main objective of the audit committee, which is to ensure the transparency and accuracy of the financial statements. The audit committee is therefore one of the most important components in the corporate governance system (Buchalter and Yokomoto, 2003; Beasley and Salterio, 2001; Abbott and Parker, 2000).

In addition to overseeing the process of financial reporting in the firms, the audit committee is also involved in meeting the financial managers and external auditors to go over the audit process, the internal control process and the corporation's financial statements (Vafeas, 2005; Klein, 2002; Wild, 1996). The existence of full audit committees (e.g. qualified, independent and expertise) leads to a strong internal corporate

governance structure, which in turn works to constrain the level of earnings management (Davidson *et al*, 2005).

Audit committee structure has been found by prior studies to be related to earnings quality, For example, Vafeas (2005) found that the characteristics of a strong audit committee (e.g. a large audit committee, frequent meetings, a high level of audit committee expertise and audit committee independence) led to an increase in earnings quality, based on a sample of 252 listed firms in the New York stock exchange from 1994 to 2000.

A large number of studies were compiled and reviewed to further study the relationship between audit committee characteristics and earnings management. For example, Lin and Hwang (2010) compare the results of 48 studies in this area by conducting seventeen tests (using the meta-analytic techniques) to examine the relationship between corporate governance, audit quality and earnings. Their overview reveals mixed results such as a significant relationship between strong corporate governance and audit quality, and a positive relationship between audit committee share ownership and earnings management. On the other hand, a negative relationship between audit committee independence and earnings management were also found. In addition, Baxter and Cotter (2009) argue that the audit committee structure and characteristics play a strong role in the mitigation of earnings management and they found strong evidence that showed the reduction of earnings management throughout firms with a good audit committee structure.

#### **4.6.2.1 Audit Committee Size and Earnings management**

In the UK, audit committees should include two or three non-executive directors because of their relevant experience and qualifications (Song and Windram, 2004). In the context of Jordan, the Corporate Governance Code (2012) stipulates that the committee should consist of at least three non-executive directors (Hamdan, *et al*, 2013). Accordingly, several studies group audit committees' size into small, medium and large sizes based on the number of audit committee members (e.g. Alkdai and Hanefah, 2012).

Prior literature that investigate the relationship between earnings management and audit committee size found mixed results, and they relate this to the differences in corporate governance mechanisms in each country since each country has different structures for its corporate governance based on their legal system, culture and political issues. Saleh, Iskandar and Rahmat (2007) and Abdul Rahman *et al* (2006) indicate in their studies that the number of audit committee members is related positively with earnings management level in Malaysian firms.

In the context of Jordan, Alhaddad *et al* (2011) found that earnings management is affected positively by audit committee size. In contrast, Lin, Li and Yang (2006) found a negative relationship between earnings management and the size of audit committee in America. Finally, several studies such as Bedard, Chtourou and Couteau (2004) and Xie, *et al* (2003) conducted based on USA and Baxter (2009)'s study, which based on Australia, do not find any association between earnings management and audit committee size. Based on the contradictory results from the above studies, we note that the country's economic classification (e.g. developed and developing countries) might affect the nature of the relationship between audit committee size and level of earnings management.

#### **4.6.2.2 Audit Committee Meetings and Earnings management**

The frequency of audit committee meetings is important to the audit committee in providing assistance to the management to resolve any conflicting issue. This could help to improve the internal control mechanism within the firms (Jenny and Lois, 2007). Abbott *et al* (2000) show that the firms with fully independent audit committees that met two times yearly were less prone to financial reporting problems, such as waste, embezzlement and misleading accounting, compared to the firms whose audit committee are not independent.

Prior studies were conducted to explore the relationship between earnings management and the number of audit committee meetings. As with audit committee size, the results are mixed and vary across geographical areas, where the research was based upon. For example positive relationships between the number of audit committees meeting and earnings management was reported by Saleh *et al*, 2007 and Abdul Rahman *et al*, 2006 (Malaysia); and a negative relationship between the number of audit committees meeting

and earnings management was found by; Baxter, *et al*, 2009 (Australian); Bedard, *et al*, 2004 (US); Davidson, *et al*, 2005 (Australian); Xie, *et al*, 2003 (US). The differences between these results are related to: (1) the existence of an active audit committee and is associated with a reduced level of earnings management, and (2) the classification as developed and developing economy could be another reason, whereas all studies that were completed using data from developing countries indicate a positive relationship while those using data from developed countries exhibit a negative relationship. Finally, Thoosamut and Jaikengkit (2009) found no relationship between numbers of audit committee meetings and earnings management in Thailand.

#### **4.6.2.3 Independence of Audit Committee and Earnings management**

Prior research presents ample evidence on the relationship between earnings management and audit committee composition. Klein (2002) predicts that an independent audit committee will reduce earnings management since an audit committee is the best mechanism to serve and oversee the financial accounting process. Accordingly, he finds high abnormal accruals in the firms whose audit committees do not contain a majority of independent members, and lower abnormal accruals where there is an independent audit committee. In a similar vein, Saleh *et al* (2007) and Abbott *et al* (2000) found that the association between earnings management and independent audit committees is negative. Based on this result, they conclude that an independent audit committee is considered as a strong mechanism in corporate governance as it reduces the manipulation of earnings arising from opportunistic behavior by managers.

Paik and Selby (2011) also found that the firms with a majority of independent audit committees were more likely to affect managers' discretionary behaviour. In the context of Singapore and Malaysia, Bradbury, Mak and Tan (2006) show that the independence of audit committees led to higher accounting quality, measured by abnormal accruals models that demonstrate increasing income earnings management. Earnings quality assurance is one of the most important issues matters to shareholders as they would exert more efforts (e.g. controlling and assessing the audit committee and board of directors processes) to ensure the credibility of financial statements so as to achieve their objectives. Dhaliwal, Naiker and Navissi (2010) found that the existence of an



independent audit committee where the members do not hold multiple directorships leads to an increase in accruals quality. In the context of America, Lee, Mande and Ortman (2004) show that the emergence of fully independent audit committees and boards of directors has resulted in a reduction in the number of resignations of external auditors as the reported financial performance of the firm became more reliable and credible.

#### **4.6.2.4 Audit Committee Expertise and Earnings Management**

Audit committee expertise is another important factor in the corporate governance mechanism. The level of expertise in the audit committee could lead to an increase in financial reports quality (Baxter and Cotter, 2009). This is in relation to audit committee members holding the necessary qualifications, professional certificates, skills, and experience in accounting and financial issues that would help improve the effectiveness in the audit process and ensure the accuracy of financial reports (e.g. Hamdan, *et al*, 2013; Bedard, *et al*, 2004). Bedard *et al* (2004) found that the existence of at least one audit committee member with a financial degree and financial background led to a reduction in earnings management in the USA. In another study that is based on a sample of 266 listed firms in China in the year 2004, Lo, Wong and Firth (2004) argue that firms with a high level of audit committee expertise are likely to engage in less earnings management, particularly, engaging in transfer pricing. Based on a sample of 300 firms listed in the Malaysian stock market, Puat and Susela (2013) presented empirical evidence showing that the existence of “experts” in the audit committee (whether the expertise was in accounting or another area relevant to the firm) was significantly related to the magnitude of earnings management. Other studies such as Abdul Rahman, *et al* (2006), who use data from Malaysia, and Lin, *et al* (2010), who use from USA instead, however found no association between earnings management level and audit committee members’ competence.

Finally, there are a few studies that have studied the effects of other audit committee members’ personal characteristics (e.g. audit committee member age, and gender) on earnings management practices. For example, Erhardt, Werbel and Shrader (2003) investigate the association between audit committees’ gender and they found that diversity on the audit committee influenced firms’ earnings positively. In a more recent

study, Qi and Tian (2012) provide evidence, showing that the older audit committees are more likely to undertake audit work to detect earnings management than younger committees; male dominated audit committees are also found to be less efficient than female dominated audit committees; and audit committees with more experienced members are found to be more effective in reducing the level of earnings management in the firm.

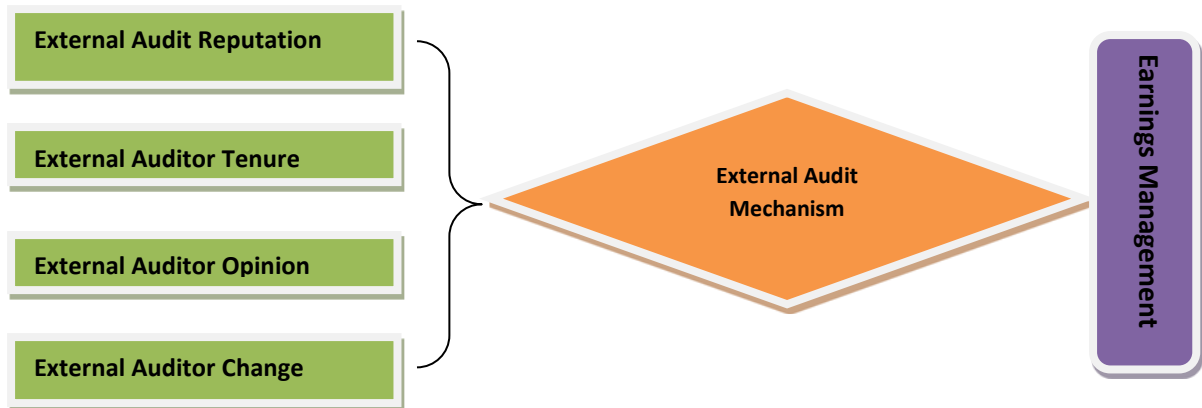
### **4.6.3 External Auditors and Earnings Management**

This section discusses the external audit function as another factor within the corporate governance mechanism. External auditors play a big role in mitigating the earnings management levels. Their influences have created much awareness following the WorldCom and Enron scandals (Velury, 2005). Mariani, Tettamanzi and Corno (2010) conducted a study using 157 annual reports of non-listed Italian companies over 2004 – 2005 and show that earnings management was involved when a firm was audited by one of the big four auditors. The external audit process involves reassessing and monitoring the internal control systems of the firm. This includes auditing financial statements to reduce the level of mistakes or errors in these statements such as, material mis-statements and changing accounting methods without fully disclosing them in the firm's annual report.

In prior literature, the researchers have identified several factors that could affect the external auditor's ability to increase or decrease earnings management such as, external auditors' reputation, external auditors' tenure, industry specialist auditors, external auditors' opinion and changes in external auditors (Alghamidi, 2012; Habbash, 2010; Piot and Janin, 2007; Mariani *et al*, 2010). In the context of Jordan, Alhayale and Lan (2005) use questionnaire methods to explore the association between earnings management and external auditors factors and they found external auditors'

characteristics affect the level of earnings management, particularly in firms where managers are not behaving ethically. In another study, Alkhabash and Althuneibat (2008) document that the external auditors are believed to have known that the management significantly engaged in legitimate earnings management either (income decrease or income increase). Figure (4.2) explains the association between earnings management and external auditors' factors.

Figure 4-2 the Relationship between External Audit Mechanism and Earnings Management Level



Based on Figure (4.2), this research discussed the effect of external auditing mechanism factors on earnings management as follows:

#### 4.6.3.1 External Auditor Reputation and Earnings Management

Most of the prior literature assess the audit reputation by reference to whether the auditor is one of the Big Four firms and assume that a large audit firm implies higher audit quality, which in turn leads to an increase in financial reporting transparency and credibility (e.g. Krishnamurthy, Zhou and Zhou, 2006; Beatty, 1989). In a recent study about situation in Portugal, Alves (2013) provides evidence that the appointment of a Big Four external audit firm and independent audit committees together have led to a reduction in earnings management practices.

Krishnamurthy *et al* (2006) investigate the effect of external auditors on financial reporting quality, using Arthur Andersen as a case study, and conclude that strong external auditors, particularly the big-four firms, are playing a major role in mitigating mistakes or errors in financial reporting, but they do not consider earnings management directly.

In the last decade, several studies investigate how external auditors' reputations (e.g. by auditor type and auditor industry specialization) are constraining earnings management practices in the firms (Kanagaretnama, Lim and Lobo, 2010). DeBoskey and Jiang (2012) based their study in the US banking sector, and found that auditor industry specialization reduced income smoothing. In a similar vein, Krishnan (2003) demonstrates that industry specialist auditors decrease accruals-based earnings management more than non-specialist auditors.

#### **4.6.3.2 External Auditor Tenure and Earnings Management**

Auditing standard setters suggest that the length of tenure of external auditors may affect their independence. The longer the number of years of services provided by the external the more likely they are to build strong personal relationships with their clients' (i.e., the firms) management. This may lead them to be less watchful and develop the tendency to conduct auditing in a mechanical rather than an analytical way (Piot *et al*, 2007). Davis, Soo and Trompeter (2009) found a strong association between discretionary accruals and short-term audit firm tenure, long-term audit firm tenure especially before the compliance with Sarbanes-Oxley Act of 2002 (SOX). This relationship disappeared after complying with (SOX). Based on a sample of 4720 firms in US over 2000 – 2001, Gul, Jaggi and Krishnan (2007) found a positive association between non-audit fees and earnings management in the firms that have short-term auditor tenure.

In another study, Myers, Myers and Omer (2003) argue that they expect longer audit tenure to reduce earnings quality in US, but in fact, their empirical findings show the opposite result where long term audit tenure leads to an increase in earnings quality, and they relate this different result to the differences of environment and economic circumstances such as, industry growth, auditor age, and industry type.

#### **4.6.3.3 External Auditors Opinion and Earnings Management**

Prior studies have investigated the association between earnings management and the firms that are receiving a going-concern modified audit opinion. These studies present mixed empirical results regarding the relationship. Omid (2015), for example, provides evidence showing a positive relationship between qualified opinions and discretionary accruals in Iran, which means that the higher the level of discretionary accruals, the greater the possibility of receiving a qualified opinion. Consistent with this study result, Similarly, Chen, Chen and Su (2001), who based on data from China and Bartov, *et al* (2000) and Francis and Krishnan (1999), who both based on data from US, also found the same result.

On the other hand, Herbohn and Rangunathan (2008) examine the association between receiving a qualified audit opinion and earnings management in Australia, where their results show a significant negative relationship between both of them. In the same year, and based on a sample of Spain firms, Arnedo, Dallo and Alegria (2008) found also, a negative relationship between qualified opinion and discretionary accruals. A few studies, however, found no relationship between earnings management and audit opinions. For example Butler, Leone, and Willenborg (2004) who based their data from the US.

Based on the mixed results in the aforementioned studies, most of these studies come to the conclusion that there are two reasons behind these mixed results: (1) the nature of the relationship between external auditor and firm management and the extent of their independence, and (2) Variation in the extent of compliance in the application of corporate governance policies in each country.

#### **4.6.3.4 External Auditor Change and Earnings Management**

The association between external auditor changes and earnings management has recently become an important consideration for regulators and academic researchers (Alghamidi, 2012). For example, Chung, Firth and Kim (2005) and Gaver and Paterson (2001) argue that changing to a large audit firm (now the big four but at the time of the study the big six) is deemed to be an important factor in detecting managers' earnings manipulations. These studies findings supported their arguments, where they found that the firms audited by big audit firms are related to less earnings management. Study by Hackenbrack and

Hogan (2002), which is based on a sample of 802 auditor changes over 1991 – 1997 in the US, show that earnings quality is low in the firms that changed their external auditors from the big four to non-big four companies in order to save auditing fees. They found that the firms that used the big four external auditors are more likely to prevent managers' opportunistic earnings management. However, existing literature on the relationship between earnings management and external auditor change also suggests that the audit fees are the main concern, rather than any consideration of earnings management, that could lead firms to change their external auditors from the big four auditors to non-big four auditors (e.g. Ettredge, Li and Scholz, 2007; Grothe and Weirich, 2007; Turner, Williams and Weirich, 2005).

#### **4.6.4 Ownership Structure and Earnings Management**

Ownership structure is deemed to be another important factor that is likely to be related to a range of accounting issues such as earnings quality, audit quality, audit fees, firm performance and earnings management. A large number of studies have examined the impact of ownership structure on earnings management. Hosseini and Abdoli (2012) show that the type of corporate ownership, composition of board and family ownership significantly could affect the level of earnings management. In addition, Alves (2012) also attempts to examine the effect of ownership structures (e.g. managerial ownership, ownership concentration and institutional ownership) in mitigating earnings management levels in Portuguese firms. Their findings show mixed results. For example, they found a negative relationship between managerial ownership, ownership concentration and discretionary accruals, but no significant relationship between institutional ownership and discretionary accruals.

Veprauskaite and Adams (2013) found that ownership concentration is negatively associated with firms' financial performance in the UK. In contrast, study by Yang and Krishan (2005) which is based on a sample of 896 firm-year observations in the US during the period of 1996 – 2000, documents that the ownership structures have a significant effect on earnings management practices.

In the context of Jordan, Alfayoumi, Abuzayed, and Alexander (2010) examine the influence of ownership structure (e.g. managerial ownership, institutions ownership and

block-holders ownership) on earnings management by using a sample of industrial listed firms in the Amman Stock Market in the period 2001-2005. Their findings show that the relationship between earnings management and managerial ownership is significantly positive, and there is no relationship between the other two types of ownership structure and earnings management.

Lopez and Jara (2007), using a sample of 185 Chilean industrial firms over 1991-2001, find that the ownership concentration has a non-linear relationship with earnings management. This result can be explained by the conflicts between large controlling shareholders and minority shareholders' interests. Some researchers suggest that, contrary to Agency Theory, the conflict between shareholders and managers interests could affect earnings management level less than the conflict between large and small shareholders' interests (Fan and Wong, 2002; Bianco and Casavola, 1999).

Table (4.3) gives the details of the concentration of ownership in Jordanian industrial firms, based on the information from Amman Stock Market, including the average ownership concentration for eleven sectors.

Table 4-3 Ownership Concentration in Jordanian Industrial Firms (Shareholders owning 1% and more 2012/2013)<sup>1</sup>

Sector name	Managerial Shareholders %	Institutional Shareholders Foreign %	Institutional Shareholders Local %	Individual Foreign %	Individual Local %	Family ownership %	Blockholder ownership <sup>2</sup>	State ownership %
Pharmaceutical and Medical Industries	58.0	10.0	14.0	12.0	36.1	32.0	50	3.0
Chemical Industries	37.4	2.2	26.3	4.6	45.0	29.2	89	0.5
Paper and Cardboard Industries	65.2	10.0	52.1	12.0	11.6	4.0	100	0.6
Printing and Packaging	82.0	40.0	49.7	-	3.1	-	100	-
Food and Beverages	73.0	18.4	42.8	0.7	22.9	24.7	100	1.0
Tobacco and Cigarettes	59.0	1.00	64.0	4.0	15.0	-	100	-
Mining and Extraction Industries	53.0	19.0	25.0	3.0	29.0	17.0	89	11.1
Engineering and Construction	42.1	14.6	35.7	5.6	22.5	11.1	100	2.0
Electrical Industries	47.8	23.3	24.4	1.9	20.3	12.4	100	3.00
Textiles, Leathers and Clothing	34.5	1.50	41.7	1.10	26.0	11.1	80	16.9
Glass and Ceramic Industries	18.0	-	23.2	3.9	21.0	9.0	100	-
<b>TOTAL (AVERAGE)</b>	<b>51.8</b>	<b>12.7</b>	<b>36.3</b>	<b>4.4</b>	<b>23.0</b>	<b>13.7</b>	<b>92</b>	<b>3.0</b>

<sup>1</sup> These categories are not mutually exclusive and therefore the rows in Table 4.3 do not add up to 100%, since individual and family ownerships are overlapping according to the Amman stock market bulletin (Amman stock market, 2015). This information has been provided by the Amman stock market. Jordan has a different system to divide ownership types, since institutional, individual, blockholders and family ownerships overlap with each other and this is the main reason that in Table 4.3 the figures do not add up to 100% for all types of ownership. For example, the Amman stock market considered family ownership as part of individual ownership whether local or foreign. Blockholders are also considered as part of the individual and institutional ownership. Furthermore, the Securities Depository Center (SDC) (2015) stated that ownership is registered under the name of the beneficial owner whether individual or judicial.

<sup>2</sup> This variable was measured in our study by giving a dummy variable of value 1 if the firm has external stockholder ownership of 5% or more of the outstanding shares.



According to Table (4.3), ownership concentration in Jordanian industrial firms is classified as: managerial ownership or insider ownership (51.8%), local institutional ownership (36.26%). Foreign individual ownership and foreign institutional ownership with 4.44% and 12.73% respectively.

The empirical analysis in chapter five explores the relationship between earnings management and the following categories of ownership: (1) family ownership, (2) individual ownership, (3) state ownership, (4) managerial ownership (5) institutional ownership, and (6) block-holder ownership. The following sections review the literature relating to each of these ownership categories.

#### **4.6.4.1 Family Ownership and Earnings Management**

Previous literature indicates that family ownership is more concentrated in developing and East Asian countries than in developed countries (e.g. Yang, 2010; Fan *et al*, 2002). Fan *et al* (2002) in their study document that a higher level of family ownership has led to more earnings management and constraints on the participation of minority shareholders. In another study that includes a sample of firms from Standard and Poor's (S&P) 500 index, Wang (2006) shed light on the association between earnings quality and founding family ownership, by using abnormal accruals models (following Dechow *et al*, 2002) to measure earnings quality. Their empirical results show the higher levels of family ownership are associated with lower abnormal accruals.

In another similar study, Yang (2010) found the tendency of chief executive officers (CEO) in non-family firms to manage firms' income was higher than a chief executive officer in family firms, which means that family firms are less engaging in earnings management compared to non-family firms to keep their reputation in the market. Cascino, Pugliese, Mussolino, and Sansone (2010) use a sample of non-financial listed firms in Italy's stock market from 1998-2004, argue that the quality of financial information in the family firms is higher than non-family firms and their findings support their argument.

Several other studies have suggested that family-controlled firms have lower levels of earnings management as they attempt to keep their reputations at the best level (e.g. Prencipe *et al*, 2011; Jara and López, 2011; Block, 2010; Jaggi, Leung, and Gul, 2009; Siregar *et al*, 2008).

The literature as reviewed above shows that some academic researchers had found a positive association between family ownership and earnings management level. They relate this result to family owners' misunderstanding of other shareholders' interests and assume the family owners' interests are similar across the different shareholders, because they know their business best. As for the academic researchers who found a negative relationship between these two factors, they relate this to the fact that these firms operate strong corporate governance systems in order to safeguard the reputation of the families.

Researchers also further examine the relationship between earnings management and family ownership by extending the models to include the effect of several corporate governance mechanisms. Jaggi and Leung (2007) in their study conducted based on Hong Kong's data in 1999-2000, found that family-controlled firms with an audit committee had low levels of earnings management. Chen and Jaggi (2000) argue that in family firms the existence of independent non-executive directors is positively related to a level of financial disclosure.

#### **4.6.4.2 Individual Ownership and Earnings Management**

Individual ownership is the ownership of shares by individual rather than by institutions, which could include insurance company and banks. Family owners are considered a subset of individual owners. Individual ownership has received little attention in the literature and this may be because we find this type of ownership most often in developing countries such as, Jordan and Indonesia (Denisa *et al*, 2003). Table 2.3 shows that individual ownership, both foreign and locally based, constitute more than 25% of the ownership of firms in Jordan, implying the significant importance to include them when analyzing earnings management practices in the industrial sector.

Only a few prior studies have examined the effect of individual ownership on earnings management (e.g. Alfayoumi *et al*, 2010; Siregar and Utama, 2008; Ali, Salleh and Hassan, 2008). Based on the sample of listed industrial firms in the Amman stock exchange over 2001 to 2005, Alfayoumi *et al* (2010) document that there is no significant relationship between individual ownership and earnings management, where they measure this variable by using *the percent of shares held by the individual block-holders (excluding managers) who own 5% or more of firm's equity share capital*. Furthermore, Ali *et al* (2008) also present similar findings to that of Alfayoumi *et al* (2010), showing that there is also no significant relationship between earnings management and individual ownership in Malaysia.

Although the empirical results reported in the literature for individual ownership are not strong, this factor is included in our analysis because there are theoretical reasons for its inclusion and in our case the same arguments applied to this factor as to family ownership.

#### **4.6.4.3 State Ownership and Earnings Management**

State ownership has received a greater attention in academic research compared to other types of ownership structures around the world. A large number of academic researchers have analysed the role played by state ownership in corporate governance mechanisms and earnings quality, (Wang and Yang, 2011; Shleifer *et al*, 1997).

Organisation for Economic Co-operation and Development (OECD) (2005) states that state ownership is considered a major challenge for numerous countries' economies. It is a complex issue, especially concerning the relationship between state ownership responsibilities and ownership functions (e.g. nominating board of directors and limit their responsibilities in the same time). Furthermore, ensuring honest competition between private sector and state-owned firms without government intervention by establishing new regulations, taxes and policies to affect the private sector, is also another challenge.

Based on the Jones and modified Jones accrual models, Wang *et al* (2011) argue that state ownership reduced earnings management levels in China. The authors suggest that the protection of state-owned firms by the government might reduce managers' discretion to manage firm earnings. Ding, Zhang and Zhang (2007) found that firms with state ownership are more likely to have earnings management than private firms that are family owned. In the context of Jordan and other Arab countries, several studies have investigated the relationship between state ownership and firms' performance. These studies suggest that state-ownership is negatively related to firms' performance, which leads to a greater possibility for managers to use their discretions to manage earnings (e.g. Alfaraih *et al*, 2012, (Kuwait); Omran, Bolbol and Fatheldin, 2008, (Egypt, Jordan, Oman and Tunisia); Zeitun, 2009, (Jordan)).

Wang, Wong and Xie (2008) found that state-owned firms have limited responsibilities to hire auditors. They explained that the structure of state ownership in China involves three levels as follows: (1) provinces, (2) cities, or (3) counties. Jordan, as a developing country, also has different levels of state ownership such as, ministries, state treasury, and Social

Security Department. The interactions among these different levels make the understanding of the relationships in state ownership more complicated.

#### **4.6.4.4 Managerial Ownership (Insider ownership) and Earnings Management**

Prior literature on the influence of managerial ownership on earnings management does not provide a consensus on whether the relationship is positive or negative (Ruan, Tian and Ma, 2011; Nahum and Hoang, 2008, Warfield, Wild and Wild, 1995). Warfield *et al* (1995) argue that level of managerial ownership creates great incentives to manipulate accounting numbers in order to achieve managers' personal objectives. In the context of Japanese firms, Teshima and Shuto (2008) develop a new model which suggests that a high proportion of managerial ownership led to a decrease in earnings management.

Based on a large sample of Taiwanese listed firms during the period from 1997 – 2004, Yang, Lai and Tan (2008) examine the relationship between director ownership, as proxy for managerial ownership, and earnings management based on the modified Jones model, through which they found a positive association between managerial ownership and discretionary accruals. In another study based on data from Singapore, Yeo *et al* (2002) found a positive association between managerial ownership and income-increasing discretionary accruals.

In a similar vein, Sanchez-Ballesta and Garsa-Meca (2007) found that when company insiders own a small percentage of shares, there is likely to be a lower level of earnings management; and when they own a large percentage this tends to be related to a high level of earnings management. Also, based on a study that includes 22 countries, Gopalan and Jayaraman (2012) investigate the association between insider control in firms and earnings management. They conclude that having a higher proportion of insiders among shareholders led to more earnings management practices in these countries.

Finally, the main reason why these results lack consistency is the lack of a unified system of corporate governance for all countries, and this may be because these country have different legal systems. These countries may have each applying the civil law, the common law, religion law or a combination of a few of them. Jordan is one of the countries that apply more than one law (e.g. Sharia'a law, tribal system, and civil law). For example, under the tribal system firm may be forced to employ the same individuals as owners and managers.

#### 4.6.4.5 Institutional Ownership and Earnings Management

Institutional ownership has been linked in the prior literature to accounting characteristics such as, corporate operating performance (e.g. Alfaraih, Alanezi1 and Almujaed, 2012; Cornett, Marcus, Saunders, and Tehranian, 2007); research and development (R&D); corporate investment performance (e.g. Fung and Tsai, 2012; Eng and Margaret, 2001; Bushee, 1998); quality of reported earnings (e.g. Velury and Jenkins, 2006); and earnings management (e.g. Koh, 2007; Koh, 2003; Chung *et al*, 2005). The reason for this is that institutional investors have the power to control and monitor corporate managers and can affect the board of directors' decisions, which places institutional owners at the heart of the firm's corporate governance system(Ping and Wing, 2011, Rose, 2007).

Bushee (1998) and Velury, *et al* (2006) define institutional ownership as investors that hold no less than \$100 million from total firm equity. In our study institutional ownership is defined in the same way as the Amman stock exchange definition, and relates to the type of shareholder rather than the amount of investment. Level of institutional ownership plays a big role in affecting earnings management; for example when institutional investors own a large number of firms' shares that could allow them to monitor the firm, this in turn might create the incentive for the firm to manage their earnings upward, to meet the requirements of the institutional investors (Koh, 2003).

The size of the effect of institutional investors on earnings management levels varies. Koh (2003) found that, in the context of Australian firms, institutional investors are associated with income increasing discretionary accruals in the short term, and but that long-term institutional investors are associated with a reduction in aggressive earnings management.

Prior studies have also divided institutional ownership into foreign institutional ownership and local institutional ownership and investigate the effect of each one of them on earnings management practices. For example, Heard and Sherman (1987) found that local institutional ownership led to more relationships between investors and managers which in turn led to more engagement in earnings management in an attempt to achieve the objectives of the local institutions. On the contrary, Ben-Nasr, Boubakri and Cosset (2012) propose a theory different to Heard *et al* (1987), where they argue that local institutions could lead to increase managers' monitoring, which would lead to less risk of firms manipulating earnings.

Foreign institutional ownership is another important issue in general since it could lead a country's economy into two states: the first one is a positive state, where the foreign investment leads to the economy booming through a decreasing unemployment rate. The second is a negative state, which leads to reduction of the average stock return in capital markets particularly in developing countries, and Jordan not isolated from this dilemma. Lel (2013) used a samples from 75 countries over the period 1999-2012 to examine the effect of foreign institutional ownership on earnings management and he found that foreign institutional ownership is related to low earnings management levels.

#### **4.6.4.6 Block-holders' Ownership and Earnings Management**

Block-holders' ownership is defined as a large number of shares that are owned by investors, and there are numerous distinct forms that these investors take. These include banks and trusts, mutual funds, individual investors, and pension funds Zhong, Gribbin and Zheng (2007) define outside blockholders "*as those shareholders who own at least 5 percent of a firm's outstanding common stocks while they serve neither as the firms' executive officers nor on the board directors*". In these circumstances, there could be a small number of investors who hold most of the firm shares, this means that there is the possibility of greater incentives to manipulate earnings, to meet the interest of these investors. However, government regulations tend to play a significant role to protect the interests of small investors, as big investors that have more power by virtue of being large (Shleifer *et al*, 1997).

Jensen and Meckling (1976) is one of the earliest studies to examine the effect of the role of block-holders in corporate governance, suggesting that monitoring by block-holders could be a way to reduce agency costs. Zhong *et al* (2007) use 5,475 firm-year observations from the New York Stock Exchange to examine two hypotheses: (1) outside block-holders have a higher ability to monitor earnings incentives than small shareholders which leads to a decrease in earnings manipulation, and (2) the higher investment return rate for block-holders could lead them to put pressure on management to manage their earnings, particularly with income-increasing techniques. Their empirical results show that the presence of block-holders is positively related with a level of discretionary accruals, especially for firms that faced declining pre-managed earnings. Regarding the second hypothesis, they found no relationship between block-holders and income-increasing earnings management, particularly in the firms that comply with GAAP.

Dechow *et al* (1996) found that a lower percentage of block-holders in firms is considered to be a significant incentive for managers to engage in earnings manipulations in the US. In another study based on data from Tunisia, Halioui and Jerbi (2012) suggest that the level of discretionary accruals is affected by the presence of block-holders, and earnings management is not affected by block-holders ownership.

The mixed results among the aforementioned studies may derive from variation in the regulatory environments found in different countries. In the context of developed countries, the government and equity market regulations generally do not allow high ownership concentration by a limited numbers of shareholders (e.g. Black and Coffee, 1994, (United Kingdom); Roe, 1994, (United States)). In contrast, the concentration of ownership in developing countries is less restrictive. For example Alfayoumi, et al (2010) report that one or two shareholders frequently could hold a high portion of firm shares in Jordan firms. Isenmila, *et al* (2012) suggest that the existence of block-holders is more likely to lead the firm's managers to manipulate earnings upward in Nigeria.

#### **4.6.5 Chief Financial Officer (CFO), Chief Executive Officer (CEO) and Earnings Management**

Prior literature used the CFOs and CEOs incentives to explore the effect of CFOs/ CEOs roles on earnings management. The Securities and Exchange Commission (SEC) (2002) stipulate that the CEO's and CFOs in big public firms have to certify the financial statements in the US. Caixing and David (2008) examine the impact of CEO/CFO qualifications on earnings management. Their results show that firms with CFOs and CEOs with more qualifications have lower earnings management levels. They found more income-increasing earnings management than income-decreasing earnings management. In the same vein, Jiang, Petroni and Wang (2010) provide empirical results, showing that the CFO and CEO equity incentives could increase the chances of managing firm earnings.

Many authors suggest that the stock value incentive is one of the most important motivations that leads the CFOs and CEOs to engage in earnings management. For example, Bergstresser *et al* (2006) found that firms where their top management and CEO compensation related to stock value are more likely to manage their earnings upward. Joubert *et al* (2010) found that CEOs based in Canada and France who owned stocks in their firms have a greater incentive to manage their earnings upward. Furthermore, Fenga, Ge, Luo and Shevlin (2011) argue that

not only are the CFOs and CEOs engaged in managing firms' earnings in order to achieve their incentives (e.g. increase their stock value), they are helping each other at the same time. For example, CFOs, who managed firm earnings, not only are they doing that for their personal benefits, but also to achieve CEOs incentives since they are at the level that give them the power to do so.

In a recent study conducted in the UK that include 468 firms listed on the London Stock Exchange (LSE), Veprauskaite, *et al* (2013) found that CEOs' power, measured by proxies such as CEO/chairman duality, CEO share ownership and CEO tenure, impacts negatively on firms' financial performance and this may create more need to use earnings management.

#### **4.7 Summary**

This chapter aims to provide a brief view of the background of Jordan, the culture of legal systems, and the important regulations that are related to this research. In addition, this chapter has reviewed the literature on the association between earnings management and corporate governance mechanisms. A number of corporate governance issues are discussed, namely, definitions of corporate governance, board of directors' characteristics, audit committee characteristics, chief financial officer (CFO), chief executive officer (CEO), external auditors, and ownership structure. The chapter then discussed how the corporate governance factors are believed to have an effect on earnings management levels.

The literature review has revealed relatively inconsistent findings about the relationship between corporate governance and earnings management for developing and developed countries. For example, the studies related to the number of board meetings to earnings management in developed countries found that more board meetings tended to reduce earnings management (e.g. Anglin *et al*, 2013; Xie, *et al*, 2003), whereas the opposite appears to be true in developing countries (e.g. Awais and Wang, 2011). Furthermore, some of the empirical results, such as Joubert *et al* (2010), found no association between board characteristics and earnings management level.

Part of the explanation for this is that the corporate governance systems and the structure of corporate entities varies from country to country since each country has its own characteristics. For example, in Jordan, managerial ownership is the largest ownership category (51.83% in Table 2.2), whereas family ownership is the most common ownership



type in Italy (Cascino *et al*, 2010). In another example, in Jordan, state ownership is the smallest ownership category, whereas institutional ownership is the largest ownership type in Kuwait (Alfaraih *et al*, 2012).

This chapter has discussed the literatures that investigate the relationship of internal control, corporate governance mechanisms and earnings management around the world, which would form a basis for comparison with regards to our empirical findings to be presented in chapter 5. The next chapter reviews the literature related to earnings management issues such as earnings management motivations (e.g. opportunistic and beneficial earnings management motivations) and earnings management models used in prior studies. We provide a critique of the published earnings management models that will be used in this research and other models that are considered important, and discuss earnings management in the context of agency theory. This analysis helps us to choose appropriate earnings management models for our empirical analysis in chapter five (empirical chapter).

## **5. Chapter Five: Research Methodology and Data Collection**

### **5.1 Introduction**

The previous chapter presents literatures about Jordan's political history, economic history and internal control practices. It also includes the legal system, the auditing profession and corporate governance mechanisms. The understanding of issues underlying the literature is helpful when interpreting empirical results from quantitative analysis and interviews in a wider context. This chapter discusses the literature relating to earnings management models and their development.

This chapter is organised as follows: Section 5.2 discusses the research methodology and research paradigm. Section 5.3 analyses some important issues concerning mixed methodologies in social science research. Section 5.4 explains the research methodology adopted for our study. Section 5.5 details the hypotheses and research questions and identifies ways to collect relevant empirical evidence. Section 5.6 explains the data collection methods, including semi-structured interviews and secondary data (financial data). Section 5.7 reviews the analytical procedures for the quantitative analysis of secondary data and the qualitative empirical methods employed in the semi-structured interviews, and section 5.8 presents a chapter summary.

### **5.2 Research Methodology and Research Paradigm**

An important step in conducting social science research is to choose and justify a suitable research paradigm to be used by the researcher, which in turn enables the researcher to understand the phenomena that he/she is investigating and to determine the suitable research tools. Easterby-Smith, Thorpe and Lowe (2002) present three arguments on the importance of research philosophy: firstly, it assists the researcher in refining and identifying research methods related to the researched phenomena. Secondly, knowledge of research philosophy helps the researcher to evaluate the differences between research methodologies and methods and hence avoid using unsuitable methods in the early stages. Thirdly, it allows the researcher to gain new knowledge by adopting a new methodology of which he/she has no previous experience.

To determine the appropriate research philosophy epistemological, ontological and methodological assumptions were investigated. Epistemology has been defined as "...the

possible ways of gaining knowledge of social reality, whatever it is understood to be” (Blaikie, 2000) (page 8). Consequently, and based on this definition, epistemological is assumed to be the practical term for the theory of knowledge (Marsh and Stoker, 2002). Research philosophy has two epistemological positions: namely, positivism and interpretivism (Hussey and Hussey, 1997).

The two most popular epistemological paradigms in social research philosophy are (1) the positivism paradigm, and (2) the interpretivism paradigm (Bryman 2008; Hussey and Hussey 1997), both of which are used extensively in accounting research. The positivism paradigm is the approach that investigates studies with complex sets of facts and associations between those facts (Smith 1998).

This paradigm is frequently associated with quantitative methods of analysis that examine the relationships between measurable variables (Bryman 2008). The aim of such research is to reveal patterns within quantitative data that can be used to produce general laws and to predict future pattern of behaviour (Blaikie 2007). One of the biggest problems facing researchers using these approaches is the extent to which their results can be generalised, in other words, how to make the connection from the empirical world to the mental world.

The interpretive paradigm solves this problem in a different way, by attempting to directly uncover the means by which this process of connection occurs. In their definition, Hughes and Sharrock (1997) define interpretivism as a paradigm that researches the essential differences between the natural (empirical) world and the social world.

Some of the criticisms levelled at the interpretivist paradigm are that the methods associated with it (e.g. the interview method) are not generalisable; it cannot produce universal laws, and that the research is strongly affected by the individual characteristics and backgrounds of the researchers. Table (5.1) presents the differences between positivism and interpretivism.

Table 5-1 The Differences between the Positive and Interpretive Paradigms.

<b>Characteristic</b>	<b>Positivist View</b>	<b>Interpretive View</b>
Purpose	The researcher will predict and explain changes from the forensic knowledge of participants	The researcher will interview the participants and recognise the value and depth of individual content
Research Methods	Quantitative	Qualitative

Characteristic	Positivist View	Interpretive View
Beliefs	<ul style="list-style-type: none"> <li>• One truth exists</li> <li>• Must be objective</li> </ul>	<ul style="list-style-type: none"> <li>• Many truths and realities</li> <li>• Different people have different perceptions, needs and experiences</li> </ul>
What Study Data is Based Upon	Measurable outcomes from measurable data	Descriptive, explanatory and contextual words from interview data
Study Sample	Clear and precise inclusion and exclusion of data	Representatives who are able to provide expertise from different points of view

**Source: Kukn 1962.**

After reviewing prior literature, this thesis has investigated two approaches: namely, the deductive and inductive approaches. These two approaches are related to epistemological paradigms (the positivist paradigm and the interpretivist paradigm), where the deductive approach is related to the positivist paradigm and the inductive to the interpretivist. In other words, deductive research relates to hypothesising relationships according to an existing theory or a set of theories before testing these hypotheses by collecting and analysing data. The inductive approach is applied when data is collected and analysed first, and a theory is developed to rationalise the findings of the data analysis.

Ontology is defined as “...claims and assumptions that are made about the nature of social reality, what exists, what it looks like, what units make it up and how these units interact with each other. In short, ontological assumptions are concerned with what we believe constitutes social reality” (Blaikie, 2000) (page 8). Flahive, Tanlar, Rahayu and Apduhan (2011) defined ontology “...as the specification of conceptualization, used to help programs and humans share knowledge” (page 618). Marsh and Stoker (2002) stated that understanding the nature of the research politically, economically and socially will help the researcher to determine the appropriate ontological position, whereas there are two contrasting ontological positions which support the categorisation of the ontological viewpoints of researchers, namely, subjectivism and objectivism (Burrell and Morgan, 1979).

This choice is informed by an understanding of the ontology of the discipline in question. Consideration of ontological philosophies will affect the approaches researchers use to assess their research, and how the research relates to real world phenomena (Blackburn, 1996). In the context of an accounting study, Brown and Brignall (2007) discussed three ontological worlds in connection with research approaches as categorised in prior studies such as, Popper

(1972), Sayer (1992) and Archer (2003), and these worlds are as follows: the physical world, the mental world, and the intelligible world (the world of ideas). Many studies in accounting are informed by this concept of a three-tiered reality, which can be found in philosophical approaches such as Critical Realism (see for example Archer, Bhaskar, Collier, Lawson and Norrie, 1998) or more recently in Pragmatic Constructivism (see for example Dewey, 2009) and Actor Network Theory (see for example Latour, 2005). Within this kind of framework, the difficulties of the middle tier, which translates and connects the physical (empirical world) to the world of ideas (theories), are explored. What these approaches have in common is a motivation to examine the tendencies and mechanisms through which the different worlds are connected and to explore ways in which they can be made to talk to each other.

Research methodology is a core issue in research procedures. It allows researchers to understand the problems to be examined in their research and choose the appropriate research method. Research paradigm is also important to the understanding of the epistemology of a particular field of study and for the researcher to understand the contribution to knowledge made by his/her research. Research may be defined as: “a process of intellectual discovery, which leads the researchers to understand the world around them by transforming the knowledge (objects and subjects) that is produced from this world to proper information to help the internal and external users of this information” (Ryan, Scapens and Theobald, 2002).

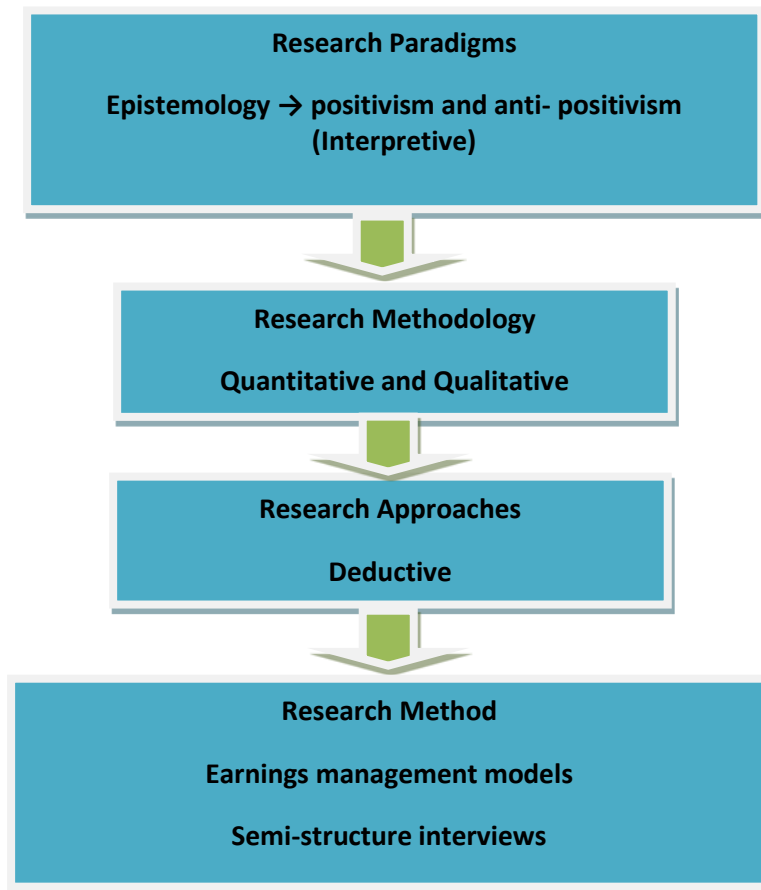
Burrell and Morgan (1979) conceptualised social science research as having two dimensions (subjective and objective). The subjective dimension includes four paradigms: anti-positivism, nominalism, voluntarism and the ideographic (qualitative) approach. The objective dimension also includes four paradigms: positivism, realism, determinism and the nomothetic (quantitative) approach. The nomothetic/ideographic approaches refer to different ways of constructing knowledge and derive originally from Kant, who described the nomothetic approach as a process of generalising empirical results to generate universal laws. The ideographic approach focuses on the study of individual cases and events, for example ethnographic studies, to generate an understanding of the processes and mechanisms in operation. Saunders and Lewis (2003) argue that research philosophy can use a combination of paradigms, such as positivism, interpretivism and realism, based on the nature of the research and adapted by the researcher.

This PhD research adopted a dual-methodological approach to investigate the relationship between corporate governance mechanisms and earnings management practices in Jordan,

which draws on both positive and interpretative paradigms. The research methods used are: (1) Quantitative methods, including estimating earnings management values by using accruals models, and using t-test and quadratic discriminant analysis to investigate the relationship between corporate governance variables and earnings management; and (2) Qualitative methods, including analysis of interviews, the main evidence for which was obtained through conducting in-depth semi-structured interviews.

Ultimately, based on the aforementioned discussions, this PhD research constructed Figure (5.1) below to explain the methodological processes that the researcher used in this present research:

Figure 5-1 Methodology Processes



These research methods can both be classified as empirical methods of analysis although the interpretation of the results for each varies according to the relevant paradigm and this creates a philosophical problem about the extent to which the two sets of results could be combined to form a coherent body of knowledge. For more explanation of the characteristics of

quantitative and qualitative methods, see Table (5.2) adapted from Cohen, Manion and Morrison (2007).

