THE UNIVERSITY OF HULL

Earnings Management, Agency Costs and Corporate Governance: Evidence from Egypt

being a Thesis submitted for the degree of
Doctor of Philosophy
in the University of Hull

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November 2010

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ACKNOWLEDGEMENTS

First of all, all praise and thanks are Allah's, the Lord of the mankind, The Most Gracious and the Most Merciful for giving me the power to complete this work.

I gratefully acknowledge the significant contribution of several people to this thesis. First among these are my supervisors, Mr. Jon Simon and Professor Aydin Ozkan. I would like to express my sincerest appreciation to them for their guidance, encouragement and support throughout the development of this thesis. Their insights comments, understanding and suggestions often provoked superior quality in my research work. With their office door open for me, they were always happy to talk about my research and spend countless hours encouraging me to develop my ideas and to think critically. I cannot adequately express my gratitude to them.

Most of all, I am forever sincerely grateful to my parents for their unconditional love and support throughout my often seemingly endless educational years. I will be forever grateful for their considerable sacrifices and all they have done to ensure my success in my study and in life. I would like to thank them especially for instilling in me the importance of knowledge and hard work.

This work could not have possible without the exceptional patience and unwavering support I have received from my wife, my daughters, Basant and Malak, and my son, Omar. They are a constant source of encouragement and support. My family gave me the strength to pursue this seemingly endless task. I am grateful to all of them for their tremendous confidence in my potential and for always providing the love that inspired me. Their emotional support and encouragement is directly responsible for overcoming hard times throughout my doctoral journey. My brother and sisters, too, have all been a great support and I deeply thank them for always being there.

Generous financial support from the Egyptian Ministry of Higher Education is also greatly appreciated. I want to thank the staff in Department of Accounting and Finance at the University of Hull for their useful comments. I am indebted to my friends and colleagues for their moral support and encouragement that helped me to overcome many obstacles in the process of completing my thesis. My special appreciation also goes to all my professors at the Faculty of Commerce in the University of Tanta for their continuous encouragement.

DEDICATION

To the memory of my father and to my mother, as the slightest return for your love, encouragement and inspiration.

ABSTRACT

The main purpose of this study is to provide further insights into the potential influence of a number of internal and external governance mechanisms in constraining earnings management and determining the agency costs level. In addition, this study attempts to enhance the understanding of a number of issues relating to ownership structure and corporate governance in an emerging country setting. The international corporate collapse and accounting scandals surrounding some prominent large companies (e.g. Enron, Xerox, World.com, HealthSouth, Tyco, Waste management, RiteAid and Subeam) raised concern about the effectiveness of different monitoring devices that protect investors' interests. The majority of failures have resulted, in part, from accounting manipulation and dereliction of efficient corporate governance mechanisms that control opportunistic behaviour of management. This study argues that agency conflicts within a firm are considered to be among the influential sources of earnings management activities. In emerging countries with highly concentrated ownership, the prevalence of agency conflicts is more likely to lie mainly between controlling and minority shareholders rather than between managers and outside shareholders. Such conflicts, combined with the weak legal protection of minority shareholders and the flexibility inherent in accounting choices, are likely to induce managers to manipulate the reported earnings and adopt a range of activities that might be contrary to minority stockholders' interests. Using an original data set for a sample of Egyptian listed firms, the findings of the empirical analyses are in agreement with this argument. It is shown that corporate governance mechanisms do not work in isolation but they interact to effectively curb earnings management and alleviate different agency conflicts. It is also shown that firm-specific characteristics (e.g., growth opportunities) play a crucial role in understanding the conditional role of such mechanisms and other governance mechanisms, such as dividends and short debt, may help resolve corporate agency problems.

Chapter 1

Introduction

1.1 Introduction

The purpose of this thesis is twofold. First, it aims to provide additional insights into the potential influence of a number of internal and external governance mechanisms in impacting earnings management and determining the level of agency costs. Second, it also aims to enhance our understanding of a number of issues relating to ownership structure and corporate governance in the Egyptian setting.

It is widely believed that financial statements are crucial to communicate with external stakeholders and serve, *inter alia*, investment and control decisions, which help to reflect the economic performance of a company. To make financial statements informative, regulators allow managers some degree of reporting flexibility to exercise their judgment. It is argued that such reporting discretion is a double-edged sword (Leuz 2010). On the one hand, managers can use such discretion efficiently to improve the value relevance of earnings and convey private information that helps external stakeholders to anticipate the future performance of a firm. On the other hand, it may provide a channel through which managers can opportunistically exercise discretion over reported earnings to attain particular objectives at the time of reporting. In many cases, such flexibility makes interpretation and application of accounting standards subjective, which offers an opportunity to *manage* the reported *earnings*. The objectives of opportunistic earnings management are to *mislead* stockholders and *conceal* the underlying economic performance of a firm in order to influence the outcomes of different contracts and achieve some private gains (Healy and Wahlen 1999; Schipper 1989).

Agency conflicts within a firm are also considered as an influential source of earnings management activities (Richardson 2000). It is widely accepted that the separation of ownership and control, in a diffused ownership context, is considered as an important source of agency conflicts between managers and outside shareholders. This is because managers have ample freedom in their accounting choices and have incentives to take decisions and adopt a range of activities that may be contrary to outside stockholders' interests.[1] In emerging countries with highly concentrated

[1] This may include excessive consumption of firm corporate resources, empire building, delaying necessary restructuring decisions and avoidance of high risk investments, as well as manipulating earnings to achieve their objectives at the time of reporting in order to evade unpleasant confrontation with employees, unions, politicians and the media (Watts and Zimmerman 1986; Morck et al. 1988).

ownership, the agency problem between managers and outside owners will not be as acute as in dispersed ownership settings. The predominant agency problem, rather, is between controlling and minority shareholders. Such agency conflicts can be seen as minority shareholder expropriation when the dominant shareholders tend to expropriate firm resources by taking self-interested actions that may not necessarily be optimal for the minority's interest.[2] Thus, the likelihood to opportunistically manage earnings is higher in these settings.

Managers are agents of owners (principals) and they should act in the principal's best interest. However, managers, as utility maximizing individuals, may have different incentives from other shareholders, which may persuade them to maximize their own (controlling shareholders') interest at the expense of that of the outside (minority) shareholders. [3] These conflicts, coupled with the imperfection of capital markets and information asymmetry that exists in favour of managers, might increase the agency costs and in turn increase the possibility of earnings management.

Several solutions are suggested in the literature to exercise control over management and reduce information disparities between managers and investors. Disclosure of private information is one potential channel by which outsiders can reduce such an information asymmetry. However, there is evidence in the literature that more transparent disclosures may lead to greater detection of earnings management by shareholders and other parties (Hirst and Hopkins 1998). As managers are aware of this fact, they commonly choose less transparent disclosure, suggesting that managers would benefit from limiting some users' ability to detect earnings management (Hunton et al. 2006).

Because periodic financial statements partially solve the agency problem (Beatty and Harris 1999), suppliers of capital may tend to contract with managers in an attempt to monitor their actions and constrain their potential opportunistic behaviour. These contracts identify the roles, rights and obligations of firm stakeholders (e.g., owners, managers and creditors) under different conditions (Jensen and Meckling 1976; Fama

[2] See, for example, Berglof and Pajuste (2005) and Cronqvist and Nilsson (2003).

[3] Jensen and Meckling (1976, 5) define an agency relationship as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent". It is assumed the owners' objective is to maximise the current value of the profit stream (hence maximising the share price) whereas a manager's objectives may include, *inter alia*, power, status, prestige, consuming perquisites, organisation size, and earnings (Ames 2002).

1980). Hence, the contractual relationships between managers and other parties may help to align the divergent objectives of various contracting individuals. On the one hand, contracts play an essential role in reducing information asymmetry between insiders and outsiders. They might also alleviate conflicts of interest by better aligning the incentives of managers and various parties, as well as reduce potential expropriation of resources by corporate insiders or controlling shareholders. This in turn may motivate managers to increase the informativeness of accounting numbers (DeAngelo 1986; Bushman and Smith 2001). On the other hand, the extensive use of accounting information by these parties to contract with management, coupled with the fact that managers are responsible for preparing financial statements, can create incentives for managers to manipulate earnings and to achieve their objectives at the time of reporting. Thus, managers may respond opportunistically to the contractual environment by managing earnings to mitigate any possible behavioural constraints imposed by accounting-based contracts, yielding accounting numbers that do not necessarily reflect the firm's underlying economic performance (Warfield et al. 1995).

Due to the imperfection in capital markets and difficulty to observe managers' actions, it is impossible to write complete contracts (Hart 1995). As a result, conflict of interests between managers (controlling shareholders) and outside (minority) shareholders cannot be resolved completely through contracts. These might create a demand for additional monitoring and corporate governance mechanisms to mitigate corporate agency conflicts and reduce adverse effects of earnings management.

Corporate governance mechanisms are designed to minimize divergences arising from the separation of ownership and decision control, as well as to ensure that managers act in the best interests of shareholders (Denis and McConnell 2003). Corporate governance mechanisms include internal mechanisms and external mechanisms (Denis and Denis 1994). In this thesis, the focus will be mainly on the monitoring and disciplining role of two influential internal mechanisms, the board of directors and managerial ownership; and two essential external mechanisms, external auditing and ownership concentration.

Although the relationship between corporate governance mechanisms and earnings management has been the subject of an enormous body of research, there is no consensus yet on the nature of this relationship. One possible explanation for the lack of agreement results from the emphasis on influence of only single governance mechanism in

isolation from the potential effects of other mechanisms. The importance of examining the potential influences of more than one mechanism stems from the fact that these mechanisms might play substitution or complementary roles in constraining opportunistic earnings management. For instance, at a higher level of executive ownership, the incentives of managers are likely to diverge from that of outside shareholders. Because minority shareholders expect that managers might tend to manipulate earnings opportunistically, they might protect their own interests by under-pricing of a firm's shares. Against this concern, managers might attempt to signal their commitment not to expropriate firm resources by employing additional complementary devices such as appointing more outside members on the board. In addition, the incentives of outside directors to further constrain earnings management are stronger when they their ownership is higher. This is because they will bear a share of the costs resulting from the adverse influences of earning management. Similarly, external auditing and outside directors might act as independent devices in monitoring the tendency of managers to manage earnings, but they might work jointly to be more effective in reducing income increasing manipulations than income decreasing manipulations. Managers might also tend to pay more dividends to build their reputation and offset the weak legal protection of minority shareholders.

Furthermore, despite the extensive research that examines a single incentive, less evidence exists on possible trade-offs among multiple goals that could explain determinants of accounting choices. In fact, focusing on a single goal at a time may lead to insufficient evidence about incentives that explain accounting choices; the same result could be ascribed to more than one goal (Fields et al. 2001). Thus, seeking to achieve certain objective(s) that benefit(s) particular group(s) may be contrary to the interests of other group(s). For example, income increasing choices that serve to accomplish the compensation objective may also be a response to the debt covenant objective, which benefits shareholders at the expense of debtholders (Fields et al. 2001). In addition, one accounting choice can help to accomplish a specific objective, but it may have adverse effects on other objectives. Several recent studies have examined the extent to which earnings are managed to achieve particular objective(s) and/or earnings management occurs around a specific event. For instance corporate managers may respond opportunistically to reporting discretion and manipulate the reported earnings to achieve contacting objectives. These objectives include, *inter alia*, management compensations, avoiding debt covenant violation and reducing the

likelihood of adverse consequences resulting from governmental intervention in largely visible firms. Management may also tend to keep fluctuations in the level of reported earnings at a minimum level, as doing so could improve investors' expectations about future cash flow components (Kirschenheiter and Melumad 2002), mitigate the information asymmetry between managers and shareholders (DeMarzo and Duffie 1995), and communicate managers' private information about future earnings (Subramanyam 1996).

Although the reduction of firm-level agency costs is a potential channel through which ownership structure and governance mechanisms can influence firm value, the relationships between ownership structure or governance mechanisms and agency costs have gained little attention in the empirical literature. One explanation for the lack of research might be due to the difficulties of finding an appropriate measure of agency costs. As a result, most of the agency costs studies do not examine these relationships directly. They instead infer the influence of different corporate governance mechanisms on agency costs level. Following Ang et al. (2000), a number of proxies have been suggested to overcome this difficulty. However, little attention has been been given to the potential roles of debt maturity and dividends as important determinants of agency costs. Also, few studies investigate the relationships between the measure of agency costs or corporate governance and ownership structure in emerging countries.

1.2 Research objectives

The above discussion lays the foundation for fulfilling the following objectives. The first objective of this study is to provide a detailed investigation of the status quo of ownership structure and corporate governance in an emerging country such as Egypt. This investigation is important because ownership structure could be both a source of and a solution to conflict in a firm and corporate governance mechanisms are significant in reducing such conflict, in addition to constraining potential opportunistic resource consumption. This detailed investigation is likely to provide insights and deeper understanding into the expected monitoring and disciplining roles of ownership and governance mechanisms.

It is believed that firms face multiple objectives and managers choose a set of accounting choices in order to achieve such objectives. However, all complicated accounting choices would be reflected in only one reported earnings number. This may

induce managers to mange earnings to attain more than one objective at the time of reporting. Consequently, the second objective is to explore trade-offs and interactions among competing earnings management objectives, namely the contracting and income smoothing incentives.

The third objective is to examine whether the board of directors, higher quality auditors and managerial ownership are effective mechanisms in curbing earnings management in settings characterized by high ownership concentration and inadequate legal protection of minority shareholders.

The fourth objective is to further examine the determinants of agency costs with a particular focus on the roles of ownership concentration and managerial ownership in impacting the level of agency costs level among Egyptian firms. In addition, dividends payout and short-term debt are also investigated as additional potential determinants of agency costs.

1.3 Why Egypt?

Egypt is an appropriate setting to explore the corporate governance and ownership structure and their relationships with earnings management and agency costs for several reasons. Firstly, the detailed information of ownership and corporate governance result from the investigation of Egypt can provide useful insights into the pros and cons of ownership concentration pattern and the different effective roles of governance mechanisms. This in turn may enhance our understanding of potential contingent roles of such mechanisms. The results may also be valid for other countries that have similar characteristics. Secondly, despite the vast research that has been conducted in developed countries, little is still known about the potential influence of different governance mechanisms on agency costs and earnings management in emerging countries. Thirdly, although Egypt has recently adopted the Egyptian Corporate Governance Code (ECGC), its recommendations are not legally binding. Furthermore, the voluntary adoption of such recommendations, along with the absence of law enforcement and relatively weak minority shareholders' protection, might induce strong managers to manipulate earnings and choose a corporate governance structure in a way that serves the interests of the controlling shareholders at the expense of minority shareholders. Hence, this environment is considered a useful setting to explore such potential effects.

1.4 The contributions of the thesis

The results of the present study contribute to the existing earnings management and corporate governance literature in several ways. Firstly, given that the Egyptian regime, which represents an example of an emerging country, differs significantly from that in the UK and the US, inferences from studies conducted in these countries may be unwarranted and misleading when used to explain discretionary choices or test the effectiveness of corporate governance mechanisms on curtailing earnings management or alleviating agency conflicts in Egypt. As a result, using a new data set that reflects different features helps to shed additional light on different institutional aspects of emerging countries. By doing so, the results may also be valid for firms in other emerging countries that have similar features to the Egyptian context.

Secondly, most of the prior studies explore managers' responses only to a specific incentive that is assumed to explain accounting choices. Thus, by studying multiple objectives in the same model, the results of this study may provide enhanced understanding of the determinants and consequences of earnings management.

Thirdly, most studies that test the relationship between earnings management and corporate governance mechanisms focus on an individual governance mechanism, neglecting the impact of other governance variables, which may lead to insufficient evidence about this relationship. Prior studies also ignore the incentives of outside directors for earnings management. This study, therefore, tests whether interests of non-executive directors would align with that of minority shareholders and, thus, constrain opportunistic earnings manipulation or whether they would prefer to go with managers' incentives when managers tend to engage in such manipulation. The results also add to the auditing literature by providing evidence that high quality auditors are an effective device for curbing earnings management even when the likelihood of exposure to litigation risk is low.

Fourthly, this study complements studies that examine the direct governance-agency costs relationship by not only contributing to the convergence debate regarding the exact type of relationship between managerial ownership and agency costs, but also shedding further light on the relationship between ownership concentration and agency costs. Particularly, the incentive-alignment and entrenchment (or expropriation) effects on agency costs are examined for both managerial ownership and blockholders. Moreover, this study investigates the potential role of other devices such as short-term

debt and dividend payout as mechanisms that have received relatively little attention and potentially play different roles in alleviating both types of agency conflicts. By doing so, this study fills a part of the gap in the literature and provides important insights into the non-linear relationship between ownership concentration and agency costs. The study also stresses the importance of evaluating the role of governance mechanisms in the light of firms' growth opportunities.

1.5 The structure and findings of the thesis

The thesis is organized as follows. Chapter 2 discusses the most widely used models to measure earnings management. Most of these models are related to the discretionary accruals approach. Alongside these, several methodologies have emerged in the literature to overcome the weaknesses of accruals models. Most of these approaches test a specific accrual or set of accruals and investigate the earnings distribution. Despite the valuable insights provided by empirical effort, nevertheless the estimation of the discretionary component of accruals is likely to be associated with a degree of measurement error; *all* earnings management proxies are imperfect and noisy (Kothari 2001; Fields et al. 2001). Yet, the literature fails to provide a generally accepted methodology that accurately measure earnings management.

Chapter 3 presents detailed descriptive analyses of ownership structure and the evolution of corporate governance in Egypt. These analyses help to gain useful insights into the corporate ownership structure and to highlight the importance of corporate governance mechanisms that might protect the interests of minority shareholders in settings characterized by weak law enforcement and poor legal protection of minority shareholders. Using a unique data set consisting of 615 observations representing a sample of non-financial Egyptian listed firms during the period 2004-2007, the descriptive analyses indicate that most of the listed firms have highly concentrated ownership and control is in the hands of a few families, individual and State shareholders. The data also reveal the lack of legal protection of minority shareholders and the ambiguous duties of board members; most board members are family members, close relatives and friends who may seek to achieve the interests of controlling shareholders at the expense of minority shareholders.

Motivated by the fact that accounting choices are commonly motivated by multiple objectives (Fields et al. 2001), and in the absence of a comprehensive theory to

explain accounting choices, Chapter 4 presents empirical analyses that test the firm-specific determinants of earnings management. Specifically, it examines the trade-offs among the efficient contracting choices (i.e., bonus plans, debt covenants and political costs) and income smoothing incentives. To conduct the empirical analysis the cross-sectional and pooled regression approach are used. The empirical results, using 442 non-financial observations, show that the efficient contracting choices explain a small portion of the variation in discretionary choices. However, the results indicate that managers tend to manipulate earnings in an attempt to reduce fluctuation of the reported earnings, which in turn can help to signal their ability to the capital market and build their reputation. More specifically, it is found that all measures of earnings management are negatively (positively) and significantly associated with measures of implicit (explicit) income smoothing variables.

Chapter 5 examines the relationships between board characteristics, audit quality and earnings management. A board is considered the shareholders' first line of defence against any possible opportunistic managerial behaviour (Weisbach 1988), and an essential mechanism for making important financial and non-financial decisions. In addition, it is widely believed that external auditing is an effective device that signals to outsiders the credibility of the financial statements (Becker et al. 1998). The effectiveness of auditing in performing this role depends on the quality of auditing. Higher quality auditors have more to lose in terms of clients and audit fees; as a result, they have stronger incentives to reduce the risk of litigation and protect their reputations (DeAngelo 1981; Dye 1993). Whether a board of directors and high quality auditors are safeguards against opportunistic earnings management in emerging countries is an empirical issue that Chapter 5 investigates. The results of the empirical analyses using the pooled regression methodology show that the monitoring and disciplining roles of outside directors are generally weak. However, they play a complementary role at a higher level of executive ownership. Furthermore, the incentives of executive and outside directors are more likely to align with minority shareholders for firms with high executive ownership. In addition, firms audited by high quality auditors and those that have large board size and high executive ownership are associated with a lower magnitude of earnings management. The maximum likelihood truncated regression approach is used to conduct the sign discretionary accruals test. The results of this test indicate that while high quality auditors are effective in constraining the magnitude of earnings management, they are more effective in curbing the income-decreasing manipulation. Further, incentive of managers to report

small earnings increases is less likely to exist for firms audited by Big Five auditors and with higher executive ownership.

While the relationships between corporate governance and performance received great attention in a substantial body of research, the direct impact of ownership and governance mechanisms on agency costs has gained less attention from researchers. To fill a part of the gap in the literature, Chapter 6 provides empirical analyses of agency costs determinants and the potential roles of ownership and corporate governance mechanisms. In particular, it focuses on the potential role of ownership concentration, short-term debt and dividends on asset turnover and the ratio of selling, general and administrative to total sales (SG&A) as proxies of agency costs. Chapter 6 also highlights the importance of including growth opportunities as an important firm characteristic that reveals different insights into the expected roles of governance mechanisms. To conduct the empirical analysis the lagged cross-sectional approach are employed to help control for the endogeneity problem.

The results reveal that managerial ownership is found to be an important internal control mechanism that helps alleviate agency conflicts between management and outside shareholders, as well as that between controlling and minority shareholders. However, the monitoring role of non-executive directors is ineffective in reducing agency costs. The results also support the alignment and the entrenchment effects of ownership concentration on agency costs. Specifically, controlling shareholders are more capable of providing better monitoring and aligning their incentives with those of minority shareholders; as a consequence, agency costs decline as ownership of large shareholders increases (Claessens and Fan 2002; Jiraporn and Gleason 2007). However, further ownership is found to be associated with higher agency costs. Dominant shareholders may have incentives and ability to employ their voting power to pursue corporate resources to serve their own interests and take suboptimal decisions, which may adversely affect the value of minority holdings, leading to an enjoyment of corporate benefits that are not shared with minority shareholders.[4] In addition, large shareholders can affect many corporate decisions, such as investment, growth, dividends and leverage (Cronqvist and Fahlenbrach 2009). They have also the power to

[4] Such benefits could either be financial, such as the consumption of perquisites, paying themselves excessive salaries, or non-financial, such as appointing low-qualified family members to management positions rather than competent managers (Shleifer and Vishny 1986; Morck et al. 1988; Anderson and Reeb 2003; Holderness 2003).

elect directors who represent their interest. In addition, for high growth-firms, there is evidence for the role of short-term debt in reducing the under-investment problem and information asymmetry between insiders and outsiders. However, the ownership by outside directors or blockholders structure is an important determinant in reducing various forms of agency costs in slow-growth firms. Furthermore, it is found that dividends act as a substitute for poor legal protection of minority shareholders.

Finally, Chapter 7 summarize the findings of the above descriptive and empirical analyses along with the implications of such finding for the regulatory environment and recommendations to improve the effectiveness of corporate governance mechanisms to mitigate agency problems the propensity of earnings management. It also points out some major limitations of the research and potential avenues for future research.

Chapter 2

Measurement of Earnings Management

2.1 Introduction

Earnings management has gained a great deal of attention in financial reporting studies. The results of a substantial number of empirical studies confirm the existence of earnings management. Broadly speaking, earnings manipulation ranges from earnings management[5], which is within GAAP, to earnings fraud, which is outside GAAP (Park and Park 2004).[6] Due to the legal costs that firms bear when manipulating earnings outside GAAP, earnings manipulation through earnings management is often more preferable (Dechow et al. 1996). Earnings management can be classified in turn into two main categories: real earnings management and accrual management (Lo 2008; Roychowdhury 2006). Managers can, for example, manipulate real activities by cutting back on advertising and research and development expenditure (Bens et al. 2003; Bushee 1998; Bens et al. 2002), selling assets (Bartov 1993), cutting back essential equipment maintenance (Peasnell et al. 2005), accelerating sales, delaying maintenance and modifying shipment schedules (e.g., Fudenberg and Tirole 1995; Dechow and Skinner 2000; Roychowdhury 2006).

Teoh et al. (1998a) point out that earnings manipulations within GAAP comprise the choice of accounting methods, the application of accounting methods and the timing of recording asset acquisitions and dispositions. Managers can alter reported earnings by choosing an accounting method that delays (advances) the recognition of expenses and advances (delays) the recognition of revenues to increase (decrease) reported earnings. They can, for example, advance recognition of sales revenue through credit sales, or delay recognition of losses by waiting to establish loss reserves (Teoh et al. 1998a). Xie et al. (2003). This demonstrates that after accounting methods are chosen, a wide range of discretionary choices of the application of the chosen accounting method is available in order to further change reported earnings (e.g. the estimates of service life and salvage value of depreciable assets, lives of tangibles and the interest rates used in pension accounting). Finally, managers can alter reported earnings by adjusting the

[5] Healy and Wahlen (1999), Fields et al. (2001) and Kothari (2001) are excellent surveys of earnings management research.

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

timing of asset acquisitions and dispositions (e.g. the decision when to sell property, plant, and equipment and when to recognize gain or loss).

Consequently, accrual manipulations affect the reported earnings by shifting the recognition of transactions to periods other than those in which the related cash flows occur. Accordingly, managers can, without violating the accounting rules, borrow income from income of a period to manipulate another period's income in an attempt to achieve specific objective(s) at the time of reporting (Roosenboom et al. 2003).

It is widely accepted that managers might prefer managing earnings via accruals because they have no direct cash flow consequences (Peasnell et al. 2005; Roychowdhury 2006), and they are difficult to observe directly or to detect (Young 1999).[7] Changing operating activities is costly and has potential negative effects on a firm value, as well as being easily discovered by the auditor; as a result, managers are less likely to prefer real activities manipulation (Healy 1985; Peasnell et al. 2005).[8] When management tend to use accruals opportunistically, the quality of reported earnings is more likely to be lower and its usefulness for different decisions is likely to be affected (Xie et al. 2003).

Several methodologies have been evolved to measure earnings management appropriately. These methodologies can be classified into two broad categories; accrual models (e.g., accrual models before the Jones model and its modifications) and non-accrual models. The model suggested by Jones (1991) is considered a milestone in the accrual approaches. Since accounting accruals consist of normal (*nondiscretionary*) accruals, which are economically determined, and abnormal (*discretionary*) accruals[9], which are management determined (McNichols 2000), the majority of empirical earnings management literature uses discretionary accruals as an appropriate proxy for earnings management (DeAngelo 1986; Beneish 2001).

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[7] Despite the preference for earnings management via accruals, Roychowdhury (2006) argues that managers might also rely on real activities management, at least in the short term, to reduce the likelihood of bearing private costs. Confirming this argument, the survey of Graham et al. (2005) indicates that managers are willing to prefer real activities management than accruals management. More specifically, they show that 80 % of managers would decrease discretionary spending, and 55% would delay a project, while 8% would change accounting assumptions. In essence, the two choices should not be seen as mutually exclusive. See Roychowdhury (2006), Zang (2007) and Cohen and Zarowin (2010) for recent evidence of earnings management through real activities.

[8] One disadvantage of using accruals for the purpose of managing earnings is the reverse nature of accruals, as any adjustments of the financial statements in any period must be reversed in future periods (Young 1999).

[9] The terms *discretionary* accruals and *abnormal* accruals will be used interchangeably.