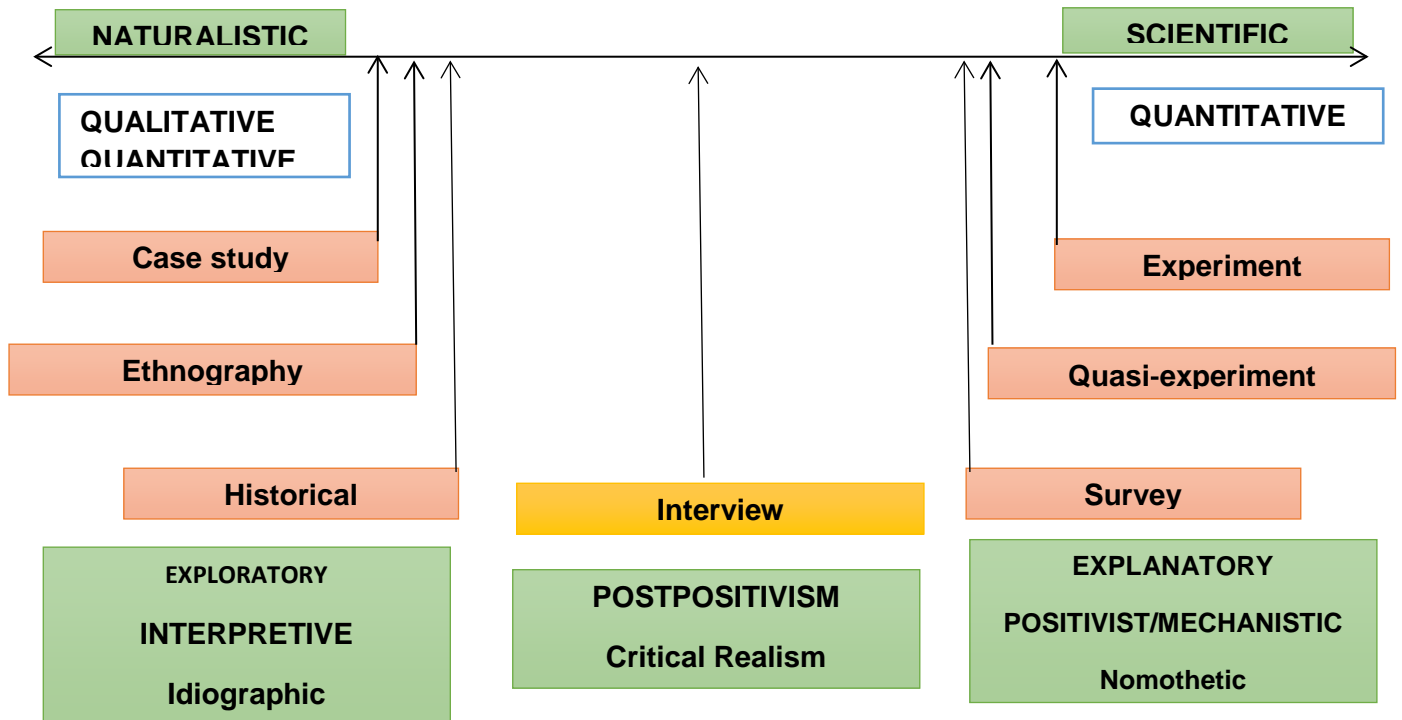
Table 5-2 Characteristics of Quantitative and Qualitative Methods

<b>Quantitative Method</b>	<b>Qualitative Method</b>
Numbers	Words
Predetermined, Given	Open-ended, Responsive
Measuring	Capturing uniqueness
Short-term, Intermittent	Long-term, Continuous
Comparing	Capturing particularity
Correlating	Valuing quality
Frequencies	Individuality
Formality	Informality
Looking at	Looking for
Regularities	Uniqueness
Description	Explanation
Objective facts	Subjective facts
Describing	Interpreting
Looking in from the outside	Looking from the inside
Structured	Unstructured
Statistical	Ethnographic, Illuminative

Source: Cohen *et al* (2007, P374)

In order to understand the nature of the relationship between the characteristics of quantitative and qualitative methods, see Figure (5.2) that has been adopted from Wiersma (1995, p14).

Figure 5-2 the Relationship between the Characteristics of Quantitative and Qualitative Methods



Yin (2009) suggests two points that researchers have to consider to determine their research methodologies, and these are: (1) the core of the research (i.e. what is the main aim of the research), and (2) the type of “W” questions they want to use in their research. Table (5.3) presents Yin’s suggestions for the researchers determining the method that is consistent with their research question.

Table 5-3 Relevant Situations for Different Research Methods

Method	Form of Research Question?	Requires Control of Behavioural Events?	Focuses on Contemporary Events?
Experiment	How, why?	Yes	Yes
Survey	Who, what, where, no yes how many, how much?	No	Yes
Archival Analysis	Who, what, where, no yes how many, how much?	No	Yes/No



History	How, why?	No	No
Case Study	How, why?	No	Yes

Source: Yin 2009.

The specific research questions developed for our study are shown in relation to these different research methods.

Table (5.4) explains the association between research questions, objectives and methods.

Research questions	Objective	Methods
Is there a relationship between corporate governance mechanisms and earnings management in Jordanian industrial firms?	<b>Investigating</b> the association between earnings management and corporate governance as an integrated system.	<b>Main and Support:</b> Database analysis
Do the independence and competence (education, training, professional experience, and professional qualifications) of internal and external auditors affect the relationship between corporate governance mechanisms and earnings management?	<b>Identify</b> the internal auditor's characteristics and <b>examining</b> if these have an effect on the relationship between corporate governance and earnings management.	<b>Main:</b> Annual report and Interviews. <b>Support:</b> Database analysis
Do differences in corporate governance structures affect the degree of manipulation in earnings management in Jordanian industrial firms?	<b>Examining</b> the relationship between each corporate governance mechanisms and earnings management, then <b>comparing</b> their results with the results of the relationship between corporate governance mechanisms as an integrated system and earnings management.	<b>Main:</b> Annual report and Database analysis <b>Support:</b> Interviews.
What are the most effective elements of corporate governance in reducing earnings	<b>Determining</b> which corporate governance mechanisms is more effective in reducing earnings management.	<b>Main:</b> Annual report and Database analysis <b>Support:</b> Interviews.

management practices?		
What is the best model for detecting earnings management in Jordanian industrial firms?	<b>Determining</b> which model among accruals models (SJ, MJ, and PPY) is the best in detecting earnings management.	<b>Main and Support:</b> Annual report and Database analysis.
<b>Research questions</b>	<b>Objective</b>	<b>Methods</b>
How do external cultural factors affect earnings management in Jordanian industrial firms?	<b>Exploring</b> the relationship between external cultural factors (e.g. revolutions in middle east, financial crisis in 2008, economics and politics circumstances) with earnings management.	<b>Main and Support:</b> Interviews.
How do the legal and taxation systems affect earnings management in Jordanian industrial firms?	<b>Exploring</b> the relationship between legal and taxation system with earnings management.	<b>Main and Support:</b> Interviews.
How does firms' internal culture affect earnings management in Jordanian industrial firms?	<b>Exploring</b> the relationship between internal culture factors with earnings management.	<b>Main and Support:</b> Interviews.

Table 5-4 Links between Research Questions, Objectives and Methods

### 5.3 Paradigm Incommensurability

There have been extensive debates in prior social sciences research that indicate the difficulty that might face researchers in choosing between the different paradigms, theories, concepts, and approaches they could use to investigate their theoretical and practical problems.

The concept of a paradigm includes several others, such as theories, assumptions, methods, instruments, and standards (Kuhn 1962). Kuhn (1970) explained a paradigm as follows “it stands for the entire constellation of beliefs, values and techniques, and so on, shared by the members of a community.” The determination of the concept of a paradigm is based on three levels of organizational theory (Burrell *et al* 1979), and these are:

- The philosophical level, which is a basic belief about the world we are living in.
- The social level, where guidelines exist as to how a researcher should conduct their work.

- The methods used when conducting research, which are considered the technical level.

Kuhn (1962) argues that direct access to any of these world levels is prohibited without using a specific paradigm. Also, he mentions that the use of different paradigms in the same observation might lead to different meanings and results. Finally, his philosophy stated that changes in science are not a linear progression. Bisman (2010) discusses some of these ideas in the context of accounting research. *“The paradigm debate in accounting was fuelled by arguments over the nature of reality and empiricism, together with opposing views about the means for discovering reality, and was exacerbated by unstated ontological, epistemological and methodological assumptions”* (page 6).

Paradigm incommensurability is a problem for social studies that use mixed methodology, particularly when the research results contradict each other. Brown *et al* (2007) state that paradigm incommensurability means that the findings of quantitative and qualitative methods do not complement each other, since each of these methods has different purpose and objective, which in turn lead to different kind of results. The proponents of paradigm incommensurability have documented that a combination of the results of two methodologies could lead researchers to misguide and mislead others, or produce an error in the unified body of knowledge. Paradigm incommensurability implies that *“there are no common points of reference between existing individual paradigms as they each adhere to distinct ontological, epistemological, and methodological assumptions about the social world and about what constitutes science”* (Clegg and Bailey, 2007). The paradigm incommensurability problem lies in the differences and inconsistencies of paradigm meanings and references:

- Several studies, such as Frege (1892) and Hempel (1965), point out that the meanings of words change based on their places in texts. For example, a "nail" in a wooden board is different from a “nail” on a human hand, and a tribe’s "eye" is different from a human "eye"; each of them has different meanings and can refer to different things.
- On the other hand, several other studies, such as Putnam (1981) and Kripke (1972), show some cases where the meanings and references of words are consistent even when the places of these words in the texts are changed.

Early writers on paradigm incommensurability, such as Burrell and Morgan (1979), took a strong view on paradigm incommensurability, stating that a synthesis or mix between

paradigms cannot be achieved; that they must be remain separate and develop independently. Since then, however, other authors have taken a less black-and-white view. It has been suggested that the use of different paradigms might be made possible and meaningful by understanding others' approaches or translating the languages and cultures of the scientists of prior centuries to fit our contemporary research. Jackson and Carter (1991) investigate whether the incommensurability of paradigm could be elucidated by the argument that each paradigm has a separate language and may contribute to research fields significantly. Therefore, in this case, paradigm incommensurability may not be an entirely negative concept, but might instead help to establish the integrity of each paradigm, obviating the necessity for justifications of different assumptions about the subject area and different beliefs about human nature, which allow potential of divergent opinions to develop.

#### **5.4 Research Methodology**

In any framework of research procedure, the researchers should reveal their viewpoint, the goals and methods of their research, how they collect and analyse the data and display the results. Therefore, the researchers have to consider the procedures that they need to follow by identifying the models that they decide to use, which in turn allows them to identify and determine the path of the research. The idea of using two approaches, quantitative and qualitative, is a controversial issue.

The previous arguments on paradigm incommensurability notwithstanding, we decided on a mixed methodology study for this research, using both the qualitative method and the quantitative methods, as we wished to investigate not only the relationships (between internal control, corporate governance mechanisms and earnings management in Jordan), but all the mechanisms through which these processes occurred and this relationship was created the issues of paradigm incommensurability, the nature of the assumptions behind the use of different methods and the approach to the use of theory were all reflected upon in the analysis of our results and in the conclusions drawn from them.

Following an analysis of mixed methodology by Tashakkori and Teddlie (1998) a number of researchers in accounting have chosen to use such an approach Brown and Brignall (2007) justify their use of mixed methodology by proposing the use of Critical Realism as a philosophical framework within which to bridge the gaps between paradigms. Having

considered these arguments, we constructed a research design to investigate the relationship between corporate governance mechanisms and earnings management in Jordan, which has four stages:

### **First stage**

The researcher use three earnings management models: the Jones Model (Jones 1991); the Modified Jones Model (Dechow *et al*, 1995), and the Margin Model (Peasnell *et al*, 2000) to estimate earnings management values for Jordanian firms. These models used financial data extracted from Jordanian industrial firms' annual reports, which are available from DATASTREAM, the Amman Stock Market (ASM), and Jordan Securities Commission (JSC). Each of these models uses a different way to calculate the accruals, which are detailed in chapter three.

### **Second stage**

The researcher use published annual financial reports from the Amman Stock Exchange website to collect information on internal control and corporate governance, such as: board of directors' characteristics (e.g. board size, board meetings, board independence, board outsiders); audit committee characteristics (e.g. audit committee size, audit committee meetings, audit committee independence and audit committee expertise); external audit factors (e.g. external auditor reputation, external auditor tenure, external auditor opinion and external auditor change), and ownership structure (e.g. managerial ownership, family ownership, blockholder ownership, individual ownership, institutional ownership and state ownership). These variables, as suggested by previous studies, examine the relationship between internal control and corporate governance mechanisms and the earnings management estimates from the accruals models, by using quantitative method.

### **Third stage**

On the basis of the results from the quantitative analysis and knowledge of the firms' positions on the Amman stock market, 12 firms were selected as the subjects for interviews.

These semi-structured interviews, conducted with general managers, financial managers and internal auditors. To complete the qualitative analysis, the data from these interviews are combined with the models of accruals, analysis of the firms' published financial statements, review of published Amman stock market information, reviews of corporate governance statements in each firm, and reviews of internal documentation.

#### **Fourth stage**

At this stage, the researcher considers the extent to which the results of the quantitative and qualitative analysis could be combined in order to produce a contribution to knowledge in the area that reflected both different approaches and types of results. In general, when using dual methodologies, thought needs to be given to which methodology is going to be allowed to predominate. The two can be combined by: (1) applying the qualitative method before the quantitative method to enable the researcher to develop and present a suitable conceptual framework, hypothesis, or necessary tools for the quantitative study, or (2) applying the qualitative method after the quantitative method to clear up any confusion in the quantitative findings and to support an interpretation, which means that merging the results of the quantitative and qualitative methods will provide a more exact overall picture of the research problem (Srnrka and Koeszegi, 2007).

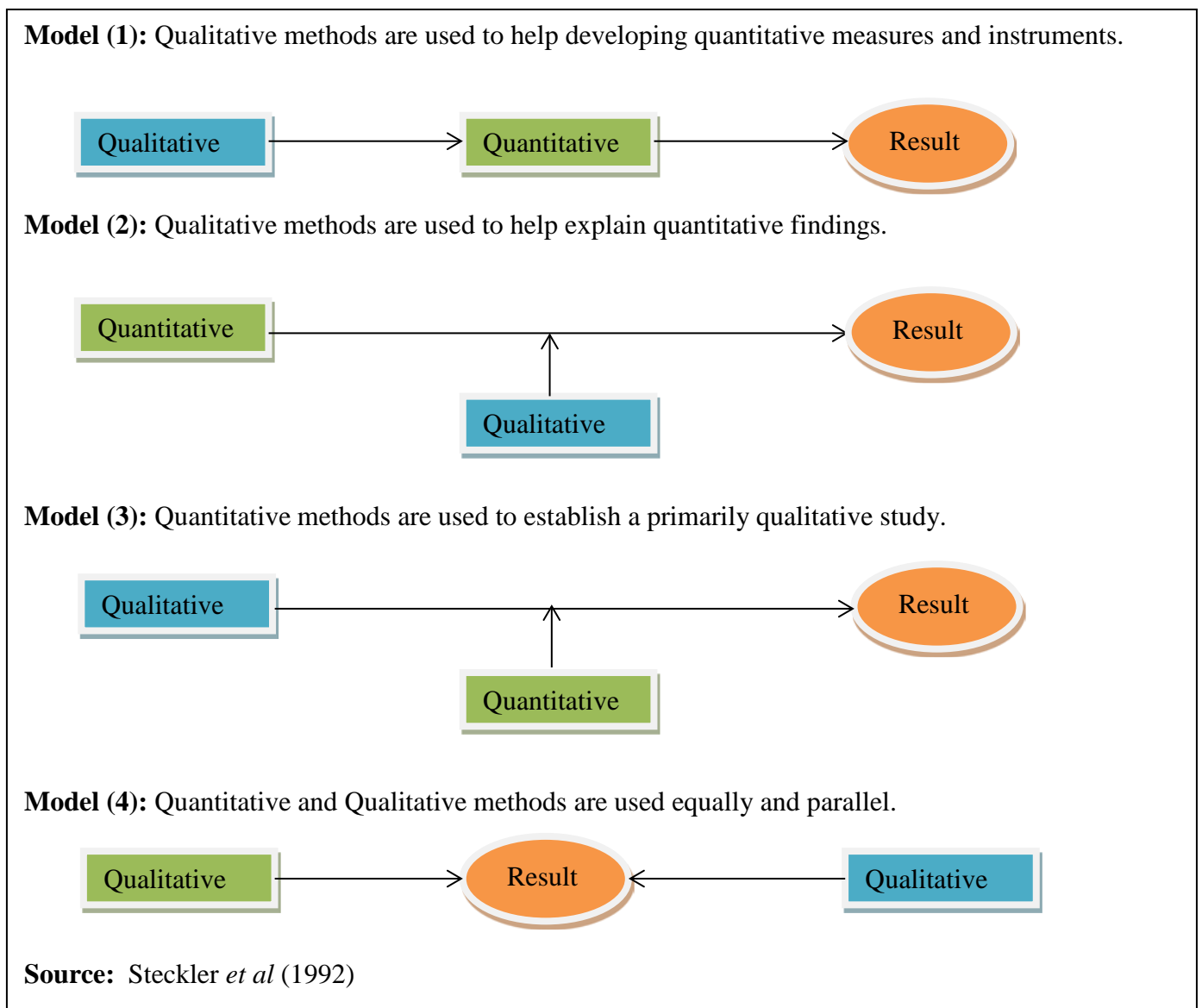
Existing literature suggests three typical reasons for using mixed methods (Caracelli and Greene 1997), and these are: *(1) testing the agreement of findings obtained from different measuring instruments, (2) clarifying and building on the results of one method with another method, and (3) demonstrating how the results from one method can impact subsequent methods or inferences drawn from the results.*

Steckler, et al (1992) discuss how qualitative and quantitative methods can be integrated and present the results. Their approach suggests that while the qualitative and quantitative paradigms separately have some weaknesses, which can be attenuated by combining the two. Furthermore, they indicate that the quantitative method produces accurate, consistent results that are usually generalisable to a larger population. They also state that the qualitative

method generates rich, in-depth, suitable results that usually support the more complex issues that the researchers cannot measure in numeric ways (i.e. using quantitative methods).

Accordingly, they provided four models, as shown in below Figure (5.2) that explain possible integrated relationships between quantitative and qualitative methods.

Figure 5-3 Integrated Quantitative and Qualitative Method



Brown et al (2007) identify three ways in which the choices made during the process of designing a dual-methodology research project can affect the way in which the results can be combined. They suggest that the results could complement each other, challenge each other, or talk past each other.

#### 5.4.1 Quantitative and Qualitative Methods Complementing Each Other

This section discusses the quantitative and qualitative methods as complementary approaches. Several researchers in prior literature have argued that if quantitative and qualitative analyses could be designed to complement each other, this will lead to producing a unified body of knowledge, e.g. Brown *et al* (2007), and this in turn will lead to a better fit and understanding between research objectives and their problems (e.g. Brown *et al* 2007; Burgess 2002). Furthermore, Johnson, Onwuegbuzie and Turner (2007) state that different methods can be based on different strategies and methods of collecting data, in ways that reflect complementary strengths and non-overlapping weaknesses.

Cupchik (2001) suggests that the notion of a qualitative-quantitative sequence could be replaced altogether by using a complementary approach. Often quantitative research yields statistically significant results, but not a full explanation of the underlying relationship powerful enough for the results to be generalised. Therefore, if the research is designed well enough, qualitative research can provide a rich source of data, that can clarify the unclear results produced by the quantitative methods and uncover the process by which the results are produced. Therefore, if qualitative and quantitative methods are deemed to be complementary, this means that the richness of information from both methods can enhance the quality of research results, since the in-depth information from the qualitative method will support the results of the quantitative method. Also, the large amounts of descriptive data produced by qualitative research can shape the choice of variables in quantitative research and provide a contextual explanation for the quantitative findings.

Existing studies have presented several advantages of using quantitative and qualitative together as complementary approaches, and Philip (1998) summarises these advantages in three points:

- The use of more than one method of gathering evidence helps to minimise the risk of generating erroneous findings.
- Qualitative research may be carried out in order to establish research questions which will subsequently be addressed by means of quantitative methods; or a quantitative study may suggest questions suitable for further investigation by means of in-depth qualitative methods.



- The combination of methods may allow a broader range of issues to be addressed during the course of conducting a research project than would be possible if exclusive use of either quantitative or qualitative methods had been made.

#### **5.4.2 Quantitative and Qualitative Methods Challenging Each Other**

Despite the existence of many similarities between qualitative and quantitative research methods, there are some measures and procedures that are extremely different under these two methods, due to both their natures and assumptions regarding the data and questions to be answered, which can lead to a challenge between these methods' results (Malterud 2001). Johnson *et al* (2007) argue that the adoption of mixed methods is an unsuitable way to present results, since the quantitative and qualitative methods study different aspect of the phenomenon under investigation.

From a research point of view, prior studies have argued that a combination of the results of quantitative and qualitative methods might lead the researchers into reaching the wrong conclusions. In this regard, Brown and Brignall (2007) state that when quantitative and qualitative results contradict each other: *“the combination of the results of quantitative and qualitative methods will be, at best, misguided and, at worst, misleading.”*

#### **5.4.3 Quantitative and Qualitative Methods “Talk Past Each Other”**

In this context, “talk past each other” means that the researcher thinks that since each of the two methods are studying the same subject, they will support each other, but in fact while each of them produces results that are credible, they are so different in nature that they cannot be combined in any reasonable way.

Barkin (2010) documents that there are two reasons which can lead to “talking past each other”. The first reason concerns the nature of the paradigmatic debate, which results in different researchers approaching their research with different mindsets and thus conducting their studies in different ways. The second reason Barkin (2010) describes as “simple terminological confusion, which results from different interpretations of important words, caused partly because scholars redefine terms and different authors use them in different ways.

In the context of a research in Anthropology Metge (1978) points out that “talking past each other” is often based on the anthropological definition of culture, which is familiar to some researchers but new or strange for others. Accordingly, “talking past each other” is one of the

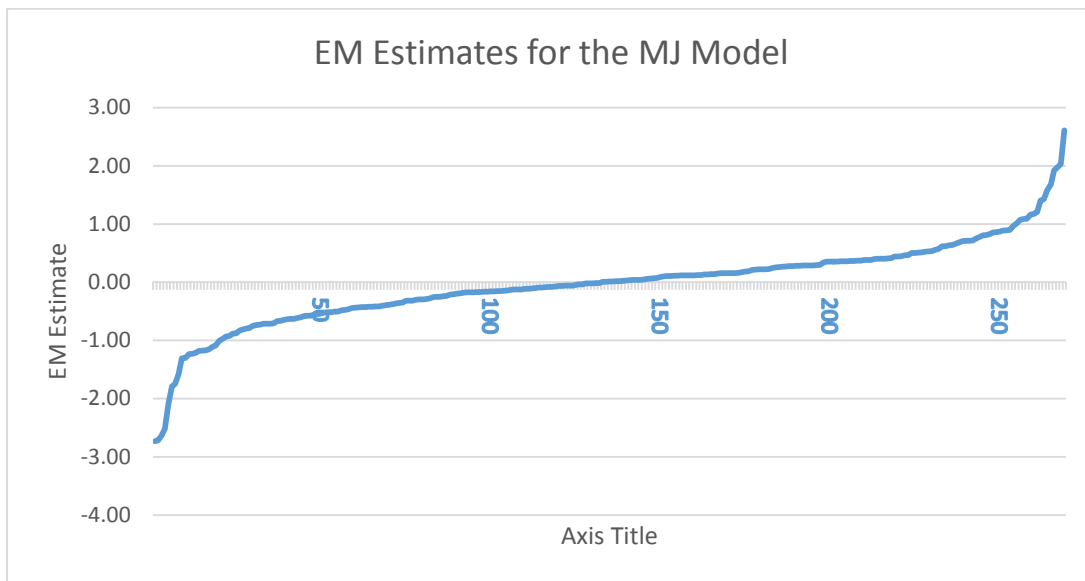
challenges of mixed methodology research approaches, which derives from paradigm incommensurability.

### 5.5 Hypothesis Development and Measurement of Variables

Chapter three discusses accrual based earnings management models developed in prior literature, providing critiques for each of them, and explaining how each one of them measures earnings management. Our own empirical research uses three of these earnings management models, the Jones Model (Jones, 1991); the Modified Jones Model (Dechow *et al*, 1995) and the Margin Model (Peasnell *et al*, 2000)

Observation of the distribution of the earnings management variables in our sample shows that binary split is a poor description of the variable (see figure 5.3 below as an example).

Figure 5-4 Earnings Management Values Carve for Modified Jones Model



A significant proportion of the observations are clustered around zero value, indicating no (or very low) earnings management. The left tail of the distribution shows a group of firms with high negative earnings management and the right tail a group with high positive earnings management. In fact, 25% of the observations were found in each tail, and 50% of them were in the near-zero category.

Classifying a distribution like this as binary variable would not adequately capture the information content of earnings management. Here, the opposite of positive earnings management is not negative earnings management but zero earnings management. The

effects on accounting variables, of the high positive and high negative earnings management firms would also tend to work in different directions making the relationships harder to predict, less easy to measure and less suitable for parametric techniques. We therefore classify the firms into three earnings management groups as follows:

**Group (i):** High positive earnings management (HI+veEM). This group includes 68 observations for the SJ sample, 68 for the MJ sample, and 136 for the PPY sample).

**Group (ii):** High negative earnings management (HI-veEM). This group includes 68 observations for the SJ sample, 67 for the MJ sample, and 134 for the PPY sample.

**Group (iii):** Low earnings management (Low EM). This group includes 95 observations for the SJ sample, 95 for the MJ sample, and 190 for the PPY sample.

Several outlying observations are excluded from the SJ, MJ, and PPY samples as follows:

- For the SJ sample, we exclude one HI+veEM observation. This is found in one of the chemical industries firms with standard prediction error value (15.34) for 2012, and this firm has losses for 3 consecutive years respectively; resulting in it dropping to the third market and ultimately becoming unlisted.
- For the MJ sample, we exclude two HI-veEM and three HI+veEM observations. These observations are found in several industries (1 paper and cardboard, 1 mining, 2 chemical and 1 food) between 2007 and 2012.

The two chemical firms are both in the second market and have standard prediction error values; 6.9 for 2012 and 4.72 for 2009, which are unusual for their sizes but no company-specific explanation is able to support this.

The paper and cardboard firms have a standard prediction error value of – 5.2 for 2008 and the food firm had a standard prediction error value – 3.3 for 2007 reported both of these large losses comparing with years before.

Finally, the mining firm has a standard prediction error value 5.13 for 2008 and can be explained by the unusual nature of the industry, which is a duopoly with a high level of government involvement.

- For the PPY sample, we exclude six HI-veEM and six HI+veEM observations. These observations are found in several industries (5 mining, 2 electrical, 1 tobacco, 2 pharmaceutical and 2 foods).

Considering these negative values, we exclude 6 observations. This includes two mining firms with 3 observations, one pharmaceutical firm with 1 observation, one Tobacco firm with 1 observation and one electrical firm with 1 observation. The reasons for excluding these observations are:

- Decreasing firm sales which would play an important role in the PPY model that could result from the financial crisis for the mining firms that have estimated values 4.35 and 4.03 for 2009 and 2010 respectively.
- Changing board of directors is likely to be the reason for the second mining firm unusual estimate (-7.1 for 2010), and for the pharmaceutical firm observation with value -3.8 for 2012.
- The Tobacco firm and electrical firm also report losses and examination of their accounts show high level of several type of expenses such as, provision for doubtful debts and loss from outside branch in 2010. This creates the potential for downward manipulation of profits sometimes known as firms talking a big bath, which would explain the high negative EM measure.

As for positive values, we exclude 6 observations and they are two mining firms, one food firm, one pharmaceutical firm and one electrical firm. As for the mining firms, the unusual nature of the mining industry was mentioned earlier. No specific events were identified for the other observations.

We now consider each of the corporate governance and internal control variables in turn and explain the methods used to measure them. The analysis consists of five groups of variables: (1) board of directors' characteristics; (2) audit committee characteristics; (3) external audit; (4) internal control components, and (5) control variables. We extract these variables for seven years (2005-2012).

### **5.5.1 Board of Directors' Characteristics**

This group contains the variables, board size, board meetings, board outsiders and board independence:

Most studies measure board size (BSIZE) by using the total number of board members as presented in the annual report at the end of each financial year (e.g. Alves 2011; Joubert *et al* 2010; Xie *et al* 2003; Yermack 1996). From an agency theory perspective, the larger board size is an indicator for reducing agency problems (e.g. Alves, 2011; Ghosh *et al* 2010; and Ahmed *et al*, 2006), and a larger number of educated and experienced directors means the board can do more monitoring and assessing management actions.

Larger boards would lead to mitigating the CFO's domination of the board which results in fewer opportunities to use discretion and more protection of shareholders' interests (Raheja, 2005). Several existing studies state that larger boards are related with high reporting quality, such as, Xie, et al (2003); Klein, (2002). On the other hand, larger board size could lead to obstacles in independent directors performing their monitoring duties because of bureaucracy and more potential for conflicting interests and views (Habbash, 2010).

Overall, the existing literature reveals that larger boards are related with less earnings management (e.g. Ghosh et al 2010; Habbash, 2010; Ahmed et al 2006). According to Watts and Zimmerman's (1986) political costs hypothesis, they state that larger firms are likely to have larger boards and these firms will be more politically visible. We expect board size to be negatively related to earnings management.

The board of directors has to attend a specified number of meetings per year (BMEETING) as stipulated by the Corporate Governance Code in each country (Ronen and Yaari 2008). A higher frequency of board meetings would benefit shareholders, since it implies that the board would have opportunities to be more responsive and to monitor and control the firm more effectively (Vafeas, 1999). Lipton and Lorsch (1992) and Conger, Finegold and Lawler (1998) assume that frequency of board meeting is related with high board effectiveness. The regular board meeting gives directors the opportunity to address important issues and problems that could arise in the firms (Rohaida, 2011).

Existing literature provides mixed empirical results (i.e. identifying positive, negative or no significant relationship) regarding board meetings and earnings management, but most studies found that more board meetings tend to mitigate earnings management (e.g. Anglin *et al* 2013; Xie *et al* 2003).

Our research measures this variable by the frequency of board meetings per annum following most existing literatures such as Anglin *et al* (2013), and Vafeas (1999).

Consistent with the agency theory, several studies hypothesise that the existence of outsiders (BOUTSIDE) (non-executives)<sup>1</sup> in the board is more likely to improve the quality of information and decisions, which could enhance firm performance (e.g. Bikki et al 2009; Zahra and Pearce, 1989). Fama (1980) states that the existence of a high portion of insiders in the board is related to more issue with personal-monitoring, which could lead to weaker monitoring of the firm performance.

The presence of the outside directors could lead to better monitoring in the firm than the inside directors (Byrd et al 1992). Several studies have examined the relationship between board outsiders and earnings management, and most of their results indicate that outsiders are more likely to mitigate earnings management in the firm (e.g. Bikki *et al* 2009; Cornett *et al* 2008; Mather *et al* 2006; Beasley 1996; Dechow *et al* 1996). Most of these studies measured the outsiders variable as a proportion of the total number of board members.

From the perspective of agency theory, Abdul Rahman and Ali (2006) assume that for effective governance, the CEO and the chair of the board have to be independent, which means that no-one can hold both positions at the same time. Abdul Rahman and Ali (2006) also state that the CEO with more power could easily engage in earnings management to achieve personal incentives. The Jordanian Corporate Governance Code (2012) stipulates that no duality should exist between the roles of CEO and board chairman in the firm. The separation between CEO and board chairman (BINDEPEND) is likely to lead to a decrease in the chance for both of them to engage in earnings management. In this regard, existing literature shows that the separation of the roles of CEO and board chairman is negatively related to earnings management level (e.g. Wang et al 2012; Marraa et al 2011; Joubert et al 2010; and Peasnell et al 2000). Based on prior findings and agency theory, our research hypothesises a negative relationship between board independence and earnings management.

We propose the following hypotheses based on board directors' characteristics according to the aforementioned discussions:

***H1: There is a negative relationship between board size and earnings management level in Jordanian industrial firms.***

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<sup>1</sup> Prior literature has defined board outsiders (non-executives) as the employees who are not occupied in any position in the firm (e.g. Brickley *et al* 1994; Byrd *et al* 1992).

**H2:** *There is a negative relationship between number of board meetings and earnings management level in Jordanian industrial firms.*

**H3:** *There is a negative relationship between a high portion of board outsiders and earnings management level in Jordanian industrial firms.*

**H4:** *There is a negative relationship between board independence and earnings management level in Jordanian industrial firms.*

### **5.5.2 Audit Committee Characteristics**

Jordan's Corporate Governance Code (2012) stipulates that the main aim of audit committees is to review the effectiveness of internal auditing, and make recommendations on the selection, appointment, reappointment and removal of the head of the internal audit department. Following this line of enquiries, this research uses audit committees' characteristics as instruments to measure the effect of corporate governance factors in constraining earnings management. This group contains the following variables, audit committee size, audit committee meetings, audit committee independence, and audit committee expertise:

Existing literature reveals that to be effective, the audit committee has to be large enough to include a range of members that have professional education and experience, and that this committee must allocate sufficient resources to deal with the complicated accounting and financial issues that could face them (Xie *et al* 2003 and Braiotta, 2000). Yermack (1996) and Bedard *et al* (2004) hypothesize that a larger audit committee is more likely to identify and avoid possible problems that could occur during the financial reporting process, where the monitoring of the financial reporting process is considered the main responsibility of this committee.

Habbash (2010) also states that smaller audit committees which include one or two members may be weak, since the management could exploit the small size of this committee to put more pressure on it to gain its support, particularly to help them in dispute with external auditor. Jordan's Corporate Governance Code (2012) specifies that each firm has to have an audit committee with a minimum of three non-executive members, and indicates that the bigger the audit committee, without the inclusion of executive members, the more likely increase in the committee's performance. Consistent with previous studies, our study

measured audit committee size (ACSIZE) as the number of audit committee members reported in the firm's annual financial reports.

The effect of audit committee size on earnings management is a debatable issue, since prior literature has presented mixed results. For example, some have found a positive relationship (e.g. Alhaddad *et al* 2011, *et al* 2007 and Abdul Rahman *et al* 2006), while others have found to have either a negative relationship (e.g. Lin *et al* 2006) or no relationship (e.g. Bedard *et al* 2004, Xie *et al* 2003, and Baxter 2009). To be consistent with existing literature, our study hypothesises that a larger size of audit committee is associated with less earnings management.

The main aim of establishing an audit committee is to keep regular communication between this committee and internal and external auditors, to evaluate audit processes, financial reporting processes, and the internal control system (Rohaida, 2011; Habbash, 2010). Klein (2002) also states that more frequent audit committee meetings held yearly is considered an indicator for an active audit committee, which will act to identify and correct and potential problems.

The variable ACMEETING is measured by using the number of meetings that the audit committee attends each year. Several studies have found a negative relationship between earnings management and the frequency of audit committee meetings (e.g. Thoopsamut *et al* 2009; Baxter *et al* 2009; Davidson *et al* 2005; Abbott *et al* 2004; Bedard *et al* 2004; and Xie *et al* 2003). Consequently, our study hypothesises that the relationship between earnings management and audit committee meetings is negative.

Audit committee independence (ACINDEPEND) is another issue that affects monitoring processes in the firms. Vicknair Hickman and Cames (1993) argue that the audit committee should be independent from management in order to achieve effective monitoring, as this separation is more likely to lead the internal and external auditors to be less pressurised by the firm executives. Consistent with this argument, Bradbury (2006) documents that high earnings quality is related with the existence of audit committee independence in the firms. Therefore, our study hypothesises that the existence of strong, independent audit committees can mitigate earnings management in the firms. This approach is in line with most of the prior literature findings, which found a negative relationship between audit committee independence and earnings management such as, Puat *et al* (2013), Bedard *et al* (2004), and Abdul Rahman and Ali (2006).



Experience in the accounting and finance field is important for audit committee members, where responsibility is to ensure the integrity of financial reports. This experience enhances audit committee members' knowledge, which enables them to understand and identify all the potential issues that could affect the firms' performance (Rohaida, 2011). Independent audit committee members that have a background in corporate finance are likely to be more aware of potential problems that could arise from different forms of earnings managements (Xie, et al 2003).

The financial expert is defined as someone who holds necessary qualifications, professional certificates, skills, and experience in the accounting and finance fields (The Jordanian Corporate Governance Code, 2012). The existence of financial experts on the audit committee is more likely to be related to high quality in the financial reports (Abbott, Parker and Peters, 2004). Several studies have found that audit committee expertise is negatively related to earnings management (e.g. Puat et al, 2013; Hamdan et al, 2013; and Bedard et al, 2004). Our study measures this variable (ACEXPERTISE) by using a dummy variable, which takes the value of 1 if all audit committee members are qualified (holding an undergraduate degree in accounting or finance) and at least one of them has an accounting professional qualification (as specified in the corporate governance code for Jordan), and 0 otherwise. We hypothesise that the existence of audit committee expertise is related negatively with earnings management.

According to the forgoing discussion, the following hypotheses in relation to audit committee characteristics are formulated:

*H5: There is a negative relationship between audit committee size and earnings management level in Jordanian industrial firms.*

*H6: There is a negative relationship between the number of audit committee meetings and earnings management level in Jordanian industrial firms.*

*H7: There is a negative relationship between audit committee independence and earnings management level in Jordanian industrial firms.*

*H8: There is a negative relationship between the level of audit committee expertise and earnings management level in Jordanian industrial firms.*

### 5.5.3 External Auditor Factors

Agency theory describes how the relationship between the agent (manager) and principal (owner) results in agency problems associated with the measurement of performance and its relation with agent incentives. Watts and Zimmerman (1983) state that an audit by someone that does not have a relationship with the manager is more likely to reduce the potential for incentive related problems that arise when the manager does not get sufficient compensation from the firm. Jensen and Meckling (1976) posit that the external audit is considered one of the most important tools for monitoring activities that increase the value of the firm.

The Institute of Chartered Accountants in England and Wales (2005) states “if, as simple agency theory implies, principals do not trust agents to provide them with reliable and relevant information, then they will hire in external experts, who are independent of these agents. This, however, introduces the concept of auditors as agents of principals, which leads to new concerns about trust, threats to objectivity and independence” (page 10). Accordingly, numerous measures are available to evaluate the quality of external audit. Therefore, this section discusses four external auditor factors; external auditor reputation (EXAREPUT), external auditor tenure (EXATENURE), external auditor opinion (EXAOPIN), and external auditor change (EXACHANGE).

DeAngelo (1981) argues that the auditor reputation is deemed a better proxy to detect and identify any error or misstatement in the firm’s financial statements, since the big 5 audit firms (now the big 4) have several common characteristics (e.g. they have higher expertise, higher independence) that enable them to protect the shareholders from any error or misstatement. Kanagaretnam, Lim and Lobo (2010) and Alves (2013) document that higher audit quality is found in big 4 firms. Existing literature measures external auditor reputation with reference to whether the external audit firm is a big firm or not (DeAgelo, 1981; Alves, 2013; Kanagaretnam (2006).

External audit tenure is measured by considering the period that the partner engages with the client firm (see Gul *et al* 2007; Myers *et al* 2003). In our study we give a dummy variable (EXATENURE) the value of 1 if the partner stays more than 4 years and 0 otherwise, based on the terms of the Jordanian Corporate Governance Code. The characteristics of the external audit opinion are measured by using a dummy variable with a value of 1 for firms that had received going-concern modified opinion, and 0 otherwise, since this factor is a particular issue in Jordan (Butler *et al* 2004; Chen *et al* 2001; Bartov *et al* 2000). Finally, prior literature

measures external audit change by considering the length of the period that the audit firm engages with the client firm (e.g. Bukit *et al*, 2009; Hackenbrack *et al*, 2002; Gaver *et al*, 2001) and in our study we give a dummy variable the value of 1 if the external audit firm stays for more than one year, and zero otherwise, based on the terms of the Jordanian Corporate Governance Code.

Most existing literature reveals mixed results for the relationship between external audit factors and earnings management. However, most of the studies indicate that the external audit quality factors result in less earnings management and pressures on the firm such as modified audit opinions and long tenure result in more earnings management. The hypotheses below are consistent with these ideas and the tenets of Agency Theory:

*H9: There is a negative relationship between the external auditor's reputation and earnings management level in Jordanian industrial firms.*

*H10: There is a positive relationship between the tenure of the external auditor and earnings management level in Jordanian industrial firms.*

*H11: There is a positive relationship between the issuing of modified audit opinions and earnings management level in Jordanian industrial firms.*

*H12: There is a negative relationship between the external audit firm staying for more than one year and earnings management level in Jordanian industrial firms.*

#### **5.5.4 Ownership Structure**

From the perspective of agency theory, Jensen and Meckling (1976) state that higher ownership concentration could reduce agency problems, by mitigating agency costs by reducing the imbalance between principals' (owners) interests and agents' (managers) interests. In this section, we include six types of ownership structure, which are not mutually exclusive; family ownership, individual ownership, state ownership, managerial ownership, institutional ownership, and block-holder ownership.

Pornuptham (2006) suggests agency theory as an appropriate model in developing countries to help explain the agency problem in firms that have high concentration of family ownership. Schulze, Lubatkin, Dino and Buchholtz (2001) conclude that, by application of Jensen's and Meckling's model of 1976, that there are three reasons for family ownership to reduce agency costs, and these are “[f]irst, owner management should reduce agency costs

because it naturally aligns the owner-managers' interests about growth opportunities and risk ... Second, private ownership should reduce agency costs because property rights are largely restricted to internal decision agents ... Finally, family management should further reduce agency costs because shares tend to be held by agents "(pages 99-100). Several prior studies presented an argument about individual ownership that is similar to the argument about family ownership (Lunati, 1997; Bergstrom, 1995). Most preceding studies of the relationship between individual ownership, family ownership and earnings management found that a higher proportion of these ownerships is related with less earnings management (e.g. Prencipe et al 2011; Jara and López 2011; Block 2010; Yang 2010; Jaggi et al 2009; Fan et al 2002; Heard et al 1987). These studies measure these types of ownership as follows; family ownership (FAMOWN) by using the percentage of total shares owned by family investors; local individual ownership (INDOWNL) by using the percentage of total shares owned by local investors; and foreign individual ownership (INDOWNF) by using percentage of total shares owned by foreign investors. In our study we expect a negative relationship between both of these types of ownership and earnings management.

Several researchers have noted that if the state were to own a large portion in the firm, then this motivates the government to increase its monitoring of managers, which mitigates the agency costs and increases firms' profitability (Ding et al 2007; Shleifer et al 1997; Bos, 1991). Dominating state ownership in a firm is seen as encouraging the managers to mitigate their personal incentives and use accounting choices to develop the firm's performance (Aljifri and Moustafa, 2007). From the perspective of transaction cost theory, Pan, Teng, Supapol, Lu, Huang and Wang (2014) suggest that state ownership could affect firms' performance through the following devices: (1) firms dominated by government ownership have better access to resources compared with firms that have other ownership types. (2) Firms with a higher portion of government ownership are more likely to receive more support from the government. Thus, our research measures this variable by using the percentage of total shares owned by the Jordanian government, and assumed that the relationship between earnings management and state ownership is negative.

To align interests with shareholders' interests, Agency theory suggests that the way to mitigate agency costs is to adjust managers' incentives (Jensen and Meckling, 1976). This leads them to argue that a higher portion of managerial ownership makes managers less likely to modify firm earnings in the short term. Economic theory identifies two conflicting points that might lead to managerial ownership affecting managers' incentives in firms, and these are

the incentive alignment effect<sup>1</sup>, and the management entrenchment effect<sup>2</sup> (Teshima et al 2008). However, Jensen (1994) suggests that the "self-control" problem created by desirable incentives can cause owners to take actions which "harm themselves as well as those around them" (page 43).

Accordingly, managerial ownership is not a straight-forward issue. Despite the hypothesised negative relationship, most studies provide empirical results that indicate a positive relationship between earnings management and managerial ownership in line with the ideas of Jensen (e.g. Alfayoumi *et al* 2010; Yang *et al* 2008; Sanchez-Ballesta *et al* 2007; Yeo *et al* 2002). Most of these studies measure ownership (MANOWN) by using the cumulative percentage of total shares owned by the directors of the firm and this measure is also adopted in our study. In line with agency theory, we hypothesise that a higher portion of managerial ownership is likely to be related with less earnings management, although we note that published empirical results tend to contradict this.

Crutchley, Jensen, Jahera and Raymond (1999) state that institutional ownership is likely related to mitigate agency costs via increased monitoring of the firms. Carleton, Nelson, and Weisbach (1998) and Black et al (1994) argue that the higher portion of institutional ownership increases the possibilities for monitoring and the effectiveness of owners in controlling the firms, which means that this type of ownership is deemed to be an important controlling mechanism to monitor managers' behaviour in detail. A few existing studies have discussed the effect of institutional ownership, whether foreign (IOWNFOR) or local (IOWNLOC), on earnings management. These studies found the proportion of institutional ownership to be negatively related with level of earnings management. Consistent with most of the prior literature, our research measures this type of ownership as a percentage of total shares in issue. We hypothesise that greater institutional ownership is related to less earnings management.

In accordance with agency theory, Jensen and Meckling (1976) suggested that when a firm has block ownership, the blockholders' monitoring can be considered to be an active device to mitigate agency costs. Holderness (2003) documents that there are two factors motivating blockholders to increase their monitoring of the firms' managers, the benefit of increasing stock returns and the private benefit of control. Thus, a larger proportion of blockholders in

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<sup>1</sup> The effect that could arise by making alignment between owners and managers incentives.

<sup>2</sup> The effect that could occur when the greater ownership would provide managers with deeper entrenchment and, therefore, greater scope for opportunistic behaviour.

the firm ownership structure means that they can exercise their strong voting power to decrease managers' incentives. (Persons, 2006).

Furthermore, several studies also state that blockholders have more motivations to control managers' activities in the firms than small external shareholders (e.g. Shleifer et al 1997; Dechow et al 1996; Jensen et al 1976), and they argue that a high proportion of blockholder ownership is more likely to decrease earnings management practices. Based on this literature, we measure blockholders' ownership (BLOCKOWN) by giving a dummy variable the value of 1 if the firm has external stockholder ownership of 5% or more of the outstanding shares. We hypothesise a negative relationship between high blockholder ownership and earnings management in our study. Hence, following hypotheses were presumed with respect to ownership structure:

***H13:** There is a negative relationship between high proportions of family ownership and earnings management level in Jordanian industrial firms.*

***H14:** There is a positive relationship between high proportions of foreign individual ownership and earnings management level in Jordanian industrial firms.*

***H15:** There is a positive relationship between high proportions of local individual ownership and earnings management level in Jordanian industrial firms.*

***H16:** There is a negative relationship between a high proportion of state (government) ownership and earnings management level in Jordanian industrial firms.*

***H17:** There is a negative relationship between a high proportion of managerial ownership and earnings management level in Jordanian industrial firms.*

***H18:** There is a negative relationship between high proportions of foreign institutional ownership and earnings management level in Jordanian industrial firms.*

***H19:** There is a negative relationship between high proportions of local institutional ownership and earnings management level in Jordanian industrial firms.*

***H20:** There is a negative relationship between blockholder ownership of 5% or more and earnings management level in Jordanian industrial firms.*

### 5.5.5 Measuring Control Variables

Existing literature argues that measuring the relationship between earnings management and corporate governance factors without control variables (e.g. firm performance, firm size and whether a firm has subsidiaries) are more likely to lead to heteroscedasticity and misspecification problems in the earnings management models (e.g. Habbash, Lijuan, Salama and Dixon, 2014; Jaggi *et al*, 2009; Kothari, Lcone and Wasley, 2005).

Accordingly, this research uses four control variables in addition to the independent variables that have been discussed in the previous sections. Several studies have documented that control variables, such as firm leverage, cash flow from operating activities, firm subsidiaries and firm performance are important in ensuring that the tests concentrate more precisely on the differences created by variations in corporate governance measures (e.g. Habbash *et al* 2014, Alghamdi 2012; Rohaida 2011; Dechow *et al* 1995). Our research uses four control variables to proxy for firm performance, cash flow, leverage and whether a firm has subsidiaries.

#### **Firm Performance (ROA):**

In common with prior studies, we use Return on assets (ROA) as proxy for firm performance. ROA is calculated using the following formula:

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets at Year End}}$$

#### **Cash Flow from Operating Activities (CFOA):**

Numerous studies reveal that high cash flow from operating activities (CFOA) is likely to be associated with managers to engage in earnings management (e.g. Graham *et al*, 2005; Dechow *et al* 1995). CFOA is calculated based on, for examples, Alghamdi 2012; Rohaida 2011; Habbash 2010) as follows:

$$(\text{CFOA}) = \frac{\text{Cash Flow from Operating Activities}}{\text{Total Asset at Year Beginning}}$$

#### **Financial Leverage (FLVE):**

FLVE is measured by dividing long-term debt by total assets at the beginning of the year.

$$\text{Financial Leverage} = \frac{\text{Long Term Debt at}}{\text{Total Asset at Year Beginning}}$$

**Firm Subsidiary (FSUB):**

Some existing studies document that firms with subsidiaries in countries that have weak regulations and corporate governance are more likely to engage in earnings management than those with subsidiaries in countries that have strong regulations and corporate governance (Tang and Tikoo 1999; Dyreng, Hanlon and Maydew 2012). Accordingly, we expect that the firms in our study with subsidiaries have a greater incentive to engage in earnings management, since most of their subsidiary firms exist in developing countries with weak regulations and corporate governance (e.g. Sudan, Libya, and Algeria). This variable is measured by a dummy variable, which we give the value of one if the firm had subsidiary firms in countries with weak regulations and corporate governance. Finally, firm size, whether small or large, was not found to be related to earnings management level in the prior literature particularly in developing countries; Jordan is not isolated from these countries, where Abed et al., (2012) and Alfayoumi et al., (2010) documented that the firm size as control variable does not have an effect on earnings management level in Jordanian firms since all Jordanian firms in Jordan are considered to be small in size compared to the size of firms in other countries whether developing or developed. Accordingly, this thesis omitted this variable. The industry variable is also omitted from the control variables as this thesis focuses on one industry sector (industrial sectors). Much of the prior literature used the industry variable as a control variable when it includes industrial, financial and services sectors in their studies (Abed et al., 2012). Table (5.5) lists the research variables used in this PhD study.

Table 5-5 Summary of Research Variables and Their Measurements

Variable	Label	Definition and Measurement
<b>Dependent Variables</b>		
Accruals Standard Jones Model	<b>ACCSJ</b>	This variable was measured by using standard prediction errors from the standard Jones Model
Accruals Modified Jones Model	<b>ACCMJ</b>	This variable was measured by using standard prediction errors from the modified Jones Model
Working Capital Accruals	<b>WAPPY</b>	This variable was measured by using standard prediction errors from the Margin Model
<b>Independent variables</b>		
<b>Board Of Directors Characteristics</b>		
Board of Directors Size	<b>BSIZE</b>	The number of board members that are in the annual report at the end of each year.
Number of Board of Directors Meetings	<b>BMEETING</b>	The number of annual meetings the board holds per annum
Board of Directors Outsiders	<b>BOUTSIDE</b>	The number of non-executives on the board divided by total number of board members



Board of Directors Independence	<b>BINDEPEND</b>	A dummy variable given value of 1 if CEO and Chairman of Board positions were conducted by the same person, 0 otherwise.
<b>Audit Committee Characteristics</b>		
Audit Committee Size	<b>ACSIZE</b>	The number of members on the committee
Number of Audit Committee Meetings	<b>ACMEETING</b>	The number of meetings the committee holds per annum.
Audit Committee Independence	<b>ACINDEPEND</b>	A dummy variable given the value 1 if the committee totally comprises non-executive members, 0 otherwise <sup>1</sup> .
<b>Variable</b>	<b>Label</b>	<b>Definition and Measurement</b>
Audit Committee Expertise	<b>ACEXPERTIE</b>	A dummy variable given the value 1 if all audit committee members were qualified and at least one of them has an accounting professional certificate (based on the corporate governance code for Jordan), 0 otherwise.
<b>External Auditors Factors</b>		
External Auditor Reputation	<b>EXAREPUT</b>	A dummy variable given the value 1 if the firm is uses a big-four auditor, 0 otherwise.
External Audit Tenure <sup>2</sup>	<b>EXATENURE</b> <sup>3</sup>	A dummy variable given the value 1 if audit partner has been engaged by the client firm for more than 4 years, and 0 otherwise.
External Audit Opinion <sup>4</sup>	<b>EXAOPIN</b> <sup>5</sup>	A dummy variable given the value 0 if firm receives a going-concern modified opinion, and 1 otherwise.
External Audit Change	<b>EXACHANG</b> <sup>6</sup>	A dummy variable given the value 1 if firm has changed external auditor before one year, and 0 otherwise.
<b>Ownership Structure Variables</b>		
Managerial Shareholders	<b>MANOWN</b>	The percentage of total shares owned by the directors of the firm.
Foreign Institutional ownership	<b>IOWNFOR</b>	The percentage of total shares owned by foreign institutions.
local Institutional ownership	<b>IOWNLOC</b>	The percentage of total shares owned by local institutions.
Foreign Individual ownership	<b>INDOWNF</b>	The percentage of total shares owned by foreign investors.
Local Individual ownership	<b>INDOWNL</b>	The percentage of total shares owned by local investors.
Family Ownership	<b>FAMOWN</b>	The cumulative percentage of total shares owned by family.
Blockholders Ownership <sup>7</sup>	<b>BLOCKOWN</b>	A dummy variable given the value 1 if the firm has external

<sup>1</sup> The measure of non-executive members on the audit committee is proxied by a dummy variable rather than as proportion similar to the measure of non-executive in the board, because the total number of audit committee members is often very small.

<sup>2</sup> Peter Carey and Roger Simnett, Audit Partner Tenure and Audit Quality (The Accounting Review, May 2006).

<sup>3</sup> A according to the external auditors (firm and partner) the Jordan corporate governance code (2012) stipulated in section (4) that “The external auditor shall exercise his duties for one year renewable... and the renewal for the partner at the external auditor may not be for more than four consecutive years, and the re-election may not take place before a minimum of two years”.

<sup>4</sup> In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the firm as of December 31<sup>st</sup>, and the results of its operations and cash flows for the years then ended, in conformity with accounting principles generally accepted and IFRS.

<sup>5</sup> The going concern principle states that if an auditor issues an unmodified audit report then they believe that the firm will continue to exist and operate in its current form for at least the next 12 months. If this is not the case, for example if the firm is about to be closed down, then the auditor issues an audit report with a going concern modification.

<sup>6</sup> See not (2) above.

<sup>7</sup> Dechow et al 1996.

		stockholder ownership of 5% or more of the outstanding shares.
State Ownership	<b>STATOWN</b>	The percentage of total shares owned by the Jordanian government
<b>Control Variables</b>		
Firm Subsidiary	<b>FSUB</b>	A dummy variable given the value 1 if the firm had a subsidiary and 0 otherwise.
Financial Leverage	<b>FLVE</b>	Long-term debt divided by total assets at year-end.
Firm Performance	<b>ROA</b>	Net income divided by total assets at the beginning of a year (return on assets)
Cash Flow from Operating Activities	<b>CFOA</b>	Cash flow from operating activities divided by total assets at the beginning of a year.

## 5.6 DATA Collection

We gather the data for this research from two sources: (1) the financial data and internal control and corporate governance variables are obtained from the annual financial reports of Jordanian industrial firms listed on the Amman Stock Market during the period 2005-2012. (2) Semi-structured interviews are constructed to obtain internal control and corporate governance-related from 12 Jordanian industrial firms (the selection of which is detailed earlier).

### 5.6.1 Earnings Management Models Sample

According to the Amman Stock Market, the industrial sector consists of 11 types. These 11 types of industries have a total of 73 firms, which represent the total sample used in this PhD study:

- Pharmaceutical and Medical Industries, which include 6 firms.
- Chemical Industries, which include 10 firms.
- Paper and Cardboard Industries, which include 3 firms.
- Printing and Packaging Industries, which include 2 firms.
- Food and Beverages Industries, which include 11 firms.
- Tobacco and Cigarettes Industries, which include 2 firms.
- Mining and Extraction Industries, which include 17 firms.
- Engineering and Construction Industries, which include 9 firms.
- Electrical Industries, which include 5 firms.
- Textiles, Leathers and Clothing Industries, which include 6 firms.

- Class and Ceramic Industries, which include two firms.

There are several values missing from DATASTREAM and the Amman Stock Market regarding our models variables. In relation to the margin model, 17 firms are excluded from the total sample, for three reasons which are: (1) the firms have missing values for several variables from 2005 to 2012; (2) the firms started trading on the stock market after 2005, and (3) the firms use the fiscal financial year instead of the financial calendar year (i.e. the year did not start by 01/01/XX). The reason for excluding firms established after 2005 (rather than 2006 since our study pertains to the period of 2006 to 2012) is that there are several variables which we would need the previous year's data to calculate the 2006 value for, such as change in account receivable and change in account payable. Therefore, only 56 firms are used in the final sample. Table (5.6) presents the breakdown of the firms into industry type. We also list down the number of firms that are omitted and the final numbers of firms used in the research.

Table 5-6 Breakdown of firms used in the Sample Margin Model (PPY Model)

Descriptions	Pharmaceutical and Medical Industries	Chemical Industries	Paper and Cardboard Industries	Printing and Packaging	Food and Beverages	Tobacco and Cigarettes	Mining and Extraction Industries	Engineering and Construction	Electrical Industries	Textiles, Leathers and Clothing	Glass and Ceramic Industries	Total
Total numbers of firms	6	10	3	2	11	2	17	9	5	6	2	73
Missing data for 2012 and 2005	0	1	0	0	1	0	3	1	1	1	1	9
Firms started after 2005	0	0	0	0	1	0	5	1	1	0	0	8
Total number of firms omitted from sample	0	(1)	0	0	(2)	0	(8)	(2)	(2)	(1)	(1)	(17)
Total firms included in the sample	6	9	3	2	9	2	9	7	3	5	1	56

Furthermore, because of missing gross (PPE) values for some firms on DATASTREAM and the Amman Stock Market, 17 firms are excluded from the sample for the SJ and MJ models; this means that the final sample is 39 firms for both of them. See Table (5.7).

Table 5-7 Breakdown of firms used in the Sample Jones and Modified Jones Models

Descriptions	Pharmaceutical and Medical Industries	Chemical Industries	Paper and Cardboard Industries	Printing and Packaging	Food and Beverages	Tobacco and Cigarettes	Mining and Extraction Industries	Engineering and Construction	Electrical Industries	Textiles, Leathers and Clothing	Glass and Ceramic Industries	Total
Total numbers of firms	6	9	3	2	9	2	9	7	3	5	1	56
Firms with missing data for (Gross PPE) during 2006 to 2012	1	3	1	1	3	1	3	3	0	1	0	17
Total number of firms omitted from sample	(1)	(3)	(1)	(1)	(3)	(1)	(3)	(3)	0	(1)	0	(17)
Total firms included in the sample	5	6	2	1	6	1	6	4	3	4	1	39

Table (5.8) provides information about the industries of the firms included in each model sample.

Table 5-8 Industry Distribution of firms used in all models

Industry Type	SJ Model	MJ Model	PPY Model
Pharmaceutical and Medical Industries	5	5	6
Chemical Industries	6	6	9
Paper and Cardboard Industries	2	2	3
Printing and Packaging	1	1	2
Food and Beverages	6	6	9
Tobacco and Cigarettes	1	1	2
Mining and Extraction Industries	6	6	9
Engineering and Construction	4	4	7
Electrical Industries	3	3	3
Textiles, Leathers and Clothing	4	4	5
Glass and Ceramic Industries	1	1	1
<b>Total</b>	<b>39</b>	<b>39</b>	<b>56</b>

### **5.6.2 Semi-structured Interview Sample**

The semi-structured interview was conducted with a sample of 16 managers from a total of 12 firms (i.e. general managers, financial managers and internal audit managers). They were selected based on three factors: (1) the empirical results from the accrual models, (2) movements in the firm's Amman stock market classification (i.e. first, second and third markets) and (3) the preliminary results from pilot interviews conducted with one firm. We evaluated the results from the pilot interview and refine the interview questions since it is a long established large firm whose financial manager has many years of experience. Based on the standardised prediction error results for each group according to earnings management models (SJ, MJ and PPY), firms were chosen to represent the categories of earnings management (high positive earnings management, low earnings management and high negative earnings management) and also to represent firms that had moved between the different stock markets as this have previously been identified as a factor associated with earnings management. The firms for interviews analysis are selected based on the followings:

- Two firms that have high positive earnings management values in all three accruals models.
- Two firms that have high negative earnings management values in all three accruals models.
- Two firms that have low positive earnings management values (close to zero) in all three accruals models.
- Two firms that have low negative earnings management values (close to zero) in all three accruals models.
- One firm that has recently moved from the first market to second market.
- One firm that has recently moved from second market to first market.
- One firm that has always been in the first market.
- A sample of one firm that moved down from the first market to the second market after the application of IFRS.

## **5.7 Analytical Procedures**

This section discusses the process the researcher undergoes to analyse the data.

### **5.7.1 The Processes of Secondary Data Analysis (Quantitative Methods)**

At this stage, we analyse the secondary data by using T-Tests (comparing means) and discriminant analysis rather than OLS and GLS regressions based on several reasons: (1) the

analysis of the covariance matrices show no clear relationship between our variables, when the earnings management (dependent) variable was treated as continuous rather than categorical (2) the existence of multicollinearity and heteroskedasticity problems among the variables (see appendix 4), (3) the lack of statistical significance in the GLS results (see appendix 4), and (4) the fact that our sample size is small for this kind of technique (see Tables 5.7 and 5.8).

#### **5.7.1.1 T-Test (Comparing Means)**

Here, we use the t-tests (comparing means) to investigate the relationship between our dependent and explanatory variables. We made the comparisons between the variables based on the three categories of earnings management we observed (high negative EM, low EM and high positive EM). Since we found a significant proportion of the EM observations are clustered around zero value which implies low earnings management, a group the firms display high positive earnings management, and a group of the firms display high negative earnings management (see appendix 3). In fact, 25% of the observations were found in each of the high EM categories, and 50% of them were in the near-zero category. T-tests were conducted for each of the corporate governance variables to test whether the means for each variable were significantly different for the group of firms belonging to each EM category.

#### **5.7.1.2 Quadratic Discriminant Analysis (Multivariate Analyses)**

Since the OLS/GLS regressions were poorly specified and yielded weak results, in this section, we used quadratic discriminant analysis to predict which of the three EM categories each firm belonged to, on the basis of their corporate governance characteristics. This technique is computationally equivalent to regression analysis (Bramhandkar, 2011) to predict the relationship between corporate governance mechanisms and earnings management level in our sample firms. Linear discriminant analysis (LDA) and quadratic discriminant analysis (QDA) are the main two types that are available in discriminant analysis (Smith, 1947). This research used the QDA type since the relationships are not linear and this is also one of the main reasons for the misspecification of the regression models (see section 6.5.2).

The quadratic discriminant analysis was used in different ways to analyse the research variables: first, we analysed all the variables together based on the three categories of EM (to

High +ve EM, Low EM, and High -ve EM)<sup>1</sup> and the three different accruals models (Jones, Modified Jones and PPY); second, based on the first results, we found that the Modified Jones EM estimates produced more significant QDA results, therefore used the MJ earnings estimates to separately analyse corporate governance factors (board characteristics, audit committee characteristics, external audit and ownership structure) in order to discover which corporate governance factors were the best in identifying high positive, low or high-negative earnings management.

Finally, the sample size of the research that utilised QDA to explain the relationship between two or more variables should include five observations for each variable; the small sample size is not considered problematic in QDA (Lu, Plataniotis and Venetsanopoulos, 2003).

### **5.7.2 Interviews Analysis**

The next stage is to use the interview approach to produce in-depth information on the processes of internal control and corporate governance mechanisms, and their relationship with earnings management practices. The semi-structured interviews conducted with managers, the findings from the models of accruals, the firms' published financial statements, reviewing of published Amman stock market information, reviewing corporate governance statements in each firm and review of internal documentation provided as a result of the interviews. In order to refine the interview questions, one pilot interview was conducted with a well-qualified financial manager with a great deal of experience. Based on the results from this pilot study and advice from three academic professors at Jordanian universities experienced in research on corporate governance and earnings management, these final interview questions are refined to make more relevant to our research objectives.

The interviews are recorded using audio-tape and subsequently transcribed. After consultation, the managers of 11 firms agreed to be recorded as long as there is no obligation to answer any question, especially those which may have implications on their positions in the firms. Due to the sensitivity of the subject matter (earnings management) we have made the firms anonymous throughout this thesis. Only one manager was unwilling for it to be recorded due to the firm's policy. Each semi-structured interview lasts between one and two-and-a-quarter hours.

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<sup>1</sup> The technique of dividing EM into categories is used first time in such topic, as most existing literatures tend to combine both high positive or high negative and analysed them together (Alghamdi, 2012; Rhohaida, 2011; Habbash, 2010).

The interviews provide in-depth information which might be of assistance to financial statement users (e.g. suppliers, the government and investors) in understanding how internal control components and corporate governance mechanisms affect earnings management.

The interviews are used to explore several in-depth issues (see section 7.1). The resulting research instrument and an outline list of suggested questions used during the interviews are attached in appendixes 1 and 2.

## **5.8 Summary**

This chapter begins by discussing research methodology and paradigms. The analysis supports the decision that this research should adopt a mixed methodology. We adopt this methodology to help with understanding the nature of the relationships among internal control, corporate governance mechanisms and earnings management practices and the empirical results draw on data deriving from both quantitative and qualitative research methods.

Combination of the results of quantitative methods and qualitative methods has been discussed by various researchers who believe that this combination can lead to one of these three possibilities; (1) they can complement each other; (2) they can challenge each other, or (3) they talk past each other (e.g. Brown *et al* 2007). In chapter seven, we discuss these three possibilities in relation to our own results and the contribution to new knowledge this research makes.

This chapter also discusses the use of variables, their proxies and measurements, in the quantitative analysis. Additionally, this chapter discusses the procedures for both methods (secondary data and interviews).



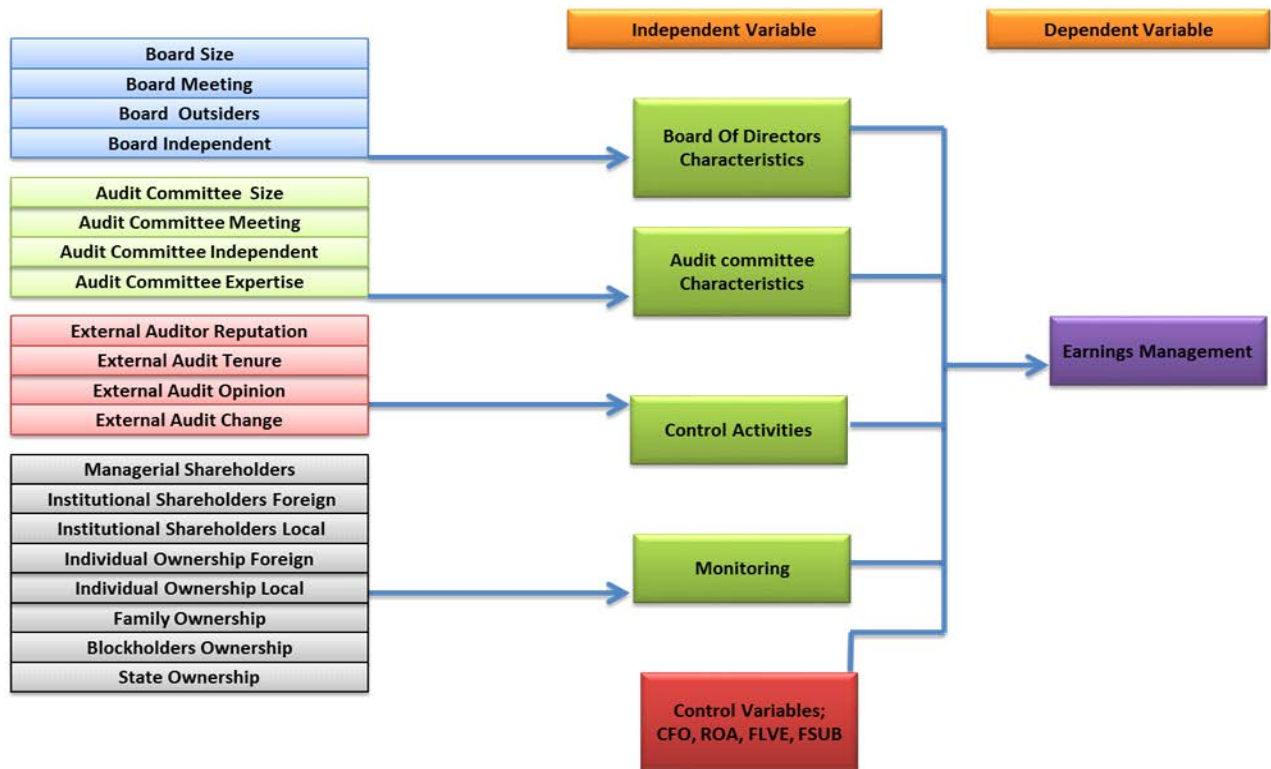
## **6. Chapter Six: Secondary Data Analysis, Findings and Discussions**

### **6.1 Introduction**

This chapter presents the results and analysis of secondary data with reference to the role of internal control and corporate governance mechanisms in constraining earnings management in Jordanian industrial firms.

As described in the methodology chapter, three earnings management models, the Standard Jones model, Modified Jones model and the Peasnell, Pope and Young model (SJ, MJ, and PPY respectively) were adapted to construct earnings management measures (i.e. discretionary accruals for SJ and MJ, and working capital accruals for PPY) as dependant variables, in order to determine to what extent internal control and corporate governance mechanisms affect earnings management in Jordanian industrial firms. The explanatory variables include board of directors' characteristics, audit committee characteristics, external audit factors and ownership structure. The other variables include firm subsidiaries, financial leverage, firm performance and cash flow from operating activities as control variables. See figure 6.1.

Figure 6-1 the Relationship between Internal Control, Corporate Governance Mechanisms and Earnings Management.



This chapter is divided as follows; Section 6.2 presents and discusses the descriptive statistics and univariate analysis. Section 6.3 presents and discusses covariance among variables. Section 6.4 presents and discusses the results of testing the hypotheses through using t-test (comparing means) and quadratic discriminant analysis. Section 6.5 provides chapter summary.

## 6.2 Measuring Accruals Models

The standard way for evaluating earnings management begins from measuring accruals. This thesis considers three models to measure accruals (SJ, MJ, and PPY), which were discussed in chapter three. This section presents the empirical evidence that determined the most suitable model to detect earnings management in Jordanian firms.

Table 6.1 shows that the regression results for the Standard Jones model has an F-statistic (15.70), significant at the 1% level however the model  $R^2$  is low, (with a value of 15% which suggests that the model is weak and does not satisfactorily explain the variation in the values of the dependent variable in SJ model sample (total accruals).

The results in Table 6.2, show a positive estimated coefficient of 0.16 on the change in revenue variable, which is significant at the 10% level, and with a negative coefficient (-0.13) for PPE, which is significant at 5%. This indicates, as in the original Jones (1991)

study, positive accruals (income increasing) associated with increases in revenue and negative accruals associated with the level of PPE. The positive coefficient on change in revenue is consistent with the idea that an underlying increase in revenue will necessarily result in an increase in working capital and thus accruals and the negative coefficient on PPE is consistent the political costs hypothesis, which suggests that larger organisations use more income-decreasing earnings management (Watts and Zimmerman, 1979). Model specification test results of SJ show that the model would be improved by including squared terms. The coefficients for which are significant at 1% level (see appendix 5).

Table 6-1 Summary of Models Fit

	SJ Model	MJ Model	PPY Model
F-statistics (Sig)	15.70 (***)	154.00 (***)	1024.00 (***)
R <sup>2</sup>	0.15	0.63	0.84

\*\*\* denotes significance at the 0.01 level

Table 6-2 Mean Coefficient (t-statistic) on Partitioning and Explanatory Variables for Earnings Management Models (SJ, MJ and PPY)

Models	Coef. t-stat (Sig) $\Delta RVE$	Coef. t-stat (Sig) $\Delta RVE - \Delta REC$	Coef. t-stat (Sig) PPE	Coef. t-stat (Sig) RVE	Coef. t-stat (Sig) CR
SJ Model	0.16 1.71*	-	-0.13 -4.71**		-
MJ Model	-	-0.72 -18.97***	-0.13 -1.53		-
PPY Model	-	-	-	0.99 40.89***	-0.97 -39.17***

\*\*\* denotes significance at the 0.01 level, \*\* denotes significance at the 0.05 level, \* denotes significance at the 0.05 level

The results in Tables 6.1 and 6.2 show that the modified Jones model is a better model for this dataset, compared with standard Jones model. The model has an F-statistic of 154

(significant at 1%) and an  $R^2$  of 0.63%. The estimated coefficients are -0.72 on the change in revenue less change in account receivables variable (significant at 1%) and -0.13 (not significant) for PPE. This result shows the importance of accounting policies relating to accounts receivable in Jordanian firms since the inclusion of this variable significantly improves the model fit and the significance of the coefficients. Model specification test results of MJ show that the model would be improved by including squared terms. The coefficients for which are significant at 1% level (see appendix 5).

PPY model shows the best results for model fit (Tables 6.1 and 6.2). Table 6.1 reveals that the PPY model has an F-statistic of 1024 (significant at 1%) and an  $R^2$  value of 0.84. With respect to the coefficients for the PPY model, the total sales variable has a coefficient of 0.99 (significant 1%) and the total sales minus the change in trade debtors variable has a coefficient of -0.97 (significant at 1%). The signs of these coefficients are consistent with those reported in the original PPY study. The results suggest that the factors in the PPY model, which are based around sales margins and working capital items are more appropriate to explain the observed pattern of accruals in Jordanian firms. Model specification test results of PPY show that the model is not improved by including squared terms. The coefficients for which are not significant (see appendix 5).

Furthermore, and based on Stubben's (2010) study which found that discretionary revenue models are better than accrual models, this thesis measured the power of the discretionary revenue models, particularly the model related to gross accounts receivable, (using fit model and model specification test) where both of them showed weak results in the context of Jordanian industrial firms compared with accrual model results (See Appendix 5).

Appendix 5 shows that the regression results for the discretionary revenue model (gross accounts receivable) has an F-statistic (36), significant at the 1% level. However, the model  $R^2$  is low, (with a value of 25% which suggests that the model is weak and does not satisfactorily explain the variation in the values of the dependent variable in the discretionary revenue model (gross accounts receivable) sample.

The results in Appendix 5, show an estimated positive coefficient of 0.09 on the change in sales variable, which is significant at the 1% level, and with a positive coefficient (0.04) for PPE, which is significant at 1%. The model specification test results of the discretionary

revenue model (gross accounts receivable) show that the model would be improved by including squared terms. The coefficients are significant at 1% level (see appendix 5).

Overall, the PPY model is the most suitable model of accruals for Jordanian firms. These results are consistent with several prior papers that indicated that Standard Jones and Modified Jones models are not effective models to detect earnings management in the developing countries, such as Islam, et al (2011) and Yoon, et al (2006).

### **6.3 Descriptive Statistics and Univariate Analysis**

This section presents the descriptive statistics and univariate analysis results for the variables used in the extended earnings management models, discretionary accruals for Standard Jones, 1991 (DACSJ), discretionary accruals for Modified Jones (DACMJ), working capital accruals for Peasnell, Pope and Young (WCPPY). In addition, we present descriptive measures for explanatory variables and control variables (detailed in the previous chapter). The descriptive statistics and univariate tests for SJ and MJ observations are shown together, and descriptive statistics and univariate tests for PPY are shown separately. The reason for this is that SJ and MJ models use the same sample of 39 Jordanian industrial firms over the period of 2006 to 2012, whereas for the PPY model, the sample includes 56 Jordanian industrial firms over the same period.

#### **6.3.1 Dependent Variable (Earnings Management)**

##### **Earnings Management Variable**

As showed in Tables (6.3 and 6.4) the mean values of DACSJ, DACMJ, and WCPPY are all around zero, implying the accruals models to fit the data fairly well. These findings are consistent with those reported by Klein (2002) in the US and Bhuiyan, Roudaki and Clark (2013) who found the mean values of four earnings models (Jones model, modified Jones model, performance matched model and performance matched free cash flow model) in Australia to be zero. Other findings as reported by, for example, Xie, et al (2003) reveal the mean value for discretionary accruals to be around 0.10 implying a poorer fit of the model. Also, Abed, *et al* (2012) found the absolute mean value for discretionary accruals using the modified Jones model in Jordanian industrial firms to be 0.08. Their findings may differ from

ours due to the different period of studies they use, which is from 2006 to 2009. This implies that the period they used does not consider important factors that could potentially lead to non-zero values when applying the discretionary accruals model, such as the more recent financial crisis and the Middle East Revolutions (e.g., Syria, Libya and Egypt). As for this current study, it covers the period over 2006 to 2012, which includes some unique economics and political circumstances such as, Middle East revolutions, volatile oil prices, and significant fluctuation in tax rates.

### **The Construction of the Earnings Management Variable for Discriminant Analysis**

The error terms from the Accruals Models generate an estimate of earnings management that does not have upper or lower bounds and whose distribution is usually considered to be sufficiently close to a normal distribution for these variables to be modelling using ordinary least squares regression (see for example Alghamdi, 2012; Rhohaida, 2011 and Habbash, 2010). One significant limitation of this approach is that it results in companies with negative earnings management and companies with positive earnings management being included in the same analysis and this has three effects on the regression coefficients. First, the coefficients for any given independent variable may be of opposite signs for these two groups (positive and negative EM) and combining them is likely to result in lower coefficients, which are less likely to prove significant than if they were analysed separately. Second, because the data contains opposing effects it can be difficult to interpret the signs of the resulting regression coefficients. Finally, the standard approach fails to allow for the possibility that there may be different motivations underlying the two types of earnings management behaviour. In many respects this problem is similar to samples containing both loss-making and profit-making firms, which has long been recognised as an issue in positive accounting research (for example see Ball and Brown, 1968).

In papers where discriminant analysis has been used to model accounting variables, the usual approach has been to construct a binary variable, the classic example being Altman’s (1968) work classifying bankrupt/non bankrupt firms. Similar approaches appear in more current analyses such as Ahmad and Shahsavari (2016) and in studies which classify firms as loss-making/profit making such as Bonini et al (2010). However, given an understanding of the practices of earnings management and the motivations that underlie it (see section 3.4) it is evident that a binary classification is not a good description of the EM variable. The variable captures three different kinds of management behaviour: firms in which there is little or no EM; firms in which there is significant income-increasing EM and firms in which there is significant income-decreasing EM, the last two groups each being driven by different motivations. See Figure (6.2) that presented earnings management estimates in SJ model sample.

Figure 6-2 EM Estimates for the SJ Model

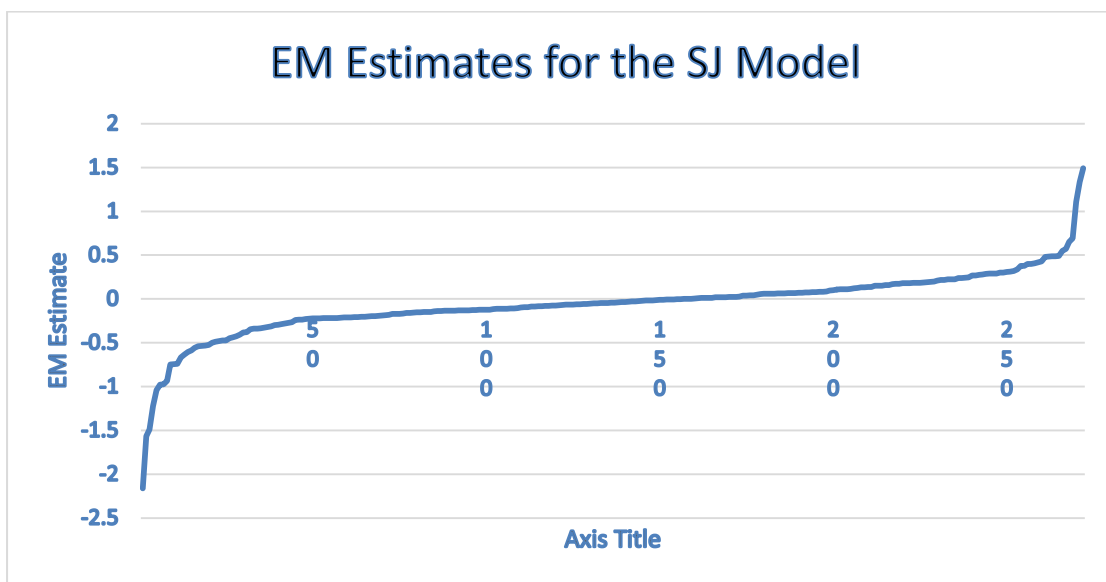


Figure (6.2) is evident in the plots of the EM estimates included in Appendix 3 (above), which show around 50% of firms with EM estimates close to zero, 25% with high positive EM and 25% with high negative EM.

In order to reflect the nature of this variable in the Quadratic Discriminant Analysis, we constructed groups to reflect this three way classification, which we believe better reflects the nature of the EM variable.

### 6.3.2 Board of Directors Characteristics

The average board size (*BSIZE*)<sup>1</sup> for the sample of firms from the SJ and MJ models is 8.06 and for the sample from the PPY model is 8.21 (Tables 6.3 and 6.4). The average board sizes reported for US firms tend to be larger (for example, those reported by Ghosh, *et al*, 2010, Xie *et al*, 2003 and Yermack, 1996 were 9.27, 12.48 and 12.25 respectively) although some US studies (e.g. Anglin *et al*, 2013) use samples with smaller board sizes (an average of 8.65). Similar board sizes are also reported for Jordanian firms by studies from the UK (e.g. Peasnell *et al*, 2005 with average of 8.01) and Saudi Arabia (e.g. Alghamdi, 2012, with an average of 8.22). Smaller board sizes are reported for Malaysian firms (for example an average of 5 members reported in Abdul Rahman *et al*, 2006). Finally, it is possible that the smaller absolute board sizes reported in some of these studies might lead to the variable appearing more significant in the regression models, as an increase or decrease of one board member would appear as a larger variation in the variable.

Table 6-3 Descriptive Statistics and Univariate Test for SJ and MJ Models and Explanatory Variables (Pooled Data)

Model Sample	Median	Min	Max	Mean	Standard Deviation
<i>DACSJ</i>	-0.04	-2.16	15.34	0.00	1.00
<i>DACMJ</i>	0.02	-5.17	6.91	0.00	1.00
<i>BSIZE</i>	7.00	3.00	13.00	8.06	2.14
<i>BMEETING</i>	6.00	4.00	10.00	6.30	0.68
<i>BOUSIDE</i>	0.80	0.00	1.00	0.80	0.20
<i>BINDEPEND</i>	1.00	0.00	1.00	0.57	0.52
<i>ACSIZE</i>	3.00	0.00	5.00	2.75	1.06
<i>ACMEETING</i>	4.00	0.00	7.00	3.70	1.48
<i>ACINDEPEND</i>	0.00	0.00	1.00	0.34	0.47
<i>ACEXPRTISE</i>	0.67	0.00	1.00	0.61	0.36
<i>EXAREPUT</i>	0.00	0.00	1.00	0.33	0.47

<sup>1</sup> This is determined by the number of members of the board of directors elected by shareholders.



<i>EXATENURE</i>	0.00	0.00	1.00	0.22	0.41
<i>EXAOPIN</i>	1.00	0.00	1.00	0.84	0.37
<i>EXACHANG</i>	0.00	0.00	1.00	0.13	0.33
<i>MANOWN</i>	0.51	0.00	0.99	0.52	0.25
<i>IOWNFOR</i>	0.00	0.00	0.99	0.15	0.23
<i>IOWNLOC</i>	0.31	0.00	9.50	0.47	1.13
<i>INDOWNF</i>	0.00	0.00	0.92	0.04	0.12
<i>INDOWNL</i>	0.15	0.00	0.82	0.51	4.97
<i>FAMOWN</i>	0.12	0.00	0.95	0.19	0.21
<i>BLOCKOWN</i>	1.00	0.00	1.00	0.85	0.36
<i>STATOWN</i>	0.00	0.00	0.50	0.06	0.11
<i>ROA</i>	0.03	-0.34	5.17	0.05	0.33
<i>CFOA</i>	0.03	-6.03	0.61	0.01	0.39
<i>FLVE</i>	0.00	0.00	0.56	0.05	0.09
<i>FSUB</i>	0.00	0.00	1.00	0.27	0.44

*ACCSJ* is Discretionary Accruals (Standard Jones Model), *ACCMJ* is Discretionary Accruals (Modified Jones Model), *WAPPY* is Working Capital Accruals, *BSIZE* is Board of Director Size, *BMEETING* is Number of the Board of Directors, *BOUSIDE* is Board of Director Outsiders, and *BINDEPEND* is Board of Director Independence. *ACSIZE* is Audit Committee Size, *ACMEETING* is Number of Audit Committee Meetings, *ACINDEPEND* is Audit Committee Independence, and *ACEXPERTISE* is Audit Committee Expertise. *EXAREPUT* is External Auditor Reputation, *EXATENURE* is External Audit Tenure, *EXAOPIN* is External Audit Opinion, and *EXACHANG* is External Audit Change. *MANOWN* is Managerial Shareholders, *IOWNFOR* is Institutional Shareholders Foreign, *IOWNLOC* is Institutional Shareholders Local, *INDOWNF* is Individual Foreign, *INDOWNL* is Individual Local, *FAMOWN* is Family Ownership, *BLOCKOWN* is Blockholder Ownership, and *STATOWN* is State Ownership. *FSUB* is Firm Subsidiary, *FLVE* is Financial Leverage, *ROA* is Firm Performance, and *CFOA* is Cash Flow from Operating Activities.

Table 6-4 Descriptive Statistics and Univariate Test for PPY Model and Explanatory Variables (Pooled Data)

Model Sample					
Variables	Median	Min	Max	Mean	Standard Deviation
<i>WCPY</i>	0.05	-7.05	6.94	0.00	1.00
<i>BSIZE</i>	9.00	3.00	13.00	8.21	2.13
<i>BMEETING</i>	6.00	4.00	10.00	6.27	0.64
<i>BOUSIDE</i>	0.82	0.00	1.00	0.82	0.18
<i>BINDEPEND</i>	1.00	0.00	1.00	0.65	0.50
<i>ACSIZE</i>	3.00	0.00	5.00	2.69	1.07
<i>ACMEETING</i>	4.00	0.00	7.00	3.65	1.51
<i>ACINDEPEND</i>	0.00	0.00	1.00	0.32	0.47
<i>ACEXPERTISE</i>	0.67	0.00	1.00	0.66	0.37
<i>EXAREPUT</i>	0.00	0.00	1.00	0.30	0.46
<i>EXATENURE</i>	0.00	0.00	1.00	0.22	0.41
<i>EXAOPIN</i>	1.00	0.00	1.00	0.88	0.33
<i>EXACHANG</i>	0.00	0.00	1.00	0.11	0.31
<i>MANOWN</i>	0.46	0.00	0.99	0.49	0.25
<i>IOWNFOR</i>	0.00	0.00	0.99	0.13	0.22
<i>IOWNLOC</i>	0.31	0.00	9.50	0.43	0.95
<i>INDOWNF</i>	0.00	0.00	0.92	0.04	0.11
<i>INDOWNL</i>	0.15	0.00	0.82	0.43	4.15
<i>FAMOWN</i>	0.13	0.00	0.95	0.20	0.22
<i>BLOCKOWN</i>	1.00	0.00	1.00	0.87	0.34
<i>STATOWN</i>	0.00	0.00	0.50	0.05	0.09
<i>ROA</i>	0.03	-0.34	5.17	0.05	0.28
<i>CFOA</i>	0.04	-6.03	0.61	0.02	0.33
<i>FLVE</i>	0.00	0.00	0.56	0.04	0.08
<i>FSUB</i>	0.00	0.00	1.00	0.20	0.40

**ACCSJ** is Discretionary Accruals (Standard Jones Model), **ACCMJ** is Discretionary Accruals (Modified Jones Model), **WAPPY** is Working Capital Accruals, **BFSIZE** is Board of Director Size, **BMEETING** is Number of the Board of Directors, **BOUTSIDE** is Board of Director Outsiders, and **BINDEPEND** is Board of Director Independence. **ACSIZE** is Audit Committee Size, **ACMEETING** is Number of Audit Committee Meetings, **ACINDEPEND** is Audit Committee Independence, and **ACEXPERTISE** is Audit Committee Expertise. **EXAREPUT** is External Auditor Reputation, **EXATENURE** is External Audit Tenure, **EXAOPIN** is External Audit Opinion, and **EXACHANG** is External Audit Change. **MANOWN** is Managerial Shareholders, **IOWNFOR** is Institutional Shareholders Foreign, **IOWNLOC** is Institutional Shareholders Local, **INDOWNF** is Individual Foreign, **INDOWNL** is Individual Local, **FAMOWN** is Family Ownership, **BLOCKOWN** is Blockholder Ownership, and **STATOWN** is State Ownership. **FSUB** is Firm Subsidiary, **FLVE** is Financial Leverage, **ROA** is Firm Performance, and **CFOA** is Cash Flow from Operating Activities.

Tables 6.3 and 6.4 reveal that not all Jordanian industrial firms comply with the Jordan corporate governance code recommendation relating to board size, which states that the number of board members, should be between 5 and 13 members, and those members must be elected by secret ballot. The minimum board size in our sample is 3 and the maximum is 13. In 52 firm-years for the PPY sample and 34 firm-years for the SJ/MJ sample the numbers of board members in the firms are less than 5.

The number of board meetings (**BMEETING**) is considered another relevant characteristic in the literature. Tables 6.3 and 6.4 show that number of board meetings ranges between 4 and 10, per year with an average just over 6. These results seem to be smaller than those reported by Anglin *et al* (2013) in Canada and Awais, *et al* (2011) in China with values of 8.01 and 7.90 respectively, and larger than Alghamdi (2012) with average value of 4.5 in Saudi Arabia.

With reference to board outsiders (**BOUTSIDE**)<sup>1</sup>, average values for which are shown in Tables (6.3, 6.4), outsiders constitute a higher proportion of the board of directors than insiders, with average values of 0.80 in SJ and MJ, and 0.82 in PPY. These average values indicate that most Jordanian industrial firms comply with the Jordan corporate governance code recommendation relating to board outsiders, which states that the majority of board members should be non-executives.

The Jordan corporate governance code stipulates that it should not allow for the board of directors' chairman to occupy any another executive position in the same firm simultaneously such as, the general manager position. Accordingly, a variable was created to investigate this issue which is called board independence (**BINDEPEND**)<sup>2</sup>. Table 6.3 indicates that more than 57% of the board of directors' chairman for the SJ/MJ sample occupy another executive

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1 This variable measured by using the number of non-executives on the board divided by the total number of board members.

2 This is a dummy variable that measured with value 1 if CEO and Chairman of Board positions were conducted by the same person and 0 otherwise.

position in the firm, the comparable figure for the PPY sample is 65% (see Table 6.4). This could lead to an increase in the probability of firms engaging in earnings management (Davidson *et al*, 2005; Peasnell *et al*, 2000). Studies by Alghamdi, (2012) (for Saudi Arabia), Prencipe, et al (2011) (for Italy) and Chtourou, et al (2001) (for Canada) have also suggested that high board independence could also lead to decrease in earnings management level.

### 6.3.3 Audit Committee Characteristics

The results in Tables 6.3 and 6.4 indicate that several Jordan industrial firms do not have audit committees despite this being a requirement of the Jordan Corporate Governance Code. Because of this the subsequent averages and estimations are adjusted to reflect only those firms with a committee.

The Jordan corporate governance code stipulates that the minimum number of audit committee members has to be no less than three. In fact, based on the information presented in Tables 6.3 and 6.4, we found that the average audit committee size (*ACSIZE*) for all models is less than 3 (the average for SJ/ MJ is 2.75 and for PPY is 2.69). These numbers indicate that most Jordanian industrial firms do not comply with Jordan corporate governance code recommendation according to the minimum audit committee members. Accordingly, these are consistent with several prior studies such as; Hamdan *et al*, 2013 who found minimum audit committee members to be 3 in Jordan firms. In addition, Baxter (2009), Bedard, *et al* (2004), and Xie, *et al* (2003), also found the minimum audit committee members less than 3.5.

By comparing audit committee size in Jordanian industrial firms with other countries, we found Jordanian industrial firms audit committee size to be smaller than audit committee size in USA (e.g. Xie *et al*, 2003 found mean value 4.53), and Saudi Arabia (e.g. Alghamdi, 2012; Habbash, 2010, who found mean values of 3.12, 3.58 respectively).

The frequency of audit committee meeting (*ACMEETING*)<sup>1</sup> per year is another issue that has received interest in this research area. On average, Tables 6.3 and 6.4 show that the frequency of audit committee meetings in Jordan is less than the frequency stipulated by the Jordan corporate governance code (average frequency for firms used in the SJ and MJ samples is 3.7 and for those in the PPY sample is 3.65), which states that each audit committee has to meet at least four times per year. These results are inconsistent with prior

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<sup>1</sup> This variable is estimated by the number of annual meetings the committee holds.

studies results (e.g. Saleh *et al*, 2007; Abdul Rahman; Baxter, *et al*, 2009; Bedard, *et al*, 2004).

Tables 6.3 and 6.4 show that audit committee independence (*ACINDEPEND*)<sup>1</sup> absolute average values are low, which is 0.34 for SJ/MJ and 0.32 for PPY), which means this increase the opportunity for the managers to engage in earnings management practices, these results are supported by prior literature such as, Saleh *et al*, (2007) and Abbott *et al*, (2000).

Tables 6.3 and 6.4 present that the average for audit committee expertise (*ACEXPERTISE*)<sup>2</sup> to be more than 0.60 in all models samples. These results are consistent with several studies results such as, Puat *et al* (2013), Lo *et al* (2004) and Bedard *et al* (2004). Furthermore, firms in our samples are compliant with corporate governance rules which state that “most of the audit committee have to have expertise in accounting and finance fields”. The average value of this variable as estimated in the different models is greater than 0.5 (0.61 for the SJ/MJ sample, and 0.66 for the PPY sample), and therefore implying a tendency to mitigate earnings management practices (Bedard *et al*, 2004).

Finally, the absence of audit committees in some Jordanian industrial firms could be the potential reason for weak regression results relating to audit committee characteristics in Jordanian industrial firms comparing with other countries. The Jordanian corporate governance code stipulates that each firm should have audit committee. In case of firm does not comply with this stipulation, this will not exclude this firm from being listed on the Amman stock market but will cause the firm to go down from the first market to the second market. (Amman Stock Market, 2015).

#### 6.3.4 External Auditors Factors

Most of prior literature suggests that compliance with external auditor requirements contained in corporate governance codes is likely lead to reduction in earnings management practices (e.g. Mariani *et al*, 2010; Alhayale *et al*, 2005).

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<sup>1</sup> This is a dummy variable that measured with value 1 if the committee totally comprises from non-executive members is given, and 0 otherwise.

<sup>2</sup> This variable is estimated by giving a value of 1 if all audit committee members were qualified and at least one of them has an accounting professional certificate (based on the corporate governance code for Jordan) and 0 otherwise.

The external auditor's reputation is reflected in the variable (*EXAREPUT*)<sup>1</sup>. Tables 6.3 and 6.4 show that most Jordanian industrial firms do not deal with big-4 audit firms since the average value of external auditor reputation is 0.33 for the SJ/MJ sample and 0.30 for the PPY sample. The main reason for this is probably due to the cost of Big-4 audit fees (Ettredge *et al*, 2007).