The main objective of this chapter, therefore, is to discuss the most widely used models in the literature to measure earnings management. It also seeks to highlight convergence, divergence and weaknesses related to the proxies of earnings management, focusing mainly on accruals-based models.[10]

The remainder of the chapter is organized as follows. Section 2.2 briefly sheds light on accrual models before the Jones Model, followed by a discussion of the evolution of the Jones Model. Section 2.4 presents the most widely used modifications of the Jones Model. Some other alternative methodologies are presented in Section 2.5, while a commentary is provided in Section 2.6. Finally, Section 2.7 concludes.

2.2 Accruals Models before the Jones Model

2.2.1 The Healy Model

Healy (1985) uses total accrual as a proxy for earnings management.[11] The average of total accruals over an estimation period prior to the event (test) period is used as a measure of nondiscretionary accruals as follows:

$$NDAC_{\tau} = \frac{\sum_t ACC_t}{T}$$

where *NDAC* is the estimated nondiscretionary accruals; *ACC* is the total accruals; *T* is lagged total assets[12]; τ is the years included in the estimation period; and *t* is year subscript indicating the event period. The discretionary accruals component in the event period is the difference between total accruals in that period and the estimated non-discretionary accruals.

Xiong (2006) argues that although this measure cannot identify specific measures used for managing earnings, it provides an indication of the existence of earnings

[10] This chapter does not aim to provide a comprehensive evaluation of *all* earnings management models used in the literature, as this is largely beyond its scope. For such evaluation see, for example, Kang and Sivaramakrishnan (1995), Dechow et al. (1995), Hansen (1996), Guay et al.(1996), Bartov et al (2000) and Kothari et al. (2005).

[11] Healy (1985, 94) defines total accruals in the period of interest as: $ACC_{it} = NI_{it} - CFO_{it}$, where NI_{it} is the reported net income for a sample firm *i* during period *t*; CFO_{jt} is the cash flow from operations for a sample firm *i* during period *t*.

[12] Lagged assets are used to reduce heteroskedasticity. Other deflators are used in other studies such as sales (Murphy and Zimmerman 1993), book value of equity (DeAngelo et al. 1994), and market value of equity (Warfield et al. 1995).

management and is considered an easy way to evaluate the possibility that a firm may engage in earnings management without using sophisticated statistical methods. However, the assumption that the non-discretionary accruals in the estimation period are zero is restrictive. Kaplan (1985) notes that the non-discretionary accruals are not expected to be zero in any given period, since the expected levels of non-discretionary accruals fluctuate depending upon the economic circumstances of a firm and these accruals serve several useful economic purposes other than providing a domain for the opportunistic behaviour of managers. Furthermore, total accruals are likely to be systematically negative for many companies due to the impact of the depreciation expense (Perry and Williams 1994), leading to an erroneous conclusion on income-decreasing choices.

2.2.2 The DeAngelo Model

DeAngelo (1986) tests whether the average value of the *abnormal* accrual is significantly negative for sample firms in periods before a management buyout, where a total accrual, in a given period t= 0 or 1, consists of discretionary accrual and non-discretionary accrual. She assumes that the average change in non-discretionary accruals ($NDAC_1$-$NDAC_0$) is approximately zero. Hence, a significant average change in total accruals (ACC_1-ACC_0) reflects a significant average change in discretionary accruals (DAC_1-DAC_0). DeAngelo (1986) uses the total accruals in the prior period as a benchmark for the non-discretionary accruals as follows: [13]

$$NDAC_t = ACC_{t-1,}$$

Therefore, the amount of discretionary accruals in the event period is the difference between total accruals (scaled by lagged total assets) in that period and the estimated non-discretionary accruals. DeAngelo uses the difference in total accruals as a measure of discretionary accruals. She assumes that this difference has an expected value of zero under the null hypothesis of no earnings management (Dechow et al. 1995).

[13] DeAngelo(1986) calculates total accruals as net income minus operating cash flows, which is derived by adjusting working capital from operations for changes in all current operating accounts.

The major criticisms associated with this model is that non-discretionary accruals are constant over time, implying that *all* changes in total accruals are discretionary (Kaplan 1985; Dechow 1994). It also fail to distinguish between accruals resulting from changes in the firm's economic performance and those that result from managerial discretion (Kaplan 1985; Beneish 2001).

2.2.3 The Industry Model

Dechow and Sloan (1991) develop the Industry Model (IM) that relaxes the assumption that non-discretionary accruals are constant over time and assumes that the variation in the determinants of non-discretionary accruals is common across all firms in the same industry. In this regard, the non-discretionary accruals are computed as follows:

$$NDAC_t = \gamma_1 + \gamma_2 median\ (ACC_t)$$

where *TA* is the median value of total accruals scaled by lagged assets for all non-sample firms in the same industry and year, and γ_1 and γ_2 are estimated by OLS, using observations in the estimation period.

The ability of this model to remove variations that reflect responses to changes in firm-specific circumstances is limited due its ability only to remove common variation in non-discretionary accruals across firms in the same industry (Dechow et al. 1995). In addition, since it applies only to event studies in which not all firms experience the same event, the results might be biased against the existence of earnings management when all firms in the industry have the same incentives to manage earnings. Using the IM, therefore, might support the non-existence of earnings management, if other firms in the industry manage earnings in the opposite direction (Ronen and Yaari 2008, 403).

2.3 The evolution of the Jones Model

Jones (1991) introduces a regression approach that controls for non-discretionary factors influencing accruals. The Jones Model (JM) assumes that changes in revenues and the level of gross property, plant and equipment are the two variables that account for the level of unmanaged (normal) accruals related to firms' economic transactions. While the changes in revenues imply changes in working capital accounts, the level of gross property, plant and equipment determines depreciation expenses (Perry and Williams 1994). The regression provides coefficients, in an estimation period, which are used in

the test period to estimate unmanaged accruals. Then, the managed accruals are the regression residuals in the test period. Precisely, the JM procedures to identify a discretionary component proceed as follows: First, non-discretionary accruals (*NDAC*) in the *event* period are estimated as a function of changes in revenues and the level of property, plant and equipment by the following regression:

$$NDAC_{it} = \hat{\alpha}\left(\frac{1}{TA_{it-1}}\right) + \hat{\beta}_1\left(\frac{\Delta REV_{it}}{TA_{it-1}}\right) + \hat{\beta}_2\left(\frac{GPPE_{it}}{TA_{it-1}}\right)$$

where *TA* is book value of total assets; *Δ REV* is changes in net revenues, measured by net revenues in current year less net revenues in prior year; *GPPE* is gross property plant and equipment; *i* is a firm subscript (*1*, ..., *N* firms); *t* is a year subscript (*1*, ..., *T* years); and $\hat{\alpha}$, $\hat{\beta}_1$, $\hat{\beta}_2$ are estimates of firm-specific parameters. Estimates of firm-specific parameters are generated using ordinary least squares (OLS) in the *estimation* period by the following model:

$$\left[\frac{ACC_{it}}{TA_{it-1}}\right] = \alpha\left(\frac{1}{TA_{it-1}}\right) + \beta_1\left(\frac{\Delta REV_{it}}{TA_{it-1}}\right) + \beta_2\left(\frac{GPPE_{it}}{TA_{it-1}}\right) + \varepsilon_{it}$$

where ε is the regression error term, assumed to be uncorrelated and normally distributed with mean zero.

Second, discretionary accruals are defined as:

$$DAC_{it} = \frac{ACC_{it}}{TA_{i,t-1}} - \hat{\alpha}\left(\frac{1}{TA_{it-1}}\right) - \hat{\beta}_1\left(\frac{\Delta REV_{it}}{TA_{it-1}}\right) - \hat{\beta}_2\left(\frac{GPPE_{it}}{TA_{it-1}}\right)$$

where $\hat{\alpha}$, $\hat{\beta}_1$ and $\hat{\beta}_2$ denote the OLS estimates of α, β_1, and β_2.

Since the JM relies on the assumption that *all* revenues are nondiscretionary, discretionary accruals generated using this model will be too small because a part of the managed earnings is removed from the discretionary accrual proxy and included in the non-discretionary accruals (Dechow et al. 1995; McNichols 2000). Dechow et al. (1995) point out that the original JM implicitly assumes that there is no discretion over revenues in either the estimation period or the event period.

2.4 Modifications to the Jones Model

2.4.1 The Modified Jones Model (Discretionary Total Accruals)

Supposing that changes in credit sales could be a source of earnings management, Dechow et al. (1995) modify the JM and adjust changes in revenues by subtracting the corresponding change in receivables in the event period. The modified Jones Model (MJM) controls for both economic transactions and firms' credit policies. Under the MJM, the first stage of estimating normal accruals is similar to the JM. However, in the second stage (the event period), normal accruals are regressed on gross property, plant and equipment and changes in revenues, which adjusted by changes in receivables, using the estimated coefficients from the first stage. They argue that when a firm does not manage earnings in the estimation period and manages receivables in the event period, the accruals of credit sales are normal in the estimation period and abnormal in the event period.

Based on the MJM, the coefficients α, β_1, and β_2 are estimated in the first stage in the same way as in the JM. Then, these parameters are used to estimate the non-discretionary accruals by the following model:

$$NDAC_{it} = \hat{\alpha}\left(\frac{1}{TA_{it-1}}\right) + \hat{\beta}_1\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}}\right) + \hat{\beta}_2\left(\frac{GPPE_{it}}{TA_{it-1}}\right)$$

where ΔREC is changes in receivables, measured by net receivable in current year less net receivable in prior year, and all other variables are as previously defined. The MJM implicitly assumes that *all* changes in credit sales in the event period result from earnings management. Dechow et al. (1995) argue that it is easier for managers to exercise discretion over the recognition of revenue on credit sales than on cash sales. This may be done, for example, by recording revenues at year end when the cash has not yet been received, leading to an increase in receivables and, in turn, increase in total accruals.

Dechow et al. (1995) note that the JM overestimates the non-discretionary component and underestimates the discretionary component because all revenues are treated as nondiscretionary. However, non-discretionary accruals of firms with growing revenues generated from the MJM are under-stated, while the discretionary accruals are over-stated (McNichols 2000). This is because not all of the change in receivables is

discretionary. Dechow et al. (1995) find that the modified Jones model is relatively more powerful in capturing sales-based manipulations than the Healy, DeAngelo and Industry models.[14]

However, both the JM and the MJM are poorly specified when they used to measure earnings management for firms with extreme financial performance (Peasnell et al. 2000b; Kothari et al. 2005). Practically, they are not error-free, though they lie at opposite ends of a continuum of potential earnings management behaviour. Whereas the MJM has a relatively high explanatory power, the assumption that all changes in credit sales in the event period are the result of earnings management activities is likely to be more unrealistic than in the JM which assumes no sales manipulation during the event period (Young 1999).

2.4.2 The Modified Jones Model (Discretionary Current Accruals)

There is a widely held belief that the current discretionary accruals are more vulnerable to earnings management, as managers have more discretion over current accruals through the choice and application of accounting techniques than long-term accruals. Hence, the discretionary component of working capital accruals may be a superior proxy for earnings management than discretionary total accruals because the scope of non-current accruals manipulation is relatively limited (e.g., Becker et al. 1998; Teoh et al. 1998a; Ashbaugh et al. 2003; Xiong 2006). Working capital accruals exclude a variety of long-term accruals, such as depreciation of plant and equipment and amortization of the debt premium/discount (Bradshaw et al. 2001). These long-term accruals tend to be quite constant over time and account for a little variation in total accruals. The MJM, as a result, controls for only a small amount of normal working capital accrual activities related to the current year (Peasnell et al. 1998).

According to *the discretionary working capital accruals method*, only working capital (*current*) accruals are separated into discretionary and non-discretionary components Teoh et al. (1998a). Using the same procedures as in the MJM, the coefficients for unmanaged accruals are obtained by regressing working capital accruals on changes in revenues using the following regression:

[14] Kothari (2001, 164) defines the power of a test as " ...the frequency with which the null hypothesis is rejected when it is false."

$$\left[\frac{CAC_{it}}{TA_{it-1}}\right] = \alpha\left(\frac{1}{TA_{it-1}}\right) + \beta_1\left(\frac{\Delta REV_{it}}{TA_{it-1}}\right) + \varepsilon_{it}$$

where *CAC* is the total current accruals (i.e., the sum of changes in inventory, accounts receivable, and other current assets less changes in accounts payable, income taxes payable and other current liabilities), and all other variables are as previously defined. The *NDCA* component for each firm is estimated using these coefficients as follows:

$$NDCA_{it} = \hat{\alpha}\left(\frac{1}{TA_{it-1}}\right) + \hat{\beta}_1\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}}\right)$$

The discretionary current accruals component is obtained by subtracting the *NDCA* from *CA* as follows:

$$DCAC_{it} = \frac{CAC_{it}}{TA_{it-1}} - NDCA_{it}$$

2.4.3 The Forward-Looking Model

Dechow et al. (2003) criticize the implicit assumption of the JM that the entire change in revenues is free from managerial discretion and may lead to misclassification of non-discretionary accruals as discretionary and that all credit sales are discretionary, as there is a part of these changes that is nondiscretionary. Based on the assumption that there is a positive correlation between discretionary accruals and current sales growth, they estimate the following regression for each industry year grouping:

$$\Delta REC_{it} = a + k\,\Delta Sales_{it} + \varepsilon_{\text{it}}$$

where Δ*Sales* is the change in sales deflated by lagged assets and *k* is the coefficient of the change in sales.

In order to calculate the discretionary component, they only include the unexpected portion of the change in accounts receivable in discretionary accruals. To do so, they subtract the full amount of the change and add back the expected change (*k* Δsales) to the change in cash sales. The cross-sectional forward-looking Jones model is as follows:

$$ACC_{it} = \alpha + \beta_1\left((1+k)\Delta Sales_{it} - \Delta REC_{it}\right) + \beta_2 GPPE_{it} + \beta_3 ACC_{it-1} + \beta_4 GR_{sales_{it+1}}$$

where $GR_{sales\ it+1}$ is the change in firm *i*'s sales from year *t* to year *t+1*, scaled by the current year sales, and all other variables are as previously defined. Dechow et al. (2003) make three innovations to the JM (Ronen and Yaari 2008, 439): The first is treating some of the changes on credit sales as non-discretionary in the event period. The second is adding the lagged accruals to control for reversal. The third is controlling for growth of sales, as the expected growth in sales will lead to a demand for higher inventory which, in turn, will lead to misclassifying non-discretionary accruals as discretionary accruals. Dechow et al. (2003) report that the inclusion of these innovations to the JM results in a significant increase in R^2 from 9.2% to 20%.

2.4.4 The Performance–adjusted Models

Prior research finds that estimates of discretionary accruals are correlated with firm performance (Kothari et al. 2005; Dechow et al. 1995; Kasznik 1999; Jeter and Shivakumar 1999). It is argued that firms with high (low) earnings have positive (negative) shocks to earnings which lead to positive (negative) discretionary accruals (McNichols 2000). This accentuates the importance of unusual performance as a key factor that should be taken into consideration when measuring earnings management. Because the magnitude of normal accruals is correlated with past and current firm performance, discretionary accruals models that ignore unusual performance are seriously misspecified (Kothari 2001). Accordingly, the failure to control for performance or growth characteristics may lead to erroneous classification of normal accruals as abnormal when performance is unusual (Teoh et al. 1998a, 1998b; McNichols 2000).

2.4.4.1 The Kang and Sivaramakrishnan Model

Kang and Sivaramakrishnan (1995) attempt to develop accruals model as a function of performance and extend the methodological boundaries by proposing an instrumental variables approach and Generalized Method of Moment (GMM) rather than the OLS. Kang (2005) points out that the assumption of the JM that changes of revenues are responsible for changes in current assets and current liabilities is restrictive; current

liabilities are more likely to be related to expenses than revenues. Consequently, the omission of expenses may lead to large positive abnormal accruals in an economic upswing and *vice versa*. Unlike previous models, this model separates revenues, expenses and matching transactions as well as assets to the working capital accruals that originate from them (Ronen and Yaari 2008, 440).

- Revenue (*REV*), which determines the accounts receivable accruals (*AR*);
- Expenses (*EXP*), which determine the inventory accruals (*INV*), other non-cash current asset accruals (*OCA*), and current liability accruals (*CL*). These accruals are aggregated into one measure (*APB*), where *APB= INV+ OCA-CL*; and
- Gross Property, Plant and Equipment (*GPPE*), which determines the depreciation expense (*DEP*). This model can be summarized as follows:

$$AB_{it} = \emptyset_0 + \emptyset_{AR}\left[\frac{AR^*_{t-1}}{REV^*_{t-1}} REV_{it}\right] + \emptyset_{APB}\left[\frac{APB^*_{t-1}}{EXP^*_{t-1}} EXP_{it}\right] + \emptyset_{DEP}\left[\frac{DEP^*_{t-1}}{GPPE^*_{t-1}} GPPE_{it}\right] + \varepsilon_{it}$$

where *AB* are the unmanaged accruals balances and ε is a white noise error. While this model is more capable than the JM to deal with measurement error, omitted variables and simultaneity problems, it has not been widely adopted by other researchers due the problems related to the simultaneous equations approach (Fields et al. 2001).

2.4.4.2 The Margin Model

Similar to the JM and the MJM, Peasnell et al. (2000b) develop a cross-sectional model (MM) that includes, in the first stage, a vector of explanatory variables designed to capture unmanaged accruals, all of which are derived from a formal model linking sales, accruals and earnings. They model the normal changes in stocks, debtors net of bad debt allowance and creditors as key components of working capital. The working capital accruals are defined as follows:

$$WCA = (\Delta STOCK + \Delta DEBT) - \Delta CREDIT + OTHER$$
$$= (REVC - COGS - BDE) + (CPS - CRC) + OTHER$$
$$= sm.\ REVC - cm.\ CRC + OTHER$$

where

WCA	=	working capital accruals;
Δ STOCK	=	purchase of materials less cost of finished goods sold;
Δ DEBT	=	revenue from credit sales less cash received from customers and bad debt expense;
Δ CREDIT	=	purchase of materials less cash paid to suppliers;
OTHER	=	all non-cash current assets other than stocks and trade debtors and all current liabilities other than creditors;
REVC	=	revenue from credit sales;
COGS	=	cost of finished goods sold;
BDE	=	bad debt expense;
CPS	=	cash paid to suppliers;
CRC	=	cash received from customers;
sm	=	gross margin on recorded sales; and
cm	=	gross cash contribution on cash collections from customers.

Thus, any working capital accruals other than sales and cash collections in a period are classified as abnormal and are likely to be considered as a sign of earnings management. To estimate the normal accruals, Peasnell et al. (2000b) use the following cross-sectional regression:

$$WCA_{it} = \lambda_0 + \lambda_1 REV_{it} + \lambda_2 CR_{it} + \eta_{it}$$

where *REV* is total sales (a proxy for *REVC*); *CR* is total sales less the change in trade debtors (a proxy for *CRC*); λ_0, λ_1, and λ_2 are regression coefficients; and η is regression residual.

Peasnell et al. (2000b) evaluate the performance of the JM, the MJM and the MM and find that all three cross-sectional models appear to be well specified when applied to a random sample. However, the MM is better than the JM and the MJM and an appropriate technique to capture earnings management towards expense manipulation, excluding bad debt expense, and when cash flow performance is extremely abnormal (i.e., high or low). In particular, a *z*-test reveals that the rejection frequencies obtained

for the MM are significantly higher than those obtained from the JM and the MJM for magnitudes of artificially-induced earnings management between 1.5% and 6.5% of lagged total assets. In contrast, they find that the JM and the MJM are more powerful in detecting revenue-based and bad debt accounts manipulations. Peasnell et al. (2000b) attribute this result to the smaller coefficients estimates obtained in the first stage of Jones models which, in turn, serve to dampen-down the effect of earnings management that contaminates the drivers of normal accruals.

2.4.4.3 The Cash-Flow Models

Dechow and Dichev (2002) present a model that separates accruals based on their association with cash flows. They do so by regressing working capital (current) accruals on lagged, current and future cash from operations. The unexplained portion of the variation in working capital accruals (residuals) is an inverse measure of accruals quality. That is, a greater unexplained portion implies lower quality (Francis and Wang 2008). The logic behind this model is that the accruals quality depends on their accuracy in predicting cash flows (Ronen and Yaari 2008, 443). Dechow and Dichev (2002) argue that firms with high variability in cash flows have higher accrual estimation errors and lower earnings persistence. Dechow and Dichev run the following firm-level time-series regression:

$$\left(\frac{\Delta WC_t}{Assets_t}\right) = b_0 + b_1\left(\frac{CFO_{t-1}}{Assets_t}\right) + b_2\left(\frac{CFO_t}{Assets_t}\right) + b_3\left(\frac{CFO_{t+1}}{Assets_t}\right) + \varepsilon_t$$

where *Δ WC* is the change in working capital, measured as the sum of change in inventory plus change in accounts receivable minus change in accounts payable minus change in tax payable plus change in net other assets; *CFO* is cash flow from continuous operations; *Assets* is average total assets, and all other variables as defined previously.

Dechow and Dichev (DD) use the standard deviation of residuals as a measure of accruals quality. Later, McNichols (2002) adds variables that capture changes in revenues and fixed assets. Her model, which combines the DD model with the JM, is as follows:

$$\left(\frac{\Delta WC_t}{TA_{t-1}}\right) = \beta_0 + \beta_1\left(\frac{CFO_{t-1}}{TA_{t-1}}\right) + \beta_2\left(\frac{CFO_t}{TA_{t-1}}\right) + \beta_3\left(\frac{CFO_{t+1}}{TA_{t-1}}\right) + \beta_4\left(\frac{\Delta REV_t}{TA_{t-1}}\right) + \beta_5\left(\frac{GPPE_t}{TA_{t-1}}\right) + \varepsilon_{it}$$

McNichols notes that the R^2 of the JM and the DD individually is 7.3% and 20.11%, respectively. The R^2 jumps to 30% when these two models are combined. Furthermore, β_4 and β_5 increase when the JM is modified by controlling for the history of cash flows.

2.4.4.4 The Performance Modified Model

Kothari et al. (2005) show that most of the existing methods for estimating discretionary accruals are misspecified and biased toward rejecting the null hypothesis of no earnings management when firms experience extreme performance, increasing the likelihood that estimated abnormal accruals are non-zero. This misspecification is due in part to the correlation between normal accruals and past (and contemporaneous) firm performance (Dechow et al. 1995; Healy 1996; Barth et al. 2001). These bias and misspecification are likely to lead to inaccurate inferences about earning management (Kothari 2001). In an attempt to model accruals as a function of firm performance, Kothari et al. (2005) offer two different approaches to modify the MJM. The first is to add the contemporaneous return on assets (ROA) or lagged ROA when estimating the discretionary component.[15] The second involves adjusting firm discretionary accruals by matching each sample with another firm in the same industry with the closest current or prior year's ROA. They also recommend the inclusion of an intercept to further control for heteroskedasticity and mitigate the effects of the omitted variable problem. [16] The linear-performance-matched Jones model is as follows:

[15] Most studies use the lagged ROA more than the contemporaneous ROA (Ronen and Yaari 2008, 445). For instance, the discretionary accruals from the JM and the MJM with lagged ROA were 0.08 and -0.14, respectively, but without lagged ROA were -0.31 and -0.61, respectively.

[16] Kothari et al. (2005) point out that the inclusion of an intercept improves the specification of the JM and enhances the power of their test. They find that the exclusion of intercept increases the rejection rates by more than 20% over those reported using models that include an intercept. They argue that this is because an intercept yields higher symmetry around zero discretionary accruals.

$$NDAC_{it} = \alpha_0 + \hat{\beta}_1\left(\frac{1}{TA_{it-1}}\right) + \hat{\beta}_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}}\right) + \hat{\beta}_3\left(\frac{GPPE_{it}}{TA_{it-1}}\right) + \hat{\beta}_4(ROA_{it-1})$$

where $ROA_{t-1,}$ is the lagged return on assets and all other variables as previously defined.

2.4.4.5 The Synthesis Model

Healy (1996, 112) argues that the major problem related to existing earnings management models is " their inability to adequately incorporate the effect of changes in business fundamentals". Most of the modifications of the JM have involved adding controls to account for growth, persistence of accruals and incorporating the effects of changes in business such as the historical rates, as well as applying research methods other than linear regression. Actually, the performance-adjustments proposed by Kothari et al. (2005) and Kang and Sivaramakrishnan (1995) present a step towards Healy's concern (Ye 2007; Ronen and Yaari 2008, 446).

To combat Healy's concern, Ye (2007) proposes a synthesis model that controls for the effects of firm basic characteristics on accruals, which allows researchers to evaluate better the accruals components and enables them to identify abnormal activities that take place within a firm. He extends the linear performance-matched model of Kothari et al. (2005) by adding three measures that not only differ for firms within the same industry, but also vary over time for the same firm. These measures include the level of beginning abnormal working capital, working capital intensity and the useful life of a firm's long-term assets. Ye (2007) runs the following pooled cross-sectional model:

$$ACC_{it} = \beta_0 + \beta_1/TA_{it-1} + \beta_2\Delta REV_{it} + \beta_3 GPPE_{it} + \beta_4 ROA_{it-1} + \beta_5\ NCWC_{it-1} + \beta_6\overline{ncwc}_{it} + \beta_7 NCWC_{it-1} * \Delta REV_{it} + \beta_8 dep_{it-1} + \beta_9 dep_{it-1} * GPPE_{it}$$

where:

NCWC = non-cash working capital (defined as non-cash current assets less current liabilities excluding the current portion of long-term debt) scaled by lagged total assets *TA*;

$\overline{ncwc}$ = normal non-cash working capital intensity which is estimated by the three-year historical average; $\overline{ncwc}_{it} = \frac{1}{3}\sum_{k=1}^{3} NCWC_{it-1-k}$; and

dep_{it-1} = the lagged depreciation rate defined as the depreciation expense Dep_{it-1}, divided by $GPPE_{it-1}$.

In order to show the superiority of his model over the JM, he tests the discretionary accruals generated by his proposed model in three different tests: stratified-sample, loss avoidance and around the time of seasoned equity offerings. He finds that earnings management tests have higher power and lower bias than those generated using the JM. He argues that the proposed variables have higher statistical significance than the variables in the JM. He also argues that the *pooled* regression method has a higher ability to predict accruals in out-of-sample than those models estimated using industry-year regression models (i.e. the JM and the performance-adjusted Jones models).

2.5 Alternative Methodologies

Despite the popularity of the aggregate accruals models, other alternative approaches are suggested to study earnings management (McNichols 2000). One such methodology is that tries to capture managerial discretion through modelling the behaviour of a specific accrual or a set of accruals. Studies that adopt this approach usually focus on a specific industry, such as property and casualty insurance (e.g., Petroni 1992; Petroni et al. 2000; Beaver et al. 2003; Gaver and Paterson 2004) or banking (e.g., Wahlen 1994; Cornett et al. 2009; Ahn and Choi 2009). Another accepted approach includes studies that examine the statistical properties of earnings to identify behaviour that might influence the earnings (e.g., Burgstahler and Dichev 1997; Degeorge et al. 1999; Burgstahler and Eames 2006; Kerstein and Rai 2007; Beaver et al. 2007). The following sections briefly discuss the proxies used under such approaches.

2.5.1 The Single Account Approach

McNichols and Wilson (1988) investigate whether firms with material accounts receivable and bad debts expense tend to smooth earnings through the provision for bad debts or whether they *take a bath* when earnings are either extremely low or high. They partition their sample into three portfolios depending on the deviation of their ROA from two benchmarks (i.e., changes in ROA and ROA from a firm's mean ROA).

McNichols and Wilson (1988) model the expected provision for bad debts as a linear function of the beginning balance in the allowance for bad debts and the magnitude of current and next year's write-offs. Their proxy of managerial accounting discretion is the residual provision for bad debts, $resprov_t$, generated from the following regression:

$$Prov_t = \alpha_0 + \alpha_1 BgBl_t + \alpha_2 Write-off_t + \alpha_3 Write-off_{t+1} + resprov_t$$

where:

$Prov_t$	=	the provision for bad debt, deflated by period *t* sales;
$BgBl_t$	=	the beginning balance in the allowance for bad debts of period *t*, deflated by period *t* sales;
$Write\text{-}off_t$	=	write-offs for period *t*, deflated by period *t* sales;
$Write\text{-}off_{t+1}$	=	write-offs for period *t+1*, deflated by period *t* sales; and
$resprov_t$	=	the projection error, which by design is orthogonal to the regression.

2.5.2 The Set of Accounts Approach

To assess the probability of earnings manipulation, Beneish (1997) develops a non-discretionary probit model uses several financial ratios most of which relate to particular accruals such as receivables, inventory and accounts payable. Specifically, he examines 49 firms identified by the SEC as GAAP violators and 15 firms whose accounting was questioned by news media during the period from 1987 to 1993. He compares sample firms with those that had large discretionary accruals and increasing sales, but had not been identified as GAAP violators. Beneish (1997) calculates a manipulation index using the following unweighted probit model:

$$MI_{it} = -4.840 + 0.920DSRI_{it} + 0.528GMI_{it} + 0.404AQI_{it} + 0.892SGI_{it} + 0.115DEPI_{it} - 0.172SGAI_{it} + 4.679TATA_{it} - 0.327LVGI_{it}$$

where:

MI	=	the manipulation index which is converted to a probability of earnings manipulation using a standard normal distribution table;
DSRI	=	days' sales receivable index ((*REC/ REV*) / (REC_{t-1} / REV_{t-1}));
GMI	=	gross margin index ([REV_{t-1} - *Cost of goods sold*$_{t-1}$ / REV_{t-1}] / [REV_t - *cost of goods sold*$_t$ / REV_t]);

AQI = asset quality index ({1-*(Current assets*$_t$ + *PPE$_t$] / TA*$_t$ } ./ [1 - (*Current assets*$_{t-1}$ + *PPE*$_{t-1}$) / *TA*$_{t-1}$]);

SGI = sales growth index (*REV*$_t$ / *REV*$_{t-1}$);

DEPI = depreciation index ([*Depreciation*$_{t-1}$ / (*Depreciation*$_{t-1}$ + *PPE*$_{t-1}$)] / (*Depreciation*$_t$ / *Depreciation*$_t$ + *PPE*$_t$));

SGAI = sales, general, and administrative expenses index ([*Sales, general, and administrative expense*$_t$ / *REV*$_t$] / (*Sales, general, and administrative expense*$_{t-1}$ / *REV*$_{t-1}$));

TATA = total accruals to total assets ([Δ*Current assets*$_t$ - Δ*Cash*$_t$ - Δ*Current liabilities*$_t$ -Δ*Current maturities of long-term debt*$_t$ - Δ*Income tax payable* - *Depreciation and amortization*$_t$] / *TA*$_t$);

LVGI = leverage index ({*Long-term debt*$_t$ + *Current liabilities*$_t$) / *TA*$_t$} / [(*Long-term debt*$_{t-1}$ + *Current liabilities*$_{t-1}$) / *TA*$_{t-1}$]);

i = firm subscript (*1*, ..., *N* firms)*;* and

t = year subscript (*1*, ..., *T* years).

He finds that the median probabilities of earnings manipulation of the non-manipulators and the manipulators are 0.011 and 0.099, respectively.

McNichols (2000) highlights several advantages associated with the usage of the particular accrual approach. First, the researcher, by utilizing his/her knowledge of GAAP, can develop a perception of the significant factors that influence the behaviour of the accrual. Second, a specific accrual approach can be applied in industries whose business practices cause the accrual in question to be substantial and expected to be a matter of discretion. The concentration on a specific industry setting might also provide insight into variables that identify the discretionary component of a given accrual. Third, because the specific accrual approach directly estimates the relation between a single accrual and explanatory factors, the induced estimation error can be avoided. Finally, it is a user friendly model and considered a low cost classification tool (Beneish 1997).

In contrast, McNichols (2000) identifies three possible disadvantages related to this approach. First, it is not clear which accrual managers tend to use in order to manipulate earnings; as a result, the explanatory power of this approach is low. Furthermore, the validity of this approach tends to be reduced when the aim of the researcher is to identify the magnitude of manipulation rather than testing factors associated with a specific accrual. In such instances, an individual model is required for

each accrual used to manipulate earnings. Second, due to the institutional knowledge needed, the feasibility of employing such an approach is questionable. Third, the generalizability of findings of specific accrual studies might be limited due to the small number of firms for which a specific accrual is manipulated. Finally, it worth noting that earnings management is a behaviour that is associated with the total accounting adjustments rather than the choice of a specific accrual (DeAngelo 1988).

2.5.3 The Distribution Approach

Burgstahler and Dichev (1997) advance a non-parametric methodology focuses on the density of the distribution of earnings after managing earnings. Their analysis depends on the distributional properties of earnings to visually inspect the occurrence of certain earnings numbers. Specifically, they investigate discontinuities in the distribution of reported earnings around three thresholds: zero earnings, prior year earnings and analysts' expectations of current year earnings. They argue that when a firm has greater incentives to achieve earnings above the benchmark, the distribution of earnings after the management will have fewer observations than expected for earnings amounts just below the threshold and more observations than expected for earnings just above the threshold. Their empirical results suggest that earnings are managed to meet earnings targets, mainly to achieve positive earnings evidence. Their results also show low frequencies of small losses and earnings declines, unusually high frequencies of small positive earnings as well as earnings increases. Using a similar analysis, Degeorge et al. (1999) find evidence that earnings are managed in order to beat analyst expectations, report profits and sustain earnings growth strings.

A notable feature of the distribution design is that it provides an informative prediction about the frequency of earnings realizations, which is unlikely to be due to the non-discretionary component of earnings. However, this approach is silent on incentives of management that drive the choice of specific accrual to achieve earnings benchmarks and the ways used to do so (McNichols 2000). Furthermore, it does not enable researchers to isolate the accrual components and it does not also allow them to relate the discretionary component to other variables of interest (e.g., corporate governance mechanisms). In addition, using this approach might be ineffective with small samples.

2.5.4 Rounding Earnings per Share (EPS)

The reporting practice with regard to rounding-up the calculated Earnings per Share (EPS) gives managers the opportunity to exercise discretion over the EPS figure. Since EPS is not an integer, managers could manipulate earnings upward or downward according to their desire to inflate or deflate EPS (Das and Zhang 2003; Ronen and Yaari 2008, 455). By a minor adjustment to earnings (i.e., the numerator in EPS), firms can produce significant valuation results. Das and Zhang (2003) find evidence that support the notion that managers manipulate earnings through short-range discretionary accruals in order to attain behavioural thresholds (i.e., report profits, meet analysts' forecasts, or sustain recent performance).

In a similar vein, Thomas (1989) indicates that firms with good news (relative to prior-year earnings) and firms with bad news round up the third number after the decimal point of EPS. More recently, Jordan et al. (2008) investigate the possible relationships between company characteristics (i.e., firm size, level of leverage and operating performance) and the tendency to manage earnings to affect the reporting EPS. In contrast to Thomas's findings, they do not observe unusual digital patterns in the correct EPS position when companies are segregated according to their status as positive or negative earnings firms. However, when the group of positive earnings firms is subdivided by company characteristics, unusual patterns emerge in the correct EPS position, especially when they are subdivided by company size.

2.6 Commentary

McNichols and Wilson (1988) develop a theory to examine bias in empirical tests that depend on discretionary accrual models. This theory was adopted later by other researchers (e.g., Kang and Sivaramakrishnan 1995; Dechow et al. 1995; Hansen 1996; McNichols 2000; Peasnell et al. 2000b). McNichols and Wilson (1988) use the following linear regression to detect *observable* earnings management, DA, around an event as follows:

$$DA = \alpha + \beta\, PART + \varepsilon,$$

where DA is the observable discretionary component, PART is a dummy variable that partitions the data into two groups according to the event that motivates earnings management and ε is an error term. PART takes the value of 0 during the estimation period and the value of 1 during the event period. Thus, the average discretionary

accruals are α if PART = 0 and $\alpha + \beta$ if PART = 1 (McNichols 2000). McNichols and Wilson (1988) argue that due the unobservability of DA, researchers use DAP as a measure of discretionary accrual, *DA*, with error η as follows:

$$\text{DAP} = \text{DA} + \eta,$$

The error, η, reflects the potential effects of omitted variables in the estimation of DA.

Hence, the accrual-based tests can be expressed as follows:

$$\text{DAP} = \emptyset + \gamma\ \text{PART} + \nu$$

where $$\gamma = \beta + \rho\ (\text{PART}, \eta) * \frac{\sigma_\eta}{\sigma_{PART}},$$

This can be written as $\gamma = \beta +$ bias in γ, and

$$\eta = \text{NA} - \text{NAEST}$$

where NA is the true non-discretionary accruals and NAEST is the estimated non-discretionary accruals using different accrual models and which is also used as a proxy of *NA*. McNichols and Wilson (1988, 6) and Ronen and Yaari (2008, 419) show that if the portioning variable is correlated with η, γ is more likely to be a biased estimate of β, which will be translated into measurement error in the estimated discretionary accrual (Dopuch et al. 2005). This correlation results from inability of researchers to observe all variables (*the omitted variable problem*) that are hypothesized to influence non-discretionary accruals (Kang and Sivaramakrishnan 1995; Young 1999), resulting in inconsistent parameter estimates and incorrect inferences about earnings management (Bernard and Skinner 1996).

The above discussion draws attention to the types of errors generated due to the omitted variables problem: *Type I* and *Type II* errors. *Type I* error takes place when the model predicts earnings management whilst firms do not manage earnings (an erroneous rejection of the non-existence of earnings management). *Type II* error occurs when the model predicts no earnings management whilst earnings management does occur (an erroneous acceptance of the non-existence of earnings management).

The measurement of total accruals is also another estimation issue that is associated with the usage of discretionary accrual models. Two mutually exclusive approaches, which yield different figures, are adopted by researchers to identify total

accruals: the balance sheet approach (BSA) and the cash flow approach (CFA). Commonly, under BSA, total accruals are the change in non-cash current assets less the change in current liabilities (exclusive of the current portion of long-term debt), and depreciation (Ronen and Yaari 2008, 420). According to CFA, the total accruals are estimated directly from the statement of cash flows as the difference between income before extraordinary items and discontinued operations and cash flows from operating activities. Although the second approach is the most commonly used in the literature after the Statement of Financial Accounting Standards (SFAS) No. 95, there are some studies that still use the balance sheet approach. A number of studies argue that the measurement error associated with CFA is lower than that with BSA (e.g., Bahnson et al. 1996; Hribar and Collins 2002).[17]

It is also worth noting that the original tests of the JM and the MJM are performed longitudinally by using time series data for each firm with sufficient time-series data (at least nine years) to estimate firm-specific coefficients in the estimation period. Subsequently, several studies have estimated these models cross-sectionally to reduce the survivorship bias problem inherent in time-series analysis and to overcome the problem of small sample size , as well as relax the assumption that the estimated coefficients are stationary (see e.g., Subramanyam 1996; Teoh et al. 1998a; DuCharme et al. 2001; Peasnell et al. 2005; Kothari et al. 2005). Although, the cross-sectional analysis provides a remedy for the survivorship bias and sample size problems, it also suffers from, at least, three problems. First, this design raises a question about the benchmark that should be used as a non-discretionary accrual (Ronen and Yaari 2008, 416). Second, the ability of a cross-sectional design to capture the reversal of accruals is low (Peasnell et al. 2000b). Third, the assumption that firms in the same industry are homogeneous is questionable (Dopuch et al. 2005; Ronen and Yaari 2008, 417).

In an effort to evaluate the discretionary accruals models, Dechow et al.(1995), Guay et al. (1996), Young (1999) and Dopuch et al. (2005) provide evidence that all of the tested models generate a low power estimate of discretionary accrual because they all contain a significant measurement error.

[17] See Sloan (1996) and Bradshaw et al. (2001) for more discussion about the properties of accruals measured by both approaches.

2.7 Conclusion

This chapter presents a discussion of the most commonly used models to measure earnings management. Several models and methodologies have emerged in the literature to measure the unobservable earnings management. These range from the naïve models such as the models of Healy (1985) and DeAngelo (1986) to more advanced discretionary models as the Jones (1991) model and its modifications. In addition, different methodologies and approaches have evolved to overcome the downsides of accruals models such as those that test a specific accrual or set of accruals or accounts (e.g., McNichols and Wilson 1988; Beneish 1997), or the distribution approach (e.g., Burgstahler and Dichev 1997; Degeorge et al. 1999).

Despite the valuable insights provided by empirical effort, nevertheless the estimation of discretionary component of accruals is likely to be associated with a significant degree of measurement error because all earnings management proxies are imperfect and noisy (Dechow et al. 1995; Healy and Wahlen 1999; Kothari 2001; Fields et al. 2001). For example, the discretionary accrual models provide little evidence or theory that explain the behaviour of accruals in the absence of earnings management (McNichols 2000), to the extent that ‘‘all of the models appear well specified when applied to a random sample.’’, and ‘‘all models reject the null hypothesis of no earnings management at rates exceeding the specified test levels when applied to samples of firms with extreme financial performance.’’(Dechow et al. 1995, 193).

Despite the improvements in research methods and abundance of data sources, the literature fails to provide a generally accepted methodology through which researchers can accurately measure earnings management. This suggests that earnings management remains a fertile and fruitful topic in financial reporting and opens wide avenues for further research to provide accepted evidence on the existence and scope of earnings management. It is reasonable, therefore, to conclude that “Despite the popular wisdom that earnings management exists, it has been remarkably difficult for researchers to convincingly document it.” (Healy and Wahlen 1999, 370).

Chapter 3

The Evolution of Corporate Governance and Ownership Structures in Egypt

3.1 Introduction

This chapter presents rich information about the regulatory environment and the features of ownership and corporate governance structures in an emerging country using a unique data set represents a sample of non-financial Egyptian listed firms during the period (2004-2007). This study is inspired and motivated by the scarcity of studies that provide detailed descriptive analysis of corporate governance mechanisms and ownership structure at the firm level. Notable exceptions of studies conducted in a single country include Black et al. (2010) in Brazil, Balasubramanian et al. (2008) in India, Hovey (2006) in China and Haniffa and Hudaib (2006) in Malaysia. Although a number of studies are conducted across countries (e.g., La Porta et al. 1999; Claessens et al. 2000; Lins 2003a; Thomsen et al. 2006; Dahya et al. 2008), and other studies provide summary statistics for firm-level corporate governance in a single country such as Al-Najjar (2010) in Jordan, Lefort and Urzúa (2008) in Chile, Bozec and Laurin (2008) in Canada, Zhera (2007) in Ukraine, Black et al. (2006) in Russia, Drobetz et al. (2004) in Germany, and Faccio and Lang (2002) in Western European, little detailed information is available about corporate governance mechanisms at the firm level.

This study presents a descriptive analysis in an emerging country characterized by concentration of ownership where control is in hands of small numbers of dominant shareholders which might adversely influence the corporate decisions and resource allocation among different owners. What makes this study distinct from studies conducted in a single country are the rich picture and the recent data used. Unlike Black et al. (2010) and Balasubramanian et al. (2008), data used in the analysis was not collected from one year using the survey method, but hand-collected over the period from 2004 to 2007. Given the secretive nature and inadequate disclosure of Egyptian reporting combined with the absence of any data bases that provide financial data and governance information, data used in the analysis is unique and valuable.

Egyptian ownership and corporate governance structures are considered an ideal example to gain useful insights into the ownership concentration pattern and to emphasis the importance of corporate governance mechanisms that protect the interests of minority shareholders, where the law enforcement is weak and the legal protection of minority shareholders is poor. By doing so, this study complements cross-country studies and adds to single country studies by shedding additional light on different aspects of corporate governance and ownership structures in an important emerging

country in the MENA region. The results of this study, therefore, are valid for other countries that share the same characteristics as Egypt and may help researchers to better understand the weaknesses in corporate governance in emerging countries that need further research.

The descriptive analyses performed in this study reveal important results. Firstly, despite the significant improvements undertaken in the legal, regulatory and institutional framework, as well as the political and economic reforms during the sample period, there is still much work to be done. Secondly, the ownership structure of most listed firms is highly concentrated and control is in the hands of a few family, individuals or State shareholders. Thirdly, although Egyptian boards composed of both executives and non-executive directors and the proportion of non-executive directors is reasonable, the absence of a precise definition of board independence and specific duties of board members casts a doubt on their fiduciary role as representatives of shareholders' interests. Nomination is more likely to be opaque; as a result, most boards are dominated by family members, close relatives and friends who may represent the interests of controlling shareholders, leading to insider-dominated, unskilled, and/or weak boards.

The rest of this chapter proceeds as follows. Section 3.2 discusses the legal and regulatory framework. Section 3.3 presents the current status of accounting and auditing; Section 3.4 discusses data collection and sampling, while Section 3.5 describes the corporate governance mechanisms. Section 3.6 explores the ownership structures and identity of largest shareholders. Finally, Section 3.7 concludes.

3.2 The legal and regulatory framework

The Egyptian legal framework is French civil law oriented, though Anglo-American common law concepts predominate in the capital market laws. The Islamic Shari'a (legislation) has no direct effect on such laws or on corporate governance rules. The regulatory framework contains a significant number of overlapping and ambiguous laws, as listed firms are under the authority of several agencies with overlapping jurisdiction, which weakens law enforcement (ROSC 2009).

Generally speaking, the Egyptian corporate sector consists of four categories of companies, which operate under different laws (Moustafa 2006). First, public enterprise companies that are owned totally by the government are regulated by the rules set by the

Ministry of Investment (MoI) and are operated under the Public Enterprise Law (PEL) 203 of 1991 with its executive decrees. Second, companies that were privatized through minority (less than 50 per cent) initial public offerings (IPOs) are still managed under PEL with its executive decree, because the government still owns over 50 per cent of their capital. Third, companies that were privatized through majority IPOs (over 50 per cent are operated under the Company Law (CL) 159 of 1981 with its amendments and its Executive Regulations 96 of 1982 (CL-ERs), which regulates, *inter alia*, joint stock companies. Fourth, the new private companies, whose ownership structures include various patterns such as, families, public individuals, institutional owners, and governmental associations, which were established either under the CL or the Investment Law (IL) 8 of 1997 with their amendments and executive decrees.

In addition, the Capital Market Law (CML) 95 of 1992 with its amendments and executive decrees covers all issues related to the capital market, such as disclosure and listing rules, tender offers, and minority shareholder rights. The Central Depository Law (CDL) 93 of 2000 with its executive decrees also provides regulations on shareholder record keeping, clearing and settlement.

The Egyptian regulatory bodies include the Capital Market Authority (CMA), which is the securities market regulator that reports directly to the MoI, the Central Bank of Egypt (CBE), and the Egyptian Insurance Supervisory Authority (EISA). In addition to these financial regulators, EGX, the companies department of the Ministry of Investment and Miser Clearing, Settlement and Depository Agency (MCSD) are important institutions involved in regulating the securities market. The following sections present a brief discussion about CMA and EGX as important institutions tasked with the enforcement of the regulatory and legal framework of the Egyptian capital market.

3.2.1 The Capital Market Authority (CMA)

CMA is the market regulatory agency for ensuring development of a transparent and efficient securities market for investors. CMA was established in the late 1970s with a target of organizing and developing the capital market and monitoring good practices of this market. CMA enforces the CML and reviews the annual financial reports produced by listed companies to ensure timely disclosure. Under the CML, new tasks were added to its responsibilities, such as information dissemination, inspection over securities

companies, supervision over market participants' training and law enforcement. In case of observed violations, CMA has administrative sanctioning powers, including de-listing, suspension of licences, cancelling transactions, and imposing monetary penalties. Although CMA has strong sanction powers, in practice weak enforcement and actions taken by the CMA have led to a few cases that being reversed on appeal at court, making complaints to the CMA as the easiest means to appeal (ROSC, 2009).

According to Law 10 of 2009, the Egyptian Financial Supervisory Authority (EFSA) replaced CMA, EISA and Mortgage Finance Authority (MFA). The main responsibility of EFSA is to supervise the non-banking financial markets and instruments including capital markets, derivative markets on financials and commodities, insurance activities, mortgage finance, financial easing, factoring and securitization.[18]

3.2.2 Overview of the Egyptian Exchange (EGX)

EGX [19] is a quasi-government body that operates under the supervision of the CMA. It provides the legal framework of the securities market in Egypt, as it is responsible for enforcing the Listing Rules (LRs) issued by Decree 30 of 2002 and supervising the implementation of these LRs through the Companies Department at the General Authority for Investment (GAFI).

In order to improve its reputation and the confidence of investors, and to attract foreign investments, EGX implemented new LRs in mid-2002 with aggressive fines and suspensions from trading. These rules are in harmony with the corporate governance requirements pertaining to the listed companies and they focus mainly on reporting requirements. Moreover, the executive decrees have been updated by the MoI, with the addition of new chapters, on margin trading, securitization, primary bond dealers and money laundering (Abdel Shahid 2005). With respect to listing, a company can now

[18] See http://www.efsa.gov.eg/content/EFSA_EN/home_page_EFSA_en/chairman_word_en.htm for more information about EFSA [Last accessed on 20/07/2010].

[19] The EGX is formerly called the Cairo and Alexandria Stock Exchange (CASE). See http://www.cma.gov.eg/cma/jtags/english/etar_en.jsp for more information [last accessed on 23/08/2010].

register in one of two tables instead of four: the Egyptian securities and the foreign securities schedules.[20]

The Egyptian capital market has witnessed an impressive economic growth, averaging 5.3 per cent from 2003 to 2008 (ROSC, 2009). Also, the total monthly value traded rose from LE 3,531.2 million at the end of December 2004 to LE 37,355 million at the end of December 2009. Furthermore, Table 3.1 shows that the total number of transactions also rose significantly from 1,743,564 at the end of December 2004 to 14,627,809 at the end of December 2009.

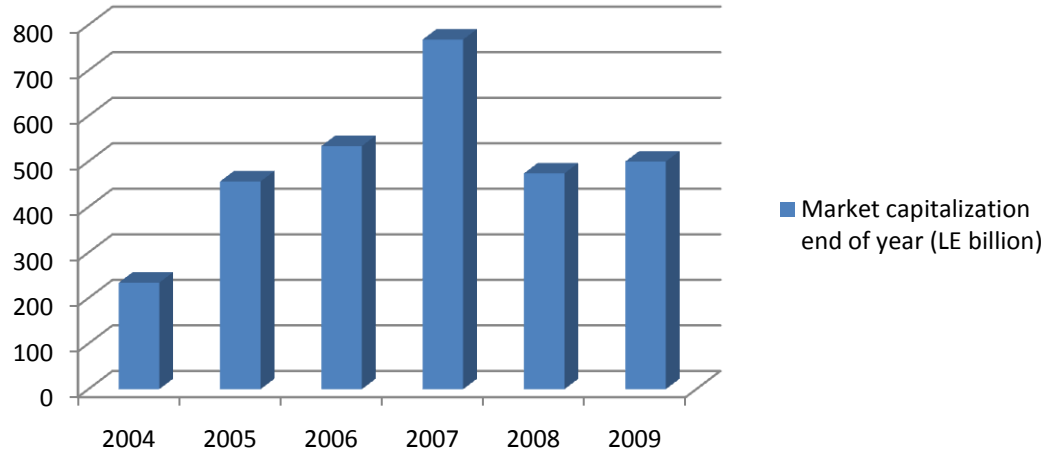

Figure 3.1 Market capitalization end of year (LE billion)

Due to the rigid enforcement of the new LRs and their amendments in 2008 and the implementation of key recommendation of the 2004 Corporate Governance Report on the Observance of Standards and Codes (ROSC), a wave of de-listing has been observed. For instance, the number of listed companies fell significantly from 1151 companies in 2002 to 435 at the end of 2007 and to 306 companies by the end of 2009. had its effect on the number of de-listed companies.

During the period 2004-2009, the market capitalization nearly doubled to LE 500 billion, from LE 233.89 billion at the end of December 2004. Most of the exchange's efforts to promote transparency have been aimed at the top companies that make up the

[20] According to the old listing rules, there were four schedules: official schedule 1, official schedule 2, non-official schedule 1 and non-official schedule 2. Financial and legal conditions required for listing in these schedules are explained in detail in listing rules which are available at: http://www.egyptse.com/pdf/Listing_Rules.pdf [Last accessed on 18/07/2010].

EGX 30[21], which account for 80 per cent of trading volume.[22] It is worth noting that the global financial crisis, although its root is found outside of Egypt, has adversely affected the equity market. More specifically, this global financial crisis has eroded much of the gains that the Egyptian market has realized during 2007 and the first quarter of 2008. The Egyptian market suffered from a wave of investors' panic, with the EGX 30 index incurring 56 per cent losses over the year 2008.[23] Figure 3.1 also points out that the market capitalization decreased from LE 768 billion at the end of 2007 to LE 474 billion at the end of 2008, although it rose to LE 500 billion by the end of 2009.[24]

[21] EGX 30 index, previously named the CASE 30 Index, is the most important of Egyptian stock market indexes calculated by EGX. The start date of this index was at the beginning of 1998 with a base value of 1000 points. The EGX 30 index includes the top 30 companies in terms of liquidity and activity. To ensure that this index truly represents actively traded companies, a company must have at least 15% free float. See http://www.egyptse.com/English/homepage.aspx for more information about the EGX indexes [last accessed on 15/07/2010].

[22] Available at: http://www.egyptse.com/English/marketindicator.aspx [last accessed on 23/07/2010].

[23] The EGX Stock Market Annual Report 2008. Available at: http:// www.egyptse.com [last accessed on 20/05/2010].

[24] In 2004 and 2005, EGX was among the world's best performing emerging market exchange. For instance, according to the Standard and Poor and Morgan Stanley indices, the Egyptian capital market came on top of the emerging and global markets in 2004 and among the best 10 stock markets in the world in 2005. Similarly, according to the 2005 and 2007 Arab Monetary Fund (AMF) index, Egypt held the first place among all other Arab stock exchanges. In addition, according to IMF report issued in 2007, EGX has been hailed as one of the best performing markets in the MENA region. Source: different issues of EGX Annual Report.