Previous studies, such as Davis *et al* (2009), have found that short term audit tenure can lead to reductions in earnings management. The Jordanian corporate governance code recommends that external audit partners are rotated every 4 years. We construct the variable (*EXATENURE*)<sup>2</sup> to represent external auditor tenure. The variable takes the value of one if the governance code conditions are met and zero otherwise. Table 6.3 and 6.4 reveals that 0.78 of Jordanian industrial firms comply with the code and change external auditor partner every 4 years.

Furthermore, We also need a point in the discussion of the figures in Table 6.3 that explains that a mean of 0.84 for the (*EXAOPIN*)<sup>3</sup> variable implies that 16% of the firms have a going concern modification in their audit report and that this is due primarily to the incidence of large and very old debts in the balance sheet and that we pick up this issue for discussion in the interviews in section 7.5.11

Finally, Tables 6.3 and 6.4 indicate averages of 0.13 (SJ/MJ sample) and 0.11 (PPY sample) for the variable representing external auditor change or rotation (*EXACHANG*)<sup>4</sup>. This implies that, more than 87% of Jordanian industrial firms do not comply with the part of the corporate governance code, which states that external auditors are hired by shareholders for one year and rotated year-by-year. This clearly provides Jordanian industrial firms with more opportunities to engage in earnings management, given the long lasting and established relationship between external auditor and firm employees (e.g. internal auditor, general manager and financial manager) which does not give any incentive for auditors to question managers' judgement. This result is supported by Gaver *et al* (2001) and Hackenbrack *et al*

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<sup>1</sup> This is a dummy variable that measured with value 1 if the firm is using big-four and 0 otherwise.

<sup>2</sup> This is a dummy variable that measured with value 1 if audit partner has been engaged by the client firm for more than 4 years and 0 otherwise.

<sup>3</sup> This variable is estimated by giving a dummy variable of value 0 if firm receives a going-concern modified opinion and 1 otherwise.

<sup>4</sup> This variable is estimated by giving a dummy variable of value 1 if firm has changed external auditor before one year and 0 otherwise.

(2002), who suggest that changing external auditors each year may mitigate earnings management practices.

### 6.3.5 Ownership Structure

As illustrated in Tables 6.3 and 6.4, ownership concentration represented by the variable blockholder ownership (*BLOCKOWN*)<sup>1</sup> is high in Jordanian industrial firms, (the SJ/MJ sample has 85% of firms with block ownership and the PPY sample 87%). Managerial ownership (*MANOWN*)<sup>2</sup> is the second type of ownership that is relevant to Jordanian industrial firms (Tables 6.3 and 6.4), where the average values are 0.52 (SJ/MJ sample) and 0.49 (PPY sample).

The average values in Tables 6.3 and 6.4 show that local individual ownership (*INDOWNL*)<sup>3</sup> and local institutional ownership (*IOWNLOC*)<sup>4</sup> are higher than foreign individual ownership (*INDOWNF*)<sup>5</sup> and foreign institutional ownership (*IOWNFOR*)<sup>6</sup> in both samples. These could be due to several reasons: the weakness of existing law to protect foreign investors, higher registration fees for new investment, and increased taxation rates in Jordan compared to other emerging economies in the same area such as, Egypt, Libya and Iraq.

Previous studies suggest that a higher proportion of family ownership will lead to less earnings management because firms are less accountable to external investors. In our study, family ownership (*FAMOWN*)<sup>7</sup> is 0.19 in the SJ/MJ sample and 0.20 in the PPY sample.

Despite the OECD (2004) suggestion that increased state-ownership in firms is likely to lead to economic expansion; Jordan is relatively unusual among developing countries in relation to the lower level of governmental ownership among firms. The results in Tables 6.3 and 6.4 show that average values for state ownership (*STATOWN*)<sup>8</sup> are 0.06 in the SJ/MJ sample and 0.05 in the PPY sample, and these results are consistent with several other studies (e.g. Alfaraih *et al*, 2012; Wang *et al*, 2011; Omran *et al*, 2008) with average values for state ownership 0.03, 0.05, and 0.06 respectively, and where they found no relationship between earnings management and state ownership.

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1 This variable is estimated by giving a dummy variable of value 1 if the firm has external stockholder ownership of 5% or more of the outstanding shares and zero, otherwise.

2 This variable is estimated by the cumulative percentage of total shares owned by the directors of the firm.

3 This variable is estimated by the cumulative percentage of total shares owned by local people.

4 This variable is estimated by the cumulative percentage of total shares owned by local institutions.

5 This variable is estimated by the cumulative percentage of total shares owned by foreign people.

6 This variable is estimated by the cumulative percentage of total shares owned by foreign institutions.

7 This variable is estimated by the cumulative percentage of total shares owned by family.

8 This variable is estimated by the cumulative percentage of government ownership of the firm.

### 6.3.6 Control Variables

In this section control variables for all models are discussed. The Return on Assets (**ROA**) for both samples range from -0.34 to 5.17, with a mean of 0.05. Similar distributions of ROA can be seen in other studies of firms in developing economies such as Alghamdi (2012) in Saudi Arabia, and Abdul Rahman *et al* (2006) in Malaysia.

The average value for cash flow from operating activities (**CFOA**) is 0.01 (JD, million) in the SJ/MJ sample and 0.02 (JD, million) in the PPY sample, with maximums of 0.61 and a minimums of -6.03. Furthermore, Tables 6.3 and 6.4 indicate firms leverage (**FLEV**) average values for this variable are 0.05 for SJ/ MJ sample models, and 0.04 for PPY sample model, with maximum of 0.56 and a minimum of 0 respectively.

Finally, the average firm subsidiaries (**FSUB**) for the SJ/MJ samples are 0.27 and 0.20 for the PPY model sample, with maximum of 1 and a minimum of 0 for all of them.

### 6.4 Correlation Matrix

In this section, we discuss the Pearson correlation coefficients which reveal the association between earnings management, board of directors' characteristics, audit committee characteristics, external audit factors, ownership structures, and control variables (Table 6.5). Prior literature has documented that a higher degree of correlation between variables may lead to a multicollinearity problem, particularly when the correlation coefficients are more than  $\pm 0.8$  (e.g. Alghamdi 2012; Hair *et al* 2010; Habbash 2010; Abdul Rahman *et al* 2006). Accordingly, this multicollinearity problem may bias the findings when using the regression models affects the ability to use regression to detect the relationship between dependent and independent variables.

Table 6.5 shows that for the SJ/MJ sample, the variables that have the highest degree of correlation with EM measures (ACCSJ/ ACCMJ) are return on assets (ROA), cash flow from operating activities (CFOA) and individual local ownership (INDOWNL). None of the other variables are highly correlated with EM measures from the PPY model (Table 6.6).

Among the other variables, audit committee characteristics (ACSIZE, ACEXPERTISE and ACMEETING) are positively related to each other, which is not surprising, as committees of a larger size might be expected to contain members with more expertise and to meet more regularly.

Additionally, the correlation matrix in Table 6.5 also reveals that there is a significant, high negative association between firm performance (*ROA*) and cash flow (*CFOA*). In accounting terms, this may imply the presence of EM, as reported profit is showing a high difference from cash flow, suggesting the use of accruals. Furthermore, a significant high negative association between individual local ownership (*INDOWNL*) and cash flow from operations (*CFOA*), and also imply the reliance of Jordanian industrial firms on long term borrowing. Also, a significant high positive association between individual local ownership (*INDOWNL*) and firm performance (*ROA*) and this results could be because of several Jordanian firms have small amount of assets, which means that these firms could be having a smaller amount of return on assets.



Table 6-5 Pearson Correlation for Firms in the SJ/MJ Sample

	<i>ACCSJ/ ACCMJ</i>	<i>BFSIZE</i>	<i>BMEETING</i>	<i>BOUTSIDE</i>	<i>BINDEPEND</i>	<i>ACSIZE</i>	<i>ACMEETING</i>	<i>ACINDEPEND</i>	<i>ACEXPERTISE</i>	<i>EXAREPUT</i>	<i>EXATENURE</i>	<i>EXAOPIN</i>	<i>EXACHANG</i>
<i>ACCSJ/ACCMJ</i>	1.00												
<i>BFSIZE</i>	-0.06	1.00											
<i>BMEETING</i>	-0.02	.28**	1.00										
<i>BOUTSIDE</i>	-0.04	.18**	0.01	1.00									
<i>BINDEPEND</i>	-0.07	-0.11	-0.10	-.20**	1.00								
<i>ACSIZE</i>	0.04	0.10	.26**	.13*	-.31**	1.00							
<i>ACMEETING</i>	0.05	.15*	.29**	.19**	-.30**	<b>.88**</b>	1.00						
<i>ACINDEPEND</i>	0.09	.13*	0.11	0.04	-0.08	.26**	.19**	1.00					
<i>ACEXPERTISE</i>	0.09	.28**	0.11	.20**	-0.12	<b>.57**</b>	<b>.64**</b>	0.11	1.00				
<i>EXAREPUT</i>	-0.02	.25**	.19**	-0.05	-.32**	.22**	.19**	.16**	0.02	1.00			
<i>EXATENURE</i>	-0.02	-0.01	-0.06	0.00	-0.01	-0.04	-0.04	-0.02	-0.02	0.03	1.00		
<i>EXAOPIN</i>	0.07	.16**	0.10	.12*	0.04	.12*	.12*	0.10	0.10	.16**	-0.04	1.00	
<i>EXACHANG</i>	-0.03	-.13*	0.11	-0.12	0.01	0.02	0.03	-0.08	-0.07	0.04	-0.12	0.01	1.00
<i>MANOWN</i>	-0.03	0.02	0.03	-0.05	-0.02	0.10	.12*	-.22**	0.11	.15*	0.04	0.08	0.04
<i>IOWNFOR</i>	-0.02	.16**	0.11	0.09	-0.02	.21**	.26**	0.02	0.06	.49**	0.09	0.11	-0.11
<i>IOWNLOC</i>	-0.06	-.24**	-.20**	-.21**	0.04	-.21**	-.20**	-0.05	-0.09	-0.10	0.01	-.21**	-0.05
<i>INDOWNF</i>	-0.05	-.21**	-.15*	-0.09	0.07	-.15*	-.17**	-0.02	-.12*	-.20**	-0.05	-.18**	-0.03
<i>INDOWNL</i>	<b>0.93**</b>	-0.10	-0.03	-0.08	-0.06	0.01	0.01	0.09	0.06	-0.05	-0.03	0.03	-0.02
<i>FAMOWN</i>	0.08	-.36**	-.18**	-.22**	0.10	-0.08	-.13*	-0.09	0.01	-.26**	-0.03	0.08	0.06
<i>BLOCKOWN</i>	0.06	.22**	-.13*	.17**	-.28**	.33**	.34**	0.11	.34**	0.10	0.08	0.01	-.20**
<i>STATOWN</i>	-0.03	.25**	.16**	.19**	-.32**	.13*	.25**	0.00	.18**	.27**	-0.04	0.07	0.00
<i>ROA</i>	<b>0.90**</b>	-0.01	0.03	-0.08	-0.08	0.07	0.08	0.08	.12*	0.02	-0.03	0.10	-0.01
<i>CFOA</i>	<b>-0.89**</b>	.17**	0.07	0.05	0.01	0.05	0.06	-0.07	0.01	.13*	0.03	0.03	0.00
<i>FLVE</i>	0.00	-0.01	0.02	.13*	-.16**	.13*	0.07	.16**	0.04	0.02	0.03	-.26**	-0.03
<i>FSUB</i>	-0.03	0.00	.39**	-0.04	0.10	-0.05	0.02	-.20**	-0.05	0.10	0.00	-0.07	0.07

Continuation .....Table 6-5 Pearson Correlation for Firms in the SJ/MJ Sample

	<i>MANOWN</i>	<i>IOWNFOR</i>	<i>IOWNLOC</i>	<i>INDOWNF</i>	<i>INDOWNL</i>	<i>FAMOWN</i>	<i>BLOCKOWN</i>	<i>STATOWN</i>	<i>ROA</i>	<i>CFOA</i>	<i>FLVE</i>	<i>FSUB</i>
<i>MANOWN</i>	1.00											
<i>IOWNFOR</i>	.40**	1.00										
<i>IOWNLOC</i>	-.14*	-.15*	1.00									
<i>INDOWNF</i>	0.00	-0.05	-0.07	1.00								
<i>INDOWNL</i>	-0.05	-0.06	-0.02	-0.02	1.00							
<i>FAMOWN</i>	0.06	-.39**	.27**	0.09	.157**	1.00						
<i>BLOCKOWN</i>	.19**	.27**	-.23**	-0.06	0.02	-.21**	1.00					
<i>STATOWN</i>	.13*	0.06	-0.02	-0.09	-0.04	-.18**	0.12	1.00				
<i>ROA</i>	0.05	0.05	-0.06	-0.05	.94**	0.08	0.06	0.00	1.00			
<i>CFOA</i>	0.10	0.09	-0.01	-0.03	-.95**	-.17**	0.02	0.08	-.84**	1.00		
<i>FLVE</i>	.14*	0.09	-0.03	0.07	-0.04	-.20**	.14*	-0.01	-0.07	0.04	1.00	
<i>FSUB</i>	-0.02	0.11	-0.09	0.00	-0.04	-.22**	-.25**	0.06	0.06	0.08	-0.03	1.00

*ACCSJ* is Discretionary Accruals (Standard Jones Model), *ACCMJ* is Discretionary Accruals (Modified Jones Model), *WAPPY* is Working Capital Accruals, *BSIZE* is Board of Director Size, *BMEETING* is Number of the Board of Directors, *BOUSIDE* is Board of Director Outsiders, and *BINDEPEND* is Board of Director Independence. *ACSIZE* is Audit Committee Size, *ACMEETING* is Number of Audit Committee Meetings, *ACINDEPEND* is Audit Committee Independence, and *ACEXPERTISE* is Audit Committee Expertise. *EXAREPUT* is External Auditor Reputation, *EXATENURE* is External Audit Tenure, *EXAOPIN* is External Audit Opinion, and *EXACHANG* is External Audit Change. *MANOWN* is Managerial Shareholders, *IOWNFOR* is Institutional Shareholders Foreign, *IOWNLOC* is Institutional Shareholders Local, *INDOWNF* is Individual Foreign, *INDOWNL* is Individual Local, *FAMOWN* is Family Ownership, *BLOCKOWN* is Blockholder Ownership, and *STATOWN* is State Ownership. *FSUB* is Firm Subsidiary, *FLVE* is Financial Leverage, *ROA* is Firm Performance, and *CFOA* is Cash Flow from Operating Activities.

\*\* denotes significance at the 0.01 level, \* denotes significance at the 0.05 level.

Table 6-6 Pearson Correlation for Firms in the PPY Sample

	<i>WAPPY</i>	<i>BFSIZE</i>	<i>BMEETING</i>	<i>BOUSIDE</i>	<i>BINDEPEND</i>	<i>ACSIZE</i>	<i>ACMEETING</i>	<i>ACINDEPEND</i>	<i>ACEXPERTISE</i>	<i>EXAREPUT</i>	<i>EXATENURE</i>	<i>EXAOPIN</i>	<i>EXACHANG</i>
<i>WAPPY</i>	1.00												
<i>BFSIZE</i>	-0.06	1.00											
<i>BMEETING</i>	-0.04	.21**	1.00										
<i>BOUSIDE</i>	-0.03	.23**	0.05	1.00									
<i>BINDEPEND</i>	0.06	-0.03	-.17**	-.21**	1.00								
<i>ACSIZE</i>	-0.07	.10*	.24**	.13*	-.29**	1.00							
<i>ACMEETING</i>	-0.08	.16**	.30**	.19**	-.30**	.91**	1.00						
<i>ACINDEPEND</i>	0.02	.13*	0.09	0.07	-0.09	.27**	.19**	1.00					
<i>ACEXPERTISE</i>	-0.04	.29**	.11*	.25**	-0.10	.63**	.70**	0.10	1.00				
<i>EXAREPUT</i>	-0.06	.20**	.112*	-0.08	-.22**	.21**	.20**	.16**	0.07	1.00			
<i>EXATENURE</i>	0.03	-0.03	-0.06	0.01	-0.01	-0.04	-0.05	0.00	-0.02	0.00	1.00		
<i>EXAOPIN</i>	-0.02	.14**	0.07	.15**	0.06	0.07	0.07	0.09	.11*	.11*	-0.03	1.00	
<i>EXACHANG</i>	0.05	-.14**	0.09	-.13**	0.01	0.05	0.04	-0.07	-0.05	0.06	-.10*	-0.03	1.00
<i>MANOWN</i>	0.08	-.16**	-0.01	-0.09	-.12*	0.06	0.06	-.17**	0.03	.14**	0.03	0.06	0.04
<i>IOWNFOR</i>	0.02	0.03	.12*	-0.02	-0.04	.21**	.25**	0.00	0.03	.43**	0.04	0.07	-0.05
<i>IOWNLOC</i>	0.01	-.22**	-.19**	-.19**	0.00	-.16**	-.16**	-0.04	-0.06	-0.07	0.02	-.20**	-0.04
<i>INDOWNF</i>	-0.01	-.20**	-.13*	-.10*	0.02	-.121*	-.14**	-0.01	-.11*	-.16**	-0.05	-.20**	0.01
<i>INDOWNL</i>	0.00	-0.08	-0.02	-0.08	-0.06	0.01	0.00	0.08	0.04	-0.04	-0.03	0.02	-0.01
<i>FAMOWN</i>	0.03	-.25**	-0.09	-.17**	.13**	-0.09	-.12*	0.04	-0.05	-.20**	-0.02	0.07	0.02
<i>BLOCKOWN</i>	0.00	.20**	-0.09	.18**	-.22**	.35**	.36**	.12*	.39**	.11*	0.04	0.06	-.16**
<i>STATOWN</i>	-0.06	.21**	.17**	.14**	-.32**	.12*	.22**	0.00	.100*	.25**	-0.04	0.02	0.01
<i>ROA</i>	0.01	-0.01	0.01	-0.08	-0.05	0.05	0.05	0.07	0.09	0.01	-0.03	0.09	0.00
<i>CFOA</i>	-0.08	.14**	0.03	0.05	0.04	0.04	0.05	-0.06	0.02	0.09	0.01	0.04	-0.01
<i>FLVE</i>	-0.10	-0.01	0.03	0.07	-.14**	.12*	0.06	.10*	0.02	0.00	0.02	-.25**	-0.03
<i>FSUB</i>	-0.07	0.02	.33**	-0.09	0.04	0.00	0.04	-.17**	-0.05	0.08	0.01	-.10*	0.08

Continuation... Table 6-6 Pearson Correlation for PPY Model (Pooled Data)

	<i>MANOWN</i>	<i>IOWNFOR</i>	<i>IOWNLOC</i>	<i>INDOWNF</i>	<i>INDOWNL</i>	<i>FAMOWN</i>	<i>BLOCKOWN</i>	<i>STATOWN</i>	<i>ROA</i>	<i>CFOA</i>	<i>FLVE</i>	<i>FSUB</i>	
<i>MANOWN</i>	1.00												
<i>IOWNFOR</i>	.40**	1.00											
<i>IOWNLOC</i>	-0.07	-.14**	1.00										
<i>INDOWNF</i>	0.01	-0.04	-0.06	1.00									
<i>INDOWNL</i>	-0.03	-0.05	-0.01	-0.02	1.00								
<i>FAMOWN</i>	0.00	-.34**	.21**	0.03	.14**	1.00							
<i>BLOCKOWN</i>	.16**	.22**	-.20**	-0.05	0.01	-.18**	1.00						
<i>STATOWN</i>	.12*	0.08	-0.01	-0.07	-0.04	-.17**	0.08	1.00					
<i>ROA</i>	0.05	0.05	-0.06	-0.05	.93**	0.07	0.05	0.00	1.00				
<i>CFOA</i>	0.06	0.07	-0.01	-0.03	-.94**	-.13*	0.02	0.05	-.81**	1.00			
<i>FLVE</i>	.10*	.11*	-0.03	.11*	-0.04	-.20**	.13*	0.02	-0.06	0.02	1.00		
<i>FSUB</i>	-0.01	.11*	-0.06	0.02	-0.03	-.20**	-.21**	0.10	0.08	0.07	0.04	1.00	

*ACCSJ* is Discretionary Accruals (Standard Jones Model), *ACCMJ* is Discretionary Accruals (Modified Jones Model), *WAPPY* is Working Capital Accruals, *BSIZE* is Board of Director Size, *BMEETING* is Number of the Board of Directors, *BOUTSIDE* is Board of Director Outsiders, and *BINDEPEND* is Board of Director Independence. *ACSIZE* is Audit Committee Size, *ACMEETING* is Number of Audit Committee Meetings, *ACINDEPEND* is Audit Committee Independence, and *ACEXPERTISE* is Audit Committee Expertise. *EXAREPUT* is External Auditor Reputation, *EXATENURE* is External Audit Tenure, *EXAOPIN* is External Audit Opinion, and *EXACHANG* is External Audit Change. *MANOWN* is Managerial Shareholders, *IOWNFOR* is Institutional Shareholders Foreign, *IOWNLOC* is Institutional Shareholders Local, *INDOWNF* is Individual Foreign, *INDOWNL* is Individual Local, *FAMOWN* is Family Ownership, *BLOCKOWN* is Blockholder Ownership, and *STATOWN* is State Ownership. *FSUB* is Firm Subsidiary, *FLVE* is Financial Leverage, *ROA* is Firm Performance, and *CFOA* is Cash Flow from Operating Activities.

\*\* denotes significance at the 0.01 level, \* denotes significance at the 0.05 level.

## **6.5 Hypotheses Tests (T-test and Multivariate Analyses)**

Analysis of the covariance matrices for our variables lead us to the conclusion that the relationships between them were not clear enough and the size of sample not large enough to support the use of OLS and GLS regressions, results of GLS regression included in (appendix, 4). We therefore conduct empirical analysis of the relationship between the variables by comparing the means of the different groups of firms, classified based on earnings management groups (discussed in next section), by using t-tests and we use quadratic discriminant analysis to predict the level of earnings management underlying our sample firms.

Quadratic discriminant analysis is a technique used to categorise research observations into two or more known groups according to one or more categorical variables. This categorisation can be completed by both parametric and nonparametric methods. A parametric method is considered a proper method assuming the research variables follow a normal distribution, and a non-parametric method is where there is no assumption of normality underlying the research variables' distributions (Silverman, 1986).

This research adopted quadratic discriminant analysis for examining the effect of internal control and corporate governance characteristics on earnings management, rather than parametric testing (OLS regression), because most of the OLS regression prerequisites are not met by the data. In particular, Multicollinearity is one of the issues that led the researcher to use discriminant regression instead of OLS regression. Correlation matrix tests, as shown in Tables 6.5 and 6.6, indicated the presence of multicollinearity since some of the independent variables are correlated to each other by more than  $\pm 0.8$  (see earlier). In addition we found that a heteroskedasticity problem exists in the data which would make the use of OLS estimation less efficient. Regression results and diagnostics are included in Appendix 4 for completeness but the results are not considered strong enough to present here.

### **6.5.1 T-Test (Comparing Means)**

This section analyses the relationship between internal controls, corporate governance mechanisms and earnings management by using t-tests to compare the means of variables representing the characteristics of firms in different earnings management groups. Prior literature has investigated this relationship by partitioning the earnings management variables into two groups representing positive and negative earnings management. See for example, Habbash, et al (2014), Alghamdi (2012), Rohaida (2011), and Habbash (2010).

T-tests were conducted for the EM variables and for each of the internal control, corporate governance and control variables to identify whether there is a significant difference between the mean in the following groups:

- High positive earnings management/ high negative earnings management (HI+veEM/ HI-veEM).
- High positive earnings management/ low earnings management (HI+veEM/ low EM).
- High negative earnings management/ low earnings management (HI-veEM/ low EM).
- High positive and negative earnings management/ / low earnings management (HI±veEM/ low EM).

#### 6.5.1.1 Control Variables

There are several variables identified by the literature that are known to be related to earnings management but which do not form part of our hypotheses. They include: return on assets (*ROA*), cash flow from operating activities (*CFOA*), financial leverage (*FLVE*), and firm subsidiary (*FSUB*).

Tables 6.7 and 6.8 show that there is a significant difference between the means of ROA for firms in all comparisons except for the comparison of the HI+veEM and Low EM groups used in the SJ/MJ samples. This implies that firms with higher ROA are using less income-reducing earnings management. Table 6.8 also shows a significant positive t-statistic for the comparison of HI+veEM and Low EM firms, but this measure for the SJ model is insignificant. The difference between the SJ and MJ models lies in the treatment of accounts receivable, which is a factor in the MJ model but not in the SJ Model. The significant positive coefficient observed for firms with high positive earnings management suggest that these firms manipulate earnings upward.

Table 6-7 T-Test (Comparing Means) for Standard Jones Model (SJ)

	High Negative		High Positive		LOW		HI+ve AND HI-ve	HI+ve AND LOW	HI-ve AND LOW	HI±ve AND LOW
	Mean	S.D	Mean	S.D	Mean	S.D	T-TEST	T-TEST	T-TEST	T-TEST
<b>BSIZE</b>	7.91	2.36	8.06	2.09	7.90	1.94	-0.38	-0.34	-0.78	-0.68
<b>BMEETING</b>	6.24	0.81	6.21	0.41	6.26	0.61	0.27	-1.80*	-1.25	-1.87*
<b>BOUTSIDE</b>	6.38	2.65	6.56	2.57	6.12	2.54	-0.39	0.02	-0.44	-0.26
<b>BINDEPEND</b>	0.60	0.49	0.53	0.50	0.56	0.50	0.86	-0.40	0.60	0.12
<b>ACSIZE</b>	2.74	1.23	2.66	1.07	2.84	0.96	0.37	-0.94	-0.42	-0.80
<b>ACMEETING</b>	3.56	1.60	3.62	1.53	3.81	1.40	-0.22	-0.89	-1.15	-1.23
<b>ACINDEPEND</b>	0.35	0.48	0.34	0.48	0.29	0.46	0.18	0.21	0.42	0.38
<b>ACEXPERTISE</b>	0.58	0.37	0.61	0.37	0.62	0.35	-0.52	-0.28	-0.90	-0.71
<b>EXAREPUT</b>	0.32	0.47	0.37	0.49	0.32	0.47	-0.60	0.91	0.21	0.69
<b>EXATENURE</b>	0.24	0.43	0.24	0.43	0.25	0.44	0.00	0.60	0.60	0.73
<b>EXAOPIN</b>	0.75	0.44	0.81	0.40	0.93	0.26	-0.82	-1.76*	-2.80***	-2.66***
<b>EXACHANG</b>	0.19	0.40	0.10	0.31	0.10	0.31	1.45	0.00	1.76*	1.10
<b>MANOWN</b>	0.51	0.23	0.52	0.26	0.52	0.25	-0.14	-0.26	-0.43	-0.42
<b>IOWNFOR</b>	0.16	0.21	0.19	0.26	0.15	0.25	-0.79	1.69*	0.86	1.57
<b>IOWNLOC</b>	0.57	1.57	0.50	1.14	0.45	1.15	0.27	0.73	0.99	0.98
<b>INDOWNF</b>	0.07	0.17	0.06	0.14	0.02	0.05	0.54	2.25**	2.87***	2.74***
<b>INDOWNL</b>	0.21	0.19	0.15	0.18	0.24	0.21	2.05**	-3.28***	-1.13	-2.75***
<b>FAMOWN</b>	0.20	0.22	0.14	0.21	0.18	0.19	1.79*	-1.96*	0.24	-1.02
<b>BLOCKOWN</b>	0.84	0.37	0.91	0.29	0.84	0.37	-1.29	1.80*	0.39	1.34
<b>STATOWN</b>	0.06	0.10	0.07	0.11	0.05	0.09	-0.49	0.34	-0.21	0.08
<b>ROA</b>	-0.01	0.11	0.04	0.16	0.07	0.09	-2.26**	-0.82	-4.93***	-2.93***
<b>CFOA</b>	0.02	0.11	0.01	0.16	0.05	0.10	0.43	-1.69*	-1.35	-1.78*
<b>FLVE</b>	0.05	0.09	0.08	0.12	0.02	0.05	-1.75*	4.69***	2.46***	3.94***
<b>FSUB</b>	0.22	0.42	0.29	0.46	0.29	0.46	-0.98	0.22	-0.90	-0.41

**BSIZE** is Board of Director Size, **BMEETING** is Number of the Board of Directors, **BOUTSIDE** is Board of Director Outsiders, and **BINDEPEND** is Board of Director Independence. **ACSIZE** is Audit Committee Size, **ACMEETING** is Number of Audit Committee Meetings, **ACINDEPEND** is Audit Committee Independence, and **ACEXPERTISE** is Audit Committee Expertise. **EXAREPUT** is External Auditor Reputation, **EXATENURE** is External Audit Tenure, **EXAOPIN** is External Audit Opinion, and **EXACHANG** is External Audit Change. **MANOWN** is Managerial Shareholders, **IOWNFOR** is Institutional Shareholders Foreign, **IOWNLOC** is Institutional Shareholders Local, **INDOWNF** is Individual Foreign, **INDOWNL** is Individual Local, **FAMOWN** is Family Ownership, **BLOCKOWN** is Blockholder Ownership, and **STATOWN** is State Ownership. **FSUB** is Firm Subsidiary, **FLVE** is Financial Leverage, **ROA** is Firm Performance, and **CFOA** is Cash Flow from Operating Activities.

Notes: significance is indicated at \*\*\* 0.001, \*\* 0.05, \* 0.10

by using bad debt provisions. We therefore investigate the use of this policy during the interviews with managers. *ROA* proved to be insignificant for firms classified using margin model (Table 6.9).

According to Tables (6.7, 6.8. and 6.9) *CFOA* is largely insignificant, but significantly positive when showing the difference for the HI+ve/HI-ve comparison in the SJ/MH model and the PPY model respectively. The potential reason for that is the focus of the PPY model on working capital items and its close relationship with cash flow.

*FLVE* proves to be significant for firms in the SJ and PPY models samples, and have positive t-statistics in all comparisons, which means that the higher leverage is associated with high positive EM and lower leverage associated with high negative EM (see Tables 6.7 and 6.9).

Finally, *FSUB* is significant only for the PPY model sample; the sign of this result is difficult to interpret, because the coefficient FSUB is constructed as a binary variable (1, 0) but results seem to indicate that firms with subsidiaries use earnings management.

### 6.5.1.2 Explanatory variables

#### Board of Directors Characteristics

**H1** assumes a negative relationship between board size and earnings management in Jordanian industrial firms, based on the t-test findings, table 6.7 and 6.8 reports showing the relationship between board size (*BFSIZE*) and earnings management in the SJ/MJ samples is insignificant. In contrast, the t-tests in Table 6.9 show the existence of differences in the mean values between the HI+veEM/ low EM, HI-veEM/ low EM, HI±veEM and low EM groups and that they are all significantly positive at 1%. These results are consistent with those of Rahman (2006) who also reports a significant positive relationship between board size and earnings management level using regression analysis, revealing that firms with larger boards are consuming more income increasing and income decreasing. Board size may well proxy for firm size in this context. These differences in findings are not surprising, since a number of empirical studies have documented that a large board (more than seven members) leads to lower efficiency, which leads the CFO to control the board members, and in addition leads to the board members having less accountability, since each of them relies on the others (e.g. Core and Guay 1999; Jensen 1993). This research found the average board size of the samples was more than eight. (See Table 6.4).



The t-tests results for the number of board meetings (**BMEETING**) in the MJ model sample is negatively significant at 10% (see Table 6.8). The t-test for the SJ model is significantly negative at 1% for the HI±veEM/ low EM group and significantly negative at 10% for the HI+veEM/ low EM group (see Table 6.7). These results indicate that a higher number of meetings could lead to a decrease in earnings management. These results are consistent with H2 which states that “there is a negative relationship between the number of board meetings and earnings management in Jordanian industrial firms”.

The results of this research are consistent with those of Habbash (2010), who found no relationship between board meetings and earnings management practices in the UK. He gave two reasons for this result: first, the weakness of corporate governance in terms of the low numbers of board meetings during the year, which is fewer than the numbers that have been established in the corporate governance code. This explanation is supported by Vafeas (1999). Second, there is a lack of education and experience on the part of the board members themselves.

Accordingly, the results of this research might be an indication of the lack of board members' education and experience. However, they cannot be attributed to the low number of board meetings, since the results in Tables 6.3 and 6.4 indicate that the average number of board meetings in Jordanian industrial firms is consistent with Jordan's corporate governance code which states that “each firm has to meet at least six times per year”. Furthermore, these results are consistent with other studies that have reached similar conclusions (e.g. Anglin *et al.*, 2013; Awais *et al.*, 2011; and Xie *et al.*, 2003). On the other hand, **BMEETING** is not significant for the PPY sample model.

Considering the negative relationship between board outsiders (**BOUTSIDE**) and earnings management that is assumed in **H3**, Tables 6.7 and 6.8 show that the relationship between both of them is negative but insignificant for the SJ/MJ models. These findings are similar to those of many studies that have been carried out in countries such as Malaysia (Yang *et al.*, 2009), Spain (Osma *et al.*, 2007), and the USA (Klein 2002).

In contrast, the t-test in Table 6.9 shows the mean differences between the groups of HI+veEM/ low EM, HI-veEM/ low EM, HI±veEM and low EM for the PPY model which are positive and significant at 1% level. These results are consistent with Rahman (2006), who found a significant positive relationship between board outside and earnings management

level in Malaysian firms, which implies that a higher proportion of outsiders on the board increase earnings management.

In this respect there appears to be a difference between developed and developing economies. Corporate governance literature suggests that in developed economies, external members on the board should improve the corporate governance system and reduce earnings management. However, the empirical evidence from developing economies reveals that the opposite seems to be true which may be due to the influence on board decisions from powerful individuals such as politicians, wealthy individuals or leaders of powerful social groups in board decisions. This theme is further explored in the case studies and should be discussed in the next chapter.

Finally, the t-tests show that there is no difference between the mean values for board independence in all of the groups compared, which means there is no relationship between board independence and earnings management in Jordanian industrial firms. This result is not consistent with **H4**, which states that there is a negative relationship between board independence and earnings management in Jordanian industrial firms. This result is in line with the earlier findings of Precipe *et al.*, (2011) who documented that there is no association between board independence and earnings management in family-controlled firms, particularly if the CEO is one of the members or the chairman of the board of directors.

Table 6-8 T-Test (Comparing Means) for Modified Jones Model (MJ)

	High Negative		High Positive		LOW		HI+ve AND HI-ve	HI+ve AND LOW	HI-veAND LOW	HI±ve AND LOW
	Mean	S.D	Mean	S.D	Mean	S.D	T-TEST	T-TEST	T-TEST	T-TEST
<b>BSIZE</b>	7.78	2.14	8.07	2.11	8.27	2.14	-0.81	-0.61	-1.54	-1.32
<b>BMEETING</b>	6.19	0.66	6.19	0.43	6.41	0.79	0.00	-2.09**	-1.94**	-2.60***
<b>BOUTSIDE</b>	6.57	2.42	6.33	2.79	6.62	2.54	0.53	-0.74	-0.14	-0.55
<b>BINDEPEND</b>	0.54	0.50	0.57	0.50	0.56	0.50	-0.35	0.10	-0.30	-0.12
<b>ACSIZE</b>	2.69	1.20	2.90	0.78	2.72	1.10	-1.20	1.14	-0.22	0.52
<b>ACMEETING</b>	3.60	1.61	3.93	1.22	3.66	1.52	-1.33	1.22	-0.29	0.54
<b>ACINDEPEND</b>	0.27	0.45	0.31	0.47	0.37	0.49	-0.57	-0.83	-1.48	-1.43
<b>ACEXPERTISE</b>	0.62	0.35	0.64	0.37	0.59	0.35	-0.41	0.91	0.44	0.83
<b>EXAREPUT</b>	0.42	0.50	0.39	0.49	0.25	0.44	0.35	1.97**	2.40**	2.63***
<b>EXATENURE</b>	0.21	0.41	0.16	0.37	0.25	0.43	0.66	-1.33	-0.59	-1.19
<b>EXAOPIN</b>	0.78	0.42	0.87	0.34	0.85	0.36	-1.35	0.28	-1.31	-0.66
<b>EXACHANG</b>	0.12	0.33	0.10	0.31	0.13	0.34	0.27	-0.60	-0.30	-0.56
<b>MANOWN</b>	0.49	0.23	0.56	0.25	0.52	0.26	-1.50	0.82	-0.85	0.00
<b>IOWNFOR</b>	0.15	0.21	0.22	0.28	0.11	0.21	-1.61	3.05***	1.28	2.64***
<b>IOWNLOC</b>	0.58	1.58	0.32	0.27	0.49	1.14	1.37	-1.22	0.49	-0.27
<b>INDOWNF</b>	0.06	0.16	0.06	0.15	0.03	0.07	0.12	1.92*	2.00**	2.14**
<b>INDOWNL</b>	0.19	0.17	0.19	0.21	0.24	0.21	-0.02	-1.67*	-1.77*	-2.15**
<b>FAMOWN</b>	0.19	0.23	0.18	0.23	0.19	0.19	0.40	-0.32	0.19	-0.08
<b>BLOCKOWN</b>	0.82	0.39	0.90	0.31	0.84	0.37	-1.24	1.13	-0.26	0.51
<b>STATOWN</b>	0.08	0.12	0.05	0.11	0.06	0.10	1.72*	-0.93	1.25	0.22
<b>ROA</b>	-0.02	0.11	0.09	0.11	0.03	0.08	-5.67***	3.89***	-4.31***	-0.19
<b>CFOA</b>	0.03	0.11	0.03	0.15	0.03	0.09	-0.15	0.13	-0.08	0.04
<b>FLVE</b>	0.05	0.11	0.05	0.09	0.04	0.06	-0.33	1.33	0.75	1.17
<b>FSUB</b>	0.28	0.45	0.30	0.46	0.25	0.43	-0.19	0.79	0.57	0.82

**BSIZE** is Board of Director Size, **BMEETING** is Number of the Board of Directors, **BOUTSIDE** is Board of Director Outsiders, and **BINDEPEND** is Board of Director Independence. **ACSIZE** is Audit Committee Size, **ACMEETING** is Number of Audit Committee Meetings, **ACINDEPEND** is Audit Committee Independence, and **ACEXPERTISE** is Audit Committee Expertise. **EXAREPUT** is External Auditor Reputation, **EXATENURE** is External Audit Tenure, **EXAOPIN** is External Audit Opinion, and **EXACHANG** is External Audit Change. **MANOWN** is Managerial Shareholders, **IOWNFOR** is Institutional Shareholders Foreign, **IOWNLOC** is Institutional Shareholders Local, **INDOWNF** is Individual Foreign, **INDOWNL** is Individual Local, **FAMOWN** is Family Ownership, **BLOCKOWN** is Blockholder Ownership, and **STATOWN** is State Ownership. **FSUB** is Firm Subsidiary, **FLVE** is Financial Leverage, **ROA** is Firm Performance, and **CFOA** is Cash Flow from Operating Activities.

Notes: significance is indicated at \*\*\* 0.001, \*\* 0.05, \* 0.1

Table 6-9 T-Test (Compare Means) for Margin Model (PPY)

	High Negative		High Positive		LOW		HI+ve AND HI-ve	HI+ve AND LOW	HI-ve AND LOW	HI±ve AND LOW
	Mean	S.D	Mean	S.D	Mean	S.D	T-TEST	T-TEST	T-TEST	T-TEST
<b>BSIZE</b>	8.71	1.98	8.48	2.05	7.81	2.20	0.76	2.51***	3.36***	3.65***
<b>BMEETING</b>	6.33	0.74	6.26	0.53	6.23	0.61	0.68	0.50	1.22	1.07
<b>BOUTSIDE</b>	7.26	2.01	7.21	2.23	6.32	2.77	0.17	2.72***	2.95***	3.63***
<b>BINDEPEND</b>	0.64	0.48	0.67	0.47	0.63	0.48	-0.46	0.70	0.17	0.53
<b>ACSIZE</b>	2.93	0.85	2.72	0.95	2.52	1.20	1.60	1.42	2.98***	2.80***
<b>ACMEETING</b>	3.95	1.15	3.71	1.42	3.42	1.69	1.29	1.43	2.76***	2.65***
<b>ACINDEPEND</b>	0.26	0.44	0.36	0.48	0.32	0.47	-1.41	0.71	-0.91	-0.11
<b>ACEXPERTISE</b>	0.72	0.34	0.66	0.38	0.63	0.37	1.20	0.74	2.15**	1.76*
<b>EXAREPUT</b>	0.37	0.48	0.28	0.45	0.25	0.43	1.24	0.67	2.14**	1.70*
<b>EXATENURE</b>	0.16	0.37	0.27	0.45	0.22	0.41	-1.95**	1.08	-1.16	0.00
<b>EXAOPIN</b>	0.85	0.36	0.87	0.33	0.88	0.32	-0.42	-0.26	-0.75	-0.62
<b>EXACHANG</b>	0.09	0.29	0.11	0.31	0.11	0.31	-0.24	-0.13	-0.41	-0.33
<b>MANOWN</b>	0.46	0.24	0.49	0.24	0.50	0.26	-1.04	-0.41	-1.55	-1.21
<b>IOWNFOR</b>	0.14	0.22	0.16	0.24	0.08	0.17	-0.42	3.05***	2.61**	3.30***
<b>IOWNLOC</b>	0.37	0.24	0.36	0.26	0.51	1.34	0.25	-1.13	-1.07	-1.55
<b>INDOWNF</b>	0.03	0.06	0.05	0.13	0.04	0.11	-1.45	0.61	-0.97	-0.14
<b>INDOWNL</b>	0.14	0.15	0.15	0.16	0.73	5.95	-0.12	-0.96	-0.96	-1.36
<b>FAMOWN</b>	0.13	0.18	0.15	0.21	0.26	0.22	-1.05	-4.06***	-5.31***	-5.84***
<b>BLOCKOWN</b>	0.89	0.31	0.89	0.31	0.84	0.37	0.00	1.20	1.20	1.52
<b>STATOWN</b>	0.04	0.08	0.05	0.09	0.05	0.10	-0.74	-0.12	-0.90	-0.64
<b>ROA</b>	0.03	0.13	0.05	0.11	0.05	0.38	-1.39	0.04	-0.55	-0.36
<b>CFOA</b>	0.07	0.12	-0.01	0.13	0.01	0.45	4.11***	-0.31	1.29	0.68
<b>FLVE</b>	0.05	0.09	0.05	0.07	0.03	0.07	0.15	2.02**	2.03**	2.45***
<b>FSUB</b>	0.25	0.44	0.25	0.44	0.13	0.33	0.00	2.71***	2.71***	3.17***

**BSIZE** is Board of Director Size, **BMEETING** is Number of the Board of Directors, **BOUTSIDE** is Board of Director Outsiders, and **BINDEPEND** is Board of Director Independence. **ACSIZE** is Audit Committee Size, **ACMEETING** is Number of Audit Committee Meetings, **ACINDEPEND** is Audit Committee Independence, and **ACEXPERTISE** is Audit Committee Expertise. **EXAREPUT** is External Auditor Reputation, **EXATENURE** is External Audit Tenure, **EXAOPIN** is External Audit Opinion, and **EXACHANG** is External Audit Change. **MANOWN** is Managerial Shareholders, **IOWNFOR** is Institutional Shareholders Foreign, **IOWNLOC** is Institutional Shareholders Local, **INDOWNF** is Individual Foreign, **INDOWNL** is Individual Local, **FAMOWN** is Family Ownership, **BLOCKOWN** is Blockholder Ownership, and **STATOWN** is State Ownership. **FSUB** is Firm Subsidiary, **FLVE** is Financial Leverage, **ROA** is Firm Performance, and **CFOA** is Cash Flow from Operating Activities.

Notes: significance is indicated at \*\*\* 0.001, \*\* 0.05, \* 0.10

### **Audit Committee Characteristics**

The means of the variables for all audit committee variables were insignificantly different for all groups compared in the SJ/MJ models (see Tables 6.7. and 6.8). Table 6.9, however, demonstrates that for the PPY model, audit committee characteristics are associated with firms using negative EM.

This is in accordance with **H5** that predicts “audit committee size is negatively associated with levels of earnings management in Jordanian industrial firms”. The t-tests for the HI-veEM/ low EM and HI±veEM/ low EM groups in the PPY model show that the audit committee size is different in their mean values, which are significantly positive at 1% (see Table 6.9). In the context of Jordan, this result is consistent with the results of Alhaddad *et al.*, (2011), who found a positive relationship between audit committee size and earnings management in Jordanian firms. On the other hand, SJ/MJ model samples do not support H5. These results are consistent with several prior studies, such as Bedard *et al.*, (2004), Xie *et al.*, (2003), and Baxter (2009), who all documented that there is no association between earnings management and audit committee size. They stated that their results might refer to the weakness of the number of audit committee members’ education and experiences, since a strong argument in the agency theory states that the larger the size of the audit committee the more likely it will lead to a mitigation of earnings management level.

The tests of **H6**, which suggested a negative relationship between the number of audit committee meetings and earnings management in Jordanian industrial firms is not supported. The t-tests for the HI-veEM/ low EM and HI±veEM/ low EM groups in the PPY model also show that the number of audit committee meetings are different in their mean values, which are significantly positive at 1% (see Table 6.9). This result is consistent with the work of Saleh *et al.*, (2007) and Abdul Rahman *et al.*, (2006), who found that the number of audit committee members is positively related to earnings management levels in Malaysia. As discussed, the main reason for their results may be the classification of their country - Malaysia is considered a developing country.

With regard to the SJ/MJ model samples, Tables 6.7 and 6.8 show that the number of audit committee meetings has no significant relationship, which means that audit committee meetings do not have a serious effect on discretionary accruals in Jordanian industrial firms. The possible reason for these results could be the low level of audit committee independence. This explanation was supported by the suggestion of Abbott *et al.*, (2000), who stated that the

full independence of audit committee members mitigates earnings management in firms. In accordance with this, Table 6.3 indicates a low level of independence among audit committee members in Jordanian industrial firms, where the average independence of audit committees according to the SJ model sample is 0.34, which means that this could be the main cause of the positive result.

Audit committee independence is another issue that was given attention in this research; **H7** assumes a negative relationship between the independence of audit committees and levels of earnings management in Jordanian industrial firms. No statistically significant relationship was detected between the independence of audit committees and earnings management, as shown in Tables 6.7, 6.8 and 6.9. These results are consistent with those of Abdul Rahman *et al.*, (2006), who conducted their study in Malaysia with 97 firms and found insignificant evidence of a relationship between audit committee independence and earnings management. Based on this result, the insignificant relationship between audit committee independence and earnings management in Jordanian industrial firms in all models may be explained by two possibilities: (1) lack of audit committee independence in Jordanian industrial firms (Tables 6.1 and 6.2 show low averages for audit committee independence in all model samples, SJ/MJ 0.34, and PPY 0.32). This possible reason is supported by Klein (2000) and Abbott *et al.*, (2000), who obtained different results from those produced by this research, and (2) small sample size, as supported by Rahman *et al.*, (2006) who found results similar to ours. Their sample size was small compared with other studies that have investigated the association between audit committee independence and earnings management. For example, Abbott *et al.*, (2000) surveyed 244 USA firms.

According to the t-test results in Tables 6.7, 6.8 and 6.9, this research does not supported **H8**, which states that there is a negative relationship between the existence of audit committee expertise and earnings management in Jordanian industrial firms. The SJ/MJ model samples do not show any significant relationship, and the PPY model sample presents a positive relationship between audit committee expertise and earnings management in the HI-veEM/Low EM and HI±veEM/Low EM groups.