Table 3.1 Main Egyptian capital market indicators

Indicator	2004	2005	2006	2007	2008	2009
Volume of Listed Securities	1,786.3	4,198.9	7,757	11,378	21,939	28,617
Volume of Unlisted Securities	648.4	1,111.6	1,323	3,713	3,617	7,985
Total Volume (Million)	2,434.7	5,310.4	9,081	15,090	25,556	36,602
Value Traded (listed securities)	36,141.7	150,924.0	271,108	321,525	475,881	333,519
Value traded (unlisted securities)	6,232.6	9,710.7	15,632	41,522	53,742	114,741
Total value traded (LE million)	42,374.3	160,634.7	286,740	363,046	529,624	448,260
Average monthly value traded (listed securities)	3,011.8	12,577.0	22,592	26,794	39,657	27,793
Average monthly value traded (unlisted securities)	519.4	809.2	1,303	3,460	4,479	9,562
Total monthly value traded (LE million)	3,531.2	13,386.2	23,895	30,254	44,135	37,355
Number of transactions (listed securities)	1,675,277	3,922,301	6,590,196	8,712,584	12,750,940	13,495,170
Number of transactions (unlisted securities)	68,287	217,791	231,244	303,532	705,376	1,132,639
Total number of transactions	1,743,564	4,210,092	6,821,440	9,016,116	13,456,316	14,627,809
Number of listed companies	795	744	595	435	373	306
Number of traded companies	503	441	407	337	322	289
Average monthly traded companies	200	186	183	199	213	216
Turnover Ratio (%)	14.24	31.14	48.7	38.7	70.3	58.63

Securities include stocks, bonds and mutual funds.
Market Capitalization = number of listed shares * market price end of year.
Turnover Ratio (%) =value traded of listed shares / market capitalization. The Turnover Ratio is calculated annually.
The Turnover Ratio in 2008 is calculated after excluding deals.
Source: different issues of the EGX annual report.

3.2.3 Egyptian accounting, auditing and financial reporting

In response to the 2002 World Bank assessment of accounting and auditing practices, which had been undertaken against International Financial Reporting Standards (IFRSs) and International Auditing Standards (IASs), and in its commitment to bring the capital market in line with international standards, Egypt established the Permanent Committee for Standards of Accounting and Auditing. The Committee adopts the Egyptian Accounting Standards (EASs) drafted by the Egyptian Society of Accountants and Auditors (ESAA). Since then, CMA and CBE have been charged with the responsibility to monitor the compliance with these standards. The World Bank assessment indicates that a considerable improvement has been made in reducing differences between EASs and IFRSs. One aspect of this improvement is the requirement of that all joint stock listed firms prepare their financial reports in compliance with EASs. Likewise, CL 159 of 1981 and CML 95 of 1992 require listed companies registered under them to follow EASs, while in the absence of corresponding EASs, companies should refer to IFRSs.[25]

With respect to financial reporting, financial disclosure has been improved remarkably in terms of timeliness and quality, though some concern about the quality of this disclosure and non-financial disclosure is still thought to be an issue (ROSC, 2009). Listed companies are required to provide copies of their annual financial statements to CMA and EGX which have to be prepared in accordance with EASs.

Additionally, listed companies must publish a summary of their annual financial statements in two daily newspapers, at least one of which must be in Arabic. Mandatory financial disclosure includes the balance sheet, the income statement, the cash flow statement, the statement of changes in equity, the notes to the accounts, the board of directors' report, and the external auditor's report.[26] Furthermore, only listed companies with 100 shareholders or more must produce semi-annual and quarterly financial statements with a limited review report by an external auditor. Firms with state ownership 25 per cent or more must be audited by the CAO in addition to external auditors.

[25] All Banks that operate under the authority of the Banking Law 88 of 2003 must use accounting and auditing standards prescribed by CBE. Likewise, insurance companies operating under the jurisdiction of Act 10 of 1981 must prepare their general-purpose financial statements in accordance with IFRSs and national bylaws have to be applied when calculating insurance technical provisions.

[26] Articles 6 and 7 of CML 95 of 1992.

Despite these significant changes, there are some concerns about the weak enforcement, the lack of implementation guidelines, and the inadequate knowledge of IFRSs, leading to a potential low quality of Egyptian financial reporting. To address these concerns, a new set of 35 EASs was issued in 2006, superseding the previous EASs issued by the Ministerial Decrees 243 of 1997 and 345 of 2002. EASs are issued to comply with economic changes and to improve Egyptian Corporate Governance.[27] The United Nations Conference on Trade and Development (UNCTAD) report issued in 2008 found considerable progress since the 2002 assessment, though a caution has been noted regarding the Arabic translation of IFRSs, connoting a potential gap between the existing EASs and the recent IFRSs.

With respect to auditing standards, a set of 38 Egyptian Standards on Auditing (ESAs) issued by the ministerial decree 166 of 2008 came into effect starting from January 2009 to replace those issued in 2000. These standards are issued in Arabic and are prepared to comply in form and content with ISAs issued in 2007.[28] Both EGX and CMA enforce these standards when auditing the financial statements prepared in accordance with EASs.

One of the unique features of auditing in Egypt is the existence of the Central Auditing Organization (CAO). CAO is an independent organization that helps the People's Assembly (Parliament) to achieve control over state and public entities' funds.[29] In order to ensure the independence of this organization, Law 157 of 1998 requires CAO to report directly to the President of Egypt. CAO performs financial and legal controls over the performance of public-sector companies, as well as follow up the implementation of the national plan and exert legal control over decisions regarding

[27] Most of these standards are issued based on the 2005 IFRSs version. In some cases EASs are prepared to take into account specific situations that reflect the Egyptian environment. These include: presentation of financial statements; property, plant and equipment; financial statements' presentation, disclosure of financial instruments; and the accounting treatment for financial leasing.

[28] The ESAA has prepared a draft of Accounting Practice Law (APL) to regulate accounting and auditing practices and amend old APL 133 of 1951. The new draft of APL had been forwarded to the People's Assembly for approval.

[29] In 1942, Law 53 was issued to establish the State Audit Bureau Law (*Divan of Accounting*) as an independent body to control public revenues and expenditures. In 1960, its name was changed to the Court of Auditing (*Divan of Auditing*). In 1964, following the nationalization of major private enterprises and the adoption of comprehensive national development planning, its name was changed again to the Central Auditing Organization (CAO) and it was assigned different duties and authority under law 129 of 1964. Then, a new Law was issued in 1988 to further enhance the powers and responsibilities of CAO. Recently, this Law was amended after the issue of Law 157 of 1998 which provides a direct subordination of the organization to the president of Egypt. *Source:* Central Auditing Organization available at: http://www.cao.gov.eg/index_files/Page437.htm [last accessed on 3/08/2010].

financial irregularities. According to Law 157 of 1998, CAO exercises financial, performance and legal control, as well as provides opinions on the financial statements for publicly owned companies, other state bodies, and companies in which one of the public entities or public sector companies or banks owns 25 per cent or more of the share capital.

Table 3.2 reports the distribution of auditor type for the pooled sample by sector. It appears from the table that all sample firms in the Telecommunication sector are audited by Big Four auditors, while one third of those firms are audited by both Big Four and CAO. Likewise, Big Four auditors appear to have a large share of sample firms in the Construction and Materials, and Personal and Household Products sectors, reflecting the lower ownership of state or other public entities of firms belonging to these sectors. In contrast, the CAO appears to be responsible for auditing 50 per cent of firms in the Chemical and Retail sectors because most sample firms are from firms owned by the holding companies in which public, government, and state entities own more than 25 per cent of the capital shares. It is evident also that 39 per cent of firms in the Travel and Leisure sector are audited by international auditors, while local auditors audit 40 per cent of firms in the Basic Resource sector. In addition, it seems that the client-auditor relationship in 84 per cent or more of sample firms started before three years or more.

Table 3.2 Auditor type by sectors

Sector	BIG4%	CAO%	BIG5%	Intentional Auditor(s)%	Local Auditor(s)%	Auditor Tenure %	No. of observations
Basic Resources	27	33	50	10	40	97	30
Chemicals	17	50	67	17	16	89	18
Construction and Materials	48	9	55	17	28	87	89
Food and Beverage	18	43	58	6	36	89	72
Healthcare and Pharmaceuticals	5	31	36	26	38	90	39
Industrial Goods & Services and Automobiles	20	29	49	34	17	85	41
Personal and Household Products	47	26	72	28	0	94	47
Real Estate	30	38	58	10	32	92	60
Travel and leisure	29	13	39	42	19	84	31
Telecommunication	100	33	100	0	0	1	9
Retail	0	50	50	50	0	1	6
All sectors	31	29	55	19	26	90	442

This table presents the average of auditors operating in different sectors for 615 non-financial firms during the period (2004-2007). *BIG4* is the four largest international auditors which include Mansour & Co. -PricewaterhouseCoopers, Kamel Saleh-Deloitte Touche Tohmatsu (DTT), Emad Ragheb-Ernst & Young and Hazem Hassan- KPMG; *CAO* is the Central Auditing Organization; *BIG5* includes the *BIG4* and the CAO; *International auditors* are the non-big four international auditors; *Auditor Tenure* is a dummy variable that takes the value of 1 if the client-auditor relationship started before three years, and zero otherwise; and *local auditors* are the Egyptian local auditors

3.3 Data collection and sample

The data examined in this study are drawn from a unique data set represents a sample of non-financial publicly listed companies over the period 2004-2007. The sample selection process resulted in an initial sample of 1577 firm-year observations. Financial, non-publically traded and regulated firms are excluded due to the uniqueness of their disclosure requirements and regulation, which makes their accounting information not comparable with that of firms in other industries. The financial statements were hand-collected from the scanned financial statements kept by EGX and CMA.[30] This data is also supplemented by financial statements collected in the same way from the Listed Companies Division (i.e., Disclosure and Listing department).

Data on ownership structure, board variables, audit committees and auditors was hand-collected from EGID and CMA. Similarly, they are supplemented by the hand-collected data from annual disclosure book issued by EGX, which provides detailed information about the 50 most active companies. Market values of equity were extracted from the monthly and yearly bulletins obtained from EGID. As a result, 289 banks and other financial services observations as well as 10 utilities observations are eliminated. The sample is reduced further by 622 observations to exclude firms whose ownership structure and other corporate governance information are not available. Finally, 41 observations are excluded due to insufficient data. Consequently, the sample selection procedure yields a final sample of 615 firm-year observations.[31] The number of firms is 152, 154, 155 and 154 for 2004, 2005, 2006 and 2007, respectively.[32]

[30] Data from EGX are hand-collected from Egypt for Information Dissemination (EGID). EGID was established in June 1999 as a fully owned subsidiary of the EGX. EGID built an electronic data base of fundamental information covering the listed companies at the EGX. Currently EGID is a joint venture between the EGX and NasdaqOMX with an aim to sell, develop and support information and technology solutions for the financial markets in the region. *Source*: available at http://www.egidegypt.com/aboutus.aspx [Last accessed on 01/08/2010].

[31] See footnote 4 in Chapter Four for procedures used to determine final sample size for the purpose of earnings management analysis.

[32] This study adopts the new classification scheme presented in 2007 by EGX. According to this classification, all listed companies are classified into 17 broad economic sectors instead of 22 sectors. The Utility and Financial sectors, which include Banks and Financial Services Firms other than banks, are excluded due to their disclosure uniqueness. Also, the Gas and Oil, Media, and Technology sectors are excluded due to the small number of firms in these sectors.

Table 3.3 Sample size by sector and year

Sector	2004		2005		2006		2007		All years	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Basic Resources	11	7.28	11	7.14	11	7.1	11	7.1	44	7.15
Chemicals	7	4.64	7	4.55	7	4.52	7	4.52	28	4.55
Construction and Materials	30	19.87	31	20.13	31	20	30	19.48	122	19.83
Food and Beverage	24	15.89	24	15.58	25	16.13	25	16.13	98	15.93
Healthcare and Pharmaceuticals	13	8.61	13	8.44	13	8.39	13	8.39	52	8.46
Industrial Goods and Services and Automobiles	14	9.27	15	9.74	15	9.68	15	9.68	59	9.59
Personal and Household Products	16	10.6	16	10.39	16	10.32	16	10.32	64	10.41
Real Estate	21	13.81	21	13.64	21	13.55	21	13.55	84	13.67
Travel and leisure	11	7.28	11	7.14	11	7.1	11	7.1	44	7.15
Telecommunication	3	1.99	3	1.95	3	1.94	3	1.94	12	1.95
Retail	2	1.32	2	1.3	2	1.29	2	1.29	8	1.3
Total	**152**	**100**	**154**	**100**	**155**	**100**	**154**	**100**	**615**	**100**

This table shows the sample size over the period (2004-2007) classified by sector and year. This study adopts the new classification scheme presented in 2007 by the EGX. According to this classification, all listed companies are classified into 17 broad economic sectors instead of 22 sectors. Utility and Financial sectors, which include Banks and Financial Services Firms other than banks, are excluded due to their disclosure uniqueness. Also, Media and Technology sectors are excluded due the small number of observation in these sectors.

Source: The Egyptian Exchange (EGX) and the Capital Market Authority (CMA).

Table 3.4 Definition of variables

Variable	Definition
Panel A: Board structure variables	
Board size	The total number of directors on the board.
Executive directors	The number of executive directors on the board.
Non-executive directors	The number of non-executive directors on the board.
Ratio of executive directors	The ratio of the number of executive directors to the total number of directors on the board.
Ratio of non-executive directors	The ratio of the number of non-executive directors to the number of total directors on the board.
CEO duality	A dummy variable coded as 1 if the positions of CEO and COB are held by the same person and zero otherwise.
Panel B: Ownership structure variables	
Executive ownership	The percentage of equity ownership held by executive directors to total equity.
Non-executive ownership	The percentage of equity ownership held by non-executive directors to total equity.
Board ownership	The percentage of equity ownership by all directors.
Executive ownership	The percentage of equity ownership held by executive directors.
Non-executive directors ownership	The percentage of equity ownership held by non-executive directors.
No. of large shareholders	Number of large shareholders in a firm.
Largest shareholder	The percentage of shares held by the largest shareholder who owns 5% or more of a firm's ordinary shares.
Two largest shareholders	The percentage of shares held by the two largest shareholders who own 5% or more of a firm's ordinary shares.
Three largest shareholders	The percentage of shares held by the three largest shareholders who own 5% or more of a firm's ordinary shares.
Four largest shareholders	The percentage of shares held by the four largest shareholders who own 5% or more of a firm's ordinary shares.
Five largest shareholders	The percentage of shares held by the five largest shareholders who own 5% or more of a firm's ordinary shares.
Ownership concentration	The sum of the shares held by all firms' shareholders with equity ownership 5 % or more of total equity.
Outside ownership concentration	The sum of the shares held by non-managerial shareholders with equity ownership 5 % or more of total equity
Panel C: Identities of the largest shareholders	
Local ownership	
CEO ownership	The percentage of shares owned by Egyptian CEO who owns 5% or more of firm's ordinary shares.

(The table continued on the next page)

Table 3.4 (continued)

Executives other than CEO	The percentage of shares owned by Egyptian executive directors (other than CEO) who own 5% or more of firm's ordinary shares.
Non-executives	The percentage of shares owned by Egyptian non-executive directors who own 5% or more of firm's ordinary shares.
Individuals/families outside the board	The percentage of shares owned by Egyptian non-managerial individual/family who own 5% or more of firm's ordinary shares.
Employees associations	The percentage of shares owned by Egyptian employees associations that own 5% or more of firm's ordinary shares.
Banks	The percentage of shares owned by Egyptian banks that own 5% or more of firm's ordinary shares.
Insurance companies	The percentage of shares owned by Egyptian insurance companies that own 5% or more of firm's ordinary shares.
Financial Firms	The percentage of shares owned by Egyptian financial firms that own 5% or more of firm's ordinary shares.
Non-financial firms	The percentage of shares owned by Egyptian non-financial firms that own 5% or more of firm's ordinary shares.
State/government agencies	The percentage of shares owned by Government and its agencies that own 5% or more of firm's ordinary shares.
Foreign ownership	
Individual/Families	The percentage of shares owned by foreign individual/family who own 5% or more of firm's ordinary shares.
Non-financial firms	The percentage of shares owned by foreign non-financial firms that own 5% or more of firm's ordinary shares.
Free-float	The percentage of all firms' shares held under the disclosure threshold and not controlled by the controlling shareholders.

Source: The Egyptian Exchange (i.e. EGID) and Capital Market Authority (CMA).

3.4 Corporate Governance in Egypt

Egypt has paid attention to the importance of compliance with international standards of corporate governance. Since 2000, Egypt with international agencies such as the United States Agency for International Development (USAID) and the World Bank as well as local agencies such as the Egyptian Centre for Economic Studies (ECES) have conducted a number of assessments of Egypt's corporate governance practices for compliance with the Organization for Economic Cooperation and Development (OECD) principles (Fawzy 2003; Moustafa 2006). In 2001, the ex-Minister of Economy, for the first time, invited a joint team from the World Bank-Integrated Monetary Fund (IMF) to prepare a ROSC. This report was updated in October 2003 (Abdel Shahid 2005). More

recently, the World Bank conducted a third assessment in 2009. According to this report, much has been undertaken in Egypt since the 2003 assessment. This includes, *inter alia*, changes in regulatory and legal legislations, issuing ECGC, updating LRs in 2008, and adopting EASs and ESAs.

To spread awareness, knowledge and best practices of corporate governance in Egypt and to follow the World Bank's recommendations, the MoI established the Egyptian Institute of Directors (EIoD) in 2004.[33] EIoD issued the first Egyptian Corporate Governance Code (ECGC) in 2005 based on OECD principles of corporate governance, which represent an excellent international benchmark for corporate governance.[34] Even though those principles mainly focus on listed companies, financial institutions, and companies financed through banking sectors traded companies, they may also be useful for non-traded companies, such as closed-family firms and limited liability corporations as a start point for listing, especially, taking into account that no more than 2.5 % are listed in EGX. Later in 2006, MoI issued a Code of Corporate Governance for Stated Owned Enterprises.[35] However, ECGC is neither mandatory nor legally binding, as ECGC is not legislatively mandated and compliance is voluntary, making the benefits resulting from such compliance limited (ROSC, 2009).[36] For example, EGX does not require listed firms to indicate whether they are in compliance with ECGC, though in very few cases a company includes in its annual reports a section that provides a brief discussion of its corporate governance structure such as the names of board members with their affiliation, number of board meetings, the names of audit committee members, and responsibilities of the General Assembly. The following sections present more details about the most important characteristics of Egyptian corporate governance, namely, board characteristics and ownership structure.

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[33] According to the Presidential decree 231 of 2004, the affiliation of the EIoD is changed from the Ministry of Trade & Industry to the Ministry of Investment.

[34] The code covers the following six areas: the climate for effective corporate governance, equal treatment of stakeholders, preserving directors' rights, openness and transparency and facilitating access to company information, rules for the information, responsibilities and conduct of boards of directors and meetings, and the rights of a company's associates. Available at: http://www.cipe.org/regional/mena/pdf/EgyptCGCodeEnglish.pdf [last accessed on 17/02/2010].

[35] Egypt is the region's first to launch codes of corporate governance for private and state-owned companies.

[36] According to 2007 IFC MENA-wide Corporate Governance Survey, only 34.3 per cent of listed firms follow ECGC recommendations.

3.4.1 Board characteristics

3.4.1.1 Board composition and size

The Egyptian boards compose of both executive and non-executive directors. The ECGC emphasises the importance of inclusion of independent directors with an appropriate mix of technical and analytical skills and capable of allotting sufficient time to their board directorship, which will not represent any conflict with their other interests. Egyptian laws stipulate that the board is elected to represent shareholders and it should be proportionally representative according to capital distribution. Nevertheless, existing voting rules entitle the controlling owners to use their voting power in order to appoint all members by voting for each nominee individually (ROSC 2009; Fawzy 2003; Sourial 2004).

In practice, it is very rare that annual reports of Egyptian firms make a distinction between independent directors and non-executive directors. The only available information is a classification of executive directors and non-executive directors. One reason for the failure to make this distinction is the lack of a clear definition of independent non-executive directors (Sourial 2004). For example, LRs require any firm seeking listing to attach, *inter alia*, a list of the names of board members and a description of their previous experience, qualifications and specialization and whether they are executive, non-executive or independent, without giving exact definition of independence or making a distinction between non-executive and independent members.[37]

Table 3.5 shows that the average number of directors on the board is 7.67 and that this number is relatively stable over the test period. The average number of executive directors ranges from 2.318 in 2004 to 2.277 in 2007. With respect to board composition, the ratio of non-executive directors, which on average is 65.6%, is also relatively stable over the sample period, although it is larger than the ratio of executive directors. Similarly, the proportion of non-executive-dominated boards in all years, on average, is 80.3%, suggesting dominant representations of outside directors on boards of sample firms.

[37] Article 4of LRs modified by a decision of CMA No. 94 of 2008.

Table 3.5 Average board composition

	2004	2005	2006	2007	all years
Number of directors	7.695	7.656	7.665	7.677	7.673
Number of non-executive directors	5.377	5.344	5.316	5.342	5.345
Number of executive directors	2.318	2.312	2.290	2.277	2.299
Fraction of non-executive directors	0.655	0.655	0.654	0.658	0.656
Fraction of executive directors	0.345	0.345	0.340	0.336	0.342
Fraction of non-executive-dominated boards[a]	0.808	0.812	0.794	0.800	0.803
CEO and COB duality	0.636	0.630	0.658	0.658	0.646
Number of observations	152	154	155	154	615

This table presents the average numbers of total, executive, and non-executive numbers of directors on the board of 615 non-financial observations over the period (2004-2007). Definitions for all variables are provided in Table 3.4.

[a] Non-executive-dominated boards are those boards in which at least 50% of the board members are non-executive directors.

Further, Figure 3.2 shows that non-executive directors on boards differ across sectors, as the Telecommunication sector has the largest boards among sample sectors with average 8.75 of non-executive directors, while the Retail sector has the smallest number of non-executive directors (3) among those sectors.

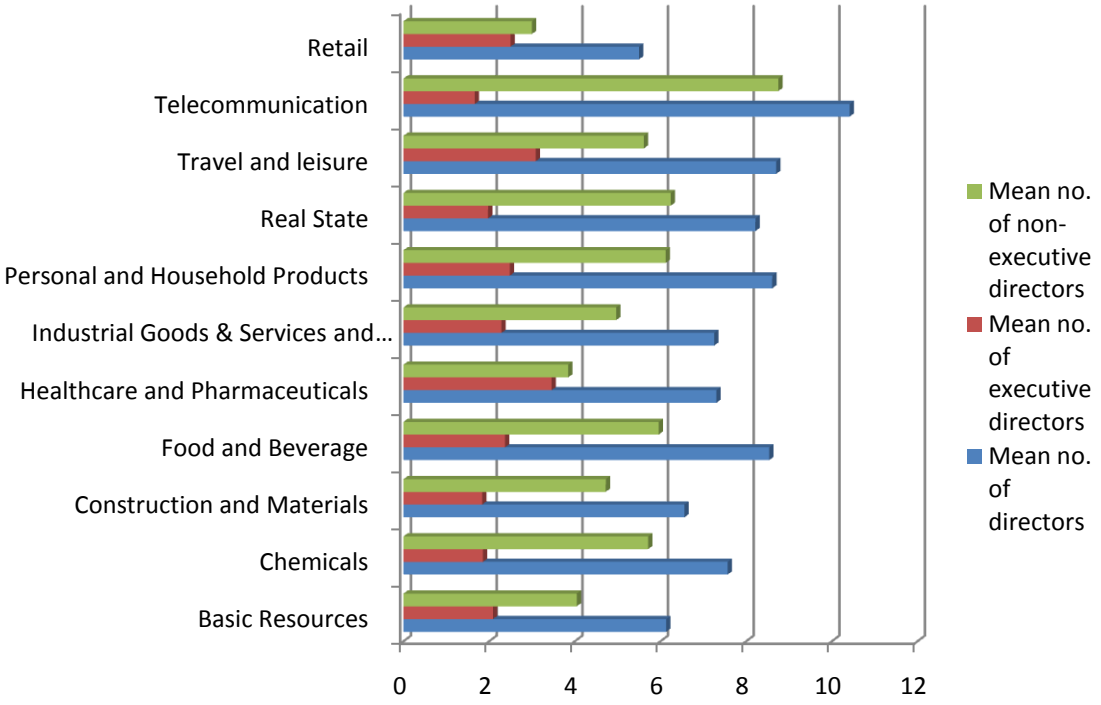

Figure 3.2 Average board compositions by sector

Despite the existence of a sufficient number of non-executive directors on boards, many firms are thought to have non-independent directors because most of those members are chosen by controlling shareholders who use their voting power to elect members who represent the interest of dominant shareholders or family-members whose interests are aligned with the interest of their families (Sourial 2004; ROSC 2009).

In many cases, this leads to selection of unskilled members and those whose loyalty and accountability are more likely to be to controlling or family owners (ROSC 2009). In such circumstances, the controlling shareholders can divert and expropriate firm resources to benefit themselves at the expense of minority shareholders.

Table 3.6 Board size

No. of directors	No. of firms	Percent	Cumulative percentage
3	39	6.34	6.34
4	6	0.98	7.32
5	136	22.11	29.43
6	50	8.13	37.56
7	110	17.89	55.45
8	20	3.25	58.7
9	116	18.86	77.56
10	22	3.58	81.14
11	59	9.59	90.73
12	18	2.93	93.66
13	23	3.74	97.4
14	8	1.3	98.7
15	4	0.65	99.35
17	4	0.65	100

This table provides the frequency and percentage of Board size of 615 non- financial observations over the period (2004-2007). A definition for board size is provided in Table 3.4.

With respect to board size, Egyptian companies have the choice to determine the appropriate board size that fits their needs. According to CL, boards must have an odd number of members, not less than three, chosen by the General Assembly for three years in accordance with the company statute, with the exception of the first board, which is appointed by the founders for a maximum of five years (Bahaa El Din and Shawky 2005).[38] In addition, these firms have the choice to determine the appropriate board size that fits their needs. According to CL, managers may serve on a maximum of

[38] Article 77 of CL 159 of 1981.

two boards, but managing directors should only serve on one board with the exception of the manager who owns at least 10 per cent of the company's share capital (Fawzy 2003).[39]

Table 3.6 shows that the smallest number of directors in sample firms is 3 and the largest is 17. For the sample firms, the average board size is 7.673. Table 3.6 also reveals that only 6.34 (0.65) per cent of observations have the minimum (maximum) number of directors identified by CL. Figure 4.2 indicates that the average board size in all sample sectors ranges from 6 to 10 with the exception of the Telecommunication and Retail sectors whose average number of directors is 10.41 and 5.5, respectively.

3.4.1.2 CEO-Duality

CEO-duality means that the Chairperson of the Board (COB) serves as the Chief Executive Officer (CEO). Two views can be distinguished concerning the separation or combination of the two roles. Advocates of separation argue that duality limits the monitoring and disciplining role because it gives a person much power over all other parties on the board, constraining the governance role of boards (Fama and Jensen 1983; Jensen 1993; Adams et al. 2005; McKnight and Weir 2009). On the other hand, proponents of duality argue that duality is crucial to achieve centralization of authority, unity of command and coordination to reduce any potential conflict between CEO and chairperson (Daily and Dalton 1997; Donaldson and Davis 1991; Davis et al. 1997; Weir et al. 2002).

Looking at the Egyptian context, CL stipulates that the board of directors can appoint a chairperson from its members, who can appoint a deputy chairperson to replace him during his/her absence. Also, CL does not prohibit the chairperson from being the CEO at the same time.[40] Moreover, ECGC *prefers* that the posts of board chairperson and CEO are not occupied by the same person and in case of the necessity of combining the two posts; the reasons should be explained in the corporation's annual reports. In this situation, a non-executive vice chairperson should be appointed.[41] Even so, duality is particularly common among listed companies in the EGX (Abdel Shahid 2003).

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[39] Article 93 of CL 159 of 1981.

[40] Article 85 of CL 159 of 1981.

[41] The ECGC 2005, (Section 3.6).

Among sample firms, Table 3.5 shows that, on average, 63.6 per cent of firms combined the positions of CEO and COB in 2004, while 65.8 per cent did so in 2007. One possible reason for this is that CEO-duality can be seen as an aspect of ownership concentration that reflects an environment dominated by family firms and characterized by weak legal investor protection. The prevalence of duality is also noticed in US and UK studies. Comparing with other studies, this figure is much higher than 58.3% that found in the USA by Linck et al. (2008), 25.7% found in Malaysia (Haniffa and Hudaib 2006), 17 % found in Bahrain (Hussain and Mallin 2002), and 7.74% found in the UK by Florackis and Ozkan (2009a).

3.4.1.3 Board structure

Boards of directors commonly perform their work through the full board or the delegation of some of their authority to standing committees that report directly to the board (Klein 2002b). Delegating different board functions to different committees implies a separation of tasks and functions in boards (Laux and Laux 2008). One such committee is the Audit Committee (AC). The responsibilities of ACs include monitoring management, appointing and meeting external auditors regularly to evaluate the firm's financial statements, interacting with and questioning the internal financial managers, and reviewing the firm's internal controls (e.g., Song and Windram 2004; Collier 1993; McDaniel et al. 2002; Klein 2002b; DeZoort et al. 2002; Bryan et al. 2004; Peasnell et al. 2005).[42]

ECGC stresses the importance of non-executives' inclusion in board committees, in particular the audit committee, which must report directly to the board. The ECGC requires each company having securities listed on EGX to have an Audit Committee to be selected by the company's board of directors with at least three qualified non-executive independent directors, one of whom is to be selected as the chairperson. In case the company does not have a sufficient number thereof, the committee may include experienced persons and shall perform its work separately from the company's management.[43] For the sample observations where data is available, 65.4 per cent of firms (not reported in the tables), on average, have audit committee composed mostly of non-executive directors.

[42] See Article 7 of LRs for more responsibilities of audit committee in Egypt.

[43] Article 7 of CMA decision 94 of 2008 regarding the amendments of Listing Rules.

Other board-level committees are nomination, corporate governance and remuneration. ECGC and LRs do not impose or identify any regulation with regard to the formation of these committees, although ECGC suggests formation of a remuneration committee comprising mostly or wholly of non-executive members who have the authority to propose financial remuneration in consultancy with the CEO, leaving the final decision to those non-executive members. Further, names of committee members should be disclosed in the firm's annual reports.[44]

In practice, the remuneration packages of executive and non-executive members are determined by the controlling shareholders and/or the chairperson (ROSC, 2009). Although the names of board directors and their remuneration are commonly disclosed to the Annual General Meeting (AGM) (Fawzy 2003), disclosure of these packages is observed, in very rare cases, in the annual reports. With regard to executive compensation, there is no obligation to disclose such information in the AGM. One potential reason for the lack of disclosure of this information may be due to the secrecy embedded in the Egyptian disclosure environment (Dahawy and Conover 2007), and the absence of regulation that enforces disclosure of this information.

3.5 Ownership structure

Egypt adopted a comprehensive economic reform programme that includes commerce, trade liberalization, legal, political, judicial reforms and tax reforms as well as stock market development. In an effort to improve the economy, Egypt has adopted a privatization programme as a fundamental part of the comprehensive economic reform programme. The privatization programme is based on reducing government interference in the economy and broadening participation of the private sector through transferring ownership of State Owned Enterprises (SOEs) or management of public enterprise to the private sector. This has led to a significant change in the structure of corporate ownership, as the government gives up control to individuals and/or transfers cash flow rights to managers (Boubakri et al. 2005; Omran 2001). Despite the slow pace of the privatization programme results from the lack of the necessary legislative and regulatory environment, the down-turn in the economy and the capital market, it accelerated at a vigorous rate after the appointment of a new cabinet in 1996 which was

[44] The ECGC 2005, (Section 3.12).

committed to concentrating on full privatization rather than partial privatization (Ben Naceur et al. 2007).[45]

Table 3.7 Companies privatized and/or liquidated from inception of privatization programme up to 31/12/2009

Method of Privatization	No. of firms	Sales Proceeds	
		LE Million	%
Majority through Public Offering	38	6,064	11.30
Minority through Public Offering	23	11,003	20.51
Liquidation	34	-	-
Asset Sale	44	3,437	6.41
Anchor Investor	85	32,208	60.04
ESAs	33	932	1.74
Leasing	25	-	-
Total	**282**	**53,644**	**100**

This table shows the number of privatized firms and sales proceeds in Egypt from inception of privatization programme up to the end of December 2009 categorized by the method of sale.

Source: Ministry of Investment and the EGX monthly bulletin (December 2009).

The period from 2005 to 2006 witnessed the highest proceeds, representing 64 per cent of the total proceeds achieved in previous periods, with total proceeds of LE 15.136 billion.[46]The Egyptian Government adopts several methods to implement that programme. This includes selling shares through the local stock market as minority and majority initial public offerings (IPOs), selling a significant percentage of shares to strategic or anchor-investor(s), selling shares to Employee Shareholder Associations (ESAs), and selling or leasing firm assets (Ben Naceur et al. 2007). Table 3.7 shows that the total number of privatized companies is 282, of which 38 companies are privatized through majority Initial Public Offerings (IPOs) and 23 via minority IPOs with proceeds LE 6,064 million and LE 11,003 million, respectively.

It is evident also from the table that the number of companies privatized through an anchor investor accounts for 60.04 per cent of all privatization proceeds. In addition, there are 33 companies privatized through selling shares to ESAs. Out of privatized companies, 44 companies are privatized via selling their assets, while the assets of 25 of

[45] From 2004 the MoI is responsible for implementing the privatization programme rather than the Ministry of Public Enterprise.

[46] *Source*: the Ministry of Investment (MoI).

those companies are leased and 34 are liquidated.[47] One important result for privatization in Egypt is the change in ownership structure that, to some extent, has become more flexible with the participation of the private sector.

The following sections present a detailed picture of the corporate ownership structure. In particular, the managerial ownership, other types of ownership and largest shareholders with their identity.

3.5.1 Managerial ownership

In Egypt, LRs require the resumes of each board member and senior management to be attached to the listing application. The resumes shall include, *inter alia*, the participation of a board member in other companies where his ownership exceeds 5 per cent in those companies' capital and any group of members that own 5 per cent or more of the company's capital.[48]

Table 3.8 Average percentage of shares held by board members

	2004	2005	2006	2007	all years
CEO ownership	8.26	8.28	8.40	7.67	8.15
Ownership of executives other than CEO	2.94	2.88	2.97	3.11	2.98
Sum of executives & CEO ownership	11.2	11.16	11.37	10.78	11.13
Non-executives' ownership	3.30	3.38	3.36	3.70	3.44
Board ownership	14.5	14.54	14.73	14.48	14.56

This table shows the average percentage of ordinary shareholders held by CEO, Executives, and Non-executives of 615 non- financial observations over the period (2004-2007). Definitions for variables are provided in Table 3.4.

Table 3.8 demonstrates that total ownership of executives (i.e., CEO and other executives) declined, on average, during the analysis period. Precisely, it dropped from 11.20 per cent in 2004 to 10.78 per cent in 2007. Of these, CEOs owned, on average, 8.26 per cent in 2004, falling off to 7.67 in 2007, although other executives' ownership is relatively stable over time. Likewise, non-executives' ownership increased by 0.40

[47] A number of studies that investigate the post-performance of privatized firms conclude that those firms experience significant increase in performance in terms of profitability, efficiency and productivity (e.g., Megginson et al. 1994; Boubakri and Cosset 1998; La Porta and Lopez-de-Silanes 1999; Omran 2004, 2007; Ben Naceur et al. 2007).

[48] Article 4 of LRs.

per cent during the same period. Table 3.8 also shows that the average board ownership accounts for 14.5 per cent and 14.48 per cent of total outstanding shares in 2004 and 2007, respectively. In comparison, UK studies indicate that the average shares held by board members are close to 15.08 per cent as reported by Lasfer (2006), while it is above the 11.5 per cent reported by Short and Keasey (1999) for a sample of UK listed firms in 1992 and the 9 per cent reported by Peasnell et al. (2003).

Table 3.9 Frequency distribution for board ownership

	CEO Ownership		Executives' Ownership		Non-executives' Ownership	
	No. of firms	%	No. of firms	%	No. of firms	%
Ownership ≤ 0.05	481	78.21	453	73.7	490	79.7
0.05 < ownership ≤ 0.10	22	3.58	15	2.44	47	7.64
0.10 < ownership ≤ 0.20	29	4.72	42	6.83	39	6.34
0.20 < ownership ≤ 0.30	25	4.07	23	3.74	21	3.41
0.30 < ownership ≤ 0.40	18	2.93	22	3.58	9	1.46
0.40 < ownership ≤ 0.50	5	0.81	9	1.46	5	0.81
Ownership > 0.50	35	5.69	51	8.29	4	0.65
Total	**615**	**100**	**615**	**100**	**615**	**100**

This table shows the frequency distribution of executives' ownership of 615 non- financial observations over the period (2004-2007). Definitions of variables are provided in Table 3.4.

Table 3.9 provides a closer look at the frequency distribution of board ownership in Egypt. Out of sample firms, there are 481 (453) firms whose CEOs (executives) own, on average, 5 per cent or less of the firm's ordinary shares, which accounts for 78.21 (73.7) per cent of sample firms. The same pattern is also noticed for ownership of non-executives, as 79.7 per cent of non-executive directors, on average, own 5 per cent or less of firm shares. However, there are only 5.69 (8.29) per cent of CEOs (executives) who hold 50 per cent or more of the firm's shares. Similarly, 0.65 per cent of non-executives hold the same percentage.

3.5.2 Ownership concentration and identity of blockholders

It is widely believed that the dispersed ownership structure model described by Berle and Means (1932) is less common in most countries around the world (e.g., Shleifer and Vishny 1997; La Porta et al. 1998; Claessens and Fan 2002).[49]

Looking at the Egyptian context, CDL stipulates that a company must keep a registry of detailed information on the beneficiary shareholders. This registry, however, does not denote the ultimate ownership. Additionally, nobody is allowed access to this registry except the issuers of securities and the authorized bodies within the limit of their remit. Shareholders have the right to review the minutes of the AGM, which include the names of all the registered owners and the number of shares owned by each of them. Nonetheless, CML requires that the prospectus of a company at incorporation should disclose, *inter alia*, the name and ownership percentage of each shareholder of nominal shares who owns more than 5 per cent of the company's shares.[50]

Table 3.10 Top five largest shareholders by year

	2004	2005	2006	2007	All years
Largest shareholder	55.39	42.65	47.21	42.98	47.02
Second largest shareholders	11.29	14.91	12.05	12.54	12.70
Third largest shareholders	3.80	7.72	6.07	5.73	5.83
Fourth largest shareholders	1.64	2.93	3.23	3.32	2.77
Fifth largest shareholders	1.04	1.78	1.71	1.81	1.58
Ownership concentration	74.15	70.64	71.24	67.49	70.88
Outside ownership concentration	60.08	56.59	56.91	53.88	56.87
Free float	25.85	29.36	28.76	32.51	29.12
Number of blockholders (average)	3.21	3.22	3.02	2.90	3.09
No. of observations	152	154	155	154	615

This table provides the average percentage of firm's shares held by the largest shareholders who own 5% or more of firm's shares and the average number of those shareholders of 615 non-financial observations over the period (2004-2007). Definitions for all variables are provided in Table 3.4.

Table 3.10 presents the average percentage of shares held by top five largest shareholders for each sample year. It appears that 47.02 per cent of sample firm shares, on average, are held by a single shareholder and that the largest shareholders constitute

[49] For instance, Shleifer and Vishny (1997, 755) demonstrate that "heavily concentrated share holdings and a predominance of controlling ownership seems to be the rule around the world."

[50] Article 5 of CML.

a large amount of ownership concentration in Egyptian's listed firms. Although this percentage is declined from 55.39 per cent in 2004 to 42.98 per cent in 2007, this high value reflects the significant voting power of controlling shareholder and the ability of single shareholder to change the outcome of key decisions of the firm (Leech 2001, 2002)

This value is relatively higher than that found in other countries. For instance, across countries, Majluf et al. (1998) find that the largest shareholders control 40 per cent of shares of the largest firms in Chile, while they hold 7 per cent for Japanese firms and 22 per cent in Germany. It is also higher than the 38.06 per cent found in Greece by Drakos and Bekiris (2010) , as well as 49.6 per cent and 10.9 per cent reported by Thomsen et al. (2006) in Continental Europe and the UK, respectively.

Similarly, the three largest shareholders hold, on average, 65.55 per cent of total shares of sample firms and the five largest hold, on average, 69.9 per cent of these shares. However, these values tend to decline over time, as the average total shares held by the three (five) largest declined from 70.48 (73.16) per cent in 2004 to 61.25 (66.38) per cent in 2007. These values are much smaller in Anglo-Saxon countries. For example, La Porta et al. (1998) find that the fraction of ownership by the three largest shareholders is 19, 34 and 48 per cent for the largest listed firms in the UK, France and Germany, respectively. As a result, the ownership concentration, on average, is 70.88 per cent, though outside ownership concentration (i.e., non-managerial ownership concentration) is 56.87 per cent. The value of ownership concentration reported herein is also higher than the 23.40 per cent found by Chen and Yur-Austin (2007) in the USA or 24.93 found in 2001 by Brockman and Yan (2009), 29.21 per cent reported in the UK by Florackis and Ozkan (2009a), and 55.73 per cent found in China by Chen et al (2009). Similarly, Prowse (1992) finds that 30 per cent of shares of publically traded firms in Japan are owned by the top five largest shareholders. The free float ranges from 25.85 per cent in 2004 to 32.51 in 2007. The results (not reported) also shows that the free float of 23 per cent of sample firms is less than the five per cent required by LRs as a minimum float percentage, although 21.3 per cent of sample firms have free float more than 50 per cent of their total shares.

Table 3.10 also reveals that the average number of blockholders which control 5 per cent or more of sample firms' shares is 3.09. Additionally, Table 3.11 indicates that 1.3 per cent of sample firms have no controlling owner and the number of blockholders

ranges from 1 to 10 for the remaining firms. In particular, 14.8 per cent of sample firms have one controlling owner, who holds, on average, 71.97 per cent of a firm's total shares, while 29.27 (20.81) per cent of firms have at least two (three) controlling shareholders who own 53.30 (47.03) per cent of firm's total shares, respectively.

Table 3.11 Frequency distribution of number of blockholders

No. of Blockholders	Freq.	Percent	Mean largest ownership (%)
0	8	1.30	0
1	91	14.8	71.97
2	180	29.27	53.30
3	128	20.81	47.03
4	73	11.87	36.32
5	81	13.17	32.91
6	23	3.74	24.39
7	23	3.74	22.95
8	6	0.98	20.87
10	2	0.33	18.06
Total	**615**	**100**	

This table provides frequency of number of blockholders that hold 5% or more of the total outstanding shares of a firm for 615 non-financial listed observations over the period (2004-2007).

Furthermore, Table 3.12 presents detailed information about the distribution of the top five largest shareholders for each sector group regardless of their identity. As can be seen from the table, the average fraction of shares held by the largest shareholder in the Retail sector is 75.6 per cent, which is the highest among all sectors, while that in the Chemical sector (33.6 per cent) is the lowest. It is not surprising therefore, to find that the ownership in the Retail sector is more concentrated than in other sectors with a value of 80.6 per cent. Consequently, it is reasonable to notice that the free float ratio which ranges from 19.4 per cent to 39.4 per cent is higher in the Chemical sector than in the Retail sector.

It is found not only that the presence of blockholders and their incentives are important to discipline managerial opportunism or enhance firm value, but also the identity of those blockholders (e.g., Andres 2008; Florackis and Ozkan 2009a; Connelly et al. 2010). Table 3.13 shows the identity of the largest owners for each sample year. Table 3.13 reveals that individual/family and state ownership play a significant role in Egypt, as individuals/family groups hold a significant fraction of sample firms' shares. Specifically, the board members own, on average, 14.56 per cent of total outstanding shares.

Table 3.12 Distribution of large shareholders by sector

Sector	Largest shareholder %	Two largest %	Three largest %	Four largest %	Five largest %	Ownership concentration %	Free float %
Basic Resources	56.2	64.9	70.3	72.8	74.8	75.5	24.5
Chemicals	33.6	46.7	50.5	53.9	56.4	60.6	39.4
Construction and Materials	50.7	63.4	68.7	72.3	74.1	74.7	25.3
Food and Beverage	44.6	56.8	63.8	65.8	67.2	68	32
Healthcare and Pharmaceuticals	58.3	65.1	67.8	69.1	69.7	70.3	29.7
Industrial Goods & Services and Automobiles	50.5	68.7	76	77.7	79.1	80.1	19.9
Personal and Household Products	47.1	57.9	61.8	63.3	63.6	63.6	36.4
Real Estate	36.4	50.5	57.3	61.2	63.2	63.9	36.1
Travel and leisure	34.1	54.4	66.3	72.6	76.4	79.2	20.8
Telecommunication	62.5	68.4	68.4	68.4	68.4	68.4	31.6
Retail	75.6	80.6	80.6	80.6	80.6	80.6	19.4
All sectors	47	59.7	65.6	68.3	69.9	70.9	29.1

This table provides the percentage of firm's shares held by the largest shareholders of 615 non-financial observations classified by sector over the period (2004-2007). Definitions of all variables are provided in Table 3.4.

Table 3.13 Percentage and identity of large shareholders

	Mean %	5% Cutoff	10% Cutoff	20% Cutoff
Local shareholders:				
Executives other than CEO	2.98	2.83	2.61	1.99
CEO	8.15	7.81	7.56	6.9
Non-executives	3.44	3.38	2.85	2.01
Total board ownership	14.56	14.02	13.02	10.9
Individuals/families out the board	2.78	2.43	1.9	1.31
State/governmental agencies	14.1	13.66	13.5	13.04
Banks	6.44	5	4.94	3.45
Financial companies	5.26	5.19	4.87	4.13
Insurance companies	3.12	2.49	2.49	1.09
Pension funds	1.67	0.9	0.73	0.4
Institutional investors	16.49	13.58	13.03	9.07
Non-financial firms	19.1	18.44	18.44	17.04
Employee associations	2.42	1.82	1.77	0.81
Sum of large local ownership	69.45	63.95	61.84	53.57
Sum of large foreign ownership	6.94	6.93	6.57	6.3
Sum of all ownership	**76.39**	**70.88**	**68.41**	**58.47**
Free float	21.61	29.12	31.59	41.53
No. of observations	**615**	**615**	**615**	**615**

This table shows the identity of largest shareholders (local and foreign) at 5%, 10%, and 20% cutoff points for 615 non-financial observations over the period (2004-2007). Definitions of all variables are provided in Table 3.4.

Whilst the Egyptian privatization programme started in the second half of the 1990s, the State and governmental agencies' ownership remains relatively high. At the 5 per cent level, Table 3.13 indicates that 13.66 per cent of firms are controlled by the State and/or governmental agencies, while this proportion is slightly lower at the 10 % and 20 % levels. Using 10 per cent as a more restrictive cut-off level, the percentage of shares controlled by the State is, on average, 13.50 per cent of total shares. This percentage is higher than the 10 per cent and 11 per cent found in Australia and the USA. However, it is lower than the 35 per cent 58 per cent and 95 per cent found in Great Britain, Switzerland and Turkey (Gugler et al. 2008).

A number of studies show that state ownership is associated with lower performance effectiveness, as the state-owned firms do not better serve the public interest (Dewenter and Malatesta 2001). It is found that that a higher level of ownership by state is associated with slower subsequent financial development and lower

economic growth (La Porta et al. 2002). A number of problems related to state-owned firms are documented by some empirical studies. These problems include poor financial performance, increased levels of corruption and lack of innovation (e.g., Shleifer 1998; Megginson and Netter 2001).

Table 3.13 also indicates that 13.5 per cent of shares held by large shareholders are controlled by institutional investors, of which 5%, 5.19%, and 2.49% are held by banks, financial institutions, and insurance companies, respectively. One possible reason for this is the lack of resources and incentives required to monitor the controlling owners and/or due to the nascent nature of the Egyptian capital markets, suggesting a weak role of institutional investors in Egypt.[51] This percentage is significantly lower than the 47.5 per cent found in the USA (Elyasiani and Jia 2010), 30.34 per cent in UK (Dong and Ozkan 2008), and 27.5% per cent in Korea (Baek et al. 2004). The lack of such a dynamic role and the low proportion of shares held by institutional investors might hurt market liquidity, and weaken corporate governance (ROSC, 2009).[52] Furthermore, 17.04 per cent of shares are controlled by non-financial corporations, and 6.93 per cent are controlled foreign institutions.

[51] For more information about the role of institutional investors see Gillan and Starks (2003).

[52] On average, approximately two-thirds of EGX shares trading is done by retail and the remainder by institutions. Specifically, 36%, 37%, 38% and 39% of this trading is done by institutions in 2004, 2005, 2006 and 2007, respectively. *Source*: different issues of EGX monthly bulletin.

Table 3.14 Identity of large shareholders

	First largest		Second largest		Third largest		Fourth largest		Fifth largest	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Panel A: Local shareholders										
CEO	71	12.01	35	6.92	8	2.52	12	5.74	0	0.00
Executives other than CEO	16	2.71	19	3.75	40	12.58	5	2.39	14	10.22
Non-executives	21	3.55	43	8.50	27	8.49	7	3.35	0	0.00
Individuals/families outside the board	22	3.72	29	5.73	26	8.18	19	9.09	13	9.49
Employees associations	15	2.54	62	12.25	8	2.52	10	4.78	13	9.49
State/government agencies	140	23.69	25	4.94	10	3.14	10	4.78	0	0.00
Non financial firms	165	27.92	100	19.76	42	13.21	35	16.75	12	8.76
Banks	49	8.29	64	12.65	50	15.72	29	13.88	11	8.03
Financial firms	44	7.45	24	4.74	33	10.38	34	16.27	24	17.52
Insurance companies	16	2.71	50	9.88	32	10.06	15	7.18	13	9.49
Pension funds	4	0.68	15	2.96	10	3.14	8	3.83	17	12.41
Total	563	95.27	466	92.08	286	89.94	184	88.04	117	85.40
Panel B: Foreign shareholders										
Foreign board members	8	1.35	6	1.19	7	2.20	17	8.13	8	5.84
Foreign individuals/families	1	0.17	8	1.58	5	1.57	13	6.22	4	2.92
Foreign non-financial firms	19	3.21	18	3.56	12	3.77	15	7.18	0	0.00
Total	28	4.74	32	6.32	24	7.55	45	21.53	12	8.76
Number of observations	**591**	**100**	**498**	**100**	**310**	**100**	**229**	**100**	**129**	100
No. of observations without large shareholder (s)	24		117		305		386		486	

This table shows the identity of largest shareholders (local and foreign) of 615 non-financial observations over the period (2004-2007).Definitions of all variables are provided in Table 3.4.

Table 3.14 presents a different picture of the identity of the top five largest shareholders. Among the largest shareholders, the State controls 23.69 per cent, individuals or families (i.e., board members, non-board members) control 21.99 per cent, of which 18.27 per cent are controlled by board members. Control by the State and/or Governmental agencies is significant (23.69 per cent of total shares held by largest owners) and Banks and Financial institutions control 15.74 per cent, while ownership of Pension funds and Foreign Individuals and/or Families is trivial. It is also worth noting that managerial ownership is still an important category, being the second largest at 19.17 per cent, while control by the State and/or Governmental agencies declined to 4.94 per cent. Likewise, the percentage of shares controlled by Employees Association increased dramatically to 12.25 per cent. These figures reflect the importance of Individuals and/or Families and the State as significant categories that can influence corporate decisions and resource allocation.

3.6 Conclusion

The objective of this chapter is to present an overview on the legal environment and the regulatory bodies in Egypt. It also shows detailed information about the status quo of corporate governance and ownership structure for a sample of non-financial listed companies during the period from 2004 to 2007. Generally speaking, major steps towards improving the legal, regulatory and institutional framework as fundamental infrastructures for implementing successful corporate governance reforms have been undertaken in recent years. These reforms include, *inter alia*, the participation of the private sector in corporate ownership by adopting an ambitious privatization programme, enforcing and updating more strict listing rules, issuing the Egyptian Accounting and Auditing Standards in line with international standards, and publishing the Egyptian Corporate Governance Code in 2005. However, the enforcement of law and compliance with the code is weak and remains a challenge.

With respect to the ownership structure, the corporate ownership in Egypt is similar to that found in most countries around the world, except for in the USA and UK. It is characterized by a high degree of ownership concentration and this concentration is relatively stable over time and across industries. Families and/or individuals, the State, banks and financial institutions play a significant role in controlling most listed firms, as they hold a significant proportion of the shares in most listed firms and they are also ranked among the top five largest blockholders. One potential drawback resulting from

this pattern of ownership is the increase in firm's cost of capital due to decreased market liquidity and decreased diversification opportunities, which adversely affects firm value and market liquidity and trading. Concentration of ownership might also discourage shareholders from participating in the governance reforms at the firm level and is likely to leave small investors unenthusiastic to invest. Another expected outcome is related to diversion or abuse of firm resources by controlling shareholders to serve their own interests over that of minority shareholders. The results indicate that foreign ownership is small, although Egypt is among the first MENA countries to allow foreign participation as one important factor in the economic reform programme.

This control is more apparent in nominating family members, family friends and close relatives to the position of board member, leading to boards that are likely to align with the family or dominant shareholders' interests to facilitate resource expropriation and gain private benefits that are not shared with other shareholders. This is obvious due to the non-existence of cumulative voting which enables minority shareholders to elect their representative on the board. Likewise, board members from owned-state firms are commonly insiders who lack independence or outsiders that lack experience as well as firm knowledge, which is likely to weaken their monitoring and disciplining governance role.