Finally, the signs on the t-tests for these variables are the opposite to what might be expected in developed economies, as they are for those for the board characteristics discussed earlier. These results are, however, consistent with prior studies based on developing economies such

as Saleh *et al.*, (2007) and Abdul Rahman *et al* (2006) who conducted similar studies on Malaysian firms.

### **External Auditors Factors**

As mentioned previously, this research addresses **H9** to determine whether there is a negative relationship between the external auditor's reputation and earnings management in Jordanian industrial firms. The results of t-tests show that the external audit reputation (*EXAREPUT*) is significant in the MJ/PPY models and the t-tests show a positive relationship between external audit reputation and EM (see Tables 6.8 and 6.9), which contradicts prior findings. As a result, we investigated other explanations for EM behaviour in our semi-structured interviews.

Furthermore, **H10** which assumes that "there is a positive relationship between the tenure of the external auditor and earnings management level in Jordanian industrial firms" is not supported where all the results of t-tests in Tables 6.7, 6.8 and 6.9 show no relationship between external auditor tenure and earnings management.

**Hypothesis 11** of this research suggested that there is a negative relationship between the issuing of going-concern modified opinions and earnings management in Jordanian industrial firms. The results of t-tests show that external auditor opinion (*EXAOPIN*) is significant only for the SJ model where it shows a negative relationship between *EXAOPIN* and EM (see Table 6.7), implying a clean audit opinion is associated with a lower EM. Findings from Chen *et al.*, (2001) also reveal that receiving a modified audit opinion (*EXAOPIN*) was associated downward with earnings management in China. With regard to the MJ/PPY model samples, the t-test results in Tables 6.8 and 6.9 indicate that there is no relationship between external auditor opinion and earnings management in Jordanian industrial firms. These results are consistent with Butler *et al.*, (2004), who found no association between external auditor opinion and earnings management in the USA.

Agency theory states that the change of external auditor based on corporate governance law is more likely to increase earnings quality, which means less earnings management in firms (Bukit *et al.*, 2009; Hackenbrack *et al.*, 2002; Gaver *et al.*, 2001). Accordingly, **H12** suggested that there is a negative relationship between the external auditors remaining with a firm for more than a year and earnings management in Jordanian industrial firms. T-test results reveal that the external audit change (*EXACHANG*) however, is not a strong

explanatory variable for the existence of earnings management in Jordanian firms as they are all insignificant for all our models. These results are not surprising, since there are two factors that might lead to them: (1) the nature of management culture, since most managers prefer to stay with the same external auditor because he/she knows the firm's circumstances, and (2) low levels of compliance with corporate governance mechanisms, since this code has only recently been adopted in Jordan. However, these results are consistent with several studies, such as one carried out in Saudi Arabia (Aghamidi, 2012) which also found that there is no relationship between external auditor change and earnings management. They refer to several potential reasons for this: (1) weakness of audit quality, which could lead to poor evaluations for the firms; (2) the methods used to evaluate Big 4 audit firms in Saudi Arabia are of lower quality than the methods used in developed countries; (3) most developing countries have weaknesses in their corporate governance mechanism, and (4) the nature of culture in Saudi Arabia, which might be considered another possible reason for this result. Bradshaw *et al.*, (2001) also presented empirical evidence that showed that there is no relationship between external auditor change and earnings management practices in the USA, and they attribute this to the ineffective application of corporate governance roles in the sample firms.

### **Ownership Structure**

Almost all comparisons of the mean values between groups show that the t-statistics for foreign institutional ownership (*IOWNFOR*) are significantly positive for all the models while foreign individual ownership (*INDOWNF*) is significantly positive for the SJ/ MJ models. This means that higher foreign ownership appears to be associated with more earnings management. These results are consistent with prior findings such as Siregar *et al.*, (2008) and Koh (2003). These results could be because foreign investors care less about the interests of the home country, which means more pressure on firms with foreign investors to report results that meet their requirements. According to these results, it can be concluded that **H14** is supported in this research, which states that there is a positive relationship between high proportions of foreign individual ownership and earnings management level in Jordanian industrial firms. **H18** is not supported, which assumes that there is a negative relationship between high proportions of foreign institutional ownership and earnings management level in Jordanian industrial firms.



As for **H15** “there is a positive relationship between high proportions of local individual ownership and earnings management in Jordanian industrial firms”. Tables 6.7 and 6.8 show that there are significantly negative results for firms in the SJ/ MJ model, which means that more *INDOWNL* is associated with less EM. This result is inconsistent with Ali *et al.*, (2008), and may be due to the influence of powerful individuals over the board of directors as discussed earlier.

**H19** states that there is a negative relationship between high proportions of local institutional ownership and earnings management. None of the results (presented for all models in Tables 6.7, 6.8 and 6.9) show a significant relationship, which means H19 is not supported. These results are not surprising since Peasnell *et al.*, (2005), in their study conducted in the UK, also showed no relationship between institutional ownership and earnings management. The cause of this could be the fact that Jordanian industrial firms suffer from constant change in institutional investors, whether foreign or local, particularly after financial crises and revolutions in the Middle East area. This explanation is supported by Koh’s studies in 2003 and 2007.

This research suggests in **H13** that there is a negative relationship between the high proportion of family ownership and earnings management in Jordanian industrial firms. Table 6.7 shows that family ownership (*FAMOWN*) has a significantly negative, but weak effect on the SJ model, but highly negative and significant effect on the PPY model which means that greater family ownership is associated with low earnings management. The possible reasons for these results are: (1) the desire of family owners to maintain their reputations, and (2) family ownership implies less need to be accountable to external shareholders. These results are consistent with prior literature (e.g. Yang 2010; Wang 2006), who found that a high percentage of family ownership mitigates earnings management.

**H17** states that there is a negative relationship between a high proportion of managerial ownership and earnings management in Jordanian industrial firms, and **H20** assumes that there is a negative relationship between blockholder ownership of 5% or more and earnings management level in Jordanian industrial firms. The results in Tables 6.7, 6.8 and 6.9 show that blockholder ownership (*BLOCKOWN*) and managerial ownership (*MANOWN*) are insignificant in all of our models. These variables, however, have been found to be significant in other studies such as Dechow *et al.*, (1996) for *BLOCKOWN*, and Yang *et al.*, (2008) for *MANOWN*.

As mentioned earlier, state ownership (government ownership) is the smallest ownership concentration in Jordanian industrial firms (Tables 6.3 and 6.4 show that the average state ownership is less than 7%). Most prior studies have found that high proportions of state ownership relate negatively to earnings management practices. For example, Wang *et al.*, (2011) documented that state ownership negatively affected earnings management practices in China. Jones and Modified Jones' models have been used to measure earnings management, following the approach of Francis *et al.*, (1999). The empirical results for this study showed a reduction in the level of earnings management in state-owned firms. They also indicated that the protection of state-owned firms might lead to reducing managers' discretion in managing firms' earnings. Accordingly, **H16** assumes that there is a negative relationship between high proportions of state (government) ownership and earnings management in Jordanian industrial firms. The results in Tables 6.7, 6.8 and 6.9 show that the relationship between state ownership (*STATOWN*) and EM is also insignificant in all of our models. These results are consistent with those from Alfaraih *et al.*, 2012, Wang *et al.*, 2011 and Omran *et al.*, 2008, who also found no relationship between earnings management and state ownership.

Overall, we found that the PPY model has more powerful results when comparing for the difference in means among different EM groups in our case. This conclusion may not be surprising since the PPY model was developed in the UK and the Jones model in the US. There are similarities in the financial systems of Jordan and UK as Jordan was under UK mandate until the middle of the last century and followed the British financial system until 1973.

### **6.5.2 Discriminant Analysis (Multivariate Analyses)**

In this section the discriminant analysis is used to test the relationships between internal control, corporate governance mechanisms and earnings management across the groups detailed earlier. Discriminate analysis is defined in the literature as a regression used statistical technique to classify a categorical outcome variable in a group or particular classification based on its characteristics (Pardoe, Yin and Cook, 2007).

Huberty (1984) stated that there are problems related to determining which type of discriminant analysis should be used; these are variables separation and classification. Huberty (1984) documented several issues that are associated with the use and interpretation of discriminant analysis:

- Distinguishing between a linear discriminant function and a linear classification function.
- Misusing stepwise discriminant analysis programs.
- Ordering variables and selecting variable subsets.
- Choosing a classification rule.
- Estimating true classification hit rates.
- Assessing classification accuracy.
- Examining and using classification results.

Quadratic discriminant analysis (QDA) is considered one type of discriminant analysis type, since there are two main types of discriminant analysis available: linear discriminant analysis (LDA) and quadratic discriminant analysis (QDA). Quadratic discriminant analysis (QDA) is a generalisation of linear discriminant analysis (LDA) that was introduced by Smith in 1947. “Quadratic discriminant analysis (QDA) extends LDA by allowing the intraclass covariance matrices to differ between classes, so that discrimination is based on quadratic rather than on linear functions of X. With QDA, however, there are no natural canonical variates and no general methods for displaying the analysis graphically. When there are just two feature variables, it is possible to visualize the quadratic classification regions in a scatterplot, but there is no clear extension to analyses with three or more features” (Pardoe et al., 2007) (page 172).

The main assumption underlying both LDA and QDA is that the observations come from a multivariate normal distribution. However, whereas LDA suggests that the groups have equal

covariance matrices (EM residual values), QDA relaxes this assumption, allowing the groups to have different covariance matrices (STATA 13, 2014). Accordingly, based on our observation of the research data of EM residual values (See appendix 3), the QDA method was adopted to test the hypotheses of this research.

A typical method to manage classification problems is QDA, which represents the probability of each class as a Gaussian distribution, then uses the subsequent distributions to assess the class for a given test point (Friedman, Hastie and Tibshirani, 2001).

In this research, quadratic discriminant analysis is used to define the differences between several known groups and utilises those differences to classify research observations in those groups. The group centroid is reached by comparing the distribution of the discriminant scores for the HI+veEM, HI-veEM, and Low EM groups. If the overlap in the distribution of these groups is small, the discriminant function splits the groups well. However, if the overlap in these groups is large, then the discriminant function is a poor discriminator between the groups (Joseph, Rolph, Ronald and William, 1995). The discriminant function is listed as follows:

*Likelihood of belonging to group 1, 2 or 3 = f {BSIZE, BMEETING, BOUTSIDE, BINDEPEND, ACSIZE, ACMEETING, ACINDEPEND, ACEXPERTISE, EXAREPUT, EXATENURE, EXAOPIN, EXACHANG, MANOWN, IOWNFOR, IOWNLOC, INDOWNF, INDOWNL, FAMOWN, BLOCKOWN, STATOWN, FSUB, FLVE, ROA, CFOA}.*

Where

Group 1 = firms with low EM

Group 2 = firms with high negative EM

Group 3 = firms with high positive EM

*BSIZE* = Board of Director Size,

*BMEETING* = Number of the Board of Directors,

*BOUTSIDE* = Board of Director Outsiders,

*BINDEPEND* = Board of Director Independence.

*ACSIZE* = Audit Committee Size,

*ACMEETING* = Number of Audit Committee Meetings,

*ACINDEPEND* = Audit Committee Independence,

*ACEXPERTISE* = Audit Committee Expertise.

***EXAREPUT** = External Auditor Reputation,*

***EXATENURE** = External Audit Tenure,*

***EXAOPIN** = External Audit Opinion,*

***EXACHANG** = External Audit Change.*

***MANOWN** = Managerial Shareholders,*

***IOWNFOR** = Institutional Shareholders Foreign,*

***IOWNLOC** = Institutional Shareholders Local,*

***INDOWNF** = Individual Foreign,*

***INDOWNL** = Individual Local,*

***FAMOWN** is Family Ownership,*

***BLOCKOWN** = Blockholder Ownership,*

***STATOWN** = State Ownership.*

***FSUB** = Firm Subsidiary,*

***FLVE** = Financial Leverage,*

***ROA** = Firm Performance,*

***CFOA** = Cash Flow from Operating Activities.*

The results for the quadratic discriminant analysis applied to the SJ model are presented in Table 6.10; results for the MJ model are presented in Table 6.11, and Table 6.12 shows the results for the PPY model. Prior probabilities established for the EM groups are as follows, Low, 50%; HI+veEM, 25% and HI-veEM 25%, based on observation of the distribution of the EM variables (see appendix 3). Table 6.10 shows that classification accuracy is high, especially in the Low EM (86.03%) and HI+veEM (75%) groups, and the overlap between these two groups is small, which means that the model discriminates well between these groups. The classification accuracy for all groups is higher than would be expected by chance. These results are consistent with the t-test results for the SJ model, shown in Table 6.7, which show that the differences in the means between groups HI+veEM/Low EM and HI±veEM/Low EM are more significant than the differences in means between the HI-veEM and Low EM groups.

As for the MJ model, Table 6.11 demonstrates that classification accuracy is high in all groups (78.36% in Low EM, 71.64% in HI-veEM and 86.07% in HI+veEM) and significantly greater than would arise by chance. These results are supported by the t-test results for the MJ model shown in table 6.8. Furthermore, results for the MJ model reported in Chapter three

also show the MJ model to be a better fit for the companies than the SJ model. Table 6.12 also shows that classification accuracy is higher for firms in the PPY model than SJ/MJ model, in the HI-veEM (82.11%) and HI+veEM (78.95%) groups, and the overlap between these two groups is small. These results are also consistent with the t-test results for the PPY model (in Table 6.9). On the other hand, the Low EM group's results for the PPY model reveals that the classification accuracy is below that which could be expected by chance (41.58%), which means that this group overlaps the other two groups (the model classifies 35% of the Low EM firms as HI-veEM and 24% of the Low EM firms as HI+veEM).

Table 6-10 Quadratic Discriminant Analysis SJ Model Sample

EM Group	Model Classification			
	Low	H-EM	H+EM	Total
Low	117 86.03%	7 5.15%	12 8.82%	136 100%
H-EM	25 36.76%	35 51.47%	8 11.76%	68 100%
H+EM	17 25.00%	0 0.00%	51 75.00%	68 100%
Total	159 58.46%	42 15.44%	71 26.10%	272 100%
Priors	50%	25%	25%	

Table 6-11 Quadratic Discriminant Analysis MJ Model Sample

EM Group	Model Classification			
	Low	H-EM	H+EM	Total
Low	105 78.36%	10 7.46%	19 14.18%	134 100%
H-EM	10 14.93%	48 71.64%	9 13.43%	67 100%
H+EM	8 11.94%	2 2.99%	57 86.07%	67 100%
Total	123 45.90%	60 22.39%	85 31.72%	268 100%
Priors	50%	25%	25%	

Table 6-12 Quadratic Discriminant Analysis PPY Model Sample

EM Group	Model Classification			
	Low	H-EM	H+EM	Total
Low	79 41.58%	66 34.74%	45 23.68%	190 100%
H-EM	1 1.05%	78 82.11%	16 16.84%	95 100%
H+EM	2 2.11%	18 18.95%	75 78.95%	95 100%

<b>Total</b>	82 21.58%	162 42.63%	136 35.79%	380 100%
<b>Priors</b>	50%	25%	25%	

Overall, based on the results of Tables 6.10, 6.11 and 6.12, we found that the MJ model sample results had the best classification accuracy in all groups; Low EM, HI-veEM and HI+veEM.

We compare the results from the quadratic discriminant analysis on the four types of variables used in the MJ sample model, each analysed separately; [(1) board of directors' characteristics, (2) audit committee characteristics, (3) external auditor factors, and (4) ownership structures] to show which of these has the most effect on earnings management levels.

According to the results in Table 6.13 (Panel D), ownership structures have the most effect on earnings management in Jordanian industrial firms, and the classification accuracy is high for HI+veEM group (73.13%) and Low EM (68.66%). In contrast, Table 6.13 (Panel D) shows that ownership structures are less powerful in identifying HI-veEM since the classification accuracy for HI-veEM is 38.81%.

The classification accuracy results in Table 6.13 (Panel A) show that board of directors' characteristics are less effective in identifying the EM groups and tend to under estimate the level of EM in the sample. This means that the classification accuracy for Low EM firms is high (78.36%). This result is consistent with Table 6.8 results which documents that board of director characteristics are associated with Low EM firms on the basis of t-tests.

A similar pattern is also found in the audit committee characteristics and external auditor factors. Table 6.13 (Panel B and Panel C) indicate that these variables also tend to under estimate the level of EM and classifies too many firms in the Low EM group. These findings are also consistent with the t-test results in Table 6.8. Finally, the results show that ownership structure has a greater effect on EM than the other categorised variables.

Table 6-13 Quadratic Discriminant Analysis Board of Directors Characteristics, Audit Committee Characteristics, External Auditor Factors and Ownership Structures (MJ Model Sample)

Board of Directors Characteristics (Panel A)					Audit Committee Characteristics (Panel B)				
Model Classification					Model Classification				
EM Group	Low	H-EM	H+EM	Total	EM Group	Low	H-EM	H+EM	Total
Low	105 78.36%	14 10.45%	15 11.19%	134 100%	Low	112 83.58%	6 4.48%	16 11.94%	134 100%
H-EM	33 49.25%	32 47.76%	2 2.99%	67 100%	H-EM	36 53.73%	25 37.31%	6 8.96%	67 100%
H+EM	33 49.25%	10 14.93%	24 35.82%	67 100%	H+EM	38 56.72%	4 14.93%	25 37.31%	67 100%
Total	171 63.81%	56 20.90%	41 15.30%	268 100%	Total	186 69.40%	35 13.06%	47 17.54%	268 100%
Priors	50%	25%	25%		Priors	50%	25%	25%	
External Audit Factors (Panel C)					Ownership Structures (Panel D)				
Model Classification					Model Classification				
EM Group	Low	H-EM	H+EM	Total	EM Group	Low	H-EM	H+EM	Total
Low	112 83.58%	7 5.22%	15 11.19%	134 100%	Low	92 68.66%	8 5.97%	34 25.37%	134 100%
H-EM	34 50.75%	26 38.81%	7 10.45%	67 100%	H-EM	20 29.85%	26 38.81%	21 31.34%	67 100%
H+EM	40 59.70%	5 7.46%	22 32.84%	67 100%	H+EM	17 25.37%	1 1.49%	49 73.13%	67 100%
Total	186 69.40%	38 14.18%	44 16.42%	268 100%	Total	129 48.13%	35 13.06%	104 38.81%	268 100%
Priors	50%	25%	25%		Priors	50%	25%	25%	



Overall, the significant findings and high levels of classification accuracy in the Quadratic Discriminant Analysis support the approach taken in constructing the Earnings Management variable as a three-way classification to represent firms with virtually no EM, firms with significant income-increasing EM and firms with significant income-decreasing EM. The expected proportions of 50% in the first category and 25% in each of the latter two categories also appears to hold true for all of the EM estimates generated by the Modified Jones, Standard Jones and PPY models, which give us more confidence that the approach is appropriate.

## **6.6 Chapter Summary**

The main aim of this chapter is to examine the effect of internal control and corporate governance mechanisms on earnings management levels in Jordanian industrial firms.

However, the relatively smaller sample size implies limitations in the modelling process. One implication is that any potential outlier would result in a disproportionate effect on the empirical findings. Furthermore, analysis of the data reveals multicollinearity between variables, and heteroskedasticity in OLS error terms (see appendix 4), implying that OLS regression may not be an appropriate model to apply for empirical analysis.

There are several weaknesses in empirical results in our study such as, the fact that the samples are small, which means that outlying observations may have a disproportionate effect on the results and that samples are less likely to be representative. In addition, analysis of the variables indicated the presence of multicollinearity between variables, and heteroskedasticity in OLS error terms (see appendix 4), which meant that OLS regression was not an appropriate technique to analyse this data. In addition, the results from the accruals models were not particularly strong. Previous studies have tended to classify the EM variables in a dichotomous way, representing firms with income-increasing and income-decreasing EM. Examination of the EM estimates from our models indicated that this would be a poor description of the variables (see section 6.2) and so we used a three-way classification (high positive earnings management, high negative earnings management and low earnings management) to represent the distribution of this variable. Therefore, we have decided to use a three-way classification (high positive earnings management, high negative earnings management and low earnings management) to represent the distribution of this variable. Doing so has also enabled us to employ t-tests and discriminant analysis to investigate the relationship between the variables by using the internal control and corporate

governance variables to predict the effect they have on the different earnings management groups.

Of all the models tested, the PPY model is better in capturing the relationship of earning management with the relevant explanatory firms' characteristics variables. For example, board size and numbers of outsiders of the board are all significantly and positively related with earnings management, particularly in groups H+EM/Low EM, H-EM/Low EM and H±EM/Low EM (see Tables 6.7 and 6.8). Audit committee characteristics (audit committee size, number of audit committee meeting and audit committee expertise) are also positively related with earnings management groups (See Table 6.9).

Our research also found external auditor opinion to be a reason for the prevalence of earning management practices. This is revealed by the SJ model, showing external auditor opinion to be significantly and negatively related with earning management. As for the MJ/PPY models, external auditor opinion is shown to have a significantly positive relationship with earning management.

Several types of ownership structure were found to be significant explanatory variables for the different earning management groups. These are the managerial ownership, local individual ownership and family ownership. The other types of ownership structure do not present significant relationships with earnings management. A plausible explanation for these results could be the weakness of investment regulations, which do not ensure protection for the investors where firms may be less focused on external equity market investors. Another reason may be that the corporate governance code in Jordan has only recently been adopted, which means there are still some weaknesses in this code. Finally, problematic nature of earnings management models for calculating earnings management values could be another potential reason.

In the quadratic discriminate analysis (QDA), we found that ownership structure affected earnings management more than board of directors' characteristics, audit committee characteristics and external auditor factors. Firm characteristics are better at classifying EM estimates from MJ model than those from the other models. These results combined with strong results for MJ model reported in chapter five suggest that the MJ model is strong to represent the nature of EM in Jordanian industrial firms.

For the PPY model, the classifications using firm characteristics tend to overestimate the

amount of EM and the QDA classifies too few firm-years in the Low EM category. However, the PPY estimates are more clearly related to firm characteristics when looking at each variable in isolation (in the t-tests), but when variables are all combined together and interaction is allowed, the firms' characteristics classify the MJ estimates of EM more accurately.

The next chapter discusses findings from the interviews conducted with the companies underlying the sample. Many of the issues identified in the secondary data analysis in this chapter were identified for further exploration in the interviews, which are reported in the next chapter.

## **7. Chapter Seven: Analysis of Semi-structured Interviews**

### **7.1 Introduction**

The analysis in the previous chapter was based on secondary data (financial data) focusing on measurable variables to explore the association between corporate governance mechanisms in constraining earnings management in Jordanian industrial firms.

This chapter concentrates on factors that are less easy to measure by presenting the analysis of semi-structured interviews. These interviews were used to acquire in-depth information in order to explore several components of internal control and corporate governance issues that were not covered in the empirical chapter such as, the effect of legal and taxation systems on earnings management. In addition this chapter explains some subtle and complex issues that affect firms in the Jordanian context.

The semi-structured interviews were conducted with general managers, financial managers and internal audit managers in the firms. Interview questions explored with them the following areas:

- The nature of their roles and the suitability for them.
- The structure of internal controls and corporate governance in their firms.
- Relationship between senior managers.
- The “ financial school of thought” adopted in the firm (See section 6.5.9 for an explanation of this area)
- Relationship with shareholders and external auditors.
- The ownership structure.
- Attitude towards earnings management.
- Specific accounting policies applied to achieve earnings management.
- The effects of contextual factors such as, the legal and taxation system and the effect of financial crisis.

- The effect of cultural factors such as, tribal system; the influence of powerful families.

The analysis of semi-structured interviews enable us to answer some questions and explain in more depth a number of issues that arose in the quantitative analysis presented in chapter five. In addition, the semi-structured interviews provided contextual explanations within which to interpret the quantitative results. The interview firms were selected with reference to the EM estimates from the accruals models in chapter five to provide firms that were representative of a range of different EM estimates, including those with high positive EM, high negative EM and Low EM.

This chapter is divided as follows; section 7.2 provides descriptive statistics about the interviewees. Section 7.3 presents detailed analysis of the semi-structured interviews and discussion. Section 7.4 shows the limitations that faced the researchers while conducting the semi-structured interviews. Finally, section 7.5 presents a chapter summary.

## **7.2 Descriptive Statistics Based on Interviewees' Information**

The semi-structured interviews were conducted with managers from 12 Jordanian industrial firms (a total of 16 interviewees, since four firms insisted the two interviewees) the firms were selected based on factors which suggested the level of EM (the standardized prediction errors from the accruals models) and Amman stock market classification (first market, second market or third market) as shown in the methodology chapter. The length of these interviews ranged between 60 and 150 minutes. Table (7.1) provides the interviewees' characteristics, e.g. qualifications, years of experience in the sample firm and years of prior experience. The 12 firms constituted 31% of the SJ/ MJ model sample and 21% of the PPY model sample. The most interviews were conducted with interviewees who occupied the position of financial manager (44%), financial and administrative manager (19%) and internal audit manager (19%). Furthermore, most of the interviewees held bachelors and masters degrees in accounting (56% and 38% respectively). Five interviewees held Jordanian Certified Public Accounting qualifications (JCPAs), and one interviewee held an American CPA qualification, which equated to 31% and 6% respectively.

Table 7-1 Interviewees Information

NO	Firm	Reason for Inclusion	Interviewee Position	Qualification	Professional Certificate	Interviewees' Experiences Firm	Prior Experiences
1	JPM	High Positive EM	Financial Manager	B.A in Accounting	JCPA	5 years	11 years
	JWI	High Positive EM	Financial and Administrative Manager	B.A in Accounting	N/A	20 Years	15 Years
2	AAI	High Negative EM	Financial Manager	B.A in Accounting	N/A	1.5 years	22 years
	JIR	High Negative EM	Financial and Administrative Manager	MSc in Accounting	N/A	10 Years	11 Years
3A	GMC	Low EM	Financial Manager	B.A in Accounting	N/A	12 years	10 years
	GMC	Low EM	Internal Auditor Manager	MSc in Accounting	JCPA	10 Years	20 Years
3B	P&C	Low EM	Financial Manager	MSc in Accounting	N/A	3 years	6 years
	P&C	Low EM	Internal Auditor Manager	MSc in International Financial Business	N/A	1 Years	11 Years
4	UAI	Low EM	Financial Manager	B.A in Accounting	N/A	7 years	3 years
	TRA	Low EM	Financial and Administrative Manager	B.A in Accounting	N/A	10 Years	1 Years
5	MID	Moved Down from First Market to Second Market	Financial Management Manager	MSc in Accounting	N/A	8 Years	25 Years

NO	Firm	Reason for Inclusion	Interviewee Position	Qualification	Professional Certificate	Interviewees' Experiences Firm	Prior Experiences
6	JWM	Moved Up from Second Market to First Market	General Manager	B.A in Accounting	N/A	25 Years	24 Years
	JWM	Moved Up Down from Second Market to First Market	Financial Manager	B.A in Accounting	JCPA	22 Years	20 Years
7	PHO	Firm always in the First Market	Executive Financial Manager	MSc in Accounting	JCPA	30 Years	10 Years
8	POT	Moved Down from First Market to Second Market after IFRS Adoption	Internal Auditor Manager	B.A in Accounting	CPA	3 Years	15 Years
	POT	Moved Down from First Market to Second Market after IFRS Adoption	Financial Manager	MSc in Accounting	JCPA	5 Years	10 Years

Regarding interviewees work experience, more than half of the interviewees had long periods of work experience in their current positions; 25% had 10–15 years, and 25% had 16 years or more. More than 80% of interviewees had had long periods of experience in their previous positions - 50% had 10 – 15 years, and 31% had 16 years or more. These findings suggest that interviewees were well qualified to provide appropriate information to the interviewees since more than 90% of them held accounting degrees and more than 50% of them had high levels of experience.

### **7.3 Semi-structured Interviews: Analysis and Discussion**

The semi-structured interviews were selected to represent the different groups identified by the accruals models (high positive EM, high negative EM and Low EM) and the firms' positions in Amman stock market, since previous research suggested that movement between markets could be associated with EM. The semi-structured interviews therefore cover firms moving between markets and firms that remained in one market throughout our study.

- Two firms have high positive EM results.
- Two firms have high Negative EM results.
- Four firms have Low EM.
- One firm moved down from first market to second market
- One firm moved up from second market to first market.
- One firm always in the first market.
- One firm moved down from first market to second market after IFRS adoption.

The information gathered from the semi-structured interviews was then analysed to determine whether there were differences between firms with different level of EM, movement up and down markets, and IFRS adoption. In case of market status and IFRS adoption firms, this research studied them from qualitative perspective.

The following sections analyse specific characteristics of the semi-structured interviews including the financial objectives, corporate governance structure, corporate governance and internal control mechanisms (including board characteristics, audit processes, management structure, business operations, financial accounting process), managers incentives to manage profit, cultural factors, financial crises, different approach to accounting system, taxation system, bad debt provisions, external and internal auditors, and ownership structure.

#### **7.3.1 Interviewees Primary Financial Objectives**

Jordanian industrial firms, like any other firms, were all established to achieve certain financial objectives; however, there was some debate amongst our interviewees about the main financial objectives of these firms. Accordingly, we found that these firms have several financial objectives they are attempting to achieve, and these are:



- Staying in the first market or moving up to the high market.
- Achieving more profit growth.
- Retaining shares in the Jordanian market.

*“Our main objective is achieving more profit to increase shareholders’ growth, and keeping our shares in Jordan’s market and trying more and more to increase ..... Our share prices, which brings in more investors, and this is another one of our targets: to attract more investors.” (Financial manager, Firms 1)*

- Provide financial advice to the firm as a whole.
- Controlling all financial transactions.
- Applying all financial policies as received from upper management.
- Avoiding any conflict with government regulation.

*“The financial objectives of this firm are to make sure that people are clear on the fact that we are here not to achieve profit and avoid loss, but to work as financial advisors for the firm. The main aim in my firm is to carry out any work, and my personal policy is to oversee the work. There is a common misapprehension that people believe about us, which is that our aim is to achieve profit and avoid the loss.” (Financial manager, Firm 2)*

- Increasing firms’ capitalisation by increases by equity or debt.
- Increasing the firm’s assets by attracting investment.

*“In terms of increasing our capitalisation, one of our most important objectives is to be the best firm on the market (I mean Amman, and foreign markets such as Egypt, since Egypt has a strong industrial sector). Another objective is increasing Jordan’s economy by attracting more investors, which means more money in Jordan.” (Financial and administrative manager, Firm 1)*

- Contributing to Jordan’s economic growth.

- Decreasing the unemployment rate.
- Hiring and supporting members of local society, this in turn leading to more growth for Jordan's economy by decreasing the unemployment rate. For example, making donations to the council of the town in which the firm is situated, and hiring some local people (e.g. as security guards).
- Increasing employees' salaries to encourage productivity.
- Reaching break-even point.

***“Another aim is to reach the point of breaking even.”*** (Financial Management Manager, Firm 5).

- Paying less interest on loans in according to principle of Islamic finance.

***“We did not pay any loan interest from 2007 to 2011 [because we did not take any loans]. This is the main objective; to remain free from (REBA<sup>1</sup>)”.***  
(Financial and Administrative Manager, Firm 4)

Accordingly, financial objectives could be a motivation for the managers to manipulate their earnings management to achieve their desirable incentives, which corresponds with previous studies (see chapter 3, section 3.4). For example, Healy (1985) found that the managers engage in earnings management to increase a firm's profit to increase their compensation and bonuses. In another example, Louis (2004) showed that the firms' managers increased their earnings in the period preceding a stock swap announcement to attract more investors.

Based on the in-depth interviews, several obstacles seem to be faced by the upper management in these firms in trying to achieve their financial objectives. These obstacles may result in managers using EM techniques to achieve their financial objectives (see e.g. Chen *et al* 2009; Laux and Laux, 2009).

***“I think there is no way to avoid these obstacles, since all of them are out of our hands. I suppose that there is one way to avoid these obstacles, which is by managing firms' accounts.”*** (Financial Manager, Firm 1)

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<sup>1</sup> In Islam, any banking interest is considered REBA, which refers to interest and is prohibited.

The most commonly cited obstacles were documented in our interviews, economic circumstances such as increases in the prices of raw materials, increasing petrol prices, increasing minimum wages for employees (although this last point was contradicted by the interviewee from firm 1). Political circumstances (e.g. revolutions) in the area that affect these firms' work and profits, such as the Syrian, Egyptian, Libyan and Yemeni revolutions. Government legislations such as increasing tax rates over time and increasing customs fees and financial crises, such as in 2008. In this regard, the statement below was provided to explain these obstacles.

***“ ..... Increasing several utilities expenses, political circumstances, financial crisis in 2008, and government regulations affected our business negatively, by more than 70%. For example, our government creates new roles daily [They do not have obvious objectives, and every government employee works as it suits him/her.” (Financial Manager, Firm 6), (Executive Financial Manager, Firm 7)***

Other difficulties mentioned by interviewees include explanations which are economic, regulatory or cultural:

- 1 Delays and obstacles in issuing production licences (e.g. mining licence).

***“We spent a long time waiting to get the licence from the government to start our work, and this led most of the investors to leave to other countries”.***  
*(Financial manager, Firm 3A)*

- 2 Increasing corporate tax rates.

***“.... a lot of firms have started thinking about leaving this country to invest in other countries that offer them lower tax rates and more services.”***  
*(Financial and Administrative Manager, Firm 1)*

- 3 The tribal system in Jordan.

***“The most important problem is the tribal system in Jordan, since we are working in XXX area [and the Sheikh of this area, from time to time, asks us to promote someone from his tribe to a high position in our firm, and if we do not listen to him]... I think the effects this will eventually have on our***

*manufacturing will eventually be disastrous.” (Executive Financial Manager, Firm 7)*

Perceived favouritism in recruitment decisions is an issue considered one of the biggest obstacles that affect Jordanian industrial firms (referred to by the interviewee below as nepotism)

*“Nepotism is considered a disastrous issue that affects our financial objectives... I hate it! Sometimes we hire people that are not qualified, just because they are related to someone who has a high position in our country or our firm.” (Financial manager, Firm 2)*

- 4 Inappropriate barriers to competition between firms including bribery and corruption described by interviewee below as “Wasta”

*“There are several firms that are similar in production, however, in fact we are the only firm who’s records are fully transparent to the trade ministry, while other firms have Wasta<sup>1</sup> and avoid having their records inspected by the trade ministry.” (Financial and Administrative Manager, Firm 4)*

During our discussions with interviewees, we found that some managers manipulated their accounts to avoid these obstacles - these results are consistent with several previous studies that found firms engaged in earnings management to avoid obstacles that prevented them from achieving their financial objectives, such as: Louis *et al* (2005), DeAngelo (1988), and Healy (1985). The statements below provide support for these results and demonstrate that EM is institutionalised in Jordanian firms and openly acknowledged as fact of life.

*“Come on, you are accountant and we know that every accountant has experience of avoiding these obstacles, for example by using loopholes in the tax system. For example, some of our products are excluded from tax, so while that is in effect we stop making other products and concentrate on this type of product. There is more I could tell you.” (Financial Management Manager, Firm 5), similar statements also were provided by (Executive Financial Manager, Firm 7) and (Financial and Administrative Manager, Firm 4)*

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<sup>1</sup> Wasta is nepotism or favouritism.

Based on these comments, we concluded that managers in Jordan engage in earnings management in order to avoid several obstacles that might prevent them from achieving their objectives and that such behaviour is widely accepted and normalised within Jordanian firms.

### **7.3.2 Corporate Governance Structure**

In this section, we discuss the nature of corporate governance in Jordan based on the analysis of the interviews. First and foremost, some of the interviewees defined the corporate governance structure as the relationship between shareholders, the board of directors, and the firm's managers.

*“The corporate governance structure is the relationship between shareholders, the board of directors and other stakeholders, and involves controlling the firm in a way that allows it to achieve the desired objectives, such as increasing shareholders’ wealth and being the best firm amongst our competitors.” (Financial Manager, Firm 1)*

This definition is consistent with the definitions found in the literature, which means that the managers in Jordanian firms understood the corporate governance structure and its roles in the same way as those in other areas. Sternberg (2004) defined corporate governance as the methods firms use to achieve the objectives of shareholders by directing the corporation's transactions, agents and assets. A strong corporate governance structure must organise and consider the relationship between the firm environment and its employees, and ensure that the relationship between past and present employees, as well as those between the firms and its customers and suppliers, are good, in addition to which they must ensure all these relationships comply with the legal system and government regulations. One of the interviewees identified two dimensions of corporate governance as follows;

*“There are two types of relationship, and these are:*

- *The relationship between shareholders and top management used to deal with financial transactions, e.g. controlling all financial transactions within the firm based on accounting standards (IFRS).*
- *The other relationship is also between shareholders and top management and deals with authority and disclosure issues, since both of them have to comply with Jordanian corporate governance law.”*  
*(Financial Manager, Group Firm 1)*

The firms followed two types of policies for organising the relationships between shareholders and top management and complying with regulations.

*“Every manager in our firm is responsible for organising the relationship between the managers and shareholders and complying with firm policies, based on two groups of policies: (1) general policies for the firm that have been established by the board of directors, and (2) policies created by government bodies, such as Jordan’s food and drugs administration policies (JFDA). (Financial Manager, Firm 1)*

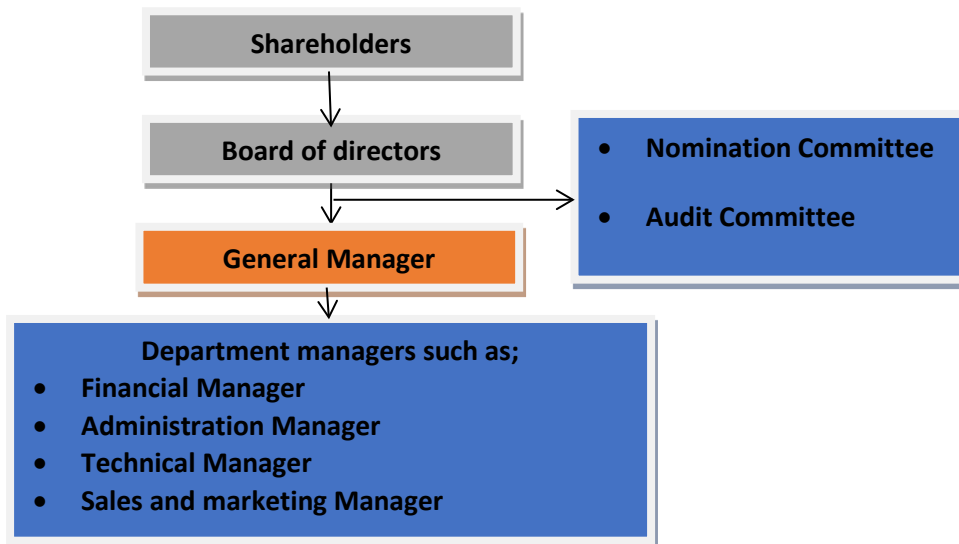
According to the 1997 Company Law (and mandates of 2002) and Khoury’s 2003 study, corporate governance structures in Jordanian firms consist of six areas: disclosure and accounting standards, legislative framework and government oversight, transparency in privatisation, the capital market, effective supervision of the board of directors, preservation of property rights and protection of minority rights. During the interviews, most of the managers stated that they are compliant with all corporate governance policies. One stated his firm was compliant in these six specific areas.

*“In general, corporate governance in Jordan is a new phenomenon... And the Jordan securities commission has issued guidance for organising corporate governance in Jordan BUT this guidance does not make it compulsory for Jordanian industrial firms to apply all corporate governance roles... Jordanian industrial firms have to disclose in their annual financial reports everything that they do not comply with. Our firm is committed to all corporate governance roles that have been issued since the financial crisis in 2008 in cooperation with IFC (International Financial Committees in developed countries). This in turn leads to an increase in the financial statements’ transparency and credibility... And still these corporate governance roles, as I understand it, are changeable.” (Internal Audit Manager, Firm 8)*

In contrast, the rest of our interviewees just described the basic overview of corporate governance structure: shareholders, board of directors, general manager, and department

managers. Figure (7.1) below shows corporate governance structure based on the interviewees' information.

Figure 7-1 Corporate Governance Chart for Jordanian industrial firms



We also found out that one firm does not have an internal audit department (this issue discussed in section 7.5.4.1). Furthermore, there are some firms that do not have audit committees or nomination committees even though these are the requirements according to the corporate governance code.

- ***“We do not have an audit committee or a nomination committee... Do not ask me why!”*** (Financial and administrative manager, Firm 2)

Consequently, the absence of an audit committee in the firm is considered a huge opportunity for the managers to manipulate their earnings to reach their incentives and this is supported in the prior literature (e.g. Abbott et al., 2000; Baxter et al., 2009; Bedard, et al., 2004; Davidson et al., 2005; Xie et al., 2003) which states that the weaknesses in audit committee responsibilities are related to high earnings management.

On the other hand, we noticed that two of the twelve firms do have the properly constituted committees as stipulated in the Jordanian corporate governance code.

***“We have financial and administration committees, and also we have an audit committee, selected by the board of directors, and I am the one who presents all the financial reports to the audit committee directly. Administratively, I***

*have a direct relationship with the general manager.” (Internal Audit Manager, Firm 8) and (Financial manager, Firm 2)*

The presence of a more complicated corporate governance structure may be due to the size of these two originations. These two large firms belong in the mining industries, which are the flagship industries of the Jordanian economy.

### **7.3.3 Corporate Governance Mechanisms**

This section discusses several characteristics of corporate governance from the point of view of financial managers and internal audit managers. The purpose of this section is to increase the understanding of the main characteristics of a board of directors that are likely to practice earnings management.

#### **7.3.3.1 Boards of Directors**

##### **Characteristics of the Boards of Directors**

Based on our semi-structured interviews analysis, we observed that the members of boards of directors are qualified in some firms, and unqualified in others. Our analysis classified the board into two groups on the basis of the qualification.

Group (A) includes firms whose boards of directors were qualified. In this group, most of the managers stated that the board members were specialists and elected in according to corporate governance law.

*“Our board of directors consists of specialists in accounting, economics and pharmacy. And this board is considered the top level of management structure, so no decision will be taken until it is approved by them. For example, our chairman of the board is an accountant and graduated in 1967” (Financial manager, Firm 1), other two managers have the similar statements; (Internal audit manager, Firm 8) and (Financial and administrative manager, Firm 2)*

Group (B) includes boards of directors whose members are unqualified. In this group, most of the managers stated that the board members were elected because they are shareholders or because they have personal connections with other board members.

*“Our board of directors is elected by the shareholders, and it is considered the highest level in the management structure, behind only the shareholders.*



*You know, more than 75% of the board of directors of our firm are shareholders and some of them unqualified.” (Financial manager, Firm 3) and (Financial and administrative manager, Firm 1)*

It does not always follow that unqualified directors have industrial or management experience to compensate for their lack of qualifications, although this is sometimes the case. In other instances directors are appointed with neither relevant qualifications nor experience. This result is supported in the prior literature (e.g. Xie et al., 2003; Vafeas, 1999) that found the weaknesses in the board of directors’ characteristics are more likely related to high earnings management level (see chapter 4, section 4.6.1)

### **Board of Directors’ Roles**

In this section, we summarise all the roles of boards of directors as perceived by the interviewees in our interviews, which are as follows:

- Establishing financial and operational policies and procedures for the firm.
- Directing all the firm’s projects.
- Hiring and terminating the contract of the members of the audit committee and executive committee, general managers and internal auditors.
- Controlling all financial, administrative and operational transactions and reporting to shareholders.
- Reviewing and approving the firm’s annual estimated budget.
- Reviewing and approving the firm’s annual financial reports.
- Controlling the employee payroll.
- Arranging Annual General Meetings with shareholders.

#### **7.3.3.2 Audit Committees Characteristics**

A lot of earlier literature has indicated that the audit committee is considered the most important committee that is put together by the board of directors, because of its role in the firm (e.g. Saleh *et al* 2007, Mak *et al* 2006) as a policing function and to provide checks and balances over management behaviour. In analysing our semi-structured interviews we

noticed that the audit committees in Jordanian industrial firms are often considered second only to the boards of directors, and all of their members are qualified specialists in the fields of accounting and finance. For example,

*Statement (1)*

*“This committee is considered a strong committee in the firm, where it has the right to manage the firm on behalf of the board of directors, particularly when some of the board members are busy and cannot attend regular meetings, and this committee is established by the board of directors.”*  
(Financial manager, Firm 1, similar statement has provided by (Financial manager, Firm 3B)

Audit committees in Jordanian industrial firms play big roles in conducting the firms’ financial and operational work. Therefore we summarised all audit committee roles as understood by the interviewees in our semi-structured interviews, and these are as follows:

- Preparing their audit plans based on International Audit Standards to mitigate any risk that could arise in the future.
- Controlling and monitoring all financial and administrative transactions in the firm.
- Ensuring that the internal auditor is independent from the external auditor and there is no relationship between them, since if there is any such relationship it may lead to them dealing with each other in a manner that could affect the firm’s financial position, e.g. by presenting inaccurate information.
- Preparing financial reports based on the International Accounting Standards.
- Allowing internal and external auditors to work together as efficiently as possible.
- Reviewing the internal control reports.
- Ensuring that the top management applies and follows through with all their responsibilities.
- Establishing all strategies for the firm and presenting them to the board of directors.
- Preparing the sales and purchase planning.

- Determining which investment to make each year.
- Bringing in outside technical and/or financial specialists if required.

### **7.3.3.3 CFOs and CEOs Roles**

Prior literature used the CFOs' and CEOs' incentives to explore the effect CFOs and CEOs roles on earnings management. In 2002, as a results of the Enron crisis, the Securities and Exchange Commission (SEC) stipulated that "the CEOs and CFOs in big public firms have to certify the transparency of financial statements"; based on this Jiang *et al* (2010) and Caixing *et al* (2008) documented that earnings management is lower in firms with better certified and qualified CFOs and CEOs.

According to our research, the CFOs and CEOs in our sample firms are well qualified and have substantial experience with nine of the sixteen interviewees having more than 20 years' experiences. The following sections explore the main roles of each of them, as suggested by the interviewees.

#### **The Roles of CFO**

- Applying financial policies that have been established by the board of directors.
- Ensuring the reliability and visibility of financial recourses.
- Preparing and reviewing financial reports and presenting them to the board of directors.
- Providing financial advice to the board of directors, the internal auditor and the audit committee.

#### **The Roles of CEO**

- Directing all the firm's projects according to the policies and procedures that have been established by the board of directors.
- Reporting to the board of directors and the audit committee.
- Attending Annual General Meetings.
- Controlling and monitoring all employees' performance, and hiring and terminating a contract of the employees.

In the context of CEO/CFO incentives, Bergstresser et al (2006) found that firms' top management and CEO compensation is related to stock value more than to earnings management. Joubert *et al* (2010) found that CEOs in Canada and France who own stocks in their firms have more incentive to manage their earnings downward. Furthermore, Fenga, Ge, Luo and Shevlin (2011) documented that CFOs and CEOs do engage in managing their firms' earnings, but also that CFOs do this not for their personal benefits, but to achieve the incentives of CEOs, since they are at the level that will allow them more power. Therefore, the strong relationship between CFO and CEO is a condition that could potentially lead financial managers to engage in earnings management.

*“We are working together to achieve the firm’s objectives... I never ever say no to the CEO, I always provide anything he needs.” (Financial and administrative manager, Firm 4. Other three managers stated the same statements (e.g. Financial manager, Firm 2; Financial and administrative manager, Firm 2; Executive financial manager, Firm 7)*

These quotations suggest that the roles of CEO and CFO are frequently not independent, which increases the likelihood of EM occurring. This result is partially supported in our secondary data analysis (QDA) (see section 6.5.2, Table 6.13). Furthermore, Table 6.3 and 6.4 indicate that more than 57% of those who chair the board of directors for the SJ, MJ, and PPY samples occupy another executive position in the firm, and this might lead to an increase in the probability of firms engaging in earnings management (Davidson *et al.*, 2005; Peasnell *et al.*, 2000).