Chapter 4

Firm-Specific Determinants of Earnings Management:

Evidence for Egyptian Companies

4.1 Introduction

The efficient contracting perspective (e.g., Watts and Zimmerman 1986; Holthausen and Leftwich 1983), hypothesizes that accounting choices are commonly motivated by managers' desire to influence one or more of the contractual arrangements by mitigating the contractual restrictions on their expected behaviours, in order to achieve some goals at the time of reporting. Thus, accounting choices may be chosen opportunistically individually or jointly to achieve one or more objective (Fields et al. 2001).

Numerous theoretical and empirical studies have examined various contexts in which management had strong incentives to manipulate earnings. Most of these studies document evidence to support the earnings management hypothesis.[53] In response to the Positive Theory of Accounting (Watts and Zimmerman 1978), much accounting research, particularly during the late 1970s and early 1980s, provided evidence consistent with the notion that managers' choices take advantage of discretion accorded by the Generally Accepted Accounting Principles (GAAP) to increase their compensation, avoid debt covenants violation, and/or reduce the chance of exposure to the political costs.

With a belief in a world of multiple motivations and imperfect capital markets, and in the absence of a comprehensive theory to explain various accounting choices (Fields et al. 2001), this study takes one step further beyond the simple focus on a single specific accounting choice. Recognizing that accounting choices are usually driven by multiple incentives and objectives, investigating more than one incentive in the same study could help to better understand why managers manipulate earnings.

The motivation behind this study is the scarcity of studies which models test the trade-offs among different accounting and reporting choices. By doing so, this study, therefore, provides empirical evidence in which aims to fill a part of the existing gap in the literature. To do so, the modified Jones model (Dechow et al. 1995) and the performance adjusted modified Jones model (Kothari et al. 2005) are employed to isolate the discretionary accruals component, which is used as a proxy of earnings management. While the total discretionary accruals are used in the main analysis, the current accruals are used for robustness tests. In addition, managerial accounting discretion is modelled as a function of two mixed accounting choices incentives;

[53] See, Fields et al. (2001) and Dechow et al. (2010) for a survey of research.

efficient contracting (bonus plans, proxied by managerial ownership; debt covenants, proxied by total debt to total assets; and political costs, proxied by firm size); and income smoothing (measured as non-discretionary earnings relative to target earnings).

This study extends prior studies of discretionary accruals choices (e.g., Young 1998; Darrough et al. 1998; Heflin et al. 2002), by investigating whether managerial discretion choices in an emerging country are driven by the same contractual incentives documented in other settings such as the US, UK and Japan. Given the obviously different accounting practices, ownership structure, and political and economic factors, a study of this setting is valuable and might provide additional insights into accounting choices.

This study is related to prior studies that investigate more than the efficient contracting incentive. For example, Young (1998) finds little evidence to support the efficient contracting explanation for managerial discretion choices in the UK, while the results of Darrough et al. (1998) provide support for leverage only for the years after the Japanese market crash of 1990 and they find evidence for the political costs hypothesis prior to the crash. Furthermore, they argue that managers of Japanese companies chose income-increasing accounting accruals to increase their bonus and increase the amount of outside funding. They also observe some effects of managerial ownership on the choice of accounting accruals. Similarly, based on 443 US firms, Heflin et al. (2002) find evidence that supports the efficient contracting expectation. Specifically, their results are consistent with the notion that managers use the latitude allowed by GAAP in order to reduce the possibility of debt covenants violation and to avoid political costs.

Based on 442 non-financial observations, the results of this study show that the efficient contracting choices explain a small portion of the variation in discretionary choices. Consistent with Young (1998) and Darrough et al. (1998) and in contrast to Heflin et al. (2002), the results indicate that managers do not tend to manipulate earnings for compensation purposes, to avoid violating debt covenants, or to reduce political costs. Specifically, it is found that all measures of earnings management are negatively (positively) and significantly associated with measures of implicit (explicit) income smoothing variables and a small portion of the variation in magnitude of abnormal accruals is related to leverage. In general, these results are robust to a range of additional sensitivity tests.

This study is important for several reasons. First, most prior studies explore managers' responses only to a specific incentive or event that explains accounting choices in affected firms within only one industry or period. Thus, such discretionary accounting choices may not be valid to explain managerial accounting discretion in other industries or other events (Johnston and Rock 2005). It is difficult to interpret the frequency of earnings management for regulatory purposes from relatively small samples (Healy and Wahlen 1999). Further, it is not clear from the results of these studies whether it is possible to generalize findings from sample firms to wide segments of the economy or they are applicable only to the sample firms. In other words, these studies do not answer the question whether discretionary accruals manipulation can provide appropriate explanation for accounting choices across industries and in different events (Healy and Wahlen 1999).

Second, the results of studying one accounting choice related to a specific event in order to accomplish a particular objective may be relatively limited (Dechow et al. 2010). Thus, studying multiple objectives in the same model may have implications for understanding the determinants and consequences of earnings management.

Third, whereas investigating one industry may provide the model with a high explanatory power and provide reliable measures of discretionary accruals, these studies are more likely to suffer from selection bias problem because only firms expected to be affected by the outcome of the event in are question included in the sample (Fields et al. 2001). In addition, the omitted variables are more likely to have an unspecified influence compared to large sample studies (Key 1997). Guidry et al. (1999) show that the results of these studies are mixed due, in part, to the limitations of using aggregated financial data from a large cross section of firms that have varying forms of incentive.

Fourth, taking into account that the Egyptian regime differs significantly from those in the UK and the US, generalization of inferred findings from studies conducted in these countries or those using data related to different contexts may not be warranted and misleading when used to explain discretionary choices in Egypt. As a result, using a new set of data that reflects different features helps to shed additional light on different institutional aspects of emerging countries, which have received little attention in the literature. These results may also be valid for firms in other emerging countries that have similar features to the Egyptian context.

The remainder of this study proceeds as follows: Section 4.2 discusses the literature review and development of hypotheses. Section 4.3 shows sample selection procedures and methodology used to test the hypotheses. Section 4.4 provides the results of empirical analyses. Section 4.5 explains further robustness tests. Finally, summary and concluding remarks are presented in Section 4.6.

4.2 Literature review and empirical hypotheses

A large body of academic research has focused on a range of contracting motivations of earnings manipulation, of which the executive bonus plans hypothesis, the debt hypothesis, and the political costs have received great attention (Watts and Zimmerman 1978, 1986). The following sections discuss these hypotheses, along with the income smoothing hypotheses, in more detail.

4.2.1 Executive Bonus Plans Hypothesis

A number of studies examine managers' motivation to manipulate earnings in order to influence short-term bonus plans. Following the seminal study of Healy (1985), a strand of literature posits that managers choose accruals (namely, discretionary accruals) to maximize their current and expected bonus. Healy's study is considered the first to incorporate the definitions and parameters actually employed in bonus agreements (Gaver et al. 1995). Healy points out that compensation schemes do not always induce managers to select income increasing accounting procedures, but they may give them an incentive to choose income-decreasing choices. More specifically, he finds that when current reported earnings are beyond the bounds embedded in compensation contracts (i.e., above the upper limit or below the lower limit), managers are likely to engage in a *"big bath"* activity (i.e., choose income-decreasing accruals) in an attempt to save income to future periods and increase their expected bonus in the future. However, managers might choose income-increasing accruals when the current level of reported earnings is within these bounds.

Holthausen et al. (1995) demonstrate that Healy's results at the lower bound are likely to be induced by his methodology, as he collects data over the period from 1930 to 1980. However, the bonus plans used to compensate executives changed during the 1970s and 1980s. Thus, the validity of his results for research studies using contemporary samples is questionable. Moreover, another shortcoming is that related to

his portfolio formation procedures, which may account for the results (Fields et al. 2001). Furthermore, whereas Healy assumes that the expected level of non-discretionary accruals is zero, Kaplan (1985) indicates that non-discretionary accruals are likely to be nonzero and vary with economic conditions. If negative non-discretionary accruals are the cause of both low accounting earnings and the negative total accrual figure, then Healy's result could be due to exogenous changes in economic conditions, rather than overt earnings management. The substitution of total accruals for discretionary accruals makes the results of Healy's empirical tests difficult to interpret (Gaver et al. 1995).

Extending the work of Healy, Holthausen et al. (1995) find that discretionary accruals are more negative (i.e., income decreasing choice), when the CEO bonus is at the upper bound than when it is between the lower and upper bounds. They also find evidence consistent with the hypothesis that managers manipulate earnings downwards when their bonuses are at their maximum. Contrary to Healy, they do not find evidence that CEOs take more negative discretionary accruals when they are below the lower bound than when they are between the lower and upper bounds.

In a similar vein, using discretionary accruals as a proxy of earnings management instead of total accruals, Gaver et al. (1995) find evidence that is consistent with the income smoothing hypothesis. Specifically, they find that managers choose income-increasing (decreasing) discretionary accruals when unmanaged earnings are below (above) the lower (upper) bound.

Moreover, Healy et al. (1987) study the potential impact of accounting changes on CEOs' salary and bonus compensation. To increase the power of their tests, they select two accounting changes: changes from FIFO to LIFO inventory method and changes from accelerated to straight-line depreciation. They find that both changes have a large effect on reported earnings. In addition, a change to LIFO typically decreases earnings, whereas a change to straight-line depreciation usually increases earnings. They also find that the potential effect of inventory and depreciation accounting changes on CEOs' bonus and salary remuneration is generally small compared to economy-wide changes in compensation over time. However, they find no evidence that subsequent to either the inventory change or the depreciation change, reported earnings are transformed to earnings under the original accounting method for computing compensation awards, since the costs of such a transformation do not appear to be significant for the accounting change. Their tests of the relation between compensation and earnings

management indicate that there are changes in the parameters of the relation for the test firms subsequent to an accounting change. However, these changes seem to be, at least in part, due to economy and industry changes, which are unrelated to the accounting changes.

To test the relation between discretionary accruals and compensation, detailed bonus plans data should be available. Unfortunately, such information is not available in the annual reports or from any other data sources, as there is no legal obligation to disclose this type of information. Given the secrecy of this data, it is not expected that managers will disclose such information voluntarily. Against this restriction and following prior studies (Young 1998; Dhaliwal et al. 1982), executive ownership is used as a proxy for compensation incentive.[54] Executive stock ownership may reduce the underlying agency problems emanating from the agency theory that exist either between managers and outside shareholders or between controlling shareholders and minority shareholders. According to this view, the more stocks executives own, the greater their degree of managerial control and the stronger their motivation to take actions that may increase the market value of the firm's shares, which may lead to a higher firm value (Hermalin and Weisbach 1991; Holderness 2003). This suggests that increased managerial equity ownership helps to align their interests with those of shareholders. The studies of Morck et al. (1988) and McConnell and Servaes (1990) support this notion empirically. Also, Warfield et al. (1995) find that earnings management is lower for firms with higher managerial ownership. Based on the previous argument the following hypothesis (in alternative form) is developed to test this argument:

Hypothesis 4.1: *Earnings management as measured by discretionary accruals is negatively related to managerial equity ownership.*

4.2.2 Debt Covenants Hypothesis

Debt contracts are contracts between debt holders and managers. Since debt agreements depend upon accounting numbers reported in annual financial statements to meet the covenants, managers have a chance to choose accounting methods which enable them not to violate these covenants, especially with the reporting flexibility accorded under

[54] It is worth noting that the unavailability of management compensation plans may reduce the power of the bonus plans hypothesis test.

GAAP. However, these contracts will not be effective unless they contain restrictions which limit the abilities of managers to manipulate accounting numbers (Watts and Zimmerman 1986). As a result, these contracts often include restrictive covenants (e.g. financing and dividend covenants) that limit potential conflicts of interest between firms' debt holders and shareholders as well as restrict managers' scope to engage in investment and financing decisions that may negatively affect the debt holders' wealth position. These may include limiting the ability of management to issue new debt, and giving the debt holders the right to demand early repayment of the debt issue, when minimum accounting numbers are not maintained (DeFond and Jiambalvo 1994; Begley 1990; Duke and Hunt 1990).

Commonly, covenants are written in terms of accounting numbers. Since violating these covenants is costly for managers, managers have incentives to reduce the possibility of default by making income increasing choices and adopting dividend policies that may transfer wealth from bondholders to stockholders. Moreover, managers of troubled firms that are close to a debt covenant violation have incentives to take income-increasing accounting procedures to avoid or defer the costs of a violation (Healy and Palepu 1990; Sweeney 1994; DeFond and Jiambalvo 1994).

Debt covenant constraints can be classified into two categories: negative covenants and affirmative covenants. While negative covenants, such as dividend restrictions, prevent managers from taking actions which transfer wealth from bondholders to stockholders, affirmative covenants, such as working capital, interest coverage, and net worth covenants, can contain guarantees by the borrower to take specific actions such as insuring and maintaining assets, paying taxes, and agreements to keep financial ratios. Also, affirmative covenants are designed to increase the security of bondholders by requiring firms to maintain specified levels of accounting-based ratios, stocks, or cash flows (Healy and Palepu 1990; Sweeney 1994; Press and Weintrop 1990).

Violation of negative covenants can be avoided by taking actions which are under managers' control. However, violation of dividend covenants can be avoided, for instance, by cutting dividends, although it may be costly for shareholders. Contrarily, avoiding violations of affirmative covenants generally requires firm managers to improve operating performance, which is not completely under managers' control (Healy and Palepu 1990).

Much of the prior work focuses on testing whether the incentives created by debt contracts can explain earnings management. For example, DeFond and Jiambalvo (1994) find that managers use abnormal total and working capital accruals to increase the reported income in the year prior to violation and, to a lesser extent, in the year of the covenant violation. Healy and Palepu (1990), however, indicate that there are no significant changes in firms' accounting methods for firms with tight constraints on dividends surrounding the near-violation year. Nonetheless, there is a substantial increase in the frequency of dividend cuts and omissions in the near-violation year and this persists for several subsequent years. Likewise, they indicate that firms tend to cut dividends, but do not make accounting changes or manipulate accruals to circumvent the dividend constraint. More specifically, they find no evidence of earnings management for firms with binding debt covenants. These findings, therefore, indicate that earnings-based dividend covenants are an effective means for bondholders to constrain firms' dividend policies.

DeAngelo et al. (1994), using a sample of 76 financially troubled firms that reduced dividends, find that managers of these firms make income-decreasing accounting decisions even though dividends are under pressure due to private debt agreements. Furthermore, they conclude that accounting choices reflect the firms' financial difficulties rather than attempts to avoid debt covenant violation, or inflate reported income to disguise the financial difficulties. However, they suggest that managers of firms in financial distress have an incentive to take so-called *discretionary write-offs* to signal to lenders their willingness to deal with financial difficulties. Similar evidence is also found by Peltier-Rivest (1999), who shows that managers of troubled firms with binding debt covenants do not adopt income-increasing accounting choices.

In contrast, Sweeney (1994) provides different tests of the covenant-based hypothesis by analysing real variables for default rather than abnormal accruals and by examining firms that violate affirmative covenants such as minimum net worth and working capital covenants, rather than dividend constraints. She examines 22 firms that defaulted on debt contracts and finds significantly greater use of income-increasing accounting changes in these firms relative to a control sample, matched on industry, size, and time period. In addition, she reports that defaulting firms tend to undertake early adoption of new accounting standards when these standards increase the reported net income. She also finds evidence on the frequency and resource allocation effects of

earnings management for lending contract purposes and concludes that only five firms succeeded in delaying technical default by one or more quarters through an accounting change.

However, the results of DeFond and Jiambalvo (1994) suffer from selection bias because successful accruals manipulating firms were not included in their sample (Fields et al. 2001). The same is true of the results of Sweeney (1994) because she includes only firms that defaulted rather than firms which fruitfully managed earnings to avoid a technical default. As a result, she might understate the frequency of earnings management for debt covenant purposes. This suggests that healthy firms have greater incentives to avoid debt covenant violations, by adopting income-increasing accounting choices, than troubled ones Peltier-Rivest and Swirsky (2000). Furthermore, conflict results could potentially be explained by the use of mixed samples of firms (i.e., not exclusively healthy or troubled). In this case, benefits from managing earnings upwards may be present for healthy firms only. For example, DeAngelo et al. (1994) did not deal clearly with debt covenants *per se*, but their samples were close to violations based on the firms' weak performance and dividends. Since they used exclusive samples of troubled firms, it is not surprising they find no significant differences between firms with and without binding debt covenants. As a result, Peltier-Rivest and Swirsky (2000) provide an analysis of the determinants of accounting choices for a sample of healthy firm. Their results imply that the closer a healthy firm is to violating its debt covenant restrictions, the more likely its managers will make income-increasing accounting choices to prevent such violation.

Based on the above discussion, it is expected that managers of highly leveraged firms are more likely to make income-increasing accounting choices in an attempt to prevent such violation. Stated in the alternative form, the second hypothesis is formulated as follows:

> **Hypothesis 4.2:** *Earnings management as measured by discretionary accruals is positively related to leverage.*

4.2.3 Political Costs Hypothesis

Since large firms are usually more politically visible, abnormally large increases in reported earnings may be used as an indicator of a monopoly or may be used as an

excuse for politician or governmental intrusions in the business affairs of these firms and/or wealth-extracting political transfers (Watts and Zimmerman 1990). Such firms may tend to use accounting choices that decrease reported earnings to reduce their political cost.[55]

Watts and Zimmerman (1986, 230-231) hypothesize that managers of high potential political costs firms that are vulnerable to adverse political consequences have incentives to manage earnings downward to reduce reported income by adopting accounting procedures or making accounting choices that reduce the transfer. To do so, they can make their firm appear less profitable in order to increase the likelihood of government subsidies to their firms, reduce the likelihood of adverse political actions and, thus, reduce expected political costs.

Several papers examine whether regulatory examination increases the possibility of manipulating discretionary accruals in periods of investigation. For instance, Jones (1991) analyses the behaviour of a sample of firms in which managers were applying to the United States International Trade Commission (ITC) for import relief and investigates whether those firms manipulate earnings downward to increase the likelihood of obtaining import relief. Consistent with this conjecture, she finds that firms in industries seeking import relief are likely to defer income in the year of import relief investigations. Furthermore, she finds that discretionary accruals are significantly negative in the year of application relative to other years.

Similarly, Cahan (1992) investigates the behaviour of managers of firms subject to anti-trust investigations. He finds that managers of firms under investigation for anti-trust violations use income-decreasing discretionary accruals during the year of the investigation to reduce reported earnings in order to reduce the possibility of being prosecuted under the US antitrust laws.

Contrarily, Cahan et al. (1997) argue that the magnitude of earnings management is expected to vary across companies, as levels of political exposure are likely to vary. They investigate the response of 43 chemical firms to legislation related to the establishment of the Superfund laws dealing with the cleanup of hazardous waste sites

[55] Political costs include all expected costs imposed on a firm from potential adverse political actions involving antitrust, regulation, government subsidies, taxes, etc.

and find that negative discretionary accruals were associated with firm-specific estimates of the future political costs imposed by Superfund. Similarly, Patten and Trompete (2003) examine a sample of 40 chemical firms following the December, 1984 Union Carbide chemical leak in Bhopal, India. Their findings indicate that, on average, sample firms adopted significant income-decreasing accruals choices in the year of the leak and that firms with lower levels of environmental disclosure used income-decreasing accruals in 1984 more than firms with higher levels of such disclosure. Likewise, Johnston and Rock (2005) analyse the discretionary accrual behaviour of 612 firms identified as potentially responsible parties (PRPs) under the Superfund during the period 1981-1995. They find support for the notion that PRPs firms manipulate earnings downward to lessen exposure to Superfund clean-up and transaction costs.

In a similar vein, Key (1997) reports evidence to support the conjecture that managers attempt to mitigate the effects of political scrutiny and potential industry regulation by managing earnings downward during the period of congressional scrutiny in the cable television industry. She also notes that firms with high share price have negative discretionary accruals higher that those with lower share price and some governmental regulation investigations may induce firms to decrease the reported earnings to increase the expected benefits of these regulations.

Similar evidence in oil firms is found by Hall (1993), Hall and Stammerjohan (1997) and Han and Wang (1998). For example, the first Persian Gulf crisis led to a sudden increase in world oil prices. As a result, reported earnings of US oil companies increased sharply. During this crisis, extensive accusations surfaced that major oil companies opportunistically profited from the price increases and, as a result, lawmakers threatened to impose a windfall tax. Consequently, oil companies faced higher exposure to political costs during this crisis. The results of Han and Wang (1998) show that petroleum refining firms tend to make negative discretionary accruals and report good news late in an attempt to reduce political costs because early release of good news would attract additional public attention, which may increase their exposure to political adverse actions.

Similarly, Hall (1993) finds evidence consistent with prior research that oil firms make more income-decreasing (increasing) accounting changes in periods of sharp oil price increases (decreases) and earnings increases (decreases) than in other periods. He points out that the increased scrutiny of oil firms influences the choice of their managers

to make accounting changes and accrual decisions that reduce the probability of political costs by smoothing income through accounting changes to minimize public pressures.

Since none of these previous studies examine the relation between earnings management and security returns, Bowman and Navissi (2003) shed more light on the relation between capital market responses and earnings management in the context of price control by investigating the relation between discretionary accruals and abnormal returns. Their results, using 55 manufacturing firms and 29 listed non-manufacturing firms, support their argument that the November price freeze regulation (PFR) of 1970 in New Zealand had negative effects on firms' security prices and firms that were most affected by the regulations managed earnings more aggressively. Based on the results of previous studies, the following hypothesis (formatted in the alternative form) is tested:

Hypothesis 4.3: *Earnings management as measured by discretionary accruals is negatively related to firm size.*

4.2.4 Income Smoothing Hypotheses

It is known that cash flows from operation and accruals constitute the level of reported earnings. Kirschenheiter and Melumad (2002) show that the level of reported earnings allows investors to infer the level of permanent future cash flows. Thus, keeping fluctuation to a minimum level could improve investors' expectations about this future component.[56] In response to this situation, firms facing an increasing (decreasing) in operating cash flows may engage in income decreasing (increasing) accrual manipulation to maintain smoothed earnings.[57] This is likely to lead to temporary high share prices, giving managers various incentives to smooth earnings (Hunt et al. 1997; Trueman and Titman 1988). Accordingly, the magnitude of discretionary accruals is

[56] Sloan (1996) finds that investors overestimate the persistence of accruals and both accruals and abnormal accruals, as firms with relatively low magnitudes of signed accruals, or signed abnormal accruals earn positive risk-adjusted returns, and *vice versa*. This result is consistent with the functional fixation hypothesis which posits that a firm's stock price is sometimes set by investors who are relatively sophisticated in their understanding to the properties of accruals and sometimes by unsophisticated investors. Thus, security can be temporarily mispriced (Hand 1990).

[57] Ronen and Sadan (1981) argue that only firms with good future prospects are expected to engage in earnings smoothing (i.e., income decreasing) because this could be disastrous to a poorly performing firms in the short term.

expected to be greater (smaller) for poor (good) cash flow firms. The following hypothesis is developed to test this expectation:

Hypothesis 4.4.a: *Earnings management as measured by discretionary accruals is negatively related to changes in cash flows from operation.*

Income smoothing [58] occurs when managers use their reporting discretion to "intentionally dampen the fluctuations of their firms' earnings realizations" (Beidleman 1973, 653). Income smoothing has been the subject of concern of regulatory and accounting studies, and in both the financial and the public press. For example, Arthur Levitt, former chairperson of the Securities and Exchange Commission (SEC), commented in 1998: "Too many corporate managers, auditors, and analysts are participants in a game of nods and winks. In the zeal to satisfy consensus earnings estimates and project a smooth earnings path, wishful thinking may be winning the day over faithful representation".[59]

Generally, two strands of income smoothing studies have emerged. The first strand presents evidence for the existence of the smoothing phenomenon (Subramanyam 1996; Hunt et al. 1997; Pincus and Rajgopal 2002). The second stream of research draws attention to incentives behind this smoothing and provides different explanations for such behaviour. Goel and Thako (2003), for instance, argue that income smoothing is a consequence of managers' efforts to increase the firm's stock price by reducing the losses shareholders may bear when they trade for liquidity reasons. They develop an analytical model to explain incentives of managers to smooth earnings. They find that the degree of earnings smoothing will be higher for firms whose manager's compensation contract is tied to long-run performance, firms with higher uncertainty about the earnings volatility, and firms characterized by diffuse ownership.

[58] In fact, income smoothing is a special case of earnings management involving intertemporal smoothing of reported earnings relative to economic earnings to reduce the variability of earnings over time (Goel and Thakor 2003). It is important to note that income smoothing can be achieved through real activities, "real smoothing", or the reporting flexibility provided by GAAP through accruals, "artificial smoothing". While the former reduces volatility by directly affecting the distribution of underlying cash flows, the latter directly affects only earnings volatility. Because real smoothing has obvious costs and artificial smoothing costs are unobservable, it is less costly for management to smooth earnings through accruals (Pincus and Rajgopal 2002; Goel and Thakor 2003).Thus, income smoothing in this study is related to artificial smoothing.

[59] See *CPA Journal* (December 1998), pp. 14–19, quote on p.14

In some cases shareholders do not mind the income smoothing behaviour. For example, Dye (1988) shows that existing shareholders may benefit when managers tend to influence perceptions of potential shareholders about firm value.

Fudenberg and Tirole (1995) argue that by smoothing earnings, managers may reduce the possibility of being dismissed. In a similar vein, DeFond and Park (1997) argue that in an attempt to reduce the threat of dismissal caused by poor performance, managers consider both current-year earnings and expected year-ahead earnings when making decisions about current-year discretionary accruals. In addition, Trueman and Titman (1988) provide evidence for use of income smoothing as a cost minimizing device. They indicate that when a firm faces a level of earnings volatility, the possibility of bankruptcy will be greater and thus increase its borrowing cost. Also, it is found that managers smooth earnings to maximize share price (Barth et al. 1999), to lower the firm's expected tax liability (Smith and Stulz 1985), to reduce income taxes (Graham and Rogers 1999), to mitigate the information asymmetry between managers and shareholders (DeMarzo and Duffie 1995), and to communicate their private information about future earnings (e.g., Tucker and Zarowin 2005; Sankar and Subramanyam 2001).

Despite the documented evidence about the communication role of income smoothing, the contracting theory "garbling" perspective (Tucker and Zarowin 2005), in contrast, argues that income smoothing is an equilibrium solution to compensate informed managers for their information advantages and for taking additional risk (Lambert 1984; Demski and Frimor 1999). Based on the garbling perspective, it is expected that abnormal accruals and the measure of income smoothing are negatively associated. This expectation leads to the following hypothesis (in the alternative form):

Hypothesis 4.4.b: *Earnings management as measured by discretionary accruals is negatively related to the difference between target earnings and current period non-discretionary earnings.*

4.3 Data and methodology

4.3.1 Data

The sample examined in this study is based on a sample of publicly traded and listed firms in EGX. The sample period covers the three years 2005 to 2007. The sample selection process started with all listed firms in EGX that have sufficient financial data

for conducting the analysis, resulting in an initial sample of 1185 firm-year observations. To be included in the sample, the sample firm had to meet the following requirements. First, firms had to have sufficient data for the period from 2004 to 2007 for estimation of discretionary accruals used in the study. Although 2004 was not included as a sample year, it was required to indentify changes in different variables used for estimation of discretionary accruals in the first stage of the analysis. Second, firms should not be involved in merger or acquisition events (M&A) because these firms tend to be larger for reasons other than earnings management behaviour (Gul et al. 2009; Ashbaugh et al. 2003). Finally, firms should not belong to the financial or regulated sectors because their disclosure requirements and accruals generation are different from those of other firms (Klein 2002a; Peasnell et al. 2005; Xie et al. 2003; Francis and Yu 2009). In addition, regulation of these firms makes their accounting information incomparable to that in other industries and earnings management incentives differ from those of unregulated industries.