#### **7.3.4 Characteristics of Internal Control System**

Internal control and corporate governance mechanisms are considered to be one of the most important issues that has an effect on earnings management practices in a firm (Xie *et al* 2003; Klein 2002; Dechow *et al*, 1996; Beasley 1996).

A firm's financial resources can be protected from loss, fraud, waste and theft through developing its internal control system to ensure that its financial data process is reliable. The main purpose of internal control is to prevent any potential errors, mistakes or fraud that might occur during the process of transactions and the preparation of financial statements, which means that strong internal controls are more likely to increase the extent to which the financial statements faithfully represent the business (Altamuro et al 2010; Gupta 2008;

Doyle et al 2007). Accordingly, our research paid attention to exploring internal control systems in Jordanian industrial firms.

#### **7.3.4.1 The Existence of Internal Audit Department**

The existence of the internal audit departments of firms is considered one of the most important corporate governance structures in Jordan, and the corporate governance code stipulates that every firm has to have a separate internal audit department. The importance of this department arises from the fact that it provides a large number of important services and a great deal of information to its firm's management, such as: evaluating and monitoring the internal control system; ensuring that the firm is complying with its own policies and government regulations, and detecting and preventing any deliberate falsification or errors.

##### *Statement (1)*

*“There are several roles that are carried out by the audit department, such as (1) matching the actual with the estimated budget and (2) determining the deviation of all items in financial reports, such as sales, expenses and other deviation... (3) Preparing SWOT analysis to determine if the firm is doing things the right way, as established by top management... Finally, (4) if there is a problem with any of the previous three points, we send a warning report to top management that indicates the weakness that we are facing in order to remedy them as soon as possible by using plan B.” (Financial manager, Firm 1), similar statements were provided by the financial and administrative manager,( Firm 2) and Internal audit manager, (Firm 8)*

The top management encourages the rest of the firm to consider the internal audit department an important juncture which connects and organises all transactions and the separate parts of the firm.

*“Yes, we have a separate internal audit department in this firm, and we consider this department a hub for all our transactions, whether financial or operational, since it organises all our transactions and connects all of them together.” (Executive Financial Manager, Firm 7)*

Eleven out of twelve of the firms that took part in our research have separate internal audit departments, and while the existence of an internal audit department in a firm is an indication

that this firm is complying with the corporate governance code, it does not necessarily follow that this department is doing its job perfectly, for several reasons:

- Four of the internal audit departments in our interviews consist of just one auditor who has to conduct and monitor all the firm's transactions and ensure the efficient operation of the whole system of internal controls.

*“Yes, we have internal audit department and my colleague (xx) is the manager and the only one in his department... He was only appointed recently and before he came I was conducting my work as financial manager in addition to internal audit manager work... This period was very hard since I was in charge of two big departments in this firm.” (Financial manager, Firm 3B)*

- Weakness on the part of the internal auditor manager, caused by his not having a relevant background and/ or not having sufficient experience of internal audit. The interviewee below explained their internal auditor failed to provide sufficient information for management decision making purposes.

*Statement (1)*

*“...Unfortunately the internal auditor does not have to do that [I do not know why]... I think this is for two reasons; our internal auditor's background and maturity... Sometimes the internal auditor makes his decision rather arbitrarily.” (Financial manager, Firm 2) and (Financial manager, Firm 2)*

- If there is no internal audit department in the firm this might lead firm managers to use their discretion to achieve their incentives.

*“At this moment we do not have an internal audit department... and we use external office to do internal audit department work, and to be honest with you this office does not understand the basic roles of auditing, BUT in the end this is our board's choice [we cannot go against them]... However, we (as top management) do not allow this office to report to the board until we verify its report to see if all our transactions are okay. [Sometimes we break some rules to achieve what we are attempting to achieve in terms of the firm's objectives. For example, hiring and terminating employee contract without the board of*

*directors' authorisation to reduce expenses and increase profit].” (Financial and Administrative Manager, Firm 4)*

These comments seem to suggest that in a number of firms the internal audit process is not particularly effective in controlling the risk of managers pursuing their own objectives.

#### **7.3.4.2 The Main Reasons for Changing Internal Control Systems**

Most of our sample firms had undergone a period of changing and developing their internal control system in the recent past. This section documents the extensive debates that were conducted in order to determine the main reasons that had led them to these changes. These reasons are as follows:

- The adoption of IFRS can lead to improving a firm's earnings quality. Based on a sample of 353 French listed firms over the period of 2003 to 2006, Zéghal, Chtourou and Sellami (2011) documented that the adoption of IFRS led to reductions in earnings management particularly in firms that had good corporate governance.

*“We changed our internal control system in the second half of 2007. The main reason for this change was the adoption of IFRS.” (Internal Audit Manager, Firm 8)*

- The financial crisis in 2008 led several firms to change their internal control system to avoid problems that might affect their financial positions. Habib *et al* (2013) found that several firms managed their earnings downward during financial crises, and particularly when they make losses. In addition, the financial crisis period encouraged managers to manipulate earnings downward because they realised that there would be no bonus for them and therefore they might as well bank the profit for future years.

*“..... After the financial crisis that occurred in 2008 we started to think deeply about the benefits that internal control and internal audit systems would achieve for our financial position.” (Financial manager, Firm 2), (Financial and administrative manager, Firm 2), (Financial and administrative manager, Firm 1), and (General Manager, Firm 6)*

- Hiring a new internal auditor. One of the firms in our study did not have an internal auditor, which meant it changed its internal control system by hiring one.

*“We changed our internal control system recently because we hired a new internal auditor.” (Financial manager, Firm 4)*

Although the financial crises were a difficult time for the firms with respect to their operations, the ensuing reflection and self-examination by firms appears to have resulted in positive changes to internal control system and improved the governance of the firms' system.

#### **7.3.4.3 Business Operations Controls**

Operational controls in firms provide analysis of actual operations compared to the original plans, budgets and corporate objectives. In addition, operational controls ensure that the transactions have been carried out using the appropriate internal control policies. This in turn leads to improvement in the performance for the firms (Cendrowski and Martin 2003). According to our semi-structured interviews results, Jordanian industrial firms control their operations by comparing actual and estimated business operations (e.g. productions) and they use several strategies to do this comparison, which are as follows:

- Efficiency analysis.

*“We are using efficiency analysis,<sup>1</sup> which helps us to know where the exact problem is that we might face during our work, and then we report to the technical committee so they can fix this problem. In addition, this analysis is considered very important for the production department, since it provides this department with information such as when they should increase or decrease their products. After we get the results from this analysis, we discuss the results with the general manager and internal auditor, then report it to the external auditor; finally, we submit our reports to the audit committee so they can take their decision, and the audit committee always takes a positive decision [The audit committee agrees with our report except if there is any issue related to bad debt provision, in which case they investigate the problem].” (Financial manager, Firm 2)*

- Annual internal control plans.

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<sup>1</sup> Comparing the actual and estimated production levels of the firm



*“We control our operational transactions based on annual internal control plans for operating issues that are prepared according to international auditing standards to avoid any risks that we might face. According to these plans, we start to follow up every single item and determine if it has been achieved as we planned. Based on these procedures, we start classifying risk areas to avoid them in the future. In addition, we have a yearly comprehensive internal control plan for all operational transactions.”*  
(Internal audit manager, Firm 8)

- Employees’ passwords and signatures.

*“We can control each manager and employee’s work by using their password and signature.”* (Financial and administrative manager, Firm 1)

- Quality control (QC) and quality assurance (QA) departments.

*“We have two departments to control operations business in this firm; (1) the quality control (QC) department, which is in control of all technical issues related to operational transactions, and also the quality assurance (QA) department, which is responsible for documenting all operational files so they can be referred back to if needed in the future.”* Financial management manager, Firm 5)

These quotations demonstrate several roles played by the controls systems: first, in providing connections between the different functions of the firm such as, the technical and production departments, and internal and external audit functions. Second, the operational controls are seen to contribute to the analysis and the management of operational risks. Finally, the systems mitigate losses and inefficiencies in the production process. Research suggests that firms with strong systems of internal control and corporate governance overall are less likely to engage in earnings management (e.g. Leventis *et al*, 2012; Clarke, 2007; Vafeas, 2005).

In general, the interviewees suggested that there are four main steps to ensure control of their operations:

- Ensuring that all departments have good managers, who can guide the firm to achieve its objectives.
- Ensuring that each employee does his/her work based on his/her job description.

- Carrying out weekly reviews of each department to ensure that all transactions in each department are recorded correctly.
- Maintaining control over all aspects of the firm, both major and minor.

#### 7.3.4.4 Financial Accounting Process Controls

The earnings management issue has always been important in considering the trustworthiness of accounting reports. In addition, internal control systems are considered an important issue, which allows the firms to provide greater assurance regarding their financial reporting process, and to direct all the firm's transactions in the manner established by the board of directors (COSO 1994). Accordingly, the financial reporting process control has received considerable attention from academic researchers, who have studied how internal control affects the process by using internal audit standards (e.g. Ewert, et al 2013; Prawitt, Smith and Wood, 2009; Davidson, *et al* 2005) and International Financial Reporting Standards (IFRS) (e.g. Wang, *et al* 2012a; Liu, *et al* 2011). Assessing and controlling the financial reporting process involves the judgment of managers, which create the opportunity to manage reported earnings in order to achieve their desired objectives. For example, managers manage earnings to achieve bonus plan goals (Healy, 1985), or to reduce political costs (Jones, 1991).

Based on our semi-structured interviews, we found that Jordanian industrial firms have different methods for controlling and assessing their financial reporting processes:

- The existence of specialist committees related to financial transactions. One financial manager suggested this method, which is used in his firm.

*“According to our control financial report process, we use more than one type, and this is decided based on the report type and size, and these types are: (1) committees that are specialists in financial transactions, such as purchases, sales, audit, development and research, and strategic executive committees, and each one of these committees has different duties and the authorisation to control financial transactions..... Then there is (2), the board of directors, which controls all these committees’ work by asking them to send monthly reports through the audit committee and the internal control department.” (Financial manager, Firm 1)*

- Horizontal financial and efficiency analysis and analysis of variances. Another financial manager stated that his firm used these methods to control all financial reporting transactions.

*“... We use two types of analysis to make a comparison between our accounts:*

- (1) Horizontal analysis every 12 months; for example, comparing the revenue account in February with the revenue account in January of the same year and then comparing that with last year.*
- (2) Also, we use a more depth analysis and called “efficiency analysis”, which is focused on the balance between product quantity, quality and production cost.” (Financial manager, Firm 1)*

- Using daily reports to evaluate the firm’s financial position in relation to sales, purchases, expenses and so on. In this regard, five managers told us that their firm used this strategy to control its financial reporting process.

*“... At this stage, we are using the best accounting system (ERP from Microsoft). In a nutshell, we control all our financial reporting processes by using this program. For example, at the end of each day we get reports that show all our sales, purchases and expenses accounts” (Financial and administrative manager, Firm 1)*

- Using employees’ signatures and passwords to control the financial accounting process. Several examples were presented during the in-depth interviews that support this method.

*“We are attempting to control the financial reporting process from inside the financial system...how? We create for each employee in the financial department a password and signature, so if he/she carries out any transaction, right away this transaction will be signed with his/her name. Accordingly, in case of error or mistake, our system will tell us which exact employee made this error or mistake.” (Financial management manager, Firm 5) and (Financial and administrative manager, Firm 1)*

- Comparing the estimated plans of the board of directors with what has been achieved.

*“We monitor our financial transactions as follows:*

*We have policies that have been established by the board of directors, and we have our estimated budget, thus at the end of each month we go back and review all our financial transactions and see if these transactions were predicted based on board policies, comply with IFRS and achieve the financial target. If yes, that is great, but if not, we go back again and review all our transactions step by step to find out where the problem is and solve it. For example, our sales go onto cash sales or account receivable, and then we follow up on our account receivable by using aging reports and so on.”*  
*(Internal audit manager, Firm 3B)*

Given the importance of the financial accounting process, we discussed three types of accounts (revenue, expenses and account receivable accounts) with interviewees, as examples for the financial accounting process. These accounts are considered the most likely vehicles of earnings management (Jones, 1991). Accordingly, we have revealed the ways in which firms deal with each account.

**First, revenues accounts:** based on the analysis of our semi-structured Interviews we found that Jordanian industrial firms control and monitor revenue accounts using two strategies:

- (1) The most common method involves comparing between estimated revenues and actual revenues to determine the deviation, whether positive or negative.

*“We control this account by comparing between actual revenues and estimated revenues budget in each quarter. If we have achieved our estimates that means we are on the correct path. But if we did not achieve our estimated sales, we start reviewing all our transactions related to the revenues account, such as sales and all operational expenses, to find the main reason for this problem.”* (Financial manager, Firm 3A), the same statement has provided by (Financial manager, Firm 1)

- (2) Maintaining statements of agreed prices for each customer. This strategy particularly is used in the mining sector where there is a complicated pricing structure.

***“For this account we are using a way that is different from other firms by focusing on price statements for each customer. Each customer of our firm has a price statement that we have agreed based on global material prices... We adjust these prices statements monthly based on [the London metal stock market, not the USA metal stock market] and this is the main step in controlling our revenues account.” (Financial manager, Firm 2)***

With regard to the two aforementioned strategies, two of the managers in our interviews (*General Manager, Firm 6; and Financial and administrative manager, Firm 4*) described several steps that the firm has to follow to control the revenue account:

- Matching sales invoices with shipping documents
- Control over shipping and billing documents
- Clerical accuracy checks on invoices
- Segregation of duties, i.e. sales and collections
- Ensuring credit approval for sales transactions
- Carrying out weekly reconciliation of bank accounts
- Controlling the listing of cash receipts
- Using budgets and analysis of variances
- Using authorised credit memos
- Using account charts to review revenue account codes, and ensuring that all codes are right, showing that all transactions have been recorded in the right place
- Mailing monthly statements to customers.

Overall, the managers identified several current problems in controlling their revenue accounts: (1) economic and political circumstances in the Middle East, resulting in difficult relationships with customers and a higher incidence of bad debts; (2) incorrect forecasts of sales, due to uncertainty and risk factors; (3) producing products of a poor quality, in order to reduce costs; (4) delays in getting licenses to sales of certain products (particularly in

pharmaceutical and mining firms), since this sometimes takes more than two years, and (5) delays of supplies, since suppliers sometimes do not have the raw materials, and in Jordan there are only a few suppliers. All of these factors may contribute to incentives for earnings management.

**Second, expenses accounts:** the interviews identified just one strategy with which firms control and monitor expenses accounts, that is, the analysis of the differences between budgeted and actual expenses.

*“In our firm we have a committee to follow up all our expenses. And this committee has several roles, such as ensuring that the firm claims their expenses based on the budgets that were established for them in the beginning of each year... These budgets are established in a meeting between all department managers and our top management [general manager and board of directors], so each manager presents his/her department’s expenses for the year based on the expenses for previous years.” (Executive Management Manager, Firm 7), the similar statement made by (Financial and administrative manager, Firm 1)*

It appears from the discussion and analysis in our case studies that the managers in Jordanian industrial firms prefer to talk further about the expenses problem in their firms. In this regard, financial managers provided the following statement.

*“ ... I do not think that I can discuss any more problems related to our expenses since I need to ask my manager about them before I provide any information about our expenses” (Financial and administrative manager, Firm 4)*

**Third, accounts receivable:** all the managers interviewed for our interviews said that there were two strategies for controlling and monitoring accounts receivable in their firms:

(1) Using account receivable aged reports.

*“We control this account by using aging reports to see our account receivable collection date. Also, if we have any problems with a customer (i.e. a customer does not pay us) we go back and deduct his/her payment from what he/she has deposited as a guarantee for his/her debt.”*

(Financial manager, Firm 3A), the same statement provided by (Internal audit manager, Firm 8)

The age reports provided during the interviews identified the presence of some very large and old receivables balances. For example, one interviewee reported that they still have a debtor that was first recorded 36 years ago, which had not been written off as bad debt. This caused the researcher to identify bad debts policy as a potential tool of earnings management in these firms and so the issue was explored in more depth with interviewees.

(2) Using bank credit reports and debt factoring. For example:

*“From early 2010 we started using a new strategy, which involves taking all our customers’ payments to us through bank credit... We made agreements with these banks to collect the payments from our customers, and each one of our customers has to sign a contract to the effect that he/she is happy with this strategy. By using this strategy we control all our customers and reduce the risk that might show up in the future.”* (Financial manager, Firm 1)

There were several reasons identified by the managers that may lead to problems in controlling accounts receivable amounts, as follows:

- Customers’ death.
- Firms’ bankruptcy.
- Difficult trading circumstances facing Jordanian firms.
- Financial crises, such as in 2008.
- Banks failing to operate the system of credit checks and debt collection effectively.

### **7.3.5 Managers’ Incentives to Manage Profit**

In chapter (3), section (3.4) it was shown that the literature classified earnings management incentives into two groups: opportunistic earnings management and beneficial earnings management. Opportunistic incentives involving the pursuit of personal interests such as management remuneration and bonuses and beneficial incentives involve adding value to the financial reporting process, for example to disclose information additional to IFRS disclosures. Accordingly, our case studies found that Jordanian managers are more likely to

engage in opportunistic earnings management than beneficial earnings management. None of the interviewees offered any explanations for beneficial earnings management. The following sections explain managers' incentives identified in the case studies' analysis:

In this group, there are four incentives:

- Avoiding customs fees: custom Law No. 20, article 10 (from the year 1998), states that “the duties of the customs tariff shall be either ad valorem (a percentage of the value of goods) or qualitative (a lump sum for each unit of the commodity). The tariff fees can be both ad valorem and qualitative for the same kind of goods.”

*“Managing our accounts sometimes arises suddenly, particularly after unfair government regulations... For example, new customs fees that have increased suddenly” (Financial and administrative manager, Firm 1)*

- Avoiding high tax rates: most of the interviewees mentioned that they believe that the tax rate for Jordanian industrial firms is unfair, particularly since it has recently increased several times.

*“Managing profit is very easy... For example, decrease the expenses or hiding some revenue, particularly deferred revenue, to pay the government less tax.”*

*“I am under pressure to manage the profits of this firm to avoid certain issues, for example, increasing the firm's expenses to avoid high tax rates, particularly in 2011 when the government increased the tax rate for industrial firms.” (Financial manager, Firm 2), similar statements were made by (Financial manager, Firm 1), (Financial and administrative manager, Firm 2), (Financial management manager, Firm 8), and (Financial manager, Firm 4)*

- Increasing management bonuses: prior studies that have investigated earnings management issues have found numerous incentives for opportunistic earnings management, such as compensation and bonuses for managers; Healy (1985) indicated that managers engaged in earnings management to increase their compensation and bonuses. His findings showed that their bonus contracts related to account reporting and the adoption of bonus plans.



*“.... I remember one manager was reducing his department expenses to increase the department’s profitability and get a bigger bonus, even though he was spending more than any other manager.” (General Manager, Firm 6)*

- Attracting more investors.

*“..... the managers might increase the firm’s profit to attract more investors, but at the same time they might decrease profit to avoid tax.” (Financial manager, Firm 4)*

- Increasing share price: A few studies have found that firms’ managers tend to use stock splits to increase stock price, which in turn increases their earnings; e.g. Guo Liu, and Song (2008).

*“To be honest with you, sometimes the government regulations push us to use all the gaps in the law to decrease or increase our profit. ... We sometimes increase our profit to increase share prices, which means more customers, and our sales prices will increase and we will be among the firms that achieved the highest profits for the year.” (Financial and administrative manager, Firm 4)*

- Increasing management stock options: Regarding this issue, prior studies have found that firm managers engage in earnings management in order to increase their stock options (Veenman *et al* 2011).

*“Increasing profits to get more stock options and to satisfy our shareholders... This is the most usual way that the managers use to manage their profits.” (Financial manager, Firm 3B)*

Based on the quoted discussions, we noticed that most of the firms, regardless of their size, industry, and earnings management group appear to engage in opportunistic earnings management and to admit to this openly in discussion. On the other hand, we found that Jordanian firms do not tend to engage in beneficial earnings management.

### **7.3.6 Does the Adoption of International Financial Reporting Standards (IFRS) affect earnings management?**

Prior studies that have examined the impact of the adoption of IFRS on earnings management levels have shown that the adoption of IFRS is likely to lead to a reduction in earnings

management practices, whether in developed or developing countries. For example, based on the context in China, Wang and Campbell (2012a) found that IFRS is more likely to reduce earnings management than Chinese GAAP. Liu *et al* (2011) focus their attention on investigating the relationship between IFRS, accounting quality and earnings management in non- English speaking countries, which they started by examining the influence of IFRS on accounting quality in China. Their empirical results show that the adoption of IFRS reduced earnings management, and increased accounting quality.

In another study that was conducted based on India's context, Rudra and Bhattacharjee (2012) attempted to investigate whether the adoption of IFRS is limiting earnings management in developing countries more or less than in developed countries. They found that the adoption of IFRS in India during 2010 led to mitigation of opportunistic earnings management more than the firms that do not adopt IFRS in emerging economy. Zéghal, *et al* (2011) claimed that the adoption of IFRS also led to mitigation of earnings management in French firms, and their empirical findings supported this argument.

In a recent study, Karampinis and Hevas (2013) used a sample of firms listed on the Athens Stock Exchange and looked at the five fiscal years before and the six fiscal years after IFRS adoption. They found a significant negative relationship between tax incentives and discretionary accruals before the adoption of IFRS, and no relationship between them after IFRS adoption.

In the context of developed countries, several studies have discussed this matter; for example, Jeanjean and Stolowy (2011) found decreasing earnings management in firms that have adopted IFRS in the UK and Australia, and increasing earnings management in France. Furthermore, Callao and Jarne (2010) examined to what extent the adoption of IFRS will lead to mitigation of discretionary accruals in 11 countries from the European Union, where they explored the fact that IFRS adoption causes more variation in earnings management, which means that there is more room to manipulate earnings within IFRS than local standards. In contrast, Van Tendeloo and Vanstraelen (2005), based on a sample of 636 firm-year observations over 1999 – 2001 in Germany, found that the adoption of IFRS did not affect levels of earnings management. In other words, no difference was made to earnings management levels under German GAAP by the adoption of IFRS.

In deference to the importance of this issue, our research paid close attention to exploring the relationship between earnings management and the adoption of IFRS. Under the Companies

Law 22/1997 and its amendments, companies operating in Jordan are required to maintain annually audited financial statements. This is applicable to all public listed companies, general partnerships, limited partnerships, limited liability companies, private shareholding companies and foreign companies. The Companies Law also stipulates that all registered companies should maintain sound accounting records and present annual audited financial statements in accordance with International Financial Reporting Standards (IFRS). The market regulator, the Jordanian Securities Commission (JSC), requires all listed companies to apply IFRS (Ernst and Young 2011).

Through our semi-structured Interviews analysis, this research has explored the adoption of IFRS as a potential factor affecting Jordanian industrial firms' performance, positively or negatively. The majority of interviewees (10 out of 12 firms) believed that the adoption of IFRS has a positive effect on their firm. Interviewees of one of the other firms suggested that the adoption of IFRS had adversely affected the firm and just one firm reported no effect was found.

The following quotations were from respondents who suggested that the adoption of IFRS led to an increase in their firms' performance. Several interviewees expressed the opinion that the adoption of IFRS and the audit processes associated with it created a structure within which firms were able to reorganise and restructure all of their accounting processes and management practices.

- Increased the transparency of financial reports.

*“Absolutely the adoption of IFRS led us to present our financial reports in an excellent way that allows us to compare our work with that of firms in developed countries, since we now apply the same standards.”* (Financial manager, Firm 2), similar statements were provided by several managers such as; (Financial management manager, Firm 5), (Financial manager, Firm 1)

- Helping the firm's employees to segregate their duties based on job descriptions.

*“The adoption of IFRS leads to segregating employees' duties based on their job descriptions, not like the prior system that allowed each employee to do other employees work.”* (Financial manager, Firm 1), and similar comment was also made by the (Financial and administrative manager, Firm 2)

- Improving firms' reputations which helped them move from the lower to higher markets in the Amman Stock Exchange.

*“Also, I can say that since adopting IFRS, our market position has changed from second market to first market.” (Financial manager, Firm 1), and similar comment was also made by the (Financial and administrative manager, Firm 1)*

- Improving firms' policies and performance.

*“We adopted IFRS in early 2007. And this adoption affected our firm's performance positively. For example, we started to be able to compare our financial data with firms in the developed countries, which in turn led to us improving many of our policies based on this comparison.” (Executive financial manager, Firm 7)*

In the firms where the interviewees reported negative effects from IFRS adoption it was suggested that the adoption of IFRS led to a decrease in these firms' performance by moving some firms to lower markets in Amman Stock Exchange.

*“The adoption of IFRS led us to move down from the first market to the second market, since this adoption caused some confusion to our employees when dealing with our financial transactions; this in turn led us to providing the Amman stock market with our financial reports late (one condition of staying in the first market is to provide the Amman stock market with financial reports on time).” (Internal audit manager, Firm 3A)*

Finally, one firm that had recently adopted IFRS reported no significant effect so far.

*“Our firm adopted IFRS in early 2013. So far, nothing has happened but I think in the near future it may.” (Financial and administrative manager, Firm 4)*

Overall, the adoption of IFRS was thought to have contributed to improvement in the system of the internal control and corporate governance in most of the firms and this is expected to reduce the level of earnings management for these firms. Subsequent exploration of the earnings management practices of these firms in the semi-structured Interviews was consistent with this idea.

### 7.3.7 Cultural factors and Earnings Management

Desender *et al.*, (2011) documented that cultural factors are considered among the most important issues that can affect earnings management. Often, cultural factors are hidden under different names and concepts, which make it difficult to explore these factors. However, ignoring or failing to understand these factors could lead firms to more problems with their performance. For example, failing to understand the level of education of employees could lead to a poor ability to compete with other firms in the same industry, particularly if they have more educated employees (Purcareau and Danalache, 2008). This section discusses in depth, the cultural factors that can affect Jordanian industrial firms and their effect on earnings management levels and firm performance.

Consistent with results from prior literature (chapter 3, section 6), several of the interviewees identified culture as a dominant force in the governance and performance of Jordanian firms.

*“This is our main issue, since it affects every single thing in our environment... Also, it is considered the main factor that keeps us as a developing country.”*  
(Financial manager, Firm 4), similar statement made by (Financial management manager, Firm 5), (Financial manager, Firm 6) and (Financial and administrative manager, Firm 4)

Proceeding from the importance of cultural factors and their potential to affect firms’ governance (see chapter 2, section 9), it was concluded that there are five cultural factors that have a strong effect on Jordanian firms’ performances.

#### 7.3.7.1 The Tribal System

The tribal system is conducted by the tribal Sheikhs, and still applies in Jordanian life - the business aspect of life is not isolated from it. Rowland *et al* (2009) stated: *“The tribal law is still used in Jordan officially to smooth things over, and unofficially just as a form of social identification. In rural areas of Jordan, the tribal system is much more palpable and plays a larger part in people’s lives than it does in the urban centres”*.

The tribal system can potentially affect all aspects of life, including access to jobs, economic opportunities and schools and social privileges. It has been suggested by Alon (2005) that the tribes should work to provide support to the government in achieving equality of access and social fairness but the reality of the tribal system can result in the opposite effect.

*Statement (1)*

*“Some of our managers were hired because of their connections and their tribes’ power, which in turn led to weaknesses in our internal control system. Some of them do not have enough qualifications, since they graduated from bad universities [and you know from where - XXX country. I know for a fact that one of them just paid money to get his degree]. [... This country will never be free from the tribal system since the whole country was built based on it].”* (Financial manager, Firm 6), and similar comment also made by the (Financial manager, Firm 3A), (Financial manager, Firm 3), and (Internal audit manager, Firm 8)

**Statement (2)**

*“The other disaster factor is the tribal system, because of which we have to hire people who are not qualified for positions just because his/her tribe is big or because they are from the area that the factory is in and we have to hire mostly from this area to satisfy this area’s tribe... You know, 60% to 70% of our employees are from XXX region of Jordan, and most of them are not qualified.”* (Internal audit manager, Firm 8)

According to these quotations, Jordanian industrial firms have different characteristics that defer them from other countries whether developing and developed. Thus, this PhD study found that the tribal system is a factor that effects the relationship between corporate governance mechanisms and the earnings management issue in Jordanian industrial firms as shown in the quotes above, where these results cannot be provided by using secondary data such as regressions models.

**7.3.7.2 Favouritism (Wasta) in Recruitment and Other Business Decisions**

In addition to the tribal system factor, there is another factor that can affect Jordanian firms’ performance, which is favouritism or nepotism (*Wasta*). Some Jordanian firms use *Wasta* to drive their businesses since they have good relationships with the government and can therefore negotiate favour treatment in decisions such as the granting the licences for trading and building. This may lead to positive benefits on an individual firm level but negatively affect the country’s economy. The Jordanian anti-corruption department has confirmed that nepotism and favouritism are at the top of their list of corruption factors (Amman Stock Market, 2015).

Several of interviewees identified *Wasta* as a barrier to effective internal control and corporate governance system.

*“Our society’s culture (e.g. nepotism) is causing us big problems all the time, since we have to hire people who are unqualified.” (Financial manager, Firm 3A), similar comments also made by (Financial and administrative manager, Firm 2) and (Executive financial manager, Firm 7)*

One of the managers also raised the issue of nepotism in government and the effect this has on overall management in the economy.

*“The problem is not in our economy but in our economists, so in my opinion, to increase our country’s economic growth, we have to fire some economists, those who do not have even the basic necessary experience [and just get hired because of Wasta]... So we end up telling them to stay home and take their salary without working – better that than making wrong decisions]. To deal with nepotism and tribal system would take more than 10 years. Therefore, I can say we are a developing country with low culture.” (Financial manager, Firm 3B)*

As stated in the aforementioned quotes, it was noticed that there is a relationship between *Wasta* and the tribal system, since the tribal system is considered as a tool to achieve the *Wasta* by hiring unqualified employees. As a result, it was found that most of the interviewees stated that the *Wasta* is considered a disaster factor that effects the level of earnings management through employing unqualified people from the managers to achieve their desirable goals particularly to increase their bonuses and compensation. This result is supported in the prior literature (see section 3.6.1, Healy, 1985).

### **7.3.7.3 Educational Attainment of Employees**

Doms, Lewis and Robb (2010) found that the level of education of employees is strongly related to a firm’s performance, and higher level of education means fewer errors and mistakes, especially for college graduates compared to university graduate. Educational factors can affect the organisational environment in any firm (Barro, 1991; Maitah, 2013), and the response of interviewees illustrates the importance they attach to this issue.

*“Employees’ education is an issue, since most of our universities nowadays use traditional systems to teach their students. For example, we are accountants [both the interviewee and the researcher] and we finished our bachelor’s degrees in accounting without any training in actual firms. See, in the UK, where you studied, they give their students one year of work as employees to enable them to take on responsibilities.”* (Financial and administrative manager, Firm 1), similar comments also made by (Financial and administrative manager, Firm 2), (Financial manager, Firm 1) and (Financial manager, Firm 6)

Although the literature suggests companies with graduate employees are likely to have better systems of internal control, our interviewees contradicted this idea on the ground that degrees obtained from Jordanian universities are not sufficiently rigorous to render them useful in practice. Accordingly, the existence of a good internal control system is more likely to relate to low earnings management in the firms, where the strong internal control system constitutes a huge obstacle for the managers to manipulate their earnings to achieve any of their desirable incentives (Klein 2002; Beasley 1996).

#### **7.3.7.4 Employees’ Mentalities and Maturities**

The effective operations of the firm can be affected by the personal characteristics of those employees operating key system. Wijewardena, Nanayakkara and De Zoysa (2008) documented that employees’ mentalities (personal characteristics) have a strong, significant relationship with firms’ performance, and different mentalities have different effects. For example, they showed that having 42.5% of employees with an organised mentality lead to a small increase in sales, and at the same time they found that having 69.3% of employees with entrepreneurial mentalities lead to a similar increase in sales. Four of the managers we interviewed referred the personal characteristics of their employees to the integrity of the business systems in which they worked.

##### *Statement (2)*

*“Of our employees, only about 30% can be described as mature. Therefore, our employees are not responsible about their work, they think that they are ‘working in their home’, and this leads to more problems that affect our firm’s performance.”* (General Manager, Firm 6), similar statements provided



*by (Financial manager, Firm 1), (Financial manager, Firm 3A) and (Executive financial manager, Firm 7)*

Few studies investigated the effect of employees' mentality and maturity on firms' performance in general, and therefore this study paid more attention to the effect of employees' mentality and maturity on earnings management in specific. It appears from our case study analysis that these two factors effect the level of earnings management and this could be as a result of using the managers to manipulate their earnings and achieve their incentives without any controlling board since all the employees had shortages in their responsibilities.

#### **7.3.7.5 Dialect and Language Factors**

Failure to master the host language or understand the language used in the firm environment causes problems in the workplace. For example, speaking in different languages (e.g. different dialects, slang etc.) can lead to problems in communication (Martinez-Calimano 2006). Our in-depth interviews showed that this factor can indeed cause some problems in firms which impact upon their performance (Maitah 2013). Two of the managers identified dialect as an issue in the management of Jordanian firms, likely to affect internal control.

##### ***Statement (1)***

***“Our language is sometimes considered one of the cultural factors that affect our work; the dialects of villages are different from the language used in cities.” (Financial manager, Firm 4)***

##### ***Statement (2)***

***“Sometime we face language related problems, since we have here in Jordan different dialectical languages, which have affected our firm's work, particularly earnings quality.” (Financial management manager, Firm 4)***

Overall, based on interview data which explored cultural factors that could affect earnings management levels in Jordan, we concluded that all the managers we interviewed, regardless of their groups, were in agreement that the tribal system and nepotism are considered the main factors that can lead to weak internal control systems and low earnings quality, which

means that there is a chance that any manager might engage in earnings management to achieve his/her desired incentives. In addition, interviewees identified three other cultural factors (employee education levels, employee mentality, and language) affect firms' governance, although not to the same extent as the tribal system or Wasta.

### 7.3.8 Financial Crises and Earnings Management

The Global Financial Crisis is considered to be the main issue that currently affects firms' performance; therefore, large numbers of researchers pay attention to studying the effects of the financial crisis, especially with regard to the earnings management issue. On this subject, Habib, Bhuiyan and Islam (2013) claimed that the results of prior literature investigating these effects are not decisive. They suggested that the financial crisis might lead to more earnings manipulation, carried out in order to achieve several goals, such as (1) decreasing firms' earnings by reducing their pricing to dispose of slow-moving inventories, and (2) increasing their earnings via acquisitions to attract more investors, and thus creating more opportunities for earnings management. For example, Rosner (2003) found that firms that become more likely to manipulate their earnings upward after financial crisis and Barth and Landsman (2010), Laux and Leuz (2010) found evidence of firms managing assets values downwards using fair value accounting. Other studies also found evidence of earnings management in the banking sector following the global financial crisis (e.g. Huizinga and Laeven, 2012; Fiechter and Meyer, 2011).

In the context of Jordan, a study by Alzoubi and Selamat (2012) claims that the Asian Financial Crisis in 1997/1998 and the Global Financial Crisis of 2008 prompted the implementation of better corporate governance structures throughout the country.

Generally, the interviewees perceived that the 2008 crisis had negative effects on Jordanian firms, which are as follows:

- Encouraging firms' managers to engage in earnings management.
- (1) The financial crisis in 2008 led some firms to manage their profit downward to avoid high taxes.

*“In general it was a disaster for this firm since the managers at the time attempted to manage the profit, upward or downward. For example, I did that in my previous firm: I have managed profit downward to avoid taxation.”*

*(Financial manager, Firm 1)*

- (2) The manager manages their earnings downward since they understood that there would be no bonus for them in the short term and therefore they might as well bank the profit for future years.

***“..... In according to my prior experiences, I found that the managers during the financial crisis in 2008 keep their earnings in the low level at that time to give their self the opportunities increase their earnings afterward to achieve more bonuses ..... as you know if they increase the profit in the time of crisis they will not get more bonuses to cover the losses that achieve in according to this crisis.” (Financial manager, Firm 3)***

- (3) On the other hand, this crisis led other firms to manage their profit upward to attract more investors and increase their firms' capital.

***“In other firms I am sure 100% they manage their profit (upward) to be attractive to more investors and bolster their capital, otherwise they would be out of business.” (Financial manager, Firm 1)***

***“In my opinion, the financial crisis in 2008 was the main factor that leads us, and most industrial firms, to make more losses, this in turn lead to a decrease in our reputation our foreign investors.” (Internal audit manager, Firm 8)***

- Terminating large number of employee contracts to reduce expenses.

***“The financial crisis caused several problems for us, such as decreasing our sales and foreign customers, and having to fire more than 50 employees since our profit had gone down and we could not cover all these employees' salaries.” (Financial manager, Firm 2)***

- Leading the Jordanian government to increase tax rates for the industrial sector, this led some firms to manage their profits to avoid the new high rate (as mentioned above).

***“Absolutely, the financial crisis affected our firm's internal controls and all other systems. It led the government to increase taxes, which led us to export most of our products to foreign countries since our local customers were no longer ordering products (they were also affected by the financial crisis). This in turn led to a decrease of our revenues.” (Financial manager, Firm 3A),***

(Financial and administrative manager, Firm 2) and (Financial manager, Firm 4)

- Decreasing the customer base, whether foreign or local.

*“The financial crisis affected our firm by reducing our customers, which meant less sales and less profit, and also limited the export of our products to large numbers of countries.”* (Financial and administrative manager, Firm 1)

- Decreasing firms’ share prices.

*“This crisis happened in 2008, and affected our firm’s performance badly. For example, our sales quantities decreased, our share prices decreased and most of our investors left us.”* (Financial management manager, Firm 5)

- Most of the banks began to lack confidence in the credibility of Jordanian industrial firms because of lateness in paying back their loans payments.

*“From what I have seen from our firm’s financial annual reports... The financial crisis affected our financial position. For example, it decreased our credibility in the eyes of our creditors, and there are several banks here in Jordan which now refuse to lend us long-term loans, which has led to a decrease in our liquidity which means less production, then less sales, then more losses.”* (Financial manager, Firm 3B)

Based on these comments it is clear that the financial crisis led to pressures on the firms and created more incentives for them to engage in earnings management, although the direction of the management, either increasing or decreasing, varied according to the firm’s individual circumstances. These results are supported in prior studies such as Habib et al., (2013).

### **7.3.9 Different Approaches to Accounting Systems in Jordan**

During the pilot study interview, the financial manager in (firm 3) identified two existing school of thought in relation to the accounting system and financial conduct of Jordanian firms, which he associated with internal controls and corporate governance system of the firms.

*“Actually, there are two types of financial school, and the differences between them are based on two points which are: (1) the reporting stage,*

*which is considered the main important matter related to the different techniques we have to adopt in our firm, and (2) financial direction, since we guide all financial transactions and relate all of them together (e.g. reporting, posting, budgeting and transferring).” (Financial manager, Firm 1)*

Further exploration of these “schools” led to the explanation that the differences between them lie primarily in the way in which IT is used in the accounting system and the adoption of IFRS and international auditing standards. The firm belonging to the “traditional school” employ paper based systems or IT systems that are not connected throughout the business and have not fully engaged with IFRS and IAS. Those in the “modern financial school” have adopted ERP system that encompass all parts of the internal control system and have fully adopted both IFRS and IAS, including internal control recommendations such as segregation duties. The idea of the two “schools of thought” identified by the financial manager in firm 3 was suggested subsequently to all other interviewees in order to assess whether they saw this as reasonable explanation for differences between the firms in Jordan.

*“I think the main issues that determine the financial school that we follow are these two points: (1) following IFRS and international auditing standards, and (2) using technology to record our financial transactions. Accordingly, I can say that we are 80% following the new financial school and 20% the traditional school, since we follow IFRS and auditing standards, but also we are still using the paper system to record our transactions in accordance government requirements for things like taxes.” (Financial manager, Firm 3B)*

The managers aspired to the “modern financial school” for a number of reasons:

- To be amongst the strongest firms in the industrial sector.

*“Of course, we are following the new, modern school, which allows us to follow developed countries’ standards, not like the traditional one that always pushes us to follow shareholders’ and board members’ objective.” (Financial manager, Firm 4)*

- Using new internal control systems to improve firms’ governance and performance.

*“We are following the new financial school in order to replace our old internal control system with a new one. For example, all our transactions are*

*signed by computer, all our managers accept or refuse the work done in this firm by using computer system (Oracle)... No more paper for our firm!"*

*(Financial and administrative manager, Firm 2)*

- Increasing financial report transparency in Jordanian industrial firms.

*"I think 95% of the time we are following the new financial school... It leads to more transparency in our financial reports and even our financial transactions." (Financial and administrative manager, Firm 1), similar statement also made by (Financial management manager, Firm 5)*

Managers in firms following the "traditional financial school" suggested that there is no chance of separating top management's and employees' duties in their firms and, as they are not independent, all of them have to work with each other whilst respecting their different levels. They also suggest that paper documentation should be the core of their work since the Jordanian government does not accept e-invoices or other electronic documents to support their work (e.g. the taxation department needs the original documents to support their allowed expenses).

*"But we are still using the paper system to satisfy the government regulations that require us to provide paper documentation... And these papers have to be signed by hand to be accepted by Jordan tax department." (Financial and administrative manager, Firm 1) and (Internal audit manager, Firm 8)*

The "traditional financial school" was also seen to allow ineffective management where it was easier for powerful individuals to circumvent internal control process. Managers also expressed the concern that the government rules that lead Jordanian firms to follow the traditional financial school thought will also lead these firms into problems in dealing with the firms from developed countries that are following the "modern financial school of thought".

*"When it comes to financial schools we are still facing some problems, especially when we ship our products to developed countries. For example, when I was working with TNT in Jordan, our general manager asked us to keep all our accounting entries in files but at the headquarters of TNT in the Netherlands they did not ask us to do that since they are using the e-system."*

*(Internal audit manager, Firm 3B), similar comment also made by (Financial manager, Firm 1)*

Finally, there was general agreement that following the “traditional financial school of thought” could encourage firms’ managers to engage in earnings management. Whereas, the “modern financial school of thought” was believed to lead to a decrease in managers’ opportunities to engage in earning management, whether upward or downward.

*“Listen, up until now we have been following the traditional financial school, since we are still filling all our documents to assist the government, particularly with tax. And I can see that this school is allowing for too many errors, since any employee can do the work of another. Also, some managers can mess around with their accounts if they have errors in their department, to show the general manager and board of directors that they are the best, so deserve to get more incentives.” (Financial manager, Firm 6) and (Financial and administrative manager, Firm 4)*

In those firms committed to modernising their accounting systems are forced to retain paper records for the government purposes.

*“... I could say that we are using both schools BUT we are more closed to the new school since all of our transactions follow international standards (e.g. IFRS, IAS, and ISO 9001). And we still use paper copies to meet government regulations, particularly on tax issue.” (Financial manager, Firm 1)*

### **7.3.10 The Effect of the Taxation System**

In a context such as Jordan where corporate taxation is based on reported profit, taxation issues are an important matter to firms since any error or mistake might lead to extra tax expenses. That is, without a strong financial manager assessing and evaluating the effect of changing accounting policies, a firm might end up with higher profit figures which mean more tax.

This creates clear incentives for income-decreasing earnings management. For instance, Cook, Huston and Omer (2008) investigated the impact of effective tax rates as an earnings management incentive on firms’ earnings in third and fourth quarters in US. Their findings showed that the tax rate is considered an incentive to manage their earnings downward to pay less tax.

Phillips, Pincus and Rego (2003) discussed tax issues by examining the effect of deferred tax expenses on earnings management. They state that a manager's discretion to manage earnings under US GAAP was greatest in relation to the use of deferred tax expenses. They found that upper management used deferred tax expenses to avoid reporting losses. In another study, Das, Shroff and Zhang (2009) found that increasing tax rates lead the managers to manage their earnings downward.

In the context of Jordan, the Income Tax law was instigated in 1951. It has been applied under the law No. 50 from the year 1950. Nowadays, Jordan still applies the Income Tax law, No. 57 of 1985 that deals with taxation issues.

There are two ways to collect the taxes; direct taxes and indirect taxes. Direct taxes are imposed on all income of individuals and corporations in Jordan, on things such as sales and salaries. The indirect taxes, however, are applied in abnormal and different ways to direct taxes, such as via import tariffs, the stamps in business contracts and land tax, which means the fees that are imposed on any person or firm in Jordan when they register or sell land (Income and Sales Tax Department, 2013).

As for the tax rates for the corporations in Jordan, there are various rates, and these rates are based on the firms' activities (e.g. communication firms, mediation and financial exchange firms, bank and financial firms and industrial and commercial firms). Table (7.2) provides the tax rates that are imposed on each type of activity:

Table 7-2 Tax Rates in Jordanian Industrial Firms (2013)

Number	Sector	Tax Rate
1	Banks and Financial firms	30%
2	Commercial firms	14%
3	Industrial firms	14%
4	Communication	24%
5	Mediation firms	24%
6	Financial exchange firms	24%

Source: Income and Sales Tax Law, 1985.



The incorporated firms in Jordan are interested in the treatment of depreciation in their accounts since it allows them a tax deduction. Furthermore, the income and sales tax law (1985) allows the firms to deduct several expenses from their income for the purpose of taxable net income, which in turn might lead the managers manipulating these expenses to increase or decrease firm income based on their personal incentives (Healy, et al 1999).

The taxation system in Jordan has changed several times based on economic and political circumstances. This in turn significantly affected after tax profit levels in Jordanian industrial firms. The managers expressed a variety of opinions, with respect to the fairness of the tax system:

Some saw the taxation system as an unfair system (ten managers out of twelve fall in this group). They stated that this system could lead to several problems, such as: decreasing foreign investments, leading firms to manipulate their expenses accounts to reduce the tax amount that they have to pay and sales tax leading to decreases in both foreign and local customers. Several interviewees also commented on the competence of the government taxation department.

*“Jordan tax department still works in the Stone Age. Also, I am not going to say much more than “it’s an unfair system” since all Jordan tax department employees are unqualified, and each day they create a new tax type to show off. Therefore, this is bad for our industrial sector, and almost 90% of present Jordanian tax department employees were hired through nepotism.”* (Financial manager, Firm 2), similar statements were provided by (Financial manager, Firm 1)

*“I think this system is unfair since it’s subject to change when the chairman of the tax Jordan is changed, but in general we are here paying a fixed rate yearly (14%), and the disastrous issue is that I have heard this rate will go up to 25% on 1/1/2014. If this rate is applied we will lose our foreign investors, since all of these investors came to Jordan because of the low tax rate... most Jordanian industrial firms will be out of business soon if the tax rate increases to 25%.”* (Internal audit manager, Firm 8)

Furthermore, one of the interviewees called this system a “personal system”, meaning that there is no uniform standard for government tax inspectors to follow. In this regard, he commented:

***“I am an internal audit manager, and I consider this system to be unclear, since each person can interpret this system based on personal attitude. For example, each tax assessor has a different level of experience and will assess a firm’s tax differently to another one. So, I suggest that the government establish fixed standards for all tax assessors. Finally, if you give two tax assessors the same financial data each one of them will give you a different tax amount. Our tax system in Jordan is personal, and is subject to change based on personal characteristics.”*** (Internal audit manager, Firm 3B)

According to this quote, earnings management could appear in the firms that understand the taxation system to be based on a personal system since the managers start believing that the government is not dealing with firms equally and they start engaging in earnings management to achieve their aims. In contrast, there are two financial managers who believed the Jordanian tax system to be a fair system.

***“I can say this system is fair to a limit, for example 15% [the current tax rate] is fair, but if they apply the new tax rate which will be 25%, this one will be a disaster”.*** (Financial manager, Firm 3A), similar statement was also made by (Executive financial manager, Firm 7)

Based on prior literature results (e.g. Das *et al*, 2009; Cook *et al*, 2008) that stated “the tax issue could be an incentive for the managers to engage in downward earnings management”, the taxation issue was raised with our interviewees who responded as follows:

***Statement (1)***

***“We always try to find any gap in the tax system to decrease the tax amount that we have to pay to the government, and our external auditor helps us with that.”*** (Internal audit manager, Firm 8), and similar comment was also made by the (Financial management manager, Firm 5) and (Financial manager, Firm 1)

***Statement (2)***

***“Some of the financial managers in industrial firms are increasing top management expenses to reduce their profits in order to pay less tax.”***  
(Financial and administrative manager, Firm 2), (Financial and administrative manager, Firm 1) and (Financial and administrative manager, Firm 4)

***Statement (3)***

***“Absolutely, there is no problem facing us regarding bad debt provision since we will get our money back, like I said, whether we get our actual money back or get it deducted from our taxes.”*** (Financial manager, Firm 3A)

It appears that most of the firms will openly manipulate earnings in order to reduce tax paid and the main instruments used to achieve this aim is the use of bad debt provision, increased management expenses and managing other expenses. These results are consistent with prior literature which found that increasing the expenses is used as tool to manipulate earnings management (See Jones, 1991).

### **7.3.11 Bad Debt Provisions and Earnings Management**

Several previous studies attempted to explore the relationship between bad debt provision and earnings management, such as McNichols *et al* (1988) who conducted their study in the USA. This study investigated whether bad debt provision is deemed to be an earnings management tool. In this regard, they argued that “the discretionary component of the provision for bad debts is income-decreasing for firms whose earnings are unusually high or low.” Empirical results showed that most firms manage their earnings by using bad debt provisions when they have high earnings, and there is no evidence showing that the firms with low earnings manage their earnings by using bad debt provision.

Based on 106 firms from three sectors (publishing, business services and nondurable wholesalers) in the USA, DeAngelo (1988) concluded that “firms manage their earnings by choosing income-decreasing accruals when income is extreme.” She determined her sample based on two factors: (1) the firms with high income to their accounts compared to their total assets, and (2) the firms with high bad debt provision compared to their net income. Empirical results indicated that the firms used bad debt provision to manage their earnings particularly when they had a high income (this result is compatible with McNichols *et al* (1988)). In a recent study, Jackson and Liu (2010) examined the relationship between bad

debt expenses and earnings management, where they found that the firms they studied managed their earnings downward by using bad debt expenses.

In the context of Jordan, firms also appear to use bad debt provisions as tool to manage their earnings downward.

*“...my friend. If we do not get back our debit from our customers, for sure we will get it as bad debt. The court will issue its decision to consider this debit as bad debt, and then we will be able, by law, to deduct this amount from our total tax amount for next 5 years. Therefore, we keep transferring this amount from one year to another [...] and all of that is based on the financial manager’s experience that enables the saving of every penny for this firm.”*  
(Financial manager, Firm 3A), similar comment was also made by (Financial manager, Firm 3B)

The collectability of accounts receivable is a matter that is determined ultimately by the Jordanian court. Companies will apply to the court to take a final decision about whether balances can be classified as bad debt and thus treated as tax deductible. The process is therefore one of negotiation between the firm, the external auditor and the government.

*Statement (3)*

*“We used this amount to deduct from our tax, and this issue is more complicated since it takes a long time in the court to clarify. ... The financial department always try to increase the profit in order to avoid any problems with the government. For example, the external auditor always demands that we present bad debt provisions worth more than our profit (external auditors refer to this issue as HANBALEH<sup>1</sup>), which means if we do not comply with the external auditor’s recommendation, then this will lead to a reduction of our stock price or it will stop our stocks in the Amman stock market. Therefore, this point will start the strife between the firm (the audit committee, general manager and internal control) and the external auditor ... so we do not have many ‘account receivables’ since we let our customers hold 75% from any real estate that they have under our account in the bank as a*

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<sup>1</sup> HANBALEH: Meaning “something that you have to do without any discussion”.

*guarantee.” (Financial manager, Firm 1) and (Financial and administrative manager, Firm 2)*

Furthermore, we found that the bad debt provision issue can become a problem for some firms as obtaining the final decision from the court can be a lengthy process.

*Statement (1)*

*“Our problem with bad debt is that the government need a final decision from a local court, so we have customers from outside Jordan who we cannot judge in Jordan, and in this case we start fighting with the government to consider this debt and allow us to deduct it from our tax amount. Unfortunately, we do not always get this money, and is the most common reason that prevents us from exporting our product outside Jordan.” (Financial manager, Firm 1)*

*Statement (2)*

*“I can say that the bad debt issue is considered an important issue since it might lead us to problems such as: decreasing our liquidity; reducing our shareholders’ profit in the short term, since this provision has to go through long procedures in the court to reach a decision; and decreasing our numbers of new investors.” (Financial management manager, Firm 5), similar statements were provided by (Financial manager, Firm 2) and (Financial and administrative manager, Firm 1)*

Accordingly, we conclude that our results are consistent with the results that have been documented in the literature such as McNichols *et al.*, (1988) and DeAngelo (1988), where they found that the bad debt provision used to manage EM was particularly income-decreasing. However, based on the previous quotations, this study found that the court procedure is considered as an obstacle for delaying the firm to manage their earnings in the short term by using bad debt provision which means that the bad debt provision could be considered as a strong tool for Jordanian firms to manage their earnings in the long term.

In general, the process of applying to the court to ratify bad debt expenses for tax purposes places Jordanian firms under more pressure which makes earnings management more likely. The problems can result in earnings management being spread over multiple years and also

extend into other areas in business such as the volume of foreign customers, all of which will increase the pressure to manage earnings.

### 7.3.12 Issues Related to External Auditors

Prior literature suggested several factors that could affect the external auditor's ability to decrease earnings management practices. These included; an external auditor's reputation, external auditors' tenure, industry specialism, external auditor opinion, and external auditor change (see: Mariani *et al*, 2010; Alkhabash *et al*, 2008; Piol *et al*, 2007; Alhayale *et al*, 2005).

Interviewees identified several roles of external auditors in achieving effective corporate governance and more reliable financial reports. These included:

- Reviewing all firms' financial transactions and reports according to international accounting and auditing standards.
- Reporting their final financial reports to shareholders.
- Defending their reports in the annual general meeting.

The big argument in previous studies on this subject concerns whether complying with corporate governance law that stipulate each firm has to change its external auditor yearly (the audit partner rather than firm) leads to mitigation of earnings management practices (e.g. Alghamidi, 2012; Chan *et al*, 2011; Chung *et al*, 2005). Standard setters for Account Audit have suggested that in the long-term, external auditors might carry out audits less independently within the firm, since they have built a strong personal relationship with firms' shareholders and management resulting in external auditors taking less care, and also taking auditing accounts as another routine work (Piol *et al*, 2007). Some studies have supported this, such as Davis *et al* (2009) and Gul *et al* (2007). On the other hand, Myers *et al* (2003) study the mandatory auditor rotation, and proposed that "the longer audit tenure reduces earnings quality". In fact, their empirical findings show the opposite result, where long auditor tenure led to increased earnings quality, because longer tenure led to auditors being able to place more constraints over extreme management decisions.

The corporate governance code in Jordan specifies that firms should change their audit partner each year and the firm of external auditors every four years. Most of our interviewees indicated that their firms did not change their external auditors (whether from 'big four' or

non-‘big four’ firms) for 4 years, but they change the partner from the same firm. This could strengthen the relationship between external auditors and firms’ managers, which could encourage firms’ managers to engage in earnings management.

*“We do not change the audit firm, but we change the partner from within this firm, just to follow Jordanian corporate law. Also I have a good relationship with the external auditor, since we know each other from a long time ago.”* (Internal audit manager, Firm 8), and similar comments were also made by the (Financial and administrative manager, Firm 2), (Financial management manager, Firm 5), (Financial manager, Firm 2), (Financial manager, Firm 1) and (Financial manager, Firm 6)

The reasons offered for non-compliance with corporate governance code consist mainly of practicalities such as the cost and inconvenience of changing of auditors and the comfort factors such as familiarity and a good relationship between auditor and manager.

On the other hand, one interviewee has documented that his firm changes its external auditor every year to comply with the corporate governance law.

*“Yes, we did change our external auditor last year to comply with corporate governance law, where it stipulated that each firm has to change its external auditor yearly. This will also lead to a reduction in the chances of a relationship forming between external auditors and our employees, which helps to avoid any account manipulation.”* (Executive financial manager, Firm 7)

Jordanian corporate governance code has stipulated that each external auditor has to be independent and must not have any relationship with any employee in the firm or firms that he or she is auditing. External auditors are not and should not be expected to have a good relationship with firms’ employees, particularly internal audit department employees (Davis *et al*, 2009). Also, they are not expected to provide any firm with advice on accounting policies or disclosure. In this regard, we found in most of our semi-structured Interviews that managers received several types of advice from external auditors thanks to their long and close relationship with them. These are advices such as, ways of avoiding government regulations and listing regulations. For example:

*Statement (1)*

***“We have good relationship with our external auditor, so he always warns us of anything that might affect our performance in the AGM. For example, one time he told us that our shareholders were focused on reducing costs, so we should be careful and focus on this area and try to provide them with a good plan for that, otherwise they might change our top management team.”***  
(Financial and administrative manager, Firm 4), similar statement were provided by (Executive financial manager, Firm 7), (Financial manager, Firm 4)

***Statement (2)***

***“Yes... the external auditor warns us if we are doing something in the wrong way that might lead our shareholders to change the top management team. We have always had a good relationship with our external auditor. Also, he tells us about any new regulations that the government is planning to issue, and how we can deal with them (e.g. tax gaps and investment gaps).”***  
(Financial management manager, Firm 5), similar comments were also made by (Financial manager, Firm 3A) and (Financial manager, Firm 2)

These comments indicate a lack of independence of the external auditors in Jordan and also their relationship with the firms' managers, to the extent that the auditor appears to be acting in the interest of manager rather than the interest of shareholders. External auditors also seemed to be advising the clients how to avoid government regulation.

The Jordanian managers suggested several factors that could lead to shareholders choosing a certain external auditor, and these are:

- The external auditor's reputation, which includes information about his reliability, independence and credibility.
- The external auditor's education, experience, and professional auditing certifications such as CPAs and CIAs.
- The external auditor's knowledge of government regulations.
- The external auditor's fees.
- The existence of a good relationship between shareholders and the external auditor.



- Ensuring that the external auditor does not hold any shares in the firm that he/she is auditing.

### 7.3.13 Internal Auditors and Earnings Management

Internal auditors are responsible for evaluating firms' work as related to financial reporting processes, in particular the systems of internal control. In general, auditing standards and company audit reports recognise that the existence of significant financial incentives based on financial results leads to increases in the risk of accounting misstatements, which in turn lead the auditors to exercise a sensible degree of professional scepticism in conducting the audit (Hirst 1994). A few prior studies have investigated the relationship between internal auditing standards and earnings management. Prawitt *et al* (2009) used components of the Statement of Auditing Standards (SAS) No. 65 (the knowledge, skill, training, professional certification, experience and objectivity of internal auditors) as measures of internal auditing quality and showed that the quality of the internal audit affects earnings management. Davidson, Goodwin-Stewart and Kent (2005) examined the impact of internal and external audit functions on earnings management: their results showed that quality internal audit functions decrease earnings management. Also, Van de Poel and Vanstraelen (2011) and Ewert and Wagenhofer (2005) found that higher accounting and auditing standards decrease earnings management.

During our interviews, we noticed that most of the interviewees suggested the internal auditors in their firms are not sufficiently independent of the firm's managers or the external auditors. Reynolds and Francis (2001) documented that internal auditors' levels of independence varies from firms to firms, and having a strong, independent auditor in the firm is likely to decrease the likelihood of managers engaging in earnings management. In this regard, several managers stated:

#### *Statement (2)*

*“Based on a long period of acquaintance, our internal auditor has a very good relationship with our external auditor, and sometime we make trips and enjoy our time, and let them accept certain expenses (e.g. hangers for employees, hosting since we have large number of visitors). Also, he warns us if there is any problem that we might soon be facing from the government.”*  
*(Financial manager, Firm 3A), and similar comment was also made by the*

*(Financial manager, Firm 3B), (Financial and administrative manager, Firm 1)  
and (Financial manager, Firm 1)*

The managers indicated that there are several factors that may quality with respect to an internal auditor, and these are:

- The internal auditor's experience.
- The internal auditor's education.
- The internal auditor's professional certifications such as the CIA, JCPA, or CPA.
- The internal auditor's personal attitude.
- Ensuring that the internal auditor does not have a criminal record.
- The internal auditor's reputation.

On the other hand, some managers suggested that their internal auditors were ineffective and lacked the qualities necessary for the role:

*“As I know, any internal auditor has to be qualified and have experience...  
But unfortunately, our internal auditor has neither... I do not know why he  
still in this firm, I think he was hired by his relative.” (Financial manager,  
Firm 3), and similar comment was also made by the (Financial and  
administrative manager, Firm 1)*

Addressing the problem of the lack of quality in internal auditors, one manager (Financial manager, Firm 2) suggested several solutions, and these are: (1) arranging monthly meetings with the Financial manager to observe the new policies that might arise from government regulations and economic circumstances, (2) working fiscally on jobs based in all financial department in order to understand the system from the point of view of each job. For example, working for one week with an accounts receivable accountant and for one week with an accounts payable accountant, and reviewing the work monthly to make sure they are following the procedure, which is meant to guide us according the modern financial school.

However, this approach is not likely to improve the independence of the internal audit function who should be able to determine the areas of their investigations themselves

and be free to criticise the decisions and behaviour of the senior management of the firm. If the internal auditor is viewed as inexperienced and inferior to the manager then his scrutiny of management cannot be effective.

#### **7.3.14 Ownership Structure and Earnings Management**

Ownership structure is deemed another important element of corporate governance that has influence on several accounting issues (e.g. earnings quality, audit quality, audit fees, firms' performance and earnings management). Accordingly, a large number of studies have examined the impact of ownership structure on earnings management. Hosseini *et al* (2012) and Alves (2012) showed that the type of corporate ownership significantly affects earnings management level.

In the context of Jordan, Alfayoumi *et al* (2010) examined the influence of various ownership structures (e.g. managerial ownership, institutional ownership and block-ownership) on earnings management by using a sample of industrial firms listed on the Amman Stock Market in the period of 2001 – 2005. They found managerial ownership to be significantly related to earnings management but no relationship between the other two types of ownership structure and earnings management.

To understand the concentration of ownership in our semi-structured Interviews, Table 6.9 presents the percentages of the ownership types that were provided by interviewees, and these percentages are consistent with those that have been published in the Amman Stock Market and annual financial reports. Three types of ownerships have been explored in these semi-structured Interviews: institutional ownership, family ownership and individual ownership. Several managers discussed the relationship between earnings quality, ownership structure and corporate governance:

##### ***Statement (1)***

***“Most of our shareholders are institutional (97%) and all of these shareholders hold top management or board of directors’ positions. For example, board chairman, board member, or general manager.”*** (Financial manager, Firm 4) and (Financial and administrative manager, Firm 1)

##### ***Statement (2)***

*“We never ever manage our profits or other accounts, since our board of directors are mostly shareholders and they have strong controls that do not allow for any room to manage anything.” (Financial manager, Firm 1)*

Table 7-3 Shareholder Concentration in Semi-structured Interviews

NO	Firm	Institutional Shareholders Foreign %	Institutional Shareholders Local %	Individual Foreign%	Individual Local%	Family Ownership %	Small shareholders %
1	JPM	41.0	26.5	12.0	6.30	-	14.2
	JWI	46.0	18.1	-	24.2	10.9	0.80
2	AAI	2.90	30.4	-	32.0	17.5	17.2
	JIR	3.40	26.4	-	29.5	-	40.7
3	GMC	-	13.8	-	68.2	15.0	3.00
	P&C	26.6	47.5	-	11.9	11.9	2.10
4	UAI	-	37.4	15.7	36.0	10.0	0.90
	TRA	-	97.4	-	-	-	2.60
5	MID	-	15.7	-	8.30	71.0	5.00
6	JWM	1.90	56.9	-	14.0	11.9	15.3
7	PHO	48.5	42.0	-	-	-	9.50
8	POT	66.0	32.0	-	-	-	12.0

Based on Table 7.3 we see that eight of the twelve firm’s high institutional ownership concentration and the remaining four have higher family or individual ownership. Previous studies have shown that in the short-term a high level of institutional investment tends to reduce earnings management in comparison to higher levels of family or individual ownership (Koh, 2003; Fan et al, 2002).

Furthermore, Table 4.3, (see page 112) presents the ownership concentration in Jordanian industrial firms, where it shows that more than 27% of Jordanian industrial firms are firms owned by individuals, whether foreign or local. Individual ownership sometimes reaches

more than 98% of share capital in Jordanian industrial firms as mentioned in the semi-structured Interviews. In this regard, one of the financial managers stated:

***“..... when I was in XXX firm as financial manager, I remember that two of shareholders own 99% from this firm capital shares” (Financial manager, Firm 2).***

However, and according to the interview analysis, it could be said that individual ownership does not have a serious effect in managing earnings management in Jordanian industrial firms. This result is consistent with the literature documenting that firms with high family ownership are more likely to avoid manipulating their earnings to maintain their reputation in the market such as Ali *et al.*, (2008). Accordingly, the statement below was provided from one of the financial managers among our interviewees:

***“.....most of firms that dominated with individual or family ownership types always try keeping to be away from managing their profit to keep their reputation in the market”. (Financial manager, Firm 6).***

Nevertheless, as has been revealed by the secondary data, firms with high individual ownership have tendency to be away from managing their earnings or constrain their earnings management to retain their reputations in the market (see page 181).

As for family ownership, Table (4.3) (see page 112) the firms with a high family ownership have a tendency not to manage their earnings whether upward or downward to maintain their reputations in the market (see page 181). In conclusion, and based on the Amman stock market classification for ownership structure, family ownership is considered part of the individual ownership type (Amman Stock Market, 2015).

However, the relationship between institutional investment and earnings management is less clear in the longer term (Koh, 2003). The anecdotal evidence provided by our interviewees suggested that the ownership structure of the firm plays a significant role in earnings management. Firms with high levels of institutional ownership, foreign or local, all reported that they are engaged in income-reducing strategies in order to reduce the tax paid. This was not the case for family owned firms. In this regard, two statements have been provided by our interviewees:

*“There are some investors particularly institutional firms came to this country because of the weakness of corporate governance roles to achieve their target profit, since they have the opportunity to increase or decrease it based on their incentives ..... When I talk about this issue I could say that the foreign institutional firms have this issue more than local institutional firms since they don’t have the loyalty for this country”. (Financial manager, Firm 1)*

This type of ownership (institutional) in the secondary data analysis has a significant effect on earnings management as shown in Tables 6.7 and 6.8. (Pages 181 and 185). This result is consistent with our result in this section, where the high portion of institutional ownership in the firm is more likely to be related to upward earnings management. Table 4.3. (See page 112) presents the ownership concentration in Jordanian industrial firms, where it shows that 12.7% is foreign institutional ownership and 36.3% is local institutional ownership. This pattern is consistent with the idea that investing institutions exert pressure on firms to manage earnings whereas in family-owned firms earnings management is less important because there is less accountability to external investors.

### **7.3.15 Firms’ Changing Positions in the Amman Stock Market and Internal Control Systems**

In the context of Jordan, several external environmental factors might affect internal control systems, such as the economy, politics, and culture, in particular the movement on the Amman stock market from lower to higher markets or vice versa (Mashoka, 2010). The responses from our interviewees seemed to suggest that if the change is from a lower market to a higher market this associated with improvement in the internal control system and overall business performance.

#### ***Statement (1)***

*“Sure, it affected our profit and capital, both of which increased. Accordingly, our financial position is stable and we have received several applications from foreign investors to invest in our firm, in addition to increasing our efficiency in controlling all our transactions.” (Financial manager, Firm 6, similar comment also made by (Financial and administrative manager, Firm 1)*

If the change is from a higher market to a lower market this may be associated with more problems with the internal control system which could affect earnings quality in the firms particularly if the reason for change is related to the existence of unqualified employees that the managers use to manipulate their earnings to achieve their incentives (see section 7.5.7.4)

*Statement (1)*

*“Our market position has changed from first market to second market since 2012, and the main reason was most our investors moving their funds to other countries because of the revolutions in the area. Also, this change has affected our internal control system, since most of our experienced employees have been fired to reduce expenses. Accordingly, we have felt the effects of this change. For example, in the form of a decrease in our capital and sales, this in turn leads to less profit.”* (Financial management manager, Firm 5) and (Financial manager, Firm 1)

The interviewees’ four main reasons that led their firms to move down the stock market, and these were as follows:

- Achieving losses for three consecutive years.
- Economic circumstances such as the financial crisis in 2008.
- Political circumstances such as the recent revolutions in the Middle East.
- Investors moving to other countries to avoid government regulations such as the high tax rate.

*Statement (1)*

*“We have had two changes; the first one was in 2007, when we moved from the second market to the first market [because we showed two years of high profit]. The second one was in 2010, when we moved from the first market to the second market [because we made three years of losses consecutively]... The first change leads us to attract more investors and increase our share prices; this in turn led to more profit that year. The second change leads us to lose some investors and our share prices decreased. In addition, we lost our*

*reputation in the market, which caused some investors to invest in other sectors.” (Financial and administrative manager, Firm 4)*

*Statement (2)*

*“Our market position has changed two times; in 2011 and 2013. We moved down this year (2013) because of politics and economic circumstances that led our investors to withdraw their money and move it to other countries to invest there... When we moved down we lost our reputation and our bonuses stopped, since there were no more sales. Also, our top management fired some employees to reduce costs. But now we are working hard to move back to the first market again.” (Financial and administrative manager, Firm 1)*

*Statement (3)*

*“Our market status changed in early 2010, and this was because of politics and economic circumstances in the area. This change has affected our firms as follows: (1) decreased our reputation, which means less investor and (2) decreased our share prices.” (Financial manager, Firm 4)*

*Statement (4)*

*“It absolutely affected our firm, by decreasing our reputation in the market, which led us to lose some of our investors, which means more losses... So you can look at our financial reports and compare between them and see the differences.” (Financial and administrative manager, Firm 2)*

### **7.3.16 Government Regulations and Earnings Management**

Political cost theory suggests that firms subject to government regulations will be likely to resort to earnings management in order to achieve objectives such as reducing the amount of government-imposed wealth transfers (Watts and Zimmerman 1983). Chen, Li, Liang, and Wang (2011) documented that government regulations (high political costs) affected earnings quality in China as Chinese firms engaged in earnings management to avoid the high political costs of China’s economic transition.

Furthermore, Guenther (1994) presented empirical evidence that showed a decrease in earnings management levels in the large firms in the USA that were given a reduction in tax rates. All of the managers in our interview firms took a pessimistic view of government



regulations and considered regulation to be detrimental to their business and among the main obstacles that the firm faces in achieving its objectives.

*“The main problem that we are facing nowadays, in addition to economic and political problems, is dealing with government regulations in different ways from other industrial firms. We are a part of the Jordanian society, and we comply with government decisions, but the government uses some incorrect strategies nowadays. For example, the government suggests that we reduce our product prices to increase our profit, but in fact this suggestion will affect us badly since the raw materials have such high prices.” (Financial manager, Firm 1)*

*“Government regulations are considered a disastrous issue, since these regulations are subject to change based on the taxation department’s chairman, and the person in that position changes from time to time. Each one of these chairmen establishes these rules based on his/her personal decisions, to show the others that they have done something that the previous managers did not do. This has caused us to get into a cycle without a beginning or ending.” (Internal audit manager, Firm 8), similar comments were made by (Financial management manager, Firm 5), (Financial manager, Firm 3A), and (Financial and administrative manager, Firm 2)*

Based on the quotes above and the discussion in several previous sections (firms’ financial objectives in section 7.5.1, taxation system in section 7.5.10, and ownership structure in section 7.5.14), this study documented that the government regulations in Jordan is considered as an important factor that affect the earnings management level. For example, increasing the tax rate was seen to be a great incentive for the managers to increase their earnings (downward) to increase their taxable profit.

The managers reported that their firms are utilising three strategies to avoid government regulations, and these are as follows:

- Changing country, this means moving the firms’ activities to other countries that have less complex government regulations.
- Changing the accounting systems or accounting policies used.

- Using the gaps in the government regulations to avoid the impact of any given regulation often under the guidance of the external auditors.

It is clear from these responses that the use of EM to avoid government regulation is institutionalised in the managers' behaviour and openly acknowledged as a response to the perceived unfairness of the regulations.

#### **7.4 Summary**

Twelve semi-structured Interviews of Jordanian firms were produced from a range of sources, including analysis of the results of earnings management estimates from accruals models; review of published accounts for each firm; analysis of information published by Amman stock market such as ownership structures and board composition; review of internal company documentation such as organisation charts and semi-structured interviews. An initial pilot interview was conducted with one of the firms and used to refine the interview questions before the other interviews took place. Interviewees included general managers, financial managers and internal audit managers with whom we discussed the pressures caused by external economic and social factors, internal control and corporate governance mechanisms within their firms and how they related to earnings management practices.

The initial questions in the interview explored the contexts in which the firms operate; their structures in terms of ownership, corporate governance and internal control; their general business practices; their approach to modernisation of accounting systems, including the adoption of IFRS, and the use of IT. Finally, this section explored the nature of the relationship between external auditors, internal auditors, board of directors, CEO and CFO.

Our semi-structured Interviews analysis identified the fact that there are several obstacles to Jordanian firms to achieve their financial objectives, such as: economic and politics circumstances; government regulations, and financial crises such as occurred in 2008. Interviewees stated that these obstacles could cause two effects: (1) encouraging investors, both foreign and local, to leave for other countries that have less complex regulations or better economic circumstances, (2) encouraging firms' managers to engage in earnings management to avoid these obstacles, particularly government regulations.

Consideration of the quality of corporate governance is a new phenomenon in Jordan, and we noticed from our semi-structured Interviews that a large proportion of directors are shareholders, which may cause a conflict of interest. The Jordanian Corporate Governance

Code requires that board members be appropriately qualified. In smaller firms many shareholders are involved in operating decisions even though they are unqualified and lack personal business experience. They are in these positions purely because of their wealth. On the other hand, large firms tend to have more qualified and experienced board members, who are independent of shareholders.

Furthermore, the holdings of the CEO and board chairman positions at the same time by one person is another problem that affects Jordanian industrial firms, and several interviewees indicated that their firms suffered from this problem, which sometimes leads the manager who is holding these two positions to engage in earnings management to achieve personal incentives such as increasing his/her bonuses and compensation.

Proceeding from the importance of internal audit functions that lead to improvement in firms' performance and protect them from any fraud or manipulation, the Jordanian Corporate Governance Code stipulates that each firm has to have an independent internal audit department to examine all its transactions, and it is deemed as a hub connecting the board of directors and the top management and external auditors. In our semi-structured Interviews analysis we found that some firms do not have such as department, and this is usually for one of these two reasons: (1) because of the costs of running an internal audit department, and (2) to comply with the desire of the board of directors, who see the existence of the department as unnecessary and believe the work of the external auditors to be sufficient.

As for external auditors, we noticed that most Jordanian firms do not comply with the Corporate Governance Code that require the change of external auditor on an annual basis. In addition, we found that most firms have a strong relationship with their external auditors, which in turn may result in external auditors lacking the necessary levels of independence and the auditors providing advice to firms on how to manage the earnings.

Prior studies' cite agency theory, which states that the corporate governance mechanism, including the board of directors' and the audit committee's characteristics play big roles in enhancing firms' performance and the quality of financial reports (Alghamdi, 2012). Jordanian firms are attempting to improve their internal control systems in different ways, but all interviewees indicated several problems that could prevent them from achieving this objective, such as: the weakness of internal auditors' qualifications, the lack of an internal audit department in some firms and cultural factors which are outline below.

The middle section of the interview was devoted to exploring the reasons why the firms engaged in earnings management and discussed various motivations for managers' practices. These drivers included the firm's response to the economic environment in particular, the recent economic crises; the firm's ownership structure; changes in government regulations; the firm's position in the Amman stock market; and various social and culture factors.

We concluded that the most common ownership types in Jordanian industrial firms are institutional ownership and family ownership, and numerous prior studies have documented that high institutional ownership concentration is more likely to lead the firms' managers to engage in earnings management practices (e.g. Alves 2012; Alfayoumi *et al* 2010). This also proved to be the case with our firms where those with institutional ownership admitted to engaging in earnings management practices.

Several motivations for earnings management related government regulation were explored in the semi-structured Interviews analysis and the managers' perceptions of the fairness of regulatory changes appeared as strong motive. The rapidly increasing tax rate was the most important factor, and appears to lead Jordanian firms to manipulate their earnings downward in order to pay lesser tax.

In the context of culture, most of the prior studies documented that cultural factors significantly affect earnings management levels in firms (Desender *et al* 2011; Guan *et al* 2010). Most of the interviewees reported that cultural factors affected the quality of reported earnings. The factors cited included the effect of the tribal system; favouritism in recruitment decisions; the system of Wasta; the practice of hiring unqualified employees (particularly in internal audit departments); the attitude and mentality of some employees and the effect that different dialect have on communication. These factors are seen to result in situation where firms' managers engage in earnings management to achieve their incentives, since they believed that there is no one who can stop them.

The final section of the semi-structured Interviews focuses on the means by which the managers manipulate their earnings and they reported the main tools they used were manipulation of the accounts receivable balances and overstatement of expenses in particular bad debt provisions and management expenses.

## 8. Chapter Eight: Summary and Conclusions

### 8.1 Introduction

This thesis aims to investigate the effects of internal controls and corporate governance mechanisms on earnings management practices in Jordanian industrial firms. With that in mind, the main important research questions are:

*“Is there a relationship between internal control, corporate governance mechanisms and earnings management in Jordanian industrial companies?”*

*“What are the characteristics of the relationships between these factors, the nature of the processes underlying them and the context in which they occur”*

This chapter summarizes the research methodology and then provides a summary of the results from both the quantitative analysis and from our semi-structured Interviews. We then draw a number of conclusions and discuss the implications of our results in the context of our review of the existing literature. Finally, the chapter presents a discussion of the contribution made by this research, the limitations of our methodology and suggestions are made for future research.

### 8.2 A Brief Summary of the Research Methodology

Our methodology was designed to investigate in what way internal control and corporate governance mechanisms are related to earnings management in Jordanian industrial firms. To do this, we explore the motivations that may lead Jordanian industrial firms' managers to engage in earnings management to achieve their desired incentives. We use three accruals-based models, the Standard Jones Model (Jones, 1991); the Modified Jones Model (Dechow et al, 1995); and the Margin Model (Peasnell et al, 2000) to generate earnings management estimates for a sample of Jordanian industrial firms. This also gives the opportunity to evaluate which of the models is most appropriate for identifying earnings management in this context.

To address the questions of why the earnings management occurred and to examine in more depth the processes by which it occurred, we investigate a number of the individual firms as semi-structured Interviews. Accordingly, the final result is mixed-methods research in four stages to analyse the research data:

- First stage: in this stage, we use earnings management models (SJ, MJ and PPY) to

estimate earnings management values using various measures of accruals as the dependent variable and known predictors of accruals as independent variables, where the earnings management estimates are the residuals (unexplained factors) from the regression analysis. We use financial data from annual reports available from DATASTREAM, the Amman Stock Market (ASM), and the Jordan Securities Commission (JSC) to run these models.

- Second stage: the researcher uses published annual financial reports from the Amman Stock Exchange website to collect data on measurable internal control and corporate governance variables, such as the characteristics of boards of directors, audit committee characteristics, external audit factors, and ownership.
- Third stage: we combine the second stage variables with the earnings management estimates from the first stage regression to determine the extent in which they are associated. Initially, statistical significance of findings from both OLS and GLS regression models (see Appendix 4 for GLS regression models) are too low, arising from the relatively small sample sizes and that the earning management variables are not distributed normally and the causality of its relationships with the other variables was unclear. Following that, we model the earnings management variable as a categorical variable, with three categories, low EM, high positive EM and high negative EM.
- Fourth stage: in this stage, we conduct 12 semi-structured Interviews with the main element focuses on semi-structured interviews with 16 managers (general managers, financial managers an internal audit managers) in order to collect in-depth information about factors that are related to internal control and corporate governance factors, such as the effect of the tax system; different approaches to the use IT in the accounting system; the rights and responsibilities of the CFO/CEO; and cultural factors that could be associated with earnings management in the context of Jordan.

These four stages of research help to provide important evidence depicting the relationship between internal control and corporate governance mechanisms and earnings management and the context in which these processes occur. The implications on research outcomes of using the mixed methods are as follows:

- The combination between quantitative results and qualitative results may be complementary to the individual results of both methods.
- The combination between quantitative results and qualitative results may be challenging to the results of both methods.

- The combination between quantitative results and qualitative results may lead to the two methods “talking past” each other.  
(Brown and Brignall, 2007)

We discuss these three outcomes in relation to our research findings in section 8.4 below.

### **8.3 Summary of the research findings and Conclusion**

#### **8.3.1 Quantitative Findings**

##### *Accruals Models*

Among the three models that are used to estimate earnings management for our sample (the Standard Jones, Modified Jones and Margin models) the PPY model gives the best fit with the most statistically significant and the best specified model. The  $R^2$  value for the PPY model is 84% compared to 63% for the MJ model and 15% for the SJ model. Tests of model specification also indicate that squared-terms would be significant if they were included in the SJ and MJ models but not in the PPY model, indicating that PPY is better specified. This result is interesting as the PPY model has not been widely used in research in Jordan or other developing countries, and the Modified Jones model is usually preferred, even though the results it produces are, at best, mixed. It is likely that the PPY model is a better description for the Jordanian data as it focuses on working capital accruals and our analysis of annual reports and interviews identify that bad debt provisions and the manipulation of expenses are both likely to play a significant part in earnings management in Jordanian companies. The PPY model is more likely to identify these factors than the Jones models.

##### *Models including corporate governance and internal control variables*

This section includes the results of t-tests and quadratic discriminant analysis to predict the earnings management category into which each firm falls into (low EM/High positive EM/High negative EM) based on the corporate governance and internal control variables.

#### **T-Tests for the Difference between Means**

These tests examined for each of the corporate governance variables differences between means of groups based on the earnings management categories. In order to compare two EM categories at a time, t-tests are carried out for the following groups for each corporate governance variable:

- HI+EM compared to HI-EM.

- HI+EM compared to low EM.
- HI-EM compared to low EM.
- HI±EM compared to low EM.

As with the accruals models, the models using the PPY estimates of earnings management has results that are more significant than those using the SJ and MJ models. In models that used the SJ/MJ estimates, "the board of directors' characteristics" variable is mostly insignificant, with the exception of "the number of board meetings", which is significant for the MJ model only. Similarly, the variables based on audit characteristics are generally not significant in predicting earnings management estimates based on the SJ/MJ models. The most significant factor in predicting the SJ/MJ estimates is one of the ownership structure variables, which is "the proportion of individual ownership".

We found "external auditor opinion" significant and positive for PPY/MJ estimates and negative for SJ estimates, this suggests that the "external auditor opinion" is a predictor of the occurrence of earnings management in the Jordanian industrial firm, although the direction of the relationship is not established clearly. With respect to earnings management estimates from the PPY model, several explanatory variables, including board characteristics, audit characteristics and ownership characteristics, are significant in predicting earnings management groups. These are board size, numbers of outsiders of the board, audit committee size, number of audit committee meetings, audit committee expertise, individual equity ownership and family ownership.

### **Quadratic Discriminant Analysis (QDA)**

In this section, the QDA classification accuracy for earnings management groups for all models is found to be high and consistent with the t-tests results. The corporate governance variables are used here to predict the firms' membership of the different earnings management categories: high positive EM, high negative EM and Low EM. The overlap between the groups for the SJ earnings management estimates are small, which means that the model discriminates well among these groups. The overlap between the groups using the MJ estimates is smaller than SJ, which means the corporate governance variables predict the MJ estimates more accurately. As for PPY estimates, we found the corporate governance variables do not predict as well as for the PPY as for the MJ estimates.



We then investigate properties of the MJ estimates further and ran the quadratic discriminant analysis for each group of corporate governance variables (board characteristics, audit characteristics and ownership characteristics) in turn. The results indicate that ownership structure is by far the most effective variable for predicting whether firms are engaging in low, high positive (income increasing) or high negative (income decreasing) earnings management practices.

The PPY estimates are more clearly related to firm characteristics when looking at each variable in isolation (in the t-tests), but when variables are all combined together and interaction is allowed, the firms' characteristics classify the MJ estimates of EM more accurately.

Overall, this research concludes that the PPY model works better for detecting earnings management in the context of Jordan. This is likely to be because the PPY model is based on working capital accruals and as identified from the data of our semi-structured Interviews, the accounting policies that the firms used to manipulate earnings are primarily associated with revenue, accounts receivable, bad debt provisions and management expenses. This conclusion is important as previous studies of earnings management in Jordan and other developing countries have used the Jones and Standard Jones models.

Unfortunately, in the context of the models using corporate governance and earnings management variables, none of the models worked well, possibly this is because the corporate governance mechanisms in Jordan are in an early stage of development.

### **8.3.2 Summary of Semi-structured Interviews Results and Conclusion**

We conduct 12 twelve semi-structured interviews from the sixteen firm managers (general managers, financial managers, and internal audit managers) as the main component. A discussion of the results from the semi-structured Interviews is provided in chapter six, and a summary is shown below.

#### ***Cultural Factors***

The cultural factors identified by our interviewees, such as the Wasta and tribal systems, apparently have negative effects on the firms in a number of ways. They cause problems in the recruitment decisions, which result in people being appointed to roles for which they do not have the qualifications or experience. This could result in managers that are less likely to

question the board of directors and, in addition, may result in more errors in the financial statements. The Wasta and tribal systems also affect the efficiency of business operations. For example, in one of our firms, through delaying the issue, products' licenses in the pharmaceutical sector, and can create barriers to competition. Therefore, we concluded that the Wasta and tribal systems are likely to create weaknesses in corporate governance or override internal control mechanisms and this creates conditions for earnings management to thrive. In addition, the extra pressure on firm performance created by the inefficiencies may increase managers' motivations to use income increasing earnings management techniques. It is not possible to understand the nature of earnings management in Jordan without consideration of these cultural factors and prior literature on EM in Jordan has failed to do this because of its focus on quantitative modeling and the Jones and Standard Jones models in particular.

### ***External Environmental Factors***

The semi-structured Interviews identified a number of external economic factors affecting internal control and corporate governance mechanisms in Jordan during the period of our study, including the revolutions in the Middle East, the financial crisis of 2008, and the IFRS adoption. The interviewees reported that they had responded to these external factors by improving internal control and corporate governance systems in an attempt to mitigate the risks that arose from them. These factors had also led some managers to follow different approaches in their accounting systems and move away from more traditional, paper-based systems to a more modern IT based system, with stronger internal controls. The changes also give more flexibility to the firms' managers to meet both government requirements and accounting standards simultaneously. Accordingly, these benefits arising from the firm's responses to challenging external factors are likely act to constrain earnings management.

### ***Motivations for Earnings Management***

The semi-structured Interviews uncover a number of motivations for earnings management that existed in the firms. These motivations include attempts to pay less customs fees to the government, attempts to reduce the firm's tax bill the belief that the firm would be able to attract more investors, and managers trying to increase their own earnings-based bonuses and compensation.

We are unable to relate the anecdotal evidence of earnings management used at the individual firm level to the earnings management estimates generated for each firm by the accruals models. The managers mainly reported motivations that might be associated with income-decreasing accruals, particularly the requirement to reduce the firm's taxation, but these firms are not identified by the accruals models as having high negative accruals. Similarly, the firms reporting income-increasing motives are also not identified by the accruals models as having high positive accruals. This may be due to the weakness in the accruals models in predicting EM in the context of Jordan or that the interviewees are possibly pessimistic in their responses and resulting in them over-estimate the influence of the tax system on their firm's accounting policy choices.

### ***Means of Earnings Management***

The managers interviewed revealed details of several accounting policies that were used in their firms for the purposes of earnings management. The common policies involved recognition of revenue, and manipulation of the bad debt provision and management expenses. Bad debt provisions proved to be a particular problem in Jordanian firms as their aged debtor ledgers contained some large balances that were as old as 5 years and the figures were therefore uncertain. Some of these debts arose from uncollected balances from customers in countries that had been affected by the recent revolutions and this leads to a high proportion of firms (17 %) receiving a going-concern qualification in their audit report. The pressure on performance created by these bad debts may well result in firms using earnings management to improve their reported earnings numbers and the bad debt provision provided them with a tool to achieve this. Understanding the effects of bad and doubtful debts on firms and their relationships with earnings management could be a motivation for the court and auditors to reconsider the policies relating to bad and doubtful debts, where one of the policies is for the firms to claim it for five years once they get a final decision from the court to deduct it from tax paid.

### ***Factors Facilitating Earnings Management***

Several factors identified in the semi-structured Interviews could facilitate EM, and these are: 1) the lack of an effective internal audit system in some firms. Despite the Corporate Governance Code in Jordan highlighting the importance the internal audit department in firms. In our case, a number of firms in our sample did not have an internal audit department.

The absence of this department in the firms may lead to weakness in internal control system and motivate firms' managers to engage in earnings management to achieve their desired incentives. 2) A long-term relationship with external auditors, especially those who have continuously acted as external auditors for a long time, would imply a closer relationship with top management, which means that auditors are less likely to challenge managers' decisions, and this could potentially lead them to be involved in earnings management. 3) CEO/chairman duality, where one person holds both roles, may cause a weakness in the internal control system in the firm and this weakness allows the managers to engage in earnings management.

A final conclusion from our semi-structured Interviews is that the stock market status of the listed firm (e.g. first, second, and third markets) is not an important motivating factor for earnings management in Jordan, despite the fact that existing literature has suggested that it is important.

#### **8.4 Combination of Quantitative and Qualitative Results**

This section discusses the possibilities for combining the results of our quantitative and qualitative analyses, in the light of the methodological issues that are discussed in chapter 4. To do this we consider whether our quantitative analysis and semi-structured Interviews complement each other, contradict each other, or whether they talk past each other. (Brown and Brignall, 2007). In general, there are few instances in which the results of our two approaches complement each other, although one instance is the specific accounting policies managers disclosed as the instruments of earnings management.

Our semi-structured Interviews have identified several instruments that could lead the managers to engage in EM including manipulation of the bad debt provision, management expenses and revenue. These terms are related directly to the PPY model variables, and this may be the reasons for the PPY model to stand out as a better model for detecting EM among Jordanian firms.

There are far more instances where the results from both methods appear to challenge each other. In particular, we did not see the earnings management described by the managers in the firms to reflect in the estimates for individual firms from the accruals models. For example, our semi-structured Interviews show that most of the firms' managers engaged in income-reducing earnings management in an attempt to pay less tax and less custom fees but our

quantitative findings do not show the same results. In addition the main corporate governance factors seem to be related to earnings management in the quantitative analysis were not given the same weight by interviewees.

It is possible that the views of the world underlying the quantitative analysis and the semi-structured Interviews are so fundamentally different that the results show that both methods are “talking past” each other. This would follow from the idea of paradigm incommensurability. Our semi-structured Interviews identified several cultural and environmental factors, which the interviewees believed are important in identifying EM in Jordanian firms and such factors are not included in the empirical models. The accruals models identify the relative size of abnormal accruals across the sample of companies and it may be that interviewees only possess knowledge of earnings management in their own company and have no idea about the size of their accruals relative to other firms. It is also possible that the accruals models do not accurately identify the firms using earnings management in Jordan. Overall, the semi-structured Interviews provide some significant insights into the mechanisms and motivations of earnings management in Jordanian firms but it is not possible to integrate the results of the semi-structured Interviews with the results of the quantitative models to give any coherent analysis. Although both approaches are investigating the same phenomenon, they clearly view it in fundamentally different ways.

### **8.5 Summary of Research Contributions**

Several contributions are made by this research, which are summarized as follows:

- This research is one of the first studies to use mixed methods (quantitative and qualitative) to investigate the association between earnings management and corporate governance mechanisms; most prior studies that examine similar issues have used only quantitative methods. This allows a richer study on the underlying processes and mechanism by which earnings management occurs.
- This research presents its results by investigating the effects of a number of different elements of internal control and corporate governance, including board characteristics, audit committee characteristics, external audit factors, and ownership structure. This differs from prior studies, which have considered only one aspect in isolation and taken a less holistic approach to corporate governance.
- As far as we know, this research is also the first to use Margin Models to measure earnings management in developing economies. The results of the accruals models

reveal that the Peasnell, Pope and Young model is better than the Standard Jones and Modified Jones models in detecting earnings management in this context and this information is likely to prove useful to other researchers wishing to study earnings management outside the context of developed economies, where capital markets are relatively more efficient and the corporate governance and accounting systems more well developed.

- This research is also one of a few studies in the world to examine the effect of internal control and corporate governance mechanisms on earnings management over a period of more than five years. The majority of studies are conducted over shorter time periods and therefore do not reflect change variables well, such as the movement of the firms up and down the different stock markets classification in Jordan.
- To the best of our knowledge, this study is the first to have used a categorical variable to reflect earnings management estimates. Existing studies use a binary classification of earnings management such as low/high. However, the nature of earnings management in practice is such that a binary classification does not reflect the presence of income-increasing and income-decreasing earnings management policies in the high category. This means that the direction of the relationship between the earnings management variable and other variables is impossible to predict, since income-increasing and income-decreasing policies work in opposite direction, which will reduce the significance of regression results. We have therefore constructed a variable to reflect three categories of earnings management high positive EM, high negative EM and low EM, to help use make predictions about the direction of the relationship between earnings management and the corporate governance factors.
- This research is also the first study in Middle East countries to explore the association between cultural factors and earnings management.
- This PhD used a new quantitative method (quadratic discriminant analysis) to investigate the relationship between earnings management and corporate governance mechanisms.

## **8.6 Research Limitations**

Jordan is one of the countries in the Middle East which faces several factors that might affect the conduct of social studies research, relating to aspects of culture, religion, social life and economic circumstances. Accordingly, the interview and secondary data of this research

faced some problems, which are described below:

### **Semi-structured Interviews Limitations**

First, there are difficulties in transcribing Arabic idioms into English; as all of our interviews were spoken, sometimes in colloquial Arabic, if we had translated everything literally then the resulting translation may have been unrepresentative, so the semi-structured Interviews had to be translated into language that preserved the idioms and these were not always easy to convey accurately.

Second, most of the interviewees initially expressed reservations about engaging in this research due to the sensitivity of the research subject; some of them commented that they could lose their jobs if they revealed any information about their firms' situations, whether financial or operational in nature. Despite this the responses they ultimately gave appeared to be frank and comprehensive, although given the subject matter there is still a possibility that responses may not have been entirely honest. It is possible that interviewees could not give bad impressions of their firms since they were scared of getting fired from their positions, so their responses may have been biased towards giving good impressions of their firms.

Third, the exploration of observations in our study was limited to listed industrial firms, and does not include financial and services firms which may have different characteristics from industrial firms. This means that the results may not apply to other types of firms.