Of the initial observations for which data was available, 217 financial firms, and 7 utilities are excluded. In addition, 467 observations were dropped due to missing ownership or other corporate governance variables.[60] Finally, 31 observations were omitted because their financial statements had insufficient data required for discretionary accruals estimation. Additionally, the value of each variable included in the analysis is restricted to be between the 1st and the 99th percentile to avoid the extreme values problem, leaving a sample with a final size of 442 observations representing 11 different sectors.

Data on ownership structure, board variables, audit committees, and auditors was manually collected from EGID and CMA. These data was supplemented with the financial statements data that was hand-collected as scanned copies from the same two sources mentioned earlier in Chapter 3. In addition, data was complemented by those collected from the Listed Companies Division (i.e., Disclosure and Listing departments) and the annual disclosure book issued by EGX. The market values of equity are collected from monthly and annually bulletins issued by EGID. The number of firms is 150, 145 and 147 for 2005, 2006 and 2007, respectively.

[60] It is worth noting that dropping firms without corporate governance data might induce a size bias in the sample. Against this concern, the size of firms included in the final sample is compared with that of firms that have not corporate governance data. The results of *t*-test comparison reveal no statistical significant between the two groups of firms, which mitigate the concern of selection bias in the sample.

4.3.2 Discretionary accruals proxies

Consistent with empirical evidence from recent earnings management research, this study employs the cross-sectional approach of the modified Jones and the performance-adjusted Jones model to isolate the discretionary accruals component. The cross-sectional approach is chosen over the time series because the latter imposes a requirement that sample firms have several years (at least nine years) of data. Given the unavailability of this data for most of the Egyptian companies, the former approach appears to be an appropriate alternative[61] that yields a larger sample size and more precise estimates (DeFond and Jiambalvo 1994; Kothari 2001).

A large body of cross-sectional discretionary accruals designs commonly estimates abnormal accruals coefficients for each industry-year combination excluding observations of industries with less than a predetermined minimum number of firms in each group (e.g., six, eight or ten observations). This design raises an econometric question about the sufficiency of this number of observations to satisfy the assumption of normality of the OLS.

Alternatively, following prior studies (e.g., Han and Wang 1998; Park and Park 2004; Tucker and Zarowin 2005; Bergstresser and Philippon 2006; Ball and Shivakumar 2006; Cornett et al. 2008, among others), this study uses the yearly pooled cross-sectional design to separate the abnormal component. The reasons behind using this approach rely on the ground that industry-specific cross-sectional regression ignores the significant differences among firms in the same industry (Ye 2007). For convenience, Cahan (1992) argues that: (i) the interfirm differences over time can be tested by using a single significance test instead of using a series of individual cross-sectional tests, (ii) using pooled data will reduce residual correlations caused by fixed effects and yields more efficient estimates and unbiased standard errors, (iii) the slope coefficient will also be less biased by omitted variables.

Ye (2007) reports that even with large samples, the estimated model still tends to be dominated by a few unusual observations, leading to a model with little predictive ability. Therefore, with a small sample size, the problem is expected to be more severe

[61] It is worth noting that while the cross-sectional approach mitigates the potential survivor bias problems and imposes less data availability requirements, it could cause positive or negative abnormal accruals that may not necessarily be related to earnings management activities (McNichols 2000; Bagnoli and Watts 2000).

when using industry-level estimations. McNichols (2000) argue that using the industry estimation approach to estimate non-discretionary accruals is more likely to understate (overstate) the discretionary (nondiscretionary) accruals. Additionally, one would also question the validity of the inherent theoretical assumption of homogeneity that relies on the idea that all firms in an industry are in the same stage of the operating cycle and have the same technology[62] (Ronen and Yaari 2008, 417).

As suggested by Hribar and Collins (2002), total accruals for each sample were calculated directly from the cash flow statement because measuring total accruals using the cash flow method is more precise than the balance sheet approach. A number of approaches are suggested in the literature to isolate the discretionary accrual component. However, the modified Jones model (MJM) and the performance-adjusted model (PAM) employed to isolate the discretionary accruals component. [63]

It is worth noting that in the original modified Jones, changes in accounts receivable ΔREC are included only in the test period to estimate non-discretionary accruals (Ashbaugh et al. 2003). The MJM and the PAM in this study are slightly different from the original approach. Two modifications to the original versions are adopted. Since there is no particular event to be examined in this study, the first modification involves adjusting firm discretionary accruals by subtracting the changes in accounts receivable from the revenues changes in the estimation period as in the test period (Teoh et al. 1998a; Kasznik 1999; Rajgopal et al. 1999), as ignoring effects of receivables may lower the power of the test (McNichols 2000). Hence, using cash sales in both stages avoids the simultaneity problem caused by having accounts receivable in both the regressor (revenues) and the regressand (total accruals) (Ronen and Yaari 2008, 434). Also, there is no reason to think that earnings management is expected only in the test period (McNichols 2000).

[62] Hrazdil and Scott (2010) examine the Standard Industrial Classification (SIC) intra-industry dispersion of discretionary accruals estimates compared to those based on three other industry classification systems: the North American Industry classification system (NAICS); the Fama-French algorithm (FF); and the Global Industry Classification System (GICS). They find significant variations in cross-sectional abnormal accruals estimations among the four industry classifications, depending largely on the number of firms in each industry category. They argue that most American capital market researchers, for example, have so far used extensively only the SIC system at the expense of other classification schemes that may considered as alternative industry categorizations in the cross-sectional approach.

[63] The procedures used to isolate the discretionary accruals component are explained in Chapter Two.

Using the same reasoning as prior research (e.g., Peasnell et al. 2000b; Jaime and de Albornoz Noguer 2004; Ball and Shivakumar 2006), the second modification involves the inclusion of intercept without scaling by lagged total assets. This is because there is no theoretical reason for forcing the regression through the origin or to believe that total accruals will be zero when changes in cash sales *(*Δ*REV*-Δ*REC)* and *GPPE* are zero. Hence, allowing the intercept to vary with the magnitude of lagged asset is essentially a control for heteroskedasticity (the magnitude of discretionary accruals is a function of firm size).

It is expected that the coefficient of *GPPE* is negative because the level of total accruals tends to be negatively correlated with the magnitude of depreciation charge, and it also determines the depreciation charge (Perry and Williams 1994; Young 1999). It is also expected that the coefficient of net change on sales (*ΔREV-ΔREC)* will be positive as the net working-capital accruals of a profitable firm will be positive (Ronen and Yaari 2008, 405). As expected, consistent with the results of previous studies, Table A.4.1 in Appendix 4.1 reveal that, on average, the estimated coefficient of (*ΔREV-ΔREC*) scaled by lagged total assets is positive and that on *GPPE* scaled by lagged total assets is negative.

According to the current-accruals approach of the modified Jones and the performance modified Jones models, the *GPPE* regressor was omitted, since it explains depreciation and amortization. Thus, only current accruals are separated into discretionary and non-discretionary components. Table A.4.2 in Appendix 4.1 provides the coefficients estimation using the current discretionary accruals version of the MJM and the PAM. The signs of coefficient (*ΔREV-ΔREC*) scaled by lagged total assets are positive except for 2006 and 2007 using both measures of abnormal accruals.

4.3.3 Independent and control variables

The empirical models include a set of explanatory variables related to determinants of discretionary accruals choice. Executive bonus plans proxied by executive ownership *EXECOWN*. Due to the high costs of accessing actual debt covenant information, many studies use proxies for the possibility of violating accounting based debt

covenants.[64] The variables commonly used in prior studies as a proxy for existence and tightness of covenant restrictions (i.e., leverage) are the debt/equity ratio, total debts to total assets, long-term debt to total assets, and total liabilities to total assets. Several prior studies conclude that the likelihood of a firm selecting income-increasing accounting procedures is positively related to closeness to covenant constraints (Healy and Palepu 1990; Duke and Hunt 1990; Press and Weintrop 1990). Accordingly, the ratio of total debts to total assets is used as a proxy of leverage *LEV*, while firm size *FSIZE* is used as a proxy of political costs.[65] In the light of previous studies, it is expected that the magnitude of abnormal accruals is greater for small firms and *vice versa*.

Change in cash flow from operation *ΔCFO* is used as proxy of implicit earnings smoothing. Explicit income smoothing is proxied a binary variable *SMOOTH*, defined as the difference between unmanaged (non-discretionary) earnings, measured as reported earnings minus discretionary accruals generated from different discretionary accruals models, and target earnings, measured as firm earnings in the prior year, taking the value of one if non-discretionary earnings are above target earnings, and zero otherwise.

Several control variables are also included. Given that discretionary accruals contain measurement error that is negatively correlated with cash flow performance (Dechow et al. 1995; Young 1999), two dummy variables *CFOH* and *CFOL* are incorporated to control for this measurement error. Also, two dummy variables *EARNH* and *EARNL* are included to control for abnormal reported earnings. In addition, the ratio of gross fixed assets to total market capitalisation is used as a proxy for assets intensity *ASSINT* to control for the effects of depreciation charge on estimations of discretionary accruals (Young 1998).

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[64] Examples of studies used leverage as a proxy for the existence and tightness of constraints include Bowen et al. (1981); DeFond and Jiambalvo (1994); Duke and Hunt (1990); Peltier-Rivest and Swirsk (2000).

[65] In an attempt to test the political cots hypothesis, researchers usually focus on firm characteristics, such as large size, to proxy for political attention. However, this proxy has faced much theoretical criticism. For example, Watts and Zimmerman (1986, 1990) describe firm size as a noisy proxy for political costs that may be used as a proxy for many effects other than political cost. Moreover, while concentrating only on large firms may make the test stronger and reduce test noise, it may weaken the power of the test as a result of testing only small samples (Hall 1993). However, size is still an acceptable proxy for contemporary research.

Sloan (1996) provides evidence that non-discretionary accruals tend to be positively associated with firm growth. Since small companies are usually characterized by high growth opportunities, it is easier for fast-growing firms to engage in earnings management practices and have higher abnormal accruals than for slow-growing firms. Consequently, one would expect greater tendency to manipulate earnings in high growth firms (McNichols 2000; Park and Shin 2004), leading a potential positive relation between firm's discretionary accruals and its growth opportunities. Therefore, the failure to control for the association between non-discretionary accruals and firm growth will generate measurement error in discretionary accruals estimates (Young 1999). As the sample includes both large and small companies, therefore, the market-to-book ratio; *MTBOOK*, defined as the ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets, is included as a proxy for growth opportunities (Bartov et al. 2000; Krishnan 2003).

Additionally, firms that constitute the Egyptian Exchange Index (i.e., the most active 30 companies) may have larger abnormal accruals because they have the ability and resources to boost reported earnings through using discretionary accruals. So, *EGX30* is a dummy variable introduced in the analyses to control for this potential tendency. The sign of this variable is expected to positively related with the firm's discretionary accruals. Adopting EGX classification, firms are classified into 11 sectors, therefore, 10 industries dummy variables; *IndustryDum*, are included to control for industry effects. Finally, *TimeDum* is a dummy variable included to potential year specific effects. Definitions for all these variables are given in Table 4.1.

Table 4.1 Variables definition

Variable	Definition
Dependent variables	
MJTDA	The signed discretionary accruals scaled by lagged total assets as measured by the cross-sectional modified Jones and performance-adjusted Jones model.
PATDA	The signed total discretionary accruals scaled by lagged total assets as measured using the cross-sectional performance-adjusted Jones model.
MJCDA	The signed working capital (current) discretionary accruals scaled by lagged total assets as measured using the cross-sectional modified Jones and performance-adjusted Jones model.
PACDA	The signed working capital discretionary accruals scaled by lagged total assets as measured using the cross-sectional performance-adjusted Jones model.
Independent variables	
EXECOWN	The percentage of equity ownership owned by CEO and executive directors to the total shares outstanding.
LEV	The ratio of total debts debt to total assets.
FSIZE	Natural logarithm end-year book value of total assets of firm in million (Egyptian) pounds.
ΔCFO	Change in cash from operations as measured by cash from operating activities in the current year less cash from operating activities in prior year.
SMOOTH	A dummy variable defined as the difference between non-discretionary earnings, measured as reported earnings minus discretionary accruals generated from different discretionary accruals models, and target earnings of firm, measured as firm earnings in the prior year, taking the value of one when non-discretionary earnings are above target earnings, and zero otherwise.
Control variables	
ASSINT	The ratio of gross fixed assets to total market capitalisation.
CFOL	A dummy variable that takes the value of one when the cash flow from operations is included in the lowest decile (the extreme low CFO) of cash flow from operations and zero otherwise.
CFOH	A dummy variable that takes the value of one when the cash flow from operations is included in the highest decile (the extreme high CFO) of cash flow from operations and zero otherwise.

(The table is continued on the next page)

Table 4.1 (continued)

EARNL	A dummy variable that takes the value of one when the reported earnings of is included in the lowest decile (the extreme low reported earnings) of reported earnings and zero otherwise.
EARNH	A dummy variable that takes the value of one when the cash flow from operations is included in the highest decile (the extreme high reported earnings) of reported earnings and zero otherwise.
MTBOOK	The ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets
EGX30	A dummy variable that takes the value of one when the firm is one of the EGX30 companies and zero otherwise.
IndustryDum	Dummies for the EGX 10 industry group.
TimeDum	Dummies for the fiscal years.

Source: The Egyptian Exchange (i.e. EGID) and Capital Market Authority (CMA).

4.3.4 Methodology

Following prior earnings management research, ordinary least squares (OLS) regressions are estimated to test the hypotheses. The following yearly pooled cross-sectional regression is used to test this study's hypotheses:

$$\begin{aligned}\text{MJTDA}_{it} \text{ or } \text{PATDA}_{it} = \propto + & \beta_1 \text{EXECOWN}_{it} + \beta_2 \text{LEV}_{it} + \beta_3 \text{FSIZE}_{it} + \beta_4 \Delta CFO_{it} + \\ & \beta_5 \text{SMOOTH}_{it} + \beta_6 \text{ASSINT}_{it} + \beta_7 \text{CFOL}_{it} + \beta_8 \text{CFOH}_{it} + \\ & \beta_9 \text{EARNL}_{it} + \beta_{10} \text{EARNH}_{it} + \beta_{11} \text{MTBOOK}_{it} + \\ & \beta_{12} \text{EGX30}_{it} + \beta_j \text{IndustryDum} + \varepsilon_{it}, \qquad (4.1)\end{aligned}$$

where i is firm subscript, t is time subscript, j = 1, …, 10, and ε is an error term, and all other variables are as defined in Table 4.1

Due to the lack of independence of observations included in the analyses, the pooling approach may bias *t*-statistics (Whelan and McNamara 2004). In order to test the hypotheses, model parameters are estimated separately for each year and for the entire sample. The year-by-year analysis might overcome the estimation bias, although it reduces the power of the test due to using a smaller sample size. For the entire sample analysis, time dummies are included to control for time effects.

4.3.5 Sample characteristics

Table 4.2 reports descriptive statistics for the main variables for the entire sample. The table indicates that the average (median) abnormal accrual as a percentage of beginning total assets is 0.0000 (-0.006) using the modified Jones model and they are qualitatively similar to using the performance-adjusted model. On average, the executive directors own 11% of firm shares and their ownership ranges from zero to the full ownership of firm's shares. In addition, the leverage ratio, on average, is 15.8%. Also, it appears that 13.3% of firms are part of firms that constitute the most 30 active firms index.

Table 4.2 Descriptive statistics

	Mean	Std. Dev	25%	Median	75%	Min	Max
MJTDA	0.000	0.105	-0.057	-0.006	0.050	-0.412	0.476
PATDA	0.000	0.098	-0.057	-0.006	0.052	-0.395	0.434
EXECOWN	0.11	0.241	0.000	0.000	0.080	0.000	1.000
LEV	0.158	0.226	0.001	0.079	0.269	0.000	3.132
FSIZE	12.74	1.585	11.681	12.629	13.786	9.057	17.965
ΔCFO	0.016	0.141	-0.039	0.016	0.079	-0.953	1.015
ASSINT	0.001	0.002	0.000	0.000	0.001	0.000	0.022
MTBOOK	1.601	1.145	0.892	1.241	1.925	0.261	9.084
			Proportion				Proportion
			Dummy=1				Dummy=0
SMOOTH			63.1%				36.9%
CFOL			9.7%				90.3%
CFOH			10.2%				89.8
EARNL			9.7%				90.3%
EARNH			9.7%				90.3%
EGX30			13.3%				86.7%

This table shows the descriptive statistics for 442 observations used in the analyses over the period 2005-2007. Definitions for all variables are provided in Table 4.1

Table 4.3 presents the correlation matrix for the variables used in the analyses. The correlation matrix shows that none of discretionary accruals measures are significantly correlated with the executive ownership at any level, although leverage ratio and firm size are negatively correlated with both proxies of earnings management at 5 % and 10% level, respectively. However, the correlation coefficients of the measure of implicit income smoothing ΔCFO and explicit income smoothing *SMOOTH* are

negative and highly significantly correlated with both earnings management measures at the 1%. These results suggest that managers are less likely to manage earnings to increase their compensation. However, they might manage earnings to avoid violation of covenants and to reduce earnings fluctuations across years. The other correlations also seem sensible. For example, larger companies are more likely to have large leverage and their motivations to smooth earnings are higher than in small companies. Also, most of the firms that constitute EGX30 are large firms.

It is crucial in multiple regression analysis that the explanatory variables should not be correlated perfectly with each other. If there were perfect correlation between two or more variables, it would be difficult to separate out the individual effects of each explanatory variable on the dependent variable. Thus, a high degree of collinearity can cause problems in estimating the regression coefficients by causing the standard errors to be inflated. Therefore, the presence of significant correlations between various independent variables suggests potential multicollinearity problems for multivariate analysis. Using the method suggested by Belsley et al. (1980), the condition index is usually used as an indication of regression coefficients; a condition number, 10 or more is commonly used as an indication of instability. The highest condition index is (4.669). In addition, the results of investigating the variance inflation factor (VIF) value indicate that the highest VIF is 2.93.[66] Since none of predictor variables produces VIF greater than 10, collinearity is unlikely to be a problem in this study.

[66] As a rule of thumb, a variable whose VIF (1/VIF) value is greater than 10 (near zero) indicates a possible collinearity and may need further investigation.

Table 4.3 Pearson correlation coefficients between variables

		1	2	3	4	5	6	7	8	9	10	11	12	13
1.	MJTDA	1												
2.	PATDA	0.939***	1											
3.	EXECOWN	0.032	0.032	1										
4.	LEV	-0.119**	-0.119**	0.049	1									
5.	FSIZE	-0.083*	-0.083*	-0.017	0.079	1								
6.	ΔCFO	-0.531***	-0.531***	0.022	0.045	0.041	1							
7.	SMOOTH	-0.560***	-0.560***	-0.016	0.005	0.128***	0.444***	1						
8.	ASSINT	0.025	0.025	0.186***	0.068	-0.078	0.053	-0.093*	1					
9.	CFOL	0.245***	0.245***	-0.027	0.236***	-0.132***	-0.367***	-0.255***	-0.024	1				
10.	CFOH	-0.227***	-0.227***	-0.101**	-0.078	0.159***	0.356***	0.226***	0.083*	-0.111**	1			
11.	EARNL	-0.263***	-0.263***	0.009	0.244***	-0.241***	-0.020	-0.050	0.134***	0.124***	-0.111**	1		
12.	EARNH	0.048	0.048	-0.039	0.086*	0.608***	0.091*	0.109**	0.027	-0.082*	0.243***	-0.108**	1	
13.	MTBOOK	0.037	0.037	-0.065	0.091*	0.160***	0.001	0.067	-0.249***	0.050	0.132***	-0.037	0.127***	1
14.	EGX30	0.088*	0.088**	-0.058	0.026	0.415***	0.029	0.052	-0.089*	-0.017	0.066	-0.106**	0.343***	0.245***

Definitions for all variables are provided in Table 4.1. *, **and *** indicate that correlation is significant at the 10%, 5% and 1% level (two-tailed), respectively.

4.4 Empirical results

4.4.1 Univariate analysis

To test the hypotheses, two substitute sets of univariate tests are employed. First, sample firms are partitioned based on the sign of discretionary accruals, resulting in the formation of two portfolios, *POS* and *NEG*. While the *POS* portfolio includes firms making income-increasing discretionary accruals, the *NEG* portfolio includes firms making income-decreasing discretionary accruals. Then, the mean value of each continuous explanatory variable is compared across the two categories of discretionary accruals using a *t*-test. Median values for explanatory variables are also compared across alternative discretionary accruals portfolios using a *Chi square* test in case of a dichotomous explanatory variable. The results of these tests are reported in Panels A and B of Table 4.4.

As predicted and consistent with the results of Young (1998), the results do not support the expectation that managers are less likely to manage earnings upward, as they bear a part from the cost of manipulation. In addition, the findings show that firms that have higher (lower) levels of cash flow changes tend to make positive (negative) discretionary accruals. This result is stable over test periods. However, the results do not support the managerial ownership and political costs hypotheses, as there are no significant differences between the two groups. Using MJTDA, Panel A also indicates that highly leveraged firms are likely to make income increasing discretionary accruals. This result appears only in 2005 and 2006 as well as for the full sample at 5%, 10% and 1% level, respectively. On the contrary, results with respect to the leverage are not supported using PATDA. Likewise, based on the median value in case of the binary values of income smoothing, the results in Panel B of Table 4.4 strongly support the income smoothing hypothesis for all test periods and for the entire sample irrespective of earnings management proxies. Accordingly, managers manipulate earnings upward (downward) when pre-managed earnings are below (above) prior year earnings.

As an alternative test, sample firms are partitioned on the basis of each explanatory variable median. Then *ABOVE* and *BELOW* portfolios are formed. The *ABOVE* portfolio includes firms above the median value and the *BELOW* portfolio includes firms below the median value of each variable or the values of 1 and 0 in case of dichotomous variables.

Table 4.4 Univariate analyses

***Panel A*: T-tests for the differences in means of explanatory variables (ownership, leverage and size)**								
	MJTDA				PATDA			
	EXECOWN	LEV	FSIZE	ΔCFO	EXECOWN	LEV	FSIZE	ΔCFO
Panel A: year 2005 (N=150)								
DA sign								
NEG	0.094	0.230	12.690	0.099	0.074	0.197	12.648	0.093
POS	0.110	0.130	12.537	-0.007	0.130	0.161	12.576	-0.002
t-value	-0.411	2.071**	0.593	4.674***	-1.461	0.734	0.280	4.140***
Panel B: year 2006 (N=145)								
NEG	0.092	0.177	12.872	0.041	0.022	0.157	12.944	0.045
POS	0.143	0.121	12.607	-0.092	0.134	0.153	12.529	-0.087
t-value	-1.207	1.806*	0.984	6.037***	-0.936	0.138	1.573	6.103***
Panel C: year 2007 (N=147)								
DA sign								
NEG	0.113	0.152	12.865	0.046	0.102	0.141	12.898	0.055
POS	0.097	0.126	12.816	-0.022	0.109	0.139	12.785	-0.028
t-value	0.409	0.94	0.182	3.376***	-0.169	0.061	0.426	4.255***
Panel D: full sample (N=442)								
DA sign								
NEG	0.100	0.185	12.814	0.060	0.091	0.164	12.836	0.063
POS	0.115	0.126	12.651	-0.036	0.124	0.151	12.634	-0.036
t-value	-0.652	2.75***	1.08	7.545***	-1.448	0.613	1.341	7.872***

Table 4.4 (continued)

***Panel B*: Explicit income smoothing partitioned by sign of discretionary accruals as measured by the modified Jones and the performance-adjusted Jones models**

	MJTDA			PATDA		
	Proportion of accruals with given sign			*Proportion of accruals with given sign*		
	NEG	POS	*p*-value	NEG	POS	*p*-value
Panel A: 2005						
UME *below* prior year earnings (*N* =63)	12.70	87.30	0.000	17.46	82.54	0.000
UME *above* prior year earnings (*N*=87)	74.71	25.29		71.26	28.74	
χ^2	56.248			42.341		
Panel B: 2006						
UME *below* prior year earnings (*N*=49)	20.41	79.59	0.000	20.41	79.59	0.000
UME *above* prior year earnings (*N*=96)	82.29	17.71		77.08	22.92	
χ^2	52.409			42.757		
Panel C: 2007						
UME *below* prior year earnings (*N*=51)	11.76	88.24	0.000	15.69	84.31	0.000
UME *above* prior year earnings (*N*=96)	76.04	23.96		69.79	30.21	
χ^2	55.352			39.016		
Panel D: Full sample						
UME *below* prior year earnings (*N*=163)	14.72	85.28	0.000	17.79	82.21	0.000
UME *above* prior year earnings (*N*=279)	77.78	22.22		72.76	27.24	
χ^2	164.79			124.661		

Table 4.4: (continued)

***Panel C*: T-test results for differences in means of discretionary accruals as measured by the modified Jones and performance-adjusted models**								
	MJTDA mean above variable median	MJTDA mean below variable median	*t*-value	Mann-Whitney	PATDA mean above variable median	PATDA mean below variable median	*t*-value	Mann-Whitney
Panel A: 2005								
EXECOWN	0.010	-0.003	0.767	0.691	0.014	-0.005	1.175	1.525
LEV	-0.006	0.006	-0.837	-1.272	0.003	-0.003	-0.414	-0.720
FSIZE	0.003	-0.003	0.403	0.310	-0.000	0.000	0.042	0.633
ΔCFO	-0.035	0.035	-4.961***	-4.730***	-0.033	0.033	-4.861***	-4.618***
SMOOTH	-0.042	0.058	-7.525***	-7.549***	-0.035	0.049	-6.480***	-6.753***
Panel B: 2006								
EXECOWN	0.003	-0.001	0.188	0.159	0.002	-0.000	0.178	0.254
LEV	-0.008	0.008	-0.924	-1.127	0.002	-0.002	0.319	0.360
FSIZE	-0.008	0.008	-0.915	-0.562	-0.001	0.001	-0.212	-0.716
ΔCFO	-0.042	0.041	-4.841***	-4.694***	-0.045	0.045	-5.910***	-5.774***
SMOOTH	-0.048	0.095	- 9.224***	-7.445***	-0.044	0.087	-9.168***	-7.277***
Panel C: 2007								
EXECOWN	0.007	-0.002	0.491	0.241	0.000	-0.003	0.608	0.527
LEV	-0.005	0.005	-0.601	-0.415	-0.000	0.002	-0.232	-0.046
FSIZE	0.006	-0.006	0.708	0.229	0.005	-0.005	0.603	0.039
ΔCFO	-0.035	0.036	-4.321***	-4.153***	-0.036	0.036	-4.621***	-4.606***
SMOOTH	-0.042	0.080	-7.962***	-7.370***	-0.037	0.069	- 6.926***	-6.853***
Panel D: full sample								
EXECOWN	0.007	-0.002	0.813	0.747	0.008	-0.003	1.096	1.232
LEV	-0.006	0.006	-1.367	-1.488	0.001	-0.001	0.2739	0.664
FSIZE	0.005	-0.005	1.194	0.286	0.000	-0.000	0.211	0.729
ΔCFO	-0.037	0.037	-8.155***	-8.030***	-0.038	0.038	-8.903***	-8.733***
SMOOTH	-0.044	0.076	-14.185***	-13.033***	-0.039	0.067	-12.88***	-12.126***

Notes: *t*- test two tailed test and *Chi*-square one tailed test. *POS* firms with abnormal accruals ≥ 0, *NEG* firms with abnormal accruals < 0, Definitions of variables are given in Table 5.1. ***, ** and * indicate that the mean difference is statistically significant at the 1%, 5% and 10% level, respectively.