Fourth, this research is based on a small number of semi-structured Interviews (12 firms) from the firms that are included in our quantitative method (56 firms), which means the results of semi-structured Interviews may not be applicable to other firms. This is a normal attribute of semi-structured Interviews research, which focuses on the depth of information rather than generalisability.

Finally, several semi-structured Interviews had more than one interviewee, which sometimes led to conflict between them as each of them tried to present his/her own opinion as the right one. This could be due to several reasons such as, 1) the differences between managers' educational backgrounds, for example in one of these firms one manager who had accounting expertise disagreed with the second manager who had a more general business background, 2) their culture, where some of them are from city and others from villages, in which case those from villages might tend to defer to their city colleagues and 3) some of them may

have felt the need to maintain their reputation in the firm when speaking in front of their colleagues. It may also be that the interviewees did not have the detailed knowledge of earnings management in the firm and its effects, particularly those whose backgrounds are not related to accounting.

### **Secondary Data Limitations**

First, extracting the financial data for 2012 took a long time, since this data did not exist on DataStream, where we usually collect data from the annual financial reports of Jordanian industrial firms that are published on the Amman Stock Market. Instead, the researcher referred to each firm's annual report separately, which was a time-consuming process. In addition, values for a large number of variables were missing from DataStream for different years; this in turn meant the researcher had to extract these values from annual reports, which was another time-consuming process. Many of the annual reports were not clear, which in turn led the researcher to contact the Amman Stock Market research office, which requires authorisation from the Amman Stock Market President, who was inaccessible.

Second, some variables were not available with net value on DataStream or the Amman Stock Market, such as gross account receivable, which meant undertaking further work using different formulae to get the net values for these variables, which was also a time-consuming process.

Third, in the context of earnings management, there are several accruals models which can detect earnings management practices, which means that there is no consensus in prior literature about any particular earnings management model. This led to some conflict between the results of the earnings management models that were used in this research (SJ, MJ and PPY Models).

Finally, this research used four control variables (CFO, ROA, FLVE and FSUB), and some control variables impacting earnings management and corporate governance mechanism may not be included in experimental models, which means that there could be other variables which might affect earnings management levels in Jordanian industrial firms that were not investigated by this research since the main aim of this PhD thesis is not to examine causality, but rather the relationship between earnings management and attributes of corporate governance mechanisms.



### **8.7 Future Research and Recommendations**

There are numerous areas that have not been covered by PhD research but which deserve further consideration in future studies. Our research has demonstrated that Standard Jones and Modified Jones models, which are models used by previous researchers, are not well-specified and are not very effective in identifying earnings management in Jordanian firms. The Peasnell, Pope and Young accruals model appears to be a better model in this context and our recommendation is, therefore, that more studies should be undertaken in the Middle East and possibly in other developing economies using the PPY model.

One of the findings of our detailed semi-structured Interviews is that it reveals a range of external economic and cultural factors that are associated with earnings management in Jordan. The semi-structured Interviews also uncovered a number of motivations for earnings management and the specific accounting techniques used by managers to achieve earnings management. This information would be particularly useful to the accounting profession, auditors and regulators in Jordan who have an interest in understanding and trying to constrain earnings management.

Furthermore, replication of this research methodology in developing economies is likely to provide in-depth information that allows these countries to explore the strengths of their corporate governance mechanisms and internal control systems in detecting earnings management, which will also allow countries with weak corporate governance mechanisms address these weaknesses and to, accordingly, reduce earnings management practices in their firms.

The corporate governance code in Jordan is still in the development stage, and most of the firms are still not complying with most of the rules. Future researchers could examine the effect of these departures from the code in more depth and study the effect on earnings management after the code has been fully developed and when more firms comply with it.

Finally, one other finding revealed from our interviews is that bad debt provision is an important issue that can affect earnings management and earnings quality issues in Jordanian industrial firms. This issue is important as it also leads to a high proportion of Jordanian firms receiving a going-concern qualification in their audit report. This problem is significant not only to earnings management but to accounting disclosure more generally and to firm performance. This problem could be an opportunity for future researchers to explore in their

future research as a separate issue.

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## **10.Appendices**

### **10.1 Appendix (1) Semi-structured Interview Questions**

**Loughborough University**

**School of Business and Economics**

**Accounting and Finance Department**

**Semi-Structured Interview 2013/2014**

**Dear Sir,**

**I am a PhD student** in the Accounting and Finance Department of the School of Business and Economics, Loughborough University, United Kingdom. I am currently examining **the relationship between internal control, corporate governance and accounting quality in Jordanian Industrial Firms**. Your answers to these interview questions will form an important part of my PhD research.

The questions for the interview are included overleaf and contain firstly, some general questions relating to your role in the company and secondly, questions related to internal control and monitoring processes within your company.

The companies have been chosen to represent a cross-section of Jordanian industrial companies. I would like to assure you that anything you say in these interviews will be treated as confidential. The research will be written up for my PhD thesis and will not include your name at any point. Any subsequent journal papers will include neither the names of individuals nor the organisations for which they work. You are welcome to see a copy of my thesis once it is written and I will also send you a copy of any articles, prior to submission to a journal, for your approval.

I hope that you will allow me to record this interview since I might be forget some points that will help me. The recordings will not be used by anyone other than me and will only be used for the purpose of this research project. They will not be published or distributed in any way. I will also produce an anonymised summary of the research findings for distribution to those who were interviewed. In this way, I hope the findings may prove useful to you in evaluating your internal control systems.

**Adel Almasarwah**

Email: adel\_almasarwah@yahoo.ca

bsaka@lboro.ac.uk

I am here to do interview with you regarding to my PhD work, Can I ask you several questions?

Can I start by knowing what is your position and role in this firm?

How long have you been in this position?

What is your previous experience?

Your qualifications?

Do you have any professional qualification?

Could you please describe the governance structure in your firm

How do you control and monitor business operations and the financial reporting process? Can you give some examples?

Why do you consider bad debt provision is an important issue? Do you think this issue leads to a problem for you firm?

Do you have a separate internal audit department?

How does the audit committee operate?

Are you following USA internal audit standards or UK internal audit standards?

Could you please describe the management structure?

Who are the board of directors' members? Can you give an example?

Could you please now tell me about the roles of board of directors?

Who is the CEO and what is their role?

Who is the CFO and what is their role?

Is your CEO and head of board of directors the same person?

Can you describe your organisation charts?

Who are your external auditors?

Do external auditors provide any services in addition to statutory audit?

What are your company's financial objectives?

What do you see as the main obstacles your company faces in achieving these objectives?

From your experience how do you avoid these obstacles?

How do government regulations affect your firm?

How does your company adapt its systems of management and control to changes in its external environment? Can you give some examples?

How does your firm adapt with external environmental factors such as, economic circumstances and government regulations?

Could you please explain how the firms might manage their profit?

Do the culture and religion affect your internal control system?

When did your company last change to a different stock market?

How does this change affect your company?

When did you last make any significant changes to your systems of control and monitoring?

What caused you to do this? What were they? How did they affect functional roles of individuals within the organisation? Can you give some examples?

Do you suggest any points that might help to solve any problems facing your internal control system?

Please explain in more detail the role of your audit committee in the governance of your company. How often do they meet?

Who do they report to?

Who reports to them?

What is the nature of their work?

Does the audit committee have a lot of power in your firm?

Does your audit committee have an effect on external auditor decisions? Can you give examples?



Who decides areas of investigation/projects for the audit committee?

What are the roles of government here to protect the small shareholders from big shareholders?

Please explain in more detail the role of the board of directors in the governance of your company.

How often do they meet?

Who reports to them?

How does the board of directors ensure the integrity of the internal control system?

How would you characterise the relationship between general manager/CFO and the internal audit function?

Do you have good relationship with the internal auditors?

What are the factors that you rely on to hire internal auditors?

Which financial school are you following (new school or traditional one)? Can you give example?

Could you please explain the organisation of your finance department?

How do you monitor and control the revenue account in your firm?

Can you give some examples how you control revenue account?

How do you monitor and control ageing accounts receivable in your firm? Can you give example?

What are the reasons that lead to more accounts receivable?

How do you monitor and control your expenses account in your firm? Can you give some examples?

When did you start applying IFRS in your company?

Has the adoption of IFRS caused any changes to your internal control systems?

Do you think that government regulation helps to improve your management system? Can you give some examples?

In your experience, are there any ways in which your firm could improve its internal control systems?

Can you describe the relationship between your internal control department and the external auditors?

What are the factors that you are rely on to hire external auditor?

Have you changed your external auditor recently? And if so why?

Could you please describe the tax system in Jordan and how it affects your firm?

Could you please tell me about the ownership concentration in your firm?

Could you please tell me more about cultural factors that might affect your firm? (Such as, tribal system, education, experience,).

**Thank you very much for your interest**

## 10.2 Appendix (2) Interviewee's Organisations Detail

The names of firms are hidden due to the sensitivity of this research subject, and we replace their names with pseudonyms (i.e. groups) according to the results of standard prediction error test according (Jones, 1991) and the classification of Amman stock markets.

### Group (1): Semi-structured Interviews (A)

This firm is a public firm, listed on Amman Stock Exchange early of 2000, operating within the Pharmaceutical and Medical Industries sector focusing on diversified manufacturing the human medicines, medical appliances and cosmetics manufacturing the human medicines, medical appliances and cosmetics. It was established 36 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>1,529</b>	<b>56</b>	<b>2</b>
<b>Companies</b>	<b>15</b>	<b>4</b>	<b>0</b>
<b>Mutual Funds</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>Institutions</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Joint</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Organizations</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Total</b>			

### Respondent Information for this Firm

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

NO	R. Position	Qualification	Professional Certificate Holding	Previous Position Experience
1	Financial Manager	M.A Accounting	JCPA <sup>1</sup>	9

### Firm (A) Classification in Amman stock Market from 2005 to 2013

interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
<b>2005</b>	<b>2</b>
<b>2006</b>	<b>2</b>
<b>2007</b>	<b>2</b>
<b>2008</b>	<b>1</b>
<b>2009</b>	<b>1</b>
<b>2010</b>	<b>1</b>
<b>2011</b>	<b>2</b>

<sup>1</sup> JCPA is Jordanian Certified Public Accountant.

	<b>2012</b>	<b>1</b>	
	<b>2013</b>	<b>1</b>	

### Group (1): Semi-structured Interviews study (B)

This firm is a public firm, listed on Amman Stock Exchange early of 2003, operating within the consumer durables and apparel sector focusing on home furnishings. It was established 34 years ago.

Shareholders Types

	<b>Jordanian Shareholders</b>	<b>Arab Shareholders</b>	<b>Foreign Shareholders</b>
<b>Individuals</b>	<b>256</b>	<b>2</b>	<b>2</b>
<b>Companies</b>	<b>9</b>	<b>6</b>	<b>1</b>
<b>Total</b>	<b>265</b>	<b>8</b>	<b>3</b>

### Respondent Information for (B) Firm

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

<b>NO</b>	<b>R. Position</b>	<b>Qualification</b>	<b>Previous Experience</b>
1	Financial and Administrative Manager.	M.A Accounting	35

### Firm (B) Classification in Amman stock Market from 2005 to 2013

Interview firm market during 2005 to 2013 in Amman stock market

<b>Year</b>	<b>Firm Market Classification</b>
<b>2005</b>	<b>1</b>
<b>2006</b>	<b>1</b>
<b>2007</b>	<b>2</b>
<b>2008</b>	<b>1</b>
<b>2009</b>	<b>2</b>
<b>2010</b>	<b>2</b>
<b>2011</b>	<b>2</b>
<b>2012</b>	<b>1</b>
<b>2013</b>	<b>2</b>

**Group (2): Semi-structured Interviews (A)**

This firm is a public firm, listed on Amman Stock Exchange in 2003, operating within the materials sector. It was established 38 years ago.

**Shareholders Types**

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>1,729</b>	<b>146</b>	<b>17</b>
<b>Companies</b>	<b>8</b>	<b>0</b>	<b>0</b>
<b>Mutual Funds</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Institutions</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>Joint</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Organizations</b>	<b>3</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>1744</b>	<b>146</b>	<b>17</b>

**Respondent Information for (A) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

**Respondent Personal Information**

NO	R. Position	Qualification	Previous Position Experience
1	Financial Manager	B.A Commerce	22

**Firm (A) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
2005	1
2006	1
2007	1
2008	1
2009	1
2010	1
2011	2
2012	1
2013	1

**Group (2): Semi-structured Interviews (B)**

This firm is a public firm, listed on Amman Stock Exchange in 2003, operating within the chemical sector. It was established 23 years ago.

**Shareholders Types**

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>1,854</b>	<b>69</b>	<b>3</b>
<b>Companies</b>	<b>27</b>	<b>3</b>	<b>0</b>
<b>Mutual Funds</b>	<b>2</b>	<b>0</b>	<b>1</b>
<b>Total</b>	<b>1,883</b>	<b>72</b>	<b>4</b>

**Respondent Information for (B) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

**Respondent Personal Information**

NO	R. Position	Qualification	Previous Position Experience
1	Financial Manager	M.A Accounting	20

**Firm (B) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
<b>2005</b>	<b>1</b>
<b>2006</b>	<b>1</b>
<b>2007</b>	<b>1</b>
<b>2008</b>	<b>1</b>
<b>2009</b>	<b>2</b>
<b>2010</b>	<b>1</b>
<b>2011</b>	<b>1</b>
<b>2012</b>	<b>2</b>
<b>2013</b>	<b>2</b>

**Group (3): Semi-structured Interviews (A)**

This firm is a public firm, listed on Amman Stock Exchange in 2003, operating within the materials sector focusing on diversified metals and mining. It was established 33 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>679</b>	<b>40</b>	<b>8</b>
<b>Companies</b>	<b>12</b>	<b>0</b>	<b>0</b>
<b>Mutual Funds</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Government</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>693</b>	<b>40</b>	<b>8</b>

**Respondent Information for (A) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

Respondent Personal Information

NO	R. Position	Qualification	Previous Position Experience
1	Financial Manager	M.A Accounting	22

**Firm (A) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
<b>2005</b>	<b>1</b>
<b>2006</b>	<b>1</b>
<b>2007</b>	<b>2</b>
<b>2008</b>	<b>2</b>
<b>2009</b>	<b>1</b>
<b>2010</b>	<b>2</b>
<b>2011</b>	<b>2</b>
<b>2012</b>	<b>2</b>
<b>2013</b>	<b>2</b>

**Group (3): Semi-structured Interviews (B)**

This firm is a public firm, listed on Amman Stock Exchange in October 2003 this firm operated under paper and cardboard industries. It was established 40 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>735</b>	<b>735</b>	<b>17</b>
<b>Companies</b>	<b>11</b>	<b>11</b>	<b>0</b>
<b>Mutual Funds</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>Institutions</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>Joint</b>	<b>2</b>	<b>2</b>	<b>0</b>
<b>Organizations</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>Total</b>	<b>751</b>	<b>751</b>	<b>17</b>

**Respondent Information for (B) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, and position).

Respondent Personal Information

NO	R. Position	Qualification	Previous Position Experience
1	Financial Manager	M.A Accounting	9
2	Internal Auditor Manger	M.A International Financial Business	12

**Firm (B) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
<b>2005</b>	<b>1</b>
<b>2006</b>	<b>1</b>
<b>2007</b>	<b>2</b>
<b>2008</b>	<b>2</b>
<b>2009</b>	<b>1</b>
<b>2010</b>	<b>2</b>
<b>2011</b>	<b>2</b>
<b>2012</b>	<b>2</b>
<b>2013</b>	<b>2</b>



**Group (4): Semi-structured Interviews (A)**

This firm is a public firm, listed on Amman Stock Exchange in 2005. This firm operated under materials sector. It was established 18 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>140</b>	<b>8</b>	<b>1</b>
<b>Companies</b>	<b>15</b>	<b>0</b>	<b>0</b>
<b>Mutual Funds</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>156</b>	<b>8</b>	<b>1</b>

**Respondent Information for (A) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

NO	R. Position	Qualification	Previous Position Experience
1	Financial and Administrative Manager	B.A Accounting	11

**Firm (A) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
2005	2
2006	2
2007	1
2008	1
2009	1
2010	2
2011	2
2012	2
2013	2

**Group (4): Semi-structured Interviews (B)**

This firm is a public firm, listed on Amman Stock Exchange in 2004. This firm operated under packaging and printing sector. It was established 19 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
Individuals	240	7	5
Companies	10	3	0
Mutual Funds	1	0	0
Total	251	10	5

**Respondent Information for (B) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

NO	R. Position	Qualification	Previous Position Experience
1	Financial Manager	B.A Accounting	10

**Firm (B) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
2005	1
2006	1
2007	1
2008	1
2009	1
2010	2
2011	2
2012	2
2013	2

**Group (5): Semi-structured Interviews (A)**

This firm is a public firm, listed on Amman Stock Exchange early of 2000, operating within the Pharmaceutical and Medical Industries. It was established 36 years ago.

**Shareholders Types**

	<b>Jordanian Shareholders</b>	<b>Arab Shareholders</b>	<b>Foreign Shareholders</b>
<b>Individuals</b>	<b>619</b>	<b>13</b>	<b>4</b>
<b>Companies</b>	<b>11</b>	<b>0</b>	<b>0</b>
<b>Mutual Funds</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>631</b>	<b>13</b>	<b>4</b>

**Respondent Information for (A) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

**Respondent Personal Information**

<b>NO</b>	<b>R. Position</b>	<b>Qualification</b>	<b>Previous Position Experience</b>
1	Financial Management Manager	M.A Accounting	33

**Firm (A) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

<b>Year</b>	<b>Firm Market Classification</b>
<b>2005</b>	<b>2</b>
<b>2006</b>	<b>2</b>
<b>2007</b>	<b>2</b>
<b>2008</b>	<b>1</b>
<b>2009</b>	<b>1</b>
<b>2010</b>	<b>1</b>
<b>2011</b>	<b>1</b>
<b>2012</b>	<b>2</b>
<b>2013</b>	<b>2</b>

**Group (6): Semi-structured Interviews (A)**

This firm is a public firm, listed on Amman Stock Exchange in 2003, operating within Textiles, Leathers and Clothings Industries. It was established 50 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>940</b>	<b>65</b>	<b>4</b>
<b>Companies</b>	<b>28</b>	<b>2</b>	<b>1</b>
<b>Mutual Funds</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>Institutions</b>	<b>3</b>	<b>0</b>	<b>0</b>
<b>Governments</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Joint</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Organizations</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>977</b>	<b>67</b>	<b>5</b>

**Respondent Information for (A) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

NO	R. Position	Qualification	Professional Certificate Holding	Previous Position Experience
1	General Manager	B.A Accounting	N/A	49
2	Financial Manager	B.A Accounting	JCPA	40

**Firm (A) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
<b>2005</b>	<b>1</b>
<b>2006</b>	<b>1</b>
<b>2007</b>	<b>1</b>
<b>2008</b>	<b>1</b>
<b>2009</b>	<b>1</b>
<b>2010</b>	<b>2</b>
<b>2011</b>	<b>2</b>
<b>2012</b>	<b>1</b>
<b>2013</b>	<b>1</b>

**Group (7): Semi-structured Interviews (A)**

This firm is a public firm, listed on Amman Stock Exchange early of 2003, operating within Mining sector. It was established for more 60 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>3,042</b>	<b>390</b>	<b>58</b>
<b>Companies</b>	<b>45</b>	<b>15</b>	<b>11</b>
<b>Mutual Funds</b>	<b>16</b>	<b>2</b>	<b>25</b>
<b>Institutions</b>	<b>4</b>	<b>0</b>	<b>2</b>
<b>Governments</b>	<b>1</b>	<b>2</b>	<b>0</b>
<b>Organizations</b>	<b>3</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>3,111</b>	<b>409</b>	<b>96</b>

**Respondent Information for (A) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

NO	R. Position	Qualification	Professional Certificate Holding	Previous Position Experience
1	Executive Financial Manager	M.A Accounting	JCPA	40

**Firm (A) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
<b>2005</b>	<b>1</b>
<b>2006</b>	<b>1</b>
<b>2007</b>	<b>1</b>
<b>2008</b>	<b>1</b>
<b>2009</b>	<b>1</b>
<b>2010</b>	<b>1</b>
<b>2011</b>	<b>1</b>
<b>2012</b>	<b>1</b>
<b>2013</b>	<b>1</b>

**Group (8): Semi-structured Interviews (A)**

This firm is a public firm, listed on Amman Stock Exchange early of 2003, operating within the mining industries. It was established 58 years ago.

Shareholders Types

	Jordanian Shareholders	Arab Shareholders	Foreign Shareholders
<b>Individuals</b>	<b>1,174</b>	<b>137</b>	<b>21</b>
<b>Companies</b>	<b>18</b>	<b>5</b>	<b>10</b>
<b>Mutual Funds</b>	<b>5</b>	<b>1</b>	<b>20</b>
<b>Institutions</b>	<b>3</b>	<b>0</b>	<b>1</b>
<b>Governments</b>	<b>1</b>	<b>6</b>	<b>0</b>
<b>Organizations</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>1,202</b>	<b>149</b>	<b>52</b>

**Respondent Information for (A) Firm**

Below Table provides all respondent personal information (e.g. qualification, experience, current position and previous position).

Respondent Personal Information

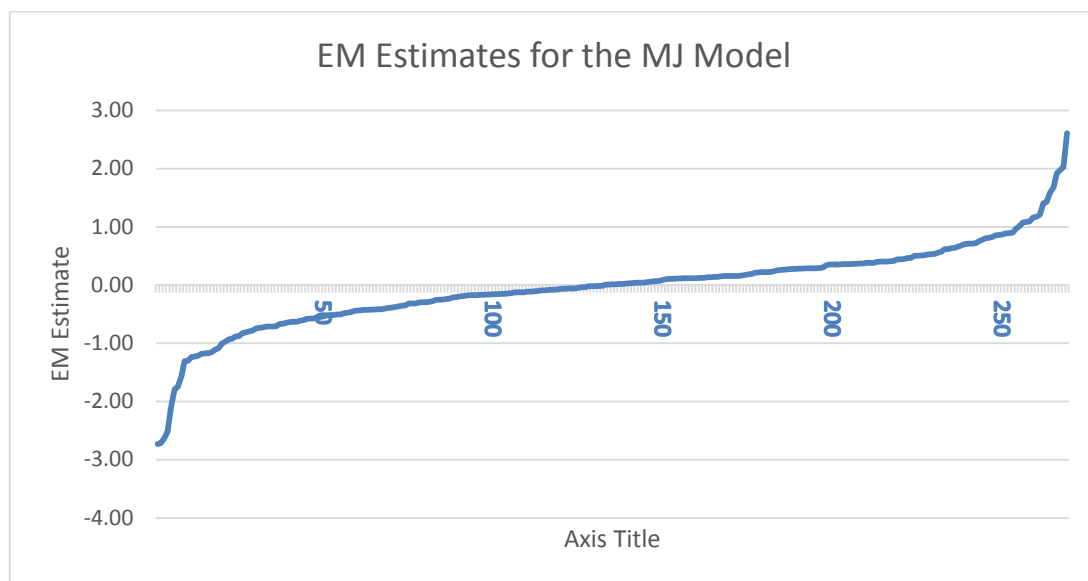
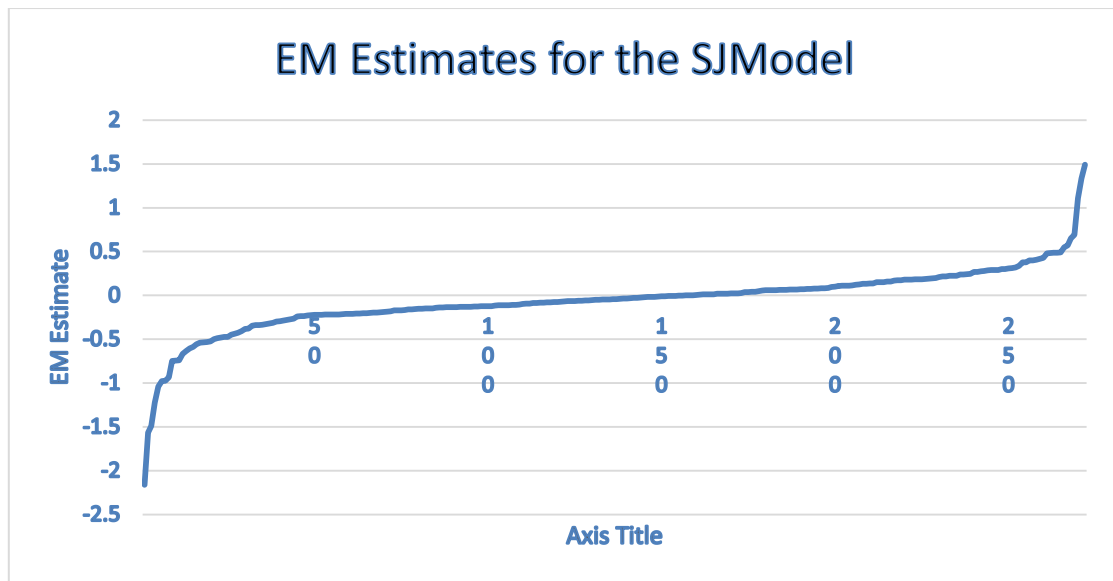
NO	R. Position	Qualification	Professional Certificate Holding	Previous Position Experience
1	Internal Audit Manager	B.A Accounting	CPA	15
2	Financial Manager	M.A Accounting	JCPA	10

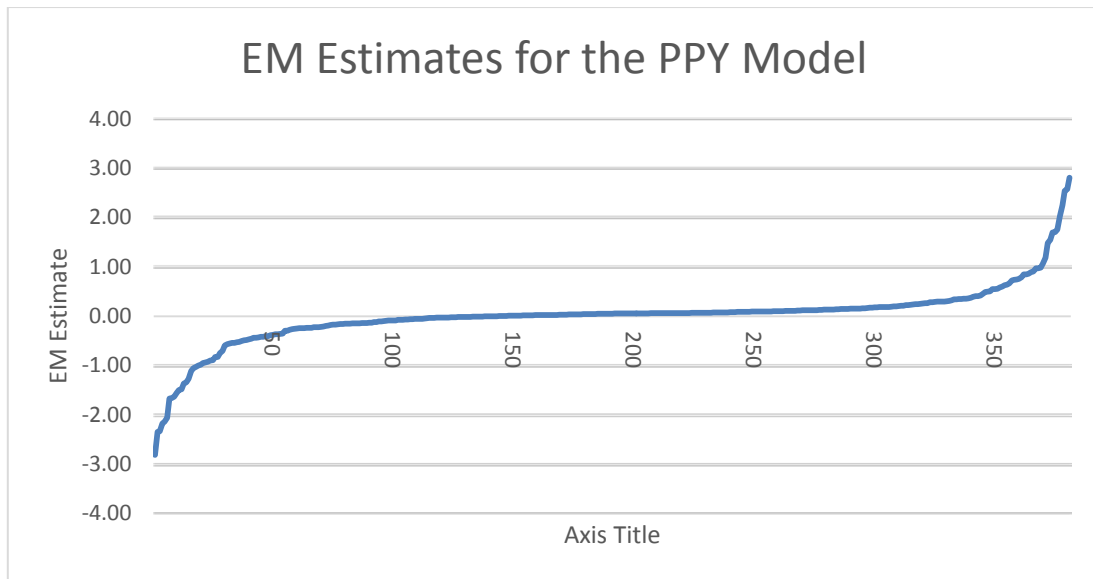
**Firm (A) Classification in Amman stock Market from 2005 to 2013**

Interview firm market during 2005 to 2013 in Amman stock market

Year	Firm Market Classification
2005	1
2006	1
2007	1
2008	2
2009	2
2010	2
2011	2
2012	1
2013	1

**10.3 Appendix (3) Earnings Management Values Curves for all Sample Models (SJ, MJ, and PPY)**









## Heteroskedasticity Results for all Models

<b>Breusch-Pagan/Cook-Weisberg test for H0: Constant variance Variables: fitted values of V</b>			
	<b>First Model (SJ)</b>	<b>Second Model (MJ)</b>	<b>Third Model (PPY)</b>
<b>Chi2(1)</b>	<b>302.75</b>	<b>300.23</b>	<b>694.33</b>
<b>Prob &gt; chi2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

## GLS Regression Results for the SJ Model

ACCSJ (N, 273)	Exp Signe	Coef.	z	P>z
<b>Board of Directors Characteristics</b>				
<i>BSIZE</i>	-	-0.004	-0.320	
<i>BMEETING</i>	-	-0.021	-0.520	
<i>BOUSIDE</i>	-	-0.030	-0.220	
<i>BINDEPEND</i>	-	0.011	0.200	
<b>Audit Committee Characteristics</b>				
<i>ACSIZE</i>	-	-0.050	-1.040	
<i>ACMEETING</i>	-	0.039	1.050	
<i>ACINDEPEND</i>	-	-0.039	-0.710	
<i>ACEPERTISE</i>	-	0.070	0.760	
<b>External Audit Factors</b>				
<i>EXAREPUT</i>	-	0.067	1.020	
<i>EXATENURE</i>	+	0.033	0.620	
<i>EXAOPIN</i>	+	0.127	1.860	*
<i>EXACHANG</i>	-	-0.055	-0.790	
<b>Ownership Structures</b>				
<i>MANOWN</i>	-	-0.030	-0.260	
<i>IOWNFOR</i>	-	-0.188	-1.310	
<i>IOWNLOC</i>	-	-0.023	-1.010	
<i>INDOWNF</i>	+	-0.247	-1.250	
<i>INDOWNL</i>	+	0.063	2.550	**
<i>FAMOWN</i>	-	-0.252	-1.780	*
<i>BLOCKOWN</i>	-	0.024	0.310	
<i>STATOWN</i>	-	-0.117	-0.470	
<b>Control Variables</b>				
<i>ROA</i>	+	0.983	4.280	***
<i>CFOA</i>	-	-0.861	-4.030	***
<i>FLVE</i>	+	0.749	2.590	***
<i>FSUB</i>	-	-0.040	-0.610	
Adj R <sup>2</sup> between	<b>82%</b>			
Adj R <sup>2</sup> overall	<b>89%</b>			
Wild Chi2	<b>1983***</b>			
<p><i>ACCSJ</i> is Discretionary accruals (Standard Jones Model), <i>ACCMJ</i> is Discretionary accruals (Modified Jones Model), <i>WAPPY</i> is Working Capital Accruals, <i>BSIZE</i> is Board of Director Size, <i>BMEETING</i> is Number of the Board of Directors, <i>BOUSIDE</i> is Board of Director Outsiders, and <i>BINDEPEND</i> is Board of Director Independent. <i>ACSIZE</i> is Audit Committee Size, <i>ACMEETING</i> is Number of Audit Committee Meetings, <i>ACINDEPEND</i> is Audit Committee Independent, and <i>ACEPERTISE</i> is Audit Committee Expertise. <i>EXAREPUT</i> is External Auditor Reputation, <i>EXATENURE</i> is External Audit Tenure, <i>EXAOPIN</i> is External Audit Opinion, and <i>EXACHANG</i> is External Audit Change. <i>MANOWN</i> is Managerial Shareholders, <i>IOWNFOR</i> is Institutional Shareholders Foreign, <i>IOWNLOC</i> is Institutional Shareholders Local, <i>INDOWNF</i> is Individual Foreign, <i>INDOWNL</i> is Individual Local, <i>FAMOWN</i> is Family Ownership, <i>BLOCKOWN</i> is Blockholders Ownership, and <i>STATOWN</i> is State Ownership. <i>FSUB</i> is Firm Subsidiary, <i>FLVE</i> is Financial Leverage, <i>ROA</i> is Firm Performance, and <i>CFOA</i> is Cash Flow from Operating Activities.</p>				

Notes: indicate significant at \*\*\* 0.001, \*\* 0.05, \* 0.10

## GLS Regression Results for the MJ Model

ACCMJ (N, 273)	Exp Signe	Coef.	z	P>z
<b>Board of Directors Characteristics</b>				
<i>BSIZE</i>	-	-0.001	-0.040	
<i>BMEETING</i>	-	-0.008	-0.090	
<i>BOUTSIDE</i>	-	-0.159	-0.490	
<i>BINDEPEND</i>	-	0.038	0.290	
<b>Audit Committee Characteristics</b>				
<i>ACSIZE</i>	-	-0.187	-1.660	*
<i>ACMEETING</i>	-	0.156	1.820	*
<i>ACINDEPEND</i>	-	-0.090	-0.700	
<i>ACEPERTISE</i>	-	-0.103	-0.470	
<b>External Audit Factors</b>				
<i>EXAREPUT</i>	-	0.021	0.130	
<i>EXATENURE</i>	+	0.103	0.850	
<i>EXAOPIN</i>	+	0.120	0.750	
<i>EXACHANG</i>	-	-0.307	-1.890	*
<b>Ownership Structures</b>				
<i>MANOWN</i>	-	-0.178	-0.650	
<i>IOWNFOR</i>	-	-0.408	-1.180	
<i>IOWNLOC</i>	-	-0.060	-1.090	
<i>INDOWNF</i>	+	-0.328	-0.700	
<i>INDOWNL</i>	+	-0.248	-4.280	***
<i>FAMOWN</i>	-	-0.116	-0.340	
<i>BLOCKOWN</i>	-	-0.103	-0.550	
<i>STATOWN</i>	-	-0.726	-1.210	
<b>Control Variables</b>				
<i>ROA</i>	+	4.356	8.180	***
<i>CFOA</i>	-	-0.824	-1.650	*
<i>FLVE</i>	+	1.292	1.890	*
<i>FSUB</i>	-	-0.167	-1.070	
Adj R <sup>2</sup> between	<b>26%</b>			
Adj R <sup>2</sup> overall	<b>39.5%</b>			
Wild Chi2	<b>164.93***</b>			
<p><i>ACCSJ</i> is Discretionary accruals (Standard Jones Model), <i>ACCMJ</i> is Discretionary accruals (Modified Jones Model), <i>WAPPY</i> is Working Capital Accruals, <i>BSIZE</i> is Board of Director Size, <i>BMEETING</i> is Number of the Board of Directors, <i>BOUTSIDE</i> is Board of Director Outsiders, and <i>BINDEPEND</i> is Board of Director Independent. <i>ACSIZE</i> is Audit Committee Size, <i>ACMEETING</i> is Number of Audit Committee Meetings, <i>ACINDEPEND</i> is Audit Committee Independent, and <i>ACEPERTISE</i> is Audit Committee Expertise. <i>EXAREPUT</i> is External Auditor Reputation, <i>EXATENURE</i> is External Audit Tenure, <i>EXAOPIN</i> is External Audit Opinion, and <i>EXACHANG</i> is External Audit Change. <i>MANOWN</i> is Managerial Shareholders, <i>IOWNFOR</i> is Institutional Shareholders Foreign, <i>IOWNLOC</i> is Institutional Shareholders Local, <i>INDOWNF</i> is Individual Foreign, <i>INDOWNL</i> is Individual Local, <i>FAMOWN</i> is Family Ownership, <i>BLOCKOWN</i> is Blockholders Ownership, and <i>STATOWN</i> is State Ownership. <i>FSUB</i> is Firm Subsidiary, <i>FLVE</i> is Financial Leverage, <i>ROA</i> is Firm Performance, and <i>CFOA</i> is Cash Flow from Operating Activities.</p>				

Notes: indicate significant at \*\*\* 0.001, \*\* 0.05, \* 0.10

## GLS Regression Results for the PPY Model

WAPPY (N, 392)	Exp Signe	Coef.	z	P>z
<b>Board of Directors Characteristics</b>				
<i>BSIZE</i>	-	-0.001	-0.040	
<i>BMEETING</i>	-	-0.005	-0.050	
<i>BOUTSIDE</i>	-	-0.120	-0.360	
<i>BINDEPEND</i>	-	0.001	0.010	
<b>Audit Committee Characteristics</b>				
<i>ACSIZE</i>	-	-0.015	-0.130	
<i>ACMEETING</i>	-	-0.066	-0.710	
<i>ACINDEPEND</i>	-	0.189	1.560	
<i>ACEXPERTISE</i>	-	0.183	0.820	
<b>External Audit Factors</b>				
<i>EXAREPUT</i>	-	-0.153	-1.120	
<i>EXATENURE</i>	+	0.053	0.430	
<i>EXAOPIN</i>	+	-0.164	-0.960	
<i>EXACHANG</i>	-	0.147	0.850	
<b>Ownership Structures</b>				
<i>MANOWN</i>	-	0.414	1.710	*
<i>IOWNFOR</i>	-	0.231	0.720	
<i>IOWNLOC</i>	-	-0.028	-0.470	
<i>INDOWNF</i>	+	-0.559	-1.100	
<i>INDOWNL</i>	+	-0.224	-3.660	***
<i>FAMOWN</i>	-	0.046	0.170	
<i>BLOCKOWN</i>	-	0.025	0.140	
<i>STATOWN</i>	-	-0.350	-0.570	
<b>Control Variables</b>				
<i>ROA</i>	+	1.014	1.740	*
<i>CFOA</i>	-	-2.143	-4.310	***
<i>FLVE</i>	+	-1.521	-2.190	**
<i>FSUB</i>	-	-0.121	-0.810	
Adj R <sup>2</sup> between	20%			
Adj R <sup>2</sup> overall	10%			
Wild Chi2	39**			
<p><i>ACCSJ</i> is Discretionary accruals (Standard Jones Model), <i>ACCMJ</i> is Discretionary accruals (Modified Jones Model), <i>WAPPY</i> is Working Capital Accruals, <i>BSIZE</i> is Board of Director Size, <i>BMEETING</i> is Number of the Board of Directors, <i>BOUTSIDE</i> is Board of Director Outsiders, and <i>BINDEPEND</i> is Board of Director Independent. <i>ACSIZE</i> is Audit Committee Size, <i>ACMEETING</i> is Number of Audit Committee Meetings, <i>ACINDEPEND</i> is Audit Committee Independent, and <i>ACEXPERTISE</i> is Audit Committee Expertise. <i>EXAREPUT</i> is External Auditor Reputation, <i>EXATENURE</i> is External Audit Tenure, <i>EXAOPIN</i> is External Audit Opinion, and <i>EXACHANG</i> is External Audit Change. <i>MANOWN</i> is Managerial Shareholders, <i>IOWNFOR</i> is Institutional Shareholders Foreign, <i>IOWNLOC</i> is Institutional Shareholders Local, <i>INDOWNF</i> is Individual Foreign, <i>INDOWNL</i> is Individual Local, <i>FAMOWN</i> is Family Ownership, <i>BLOCKOWN</i> is Blockholders Ownership, and <i>STATOWN</i> is State Ownership. <i>FSUB</i> is Firm Subsidiary, <i>FLVE</i> is Financial Leverage, <i>ROA</i> is Firm Performance, and <i>CFOA</i> is Cash Flow from Operating Activities.</p>				

Notes: indicate significant at \*\*\* 0.001, \*\* 0.05, \* 0.10

GLS Regression Results for the Discretionary Revenue Model (Gross Accounts Receivable)<sup>1</sup>

GAR (N, 336)	Exp Signe	Coef.	z	P>z
<b>Board of Directors Characteristics</b>				
<i>BSIZE</i>	-	-0.018	0.576	
<i>BMEETING</i>	-	0.139	0.191	
<i>BOUTSIDE</i>	-	-0.002	0.980	
<i>BINDEPEND</i>	-	0.053	0.705	
<b>Audit Committee Characteristics</b>				
<i>ACSIZE</i>	-	0.018	0.897	
<i>ACMEETING</i>	-	0.000	0.998	
<i>ACINDEPEND</i>	-	-0.006	0.964	
<i>ACEXPERTISE</i>	-	-0.080	0.754	
<b>External Audit Factors</b>				
<i>EXAREPUT</i>	-	0.026	0.863	
<i>EXATENURE</i>	+	0.114	0.441	
<i>EXAOPIN</i>	+	0.171	0.399	
<i>EXACHANG</i>	-	0.508	0.014	**
<b>Ownership Structures</b>				
<i>MANOWN</i>	-	-0.057	0.834	
<i>IOWNFOR</i>	-	-0.075	0.835	
<i>IOWNLOC</i>	-	0.009	0.890	
<i>INDOWNF</i>	+	0.400	0.474	
<i>INDOWNL</i>	+	-0.125	0.757	
<i>FAMOWN</i>	-	0.006	0.985	
<i>BLOCKOWN</i>	-	0.133	0.516	
<i>STATOWN</i>	-	0.028	0.968	
<b>Control Variables</b>				
<i>ROA</i>	+	-0.729	0.311	
<i>CFOA</i>	-	0.762	0.198	
<i>FLVE</i>	+	0.373	0.661	
<i>FSUB</i>	-	-0.067	0.699	
Adj R <sup>2</sup> between	7.4%			
Adj R <sup>2</sup> overall	3.9%			
Wild Chi2	12.52			
<p><i>ACCSJ</i> is Discretionary accruals (Standard Jones Model), <i>ACCMJ</i> is Discretionary accruals (Modified Jones Model), <i>WAPPY</i> is Working Capital Accruals, <i>BSIZE</i> is Board of Director Size, <i>BMEETING</i> is Number of the Board of Directors, <i>BOUTSIDE</i> is Board of Director Outsiders, and <i>BINDEPEND</i> is Board of Director Independent. <i>ACSIZE</i> is Audit Committee Size, <i>ACMEETING</i> is Number of Audit Committee Meetings, <i>ACINDEPEND</i> is Audit Committee Independent, and <i>ACEXPERTISE</i> is Audit Committee Expertise. <i>EXAREPUT</i> is External Auditor Reputation, <i>EXATENURE</i> is External Audit Tenure, <i>EXAOPIN</i> is External Audit Opinion, and <i>EXACHANG</i> is External Audit Change. <i>MANOWN</i> is Managerial Shareholders, <i>IOWNFOR</i> is Institutional Shareholders Foreign, <i>IOWNLOC</i> is Institutional Shareholders Local, <i>INDOWNF</i> is Individual Foreign, <i>INDOWNL</i> is Individual Local, <i>FAMOWN</i> is Family Ownership, <i>BLOCKOWN</i> is Blockholders Ownership, and <i>STATOWN</i> is State Ownership. <i>FSUB</i> is Firm Subsidiary, <i>FLVE</i> is Financial Leverage, <i>ROA</i> is Firm Performance, and <i>CFOA</i> is Cash Flow from Operating Activities.</p>				

Notes: indicate significant at \*\*\* 0.001, \*\* 0.05, \* 0.10

<sup>1</sup> This regression showed the weak results among corporate governance models (SJ, MJ, PPY, and discretionary revenue models).

## 10.5 Appendix (5) Model Specification Tests

### *SJ Model*

. regress TAA1 A1 REVA1 PPEA1, noconstant

Source	SS	df	MS			
Model	5.9053945	3	1.96846483	Number of obs =	273	
Residual	33.8491636	270	.125367273	F( 3, 270) =	15.70	
Total	39.7545581	273	.145621092	Prob > F =	0.0000	
				R-squared =	0.1485	
				Adj R-squared =	0.1391	
				Root MSE =	.35407	

TAA1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
A1	587.6166	90.06349	6.52	0.000	410.3006	764.9326
REVA1	.1571627	.0920304	1.71	0.089	-.0240256	.3383511
PPEA1	-.132111	.0280568	-4.71	0.000	-.1873489	-.0768731

. linktest

Source	SS	df	MS			
Model	20.7324097	2	10.3662048	Number of obs =	273	
Residual	18.9616785	270	.070228439	F( 2, 270) =	147.61	
Total	39.6940882	272	.145934148	Prob > F =	0.0000	
				R-squared =	0.5223	
				Adj R-squared =	0.5188	
				Root MSE =	.26501	

TAA1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
_hat	-.4261994	.1470732	-2.90	0.004	-.7157555	-.1366434
_hatsq	3.718978	.2554299	14.56	0.000	3.216091	4.221866
_cons	-.1019887	.0176061	-5.79	0.000	-.1366514	-.067326

### MJ Model

. regress TAA1 A1 REVARA1 PPEA1, noconstant

Source	SS	df	MS			
Model	25.0901948	3	8.36339827	Number of obs =	273	
Residual	14.6643633	270	.054312457	F( 3, 270) =	153.99	
Total	39.7545581	273	.145621092	Prob > F =	0.0000	
				R-squared =	0.6311	
				Adj R-squared =	0.6270	
				Root MSE =	.23305	

TAA1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
A1	12.24712	65.94668	0.19	0.853	-117.588	142.0822
REVARA1	-.7185316	.0378719	-18.97	0.000	-.7930935	-.6439697
PPEA1	-.0289488	.018861	-1.53	0.126	-.0660822	.0081847

. linktest

Source	SS	df	MS			
Model	34.5143446	2	17.2571723	Number of obs =	273	
Residual	5.17974361	270	.019184236	F( 2, 270) =	899.55	
Total	39.6940882	272	.145934148	Prob > F =	0.0000	
				R-squared =	0.8695	
				Adj R-squared =	0.8685	
				Root MSE =	.13851	

TAA1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
_hat	.0640524	.0503701	1.27	0.205	-.0351158	.1632205
_hatsq	.3074277	.0138268	22.23	0.000	.2802055	.3346498
_cons	-.042291	.0085873	-4.92	0.000	-.0591977	-.0253844

### PPY Model

. regress WCA AD CR, noconstant

Source	SS	df	MS			
Model	3.7852e+10	2	1.8926e+10	Number of obs =	392	
Residual	7.1164e+09	390	18247139.7	F( 2, 390) =	1037.20	
Total	4.4968e+10	392	114715168	Prob > F =	0.0000	
				R-squared =	0.8417	
				Adj R-squared =	0.8409	
				Root MSE =	4271.7	

WCA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AD	.9986677	.0244401	40.86	0.000	.9506168	1.046719
CR	-.9681847	.0247004	-39.20	0.000	-1.016747	-.919622

. linktest

Source	SS	df	MS			
Model	3.7340e+10	2	1.8670e+10	Number of obs =	392	
Residual	7.0911e+09	389	18229087	F( 2, 389) =	1024.20	
Total	4.4432e+10	391	113635797	Prob > F =	0.0000	
				R-squared =	0.8404	
				Adj R-squared =	0.8396	
				Root MSE =	4269.6	

WCA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
_hat	.9926501	.0340374	29.16	0.000	.9257299	1.05957
_hatsq	1.31e-07	3.13e-07	0.42	0.675	-4.84e-07	7.47e-07
_cons	-237.151	217.967	-1.09	0.277	-665.6919	191.3899



### Discretionary Revenue Model (Gross Accounts Receivable)

. regress GR Al S P

Source	SS	df	MS	Number of obs =	332
Model	2230.74397	3	743.581323	F( 3, 328) =	36.55
Residual	6672.56188	328	20.3431765	Prob > F =	0.0000
				R-squared =	0.2506
				Adj R-squared =	0.2437
Total	8903.30585	331	26.898205	Root MSE =	4.5103

GR	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Al	-83.77873	12.73506	-6.58	0.000	-108.8314 -58.72603
S	.0889446	.0118625	7.50	0.000	.0656084 .1122808
P	.0402324	.0085996	4.68	0.000	.023315 .0571497
_cons	.0951255	.2479373	0.38	0.701	-.3926225 .5828734

. linktest

Source	SS	df	MS	Number of obs =	332
Model	3355.97731	2	1677.98866	F( 2, 329) =	99.52
Residual	5547.32854	329	16.861181	Prob > F =	0.0000
				R-squared =	0.3769
				Adj R-squared =	0.3731
Total	8903.30585	331	26.898205	Root MSE =	4.1062

GR	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
_hat	1.214924	.0908335	13.38	0.000	1.036236 1.393611
_hatsq	.0364372	.0044603	8.17	0.000	.0276628 .0452115
_cons	-.2856277	.2286162	-1.25	0.212	-.7353617 .1641062