To run the test, mean discretionary accruals for each portfolio were compared using *t*-test and Mann-Whitney test. The results in Panel C of Table 4.4 show that firms that have negative cash flow changes make significantly higher discretionary accruals compared to firms with positive cash flow changes. In contrast, the results do not support the managerial ownership, leverage and political costs hypotheses for any periods or earnings management proxy.

To summarize, the above univariate tests provide strong support for the income smoothing hypotheses, but tests do not support any of the ownership, and political costs hypotheses. Moreover, the results of the first set of univariate tests provide little support for the leverage hypothesis.

4.4.2 Multivariate analysis

One limitation of univariate analysis is that it ignores the effects of other variables and the interrelationship among variables that possibly confound the inferred conclusion. Therefore, this section presents the results of multivariate analysis. A cross-sectional regression model is employed for each test individual year and the entire sample to test the competing contracting incentives of earnings manipulation (i.e. bonus hypothesis, the debt hypothesis, and political costs), which might explain managerial accounting choices. The multivariate analysis begins with a model (M1), in which only the control variables are included. Then, in M2 only the independent variables are examined. In M3 all control and independent variables are examined to judge the marginal predictive power determinants of discretionary accruals choices. In addition, a vector of industry dummies *IndustryDum* is added to the OLS regression to control for industry-fixed effects. In case of pooled regression, time dummies *TimeDum* are added to control for year-fixed effects. However, the coefficients of industry dummies and time dummies are not included in the results.

In general, the coefficients of most variables are in line with the expected signs except for *EXECOWN* and *LEV*, which appear in the analysis with a wrong or inconsistent sign in some years and for all models. Also, there is a little deviation for some coefficients in some years. In addition, the signs of most of the control variables are as predicted.

Table 4.5 Cross sectional regressions using discretionary total accruals as measured by the MJTDA

	Pred.	2005			2006			2007		
	sign	M 1	M 2	M 3	M 1	M 2	M 3	M 1	M 2	M 3
Constant	+/-	-0.005	-0.045	0.013	-0.002	0.001	0.011	-0.013	-0.099	0.051
		(-0.40)	(-0.87)	(0.22)	(-0.09)	(0.01)	(0.14)	(-0.82)	(-1.26)	(0.60)
EXECOWN	-		0.026	0.028		0.021	0.020		0.004	0.011
			(1.32)	(1.42)		(0.72)	(0.74)		(0.15)	(0.41)
LEV	+		-0.042***	-0.059***		-0.112***	-0.085**		-0.073	-0.012
			(-3.13)	(-3.76)		(-2.83)	(-2.20)		(-1.45)	(-0.26)
FSIZE	-		-0.008**	-0.002		0.006	0.005		-0.015**	-0.002
			(-2.06)	(-0.46)		(1.02)	(0.76)		(-2.51)	(-0.37)
ΔCFO	-		-0.272***	-0.182***		-0.403***	-0.338***		-0.137	-0.162**
			(-4.77)	(-3.13)		(-6.02)	(-4.79)		(-1.61)	(-2.00)
SMOOTH	-		-0.075***	-0.070***		-0.092***	-0.095***		-0.118***	-0.120***
			(-5.59)	(-5.21)		(-4.78)	(-4.66)		(-7.03)	(-7.76)
ASSINT	+	8.718***		3.526	6.126		0.071	6.349***		4.721*
		(3.29)		(1.17)	(1.06)		(0.02)	(3.71)		(1.89)
CFOL	+	0.083***		0.063***	0.156***		0.038	0.054*		-0.022
		(2.73)		(2.70)	(4.56)		(1.30)	(1.68)		(-0.72)
CFOH	-	-0.134***		-0.074***	-0.081***		-0.006	-0.075**		-0.024
		(-3.86)		(-3.23)	(-2.72)		(-0.23)	(-2.28)		(-0.88)
EARNL	-	-0.104***		-0.058***	-0.133***		-0.080***	-0.130***		-0.130***
		(-4.58)		(-3.28)	(-4.59)		(-4.67)	(-3.41)		(-3.80)

EARNH	+	0.070*			0.050*	-0.004		-0.008	0.040			0.041
		(1.88)			(1.68)	(-0.10)		(-0.21)	(0.99)			(1.03)
MTBOOK	+	0.000			0.006	-0.000		0.003	0.012			0.006
		(0.04)			(1.05)	(-0.04)		(0.39)	(1.50)			(0.96)
EGX30	+	0.037			0.042**	0.033		0.007	-0.006			-0.002
		(1.58)			(2.04)	(0.79)		(0.24)	(-0.23)			(-0.10)
Industry Dummies?		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes
No. of Observations		150	150		150	145	145	145	147	147		147
R^2		0.3603	0.4970		0.6297	0.2736	0.5892	0.6288	0.1823	0.3887		0.5039
adj. R^2		0.2779	0.4407		0.5655	0.1763	0.5414	0.5619	0.0745	0.3187		0.4159

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table 4.6 Cross sectional regressions using discretionary total accruals as measured by the PATDA

	Pred.	2005			2006			2007		
	sign	M 2	M 1	M 3	M 2	M 1	M 3	M 2	M 1	M 3
Constant	+/-	-0.010	-0.008	-0.004	0.009	0.081	0.066	-0.011	-0.095	0.037
		(-0.89)	(-0.14)	(-0.06)	(0.56)	(1.33)	(0.87)	(-0.75)	(-1.21)	(0.46)
EXECOWN	-		0.022	0.028		0.017	0.013		0.007	0.012
			(1.17)	(1.51)		(0.68)	(0.55)		(0.30)	(0.41)
LEV	+		0.018	-0.015		-0.006	-0.030		-0.030	0.016
			(1.39)	(-1.04)		(-0.13)	(-0.75)		(-0.65)	(0.32)
FSIZE	-		0.004	0.002		-0.003	-0.001		-0.012**	-0.002
			(0.92)	(0.46)		(-0.58)	(-0.14)		(-2.16)	(-0.27)
ΔCFO	-		-0.274***	-0.154***		-0.415***	-0.307***		-0.215**	-0.218**
			(-4.68)	(-2.77)		(-6.00)	(-5.22)		(-2.40)	(-2.43)
SMOOTH	-		-0.059***	-0.055***		-0.076***	-0.072***		-0.089***	-0.089***
			(-4.33)	(-4.08)		(-4.34)	(-4.12)		(-5.04)	(-4.95)
ASSINT	+	7.075***		2.233	4.264		-0.742	6.745***		5.326**
		(2.97)		(0.79)	(0.94)		(-0.19)	(4.26)		(2.46)
CFOL	+	0.098***		0.075***	0.176***		0.068***	0.068**		-0.007
		(3.94)		(3.23)	(5.70)		(2.67)	(2.26)		(-0.20)
CFOH	-	-0.150***		-0.098***	-0.115***		-0.050**	-0.090***		-0.040
		(-5.02)		(-4.87)	(-4.80)		(-2.40)	(-2.94)		(-1.54)
EARNL	-	-0.052***		-0.023	-0.075***		-0.036**	-0.111***		-0.113***
		(-3.07)		(-1.37)	(-3.27)		(-2.09)	(-2.95)		(-3.16)

EARNH	+	0.049		0.031	-0.027		-0.018	0.036		0.039
		(1.38)		(0.99)	(-0.71)		(-0.55)	(0.93)		(0.99)
MTBOOK	+	0.003		0.006	-0.007		-0.004	0.009		0.003
		(0.51)		(1.12)	(-0.92)		(-0.56)	(1.22)		(0.56)
EGX30	+	0.035		0.038*	0.030		0.011	0.005		0.012
		(1.61)		(1.87)	(0.93)		(0.53)	(0.20)		(0.49)
Industry Dummies?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		150	150	150	145	145	145	147	147	147
R^2		0.3948	0.4159	0.5692	0.3889	0.6156	0.6578	0.1931	0.3417	0.4465
adj. R^2		0.3168	0.3505	0.4946	0.3071	0.5709	0.5961	0.0867	0.2663	0.3483

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

With respect to the bonus plans hypothesis, the regressions results provide support for the univariate analysis that there is no evidence of managerial ownership-driven discretionary accruals activity in any test year or using any proxy of earnings management. The pooled regressions also support these results, implying that managers of sample firms are less likely to manipulate earnings downward or upward in an attempt to increase their compensation.

Table 4.7 Pooled regressions using the MJTDA and PATDA

	Pred.	MJTDA			PATDA		
	sign	M 1	M 2	M 3	M 1	M 2	M 3
Constant	+/-	-0.007	-0.052	0.025	-0.006	-0.006	0.028
		(-0.58)	(-1.29)	(0.56)	(-0.55)	(-0.16)	(0.66)
EXECOWN	-		0.013	0.010		0.011	0.005
			(0.96)	(0.80)		(0.93)	(0.43)
LEV	+		-0.057***	-0.041***		0.008	0.003
			(-3.24)	(-2.72)		(0.58)	(0.23)
FSIZE	-		0.010***	0.003		0.004	0.001
			(3.18)	(0.79)		(1.54)	(0.34)
ΔCFO	-		-0.264***	-0.229***		-0.287***	-0.219***
			(-7.25)	(-6.10)		(-8.14)	(-6.24)
SMOOTH	-		-0.094***	-0.090***		-0.075***	-0.068***
			(-10.65)	(-10.43)		(-8.79)	(-8.10)
ASSINT	+	7.507***		4.227**	7.343***		4.523**
		(4.68)		(2.15)	(4.92)		(2.38)
CFOL	+	0.095***		0.030*	0.112***		0.049***
		(4.95)		(1.82)	(6.34)		(2.97)
CFOH	-	-0.094***		-0.031**	-0.114***		-0.057***
		(-4.95)		(-2.05)	(-6.77)		(-4.25)
EARNL	-	-0.118***		-0.094***	-0.076***		-0.063***
		(-7.06)		(-6.77)	(-4.91)		(-4.21)
EARNH	+	0.035		0.029	0.019		0.015
		(1.53)		(1.38)	(0.86)		(0.71)
MTBOOK	+	0.005		0.005	0.003		0.003
		(0.98)		(1.52)	(0.72)		(0.80)
EGX30	+	0.019		0.018	0.022		0.022*
		(1.13)		(1.27)	(1.50)		(1.68)
Industry dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Number of observations		442	442	442	442	442	442
R^2		0.2307	0.4589	0.5344	0.2699	0.4242	0.4937
adj. R^2		0.1960	0.4372	0.5076	0.2371	0.4012	0.4645

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

The results of Table 4.5 and Table 4.7 indicate that the relationship between discretionary accruals and leverage using the modified Jones model is negative and significant at the 1% level for 2005 and 2006, although this relationship is not significant in 2007 or when the performance-adjusted Jones model is used. Although this results in contrast with the leverage hypothesis because it suggest that highly leverage firms have lower discretionary accruals, it is consistent with some previous studies (e.g., DeAngelo et al. 1994; DeFond and Jiambalvo 1994; Chung et al. 2002). The commonly used explanation for this negative association is that companies that are close to debt covenant violation generate large negative accruals in order to make contractual renegotiations that are favourable for them (DeAngelo et al. 1994).

Consistent with the univariate analysis, regression results show little support for the political costs hypothesis. Table 4.7 reveals that the negative association between discretionary accruals and firm size is marginally significant at the 10%, only for pooled regression and when discretionary accruals are measured by the *MJTDA*. This implies that large firms may tend to make income decreasing choices in an attempt to reduce the probability of being visible and reduce politician or governmental intrusions in firm affairs. However, no evidence is documented for this association for any individual year or for both alternative measures of abnormal accruals. One explanation of this result is that one or more of the control variables capture the same effects as firm size, as the coefficient of *FSIZE* is significant before the inclusion of control variables at the 5% for 2005 and 2007 when *MJTDA* is used and for 2007 when *PATDA* is used. Analysis of the correlation matrixes in Table 4.2 shows that *FSIZE* is highly significant with extreme earnings, extreme cash flows from operating activities, and constituents of the most active index. As such, the *FSIZE* coefficient estimates are most likely sensitive to the inclusion of these control variables.

Furthermore, consistent with the univariate results, both income smoothing variables are highly significant across all estimation periods and alternative discretionary accruals estimation models. More specifically, the coefficient of cash flow changes is negative and highly statistically significant at the 1% level for all discretionary accruals proxies and for 2005, 2006 and pooled data, while it is not statistically significant for 2007. This result implies that firms with positive cash flow changes are more likely to manipulate earnings downward to negatively affect the reporting earnings level to keep fluctuation of reporting earnings at minimum levels.

This negative association is consistent with prior studies (e.g., Becker et al. 1998; Reynolds and Francis 2000; DeFond and Jiambalvo 1994). Similarly, *SMOOTH* displays significant variation across the estimation periods. More specifically, the coefficient of *SMOOTH* is negative and significant at the 1% level in all years or for the pooled data across the two proxies of earnings management. Accordingly, managers are more likely to manage earnings upward when the pre-managed earnings are below the prior year while they damp the current year earnings when they are above the prior year earnings in an attempt to report smoothed earnings.

Collectively, the results of regression analysis lend credence to the idea that the traditional costly contracting incentives (namely, managerial ownership and political costs) provide little explanation for discretionary accruals choices, while income smoothing activity explains great of the cross sectional variation in managerial choices in all estimation periods. Firms probably benefit from damping the fluctuation of earnings (Beidleman 1973) because the smoothed earnings may lead to higher share prices (Barth et al. 1999) and lower cost of equity (Francis et al. 2004), as they could be seen as a reflection of management abilities.

4.5 Robustness checks

In this section, further analyses are conducted to verify the robustness of the previous results. These additional tests are discussed in the following sections.

4.5.1 Alternative discretionary accruals proxies: current discretionary accruals

To ensure that previous results are not a product of measurement errors emanating from discretionary accruals estimations, the discretionary accruals are re-estimated using the cross-sectional working capital (current) discretionary accruals of the modified Jones model (Dechow et al. 1995), and the performance-adjusted Jones model (Kothari et al. 2005).[67]

It is widely believed that the scope for manipulating non-current accruals (i.e. non-working capital accruals) is relatively limited for management because it is easier for managers to manipulate current accruals relative to non-working capital accruals

[67] Following Ashbaugh et al. (2003), current accruals are defined as the difference between earnings before extraordinary items and discontinued operations and cash flows from operations after adding the depreciation and amortization charges, scaled by lagged total assets

because they can exercise more discretion over the choice of regular revenue and expense items. DeFond and Jiambalvo (1994) find that working capital is more likely to be used by managers to manage earnings than the other components of net operating assets. Sloan (1996) also reports that the magnitude of its variability compared to that of non-current accruals is expected to be great. Therefore, it is expected that the working capital discretionary accruals component is an effective device for managers to manipulate earnings without being easily detected.

To test the sensitivity of results after excluding depreciation, OLS estimation is re-examined using the current discretionary accruals as the dependent variable in the multivariate analysis.[68] The results of Tables A.4.3, A.4.4 and A.4.5 in Appendix 4.1 are similar to those reported using discretionary total accruals models. The results confirm the highly negative association between discretionary accruals and income smoothing hypotheses for the cross-sectional and pooled regressions using the two measures of discretionary accruals. Similarly, no evidence is found to support the managerial ownership or the political costs hypothesis.

4.5.2 Managerial ownership: piecewise and nonlinearity tests

The regression results, contrary to expectation, show a positive relation between management ownership and discretionary accruals. Jensen and Meckling (1976) argue that the relation between managerial ownership and agency costs is linear and the optimal point for a firm is achieved when managers acquire all of the shares of the firm. However, other researchers find that this relation could be non-monotonic (see, e.g., Morck et al. 1988; McConnell and Servaes 1990, 1995; Teshima and Shuto 2008, among others).

Since the sign and findings of managerial ownership are not in line with the predicted relation, this result is probably due to the nonlinear relation between executive ownership and discretionary accruals. As a result, two alternative additional tests are performed to investigate this possibility. First, following prior studies (e.g., Morck et

[68] The means value of *GPPE* (depreciation and amortization charges) scaled by lagged total assets are 0.694 (0.0323), 0.659 (0.0307), 0.6764 (0.0287) and 0.677 (0.0306) in year 2005, 2006, 2007 and pooled data, respectively. As a result, it is important to re-estimate OLS using the current accruals models and restrict the attention only to the short-term accruals by excluding the long-run accrual of depreciation (Teoh et al. 1998a, 1998b).

al. 1988; Young 1998; Lennox 2005), piecewise linear models are estimated. According to this model, *EXECOWN* is decomposed as follows:

EXECOWN 0 to 5 = *EXECOWN* if *EXECOWN* <5%,

= 5% if *EXECOWN* ≥ 5%;

EXECOWN 5 to 25 = 0 if *EXECOWN* < 5%;

= *EXECOWN*- 5% if 5% ≤ *EXECOWN*<25%;

EXECOWN > 25 = 0 if *EXECOWN* < 25%

= *EXECOWN* – 25% if *EXECOWN* ≥ 25%.

Results from the piecewise regression presented in Table A.4.6 in Appendix 4.1 confirm results previously documented. More specifically, using pooled data, the coefficient of the intermediate ownership level is negative and none of ownership terms are significant at any level, although the coefficients for the low and high ownership region are positive.

Second, regression models are re-estimated after including a quadratic term of ownership $EXECOWN^2$. The coefficients of both ownership variables are not significant when the two earnings management proxies are employed, suggesting no evidence of a nonlinear relation between managerial ownership and discretionary accruals.

4.5.3 Prior period accruals

Since the discretionary accruals revert over the firm lifetime (Dechow 1994; Sloan 1996), the discretionary accruals in any period consist of the initial discretionary accrual in that period plus portions of prior periods (McNichols 2000). However, the ability of managers to inflate the current period's reported earnings will doubtless shrink, as the level of lagged total accruals rises (Koh 2007). Thus, the failure to control for reversal of prior years' accruals may lead to seriously invalid conclusions (Kasznik 1999; Bartov et al. 2000; Klein 2002a).

As a result, the relation between current period discretionary accruals and lagged total accruals is expected to be significantly negative. To control for the effects of accruals reversal and to test the sensitivity of reported results to this inclusion, a dummy variable *LAGAC* is defined, taking the value of one when the value of lagged total

accruals is negative and zero otherwise. Likewise, *LAGDA* is defined, taking the value of one when the lagged discretionary accruals is negative and zero otherwise

Consistent with Young (1998) and contrary to Koh (2007), the results of Panel A in Table A.4.7 in Appendix 4.1 present evidence that abnormal accruals are subject to short term reversal. Also, the results confirm previous findings concerning the income smoothing hypotheses. It is worth noting that all coefficients of other variables are similar to those reported previously, except for the coefficient of *LEV*, which becomes positive when PATDA is used. This casts doubt on the prior results including the prior year accruals suggesting that the main results reported earlier could be driven by accruals reversal. To examine this possibility, the OLS regressions are re-estimated after including the interactions between *LAGDA* and various explanatory variables. One would observe significant coefficients on interacting variables if the accruals reversal has significant effects on the prior results. Panel B of Table A.4.7 reveals that income smoothing variables stay significant and all coefficients of interactions are not significant in all cases except for *FSIZE*. These results provide evidence that the initial findings remain robust even after the taking the effects of accruals reversal into consideration.

4.5.4 Size effect

The prior results documented above provide little support for the political costs hypothesis. Sloan (1996) finds a quadratic relation between total accruals and firm size. To examine the non-linear relationship between firm size and discretionary accruals, the MJTDA and the PATDA are re-estimated by adding a quadratic term $FSIZE^2$. The results in Table A.4.8 in Appendix 4.1 show no linear relationship between firm size and discretionary accruals, though it is marginally significant at 10% when MJTDA is used. Another point to note is that the smoothing variables are still statistically significant ($p < 0.01$). It appears from the correlation matrix that *FSIZE* is highly correlated with other explanatory variables, which suggests a need to investigate whether the preceding results will be affected exclusive *FSIZE* or using a different proxy for size; *FSIZE2* defined as the natural logarithm of sales. Table A.4.9 in Appendix 4.1 shows that results exclusive *FSIZE* or using *FSIZE2* are similar to those reported previously.

4.6 Summary and concluding remarks

This study examines whether discretionary accruals choices can be explained by the costly contracting incentives (i.e., bonus plans, debt covenants, political costs hypotheses). Motivated by the absence of a comprehensive theory of accounting choices and imperfection in capital markets, the assertion of this study is that the inferences concluded from studying a single objective in a particular event are likely to be inadequate to understand the incentives that lie behind accounting choices. Thus, recognizing that the reported earnings would reflect all complex choices, which are motivated by multiple objectives, it is crucial to study these competing objectives in the same model at no event point.

In particular, the objectives studied in the present study are related to the efficient contracting theory. Managerial accounting discretion is modelled as a function of two competing accounting choices incentives; efficient contracting (bonus plans, proxied by managerial ownership; debt covenants, proxied by total debt to total assets; and political costs, proxied by firm size); and income smoothing (measured as pre-managed earnings relative to the firm prior year earnings). Hence, this study is one possible attempt to better understand the discretionary accounting choices in multiple objectives and in an emerging country where the legal enforcement is relatively weak and the minority shareholders' protection is inadequate, which could encourage managers to make discretionary accounting choices that maximize their benefits at the time of reporting.

To conduct the analyses, the signed discretionary accruals are used as a proxy for capturing earnings management activities. The modified Jones and performance-adjusted Jones models are used to isolate the discretionary accruals component. While the discretionary total accruals are employed in the main analyses, the working capital (current) accruals are used for robustness purposes. Based on 442 non-financial observations, representing a sample of Egyptian listed firms, over the period 2005-2007, the results of the year-by-year and the pooled regressions estimation indicate that the costly contracting hypothesis explains little of variations of discretionary accruals in the Egyptian setting, as the associations between the measure of earnings management and efficient contracting variables are not significant in any estimation period or for the pooled regressions. However, the results provide strong evidence for the income smoothing hypotheses and a marginal association for the debt covenants hypothesis.

Clearly, it is found that firms have positive operating cash flows or/and whose non-discretionary earnings are above the firm's prior year earnings are more likely to manipulate earnings downward by making income-decreasing discretionary accruals in an attempt to keep earnings fluctuation at the minimum levels. In contrast, firms have negative operating cash flows or/and whose pre-managed earnings below the targets tend to adopt income increasing choices. These results are robust for several robustness checks which include different measures of discretionary accruals, additional tests for the potential non-linearity of managerial ownership and firm size, and controlling for the potential effects of accrual reversal. All of these tests confirm the results reported in the main analyses concerning the income smoothing hypotheses.

Despite the documented evidence, the results of this study are subject to some caveats. First, as in any accruals-based earnings management study, a key concern regarding the explanation of results relies on the ability of earnings management proxies to adequately capture earnings manipulation activities. It is well-known that measurement errors related to abnormal accruals measurement are a concern. Despite the use of alternative versions of modified Jones models, the findings are comparatively, but not totally free of this concern. Thus, the inferred conclusion is likely to be contingent on the ability of these models to appropriately isolate the discretionary accruals component. Thus, the possibility remains that measurement errors related to measures of discretionary accruals drive some of the reported results. Furthermore, the self-selection bias innate in the sample is also considered a general limitation related to most accounting research. Also, misspecification of the accounting choices determinants by using crude proxies, particularly executive bonus plans and leverage, may lie behind some of the observed relation (Fields et al. 2001).

Second, although this study documents evidence for the existence of income smoothing, examining incentives that lie behind the explanations of income smoothing, however, is not the concern of this study and beyond its objectives. One possible explanation is that managers use artificial smoothing through accruals to obscure the real value of the firm by damping the income volatility (Barton 2001), to benefit themselves at the expense of other parties, particularly shareholders (Fudenberg and Tirole 1995; DeFond and Park 1997).

Finally, the small number of firms in the estimation portfolio tends to weaken the power of the tests because it may cause large standard errors which may increase the

chance of *type II* error (Ronen and Yaari 2008, 215). In turn, this may lead to less reliable estimated parameters, which could introduce noise into the analyses. In reality, however, the smaller sample size in this study is unavoidable because the number of observations in the Egyptian population tends to be low.[69]

[69] Examples of studies that suffer from the same limitation include Erickson and Wang (1999) (55 firms involved in a stock for stock merger); Han and Wang (1998) (76 firms in the crude petroleum and natural gas industry in 1999); and Pincus and Rajgopal (2002) (236 observations extracted from oil and gas.

Chapter 5

Board Characteristics, Audit Quality and Earnings Management

5.1 Introduction

The recent international corporate collapse and accounting scandals surrounding some prominent large companies (e.g. Enron, Xerox, World.com, HealthSouth, Tyco, Waste management, RiteAid and Subeam) raised concern about the effectiveness of different monitoring devices that protect investors' interests. The majority of failures have resulted, in part, from accounting manipulation and dereliction or absence of efficient corporate governance mechanisms that control opportunistic behaviour of management. Such failures provide evidence of earnings management and provide strong impetus for regulators to re-evaluate corporate governance (Mulgrew and Forker 2006; Jaggi and Leung 2007).

Several governance mechanisms have been suggested in the literature to reduce earnings management activities. These include a board of directors, managerial ownership and external auditing. The board is considered as an effective governance mechanism in theory and has a fiduciary responsibility for monitoring the actions of top management (Fama 1980; Fama and Jensen 1983). However, there is no agreement yet on the ability of boards to guarantee that management acts in the interest of shareholders and reduce earnings management (Park and Shin 2004; Holderness and Sheehan 1991). The composition of a board is influential on the effectiveness of the board's monitoring and disciplining activities. Most corporate boards include some of the firm's top management in addition to directors from outside. It is argued that boards of publicly traded firms are generally viewed as relatively inactive entities, often dominated by the managers they are charged with monitoring and not effective in protecting minority stockholders from expropriation by entrenched insiders (Holderness and Sheehan 1991; Klein 1998; Park and Shin 2004). For example, it is found that higher proportions of outside directors are associated with better decisions, but not associated with lower earning management (Piot and Janin 2005; Bradbury et al. 2006). In addition, managerial ownership is also considered as an important internal control mechanism that helps alleviate agency conflicts between management and outside shareholders

An assumption maintained in prior studies that examine the association between audit quality and earnings management is that Big Four auditors are associated with high audit quality. The explanation commonly found in the literature for high audit quality is that Big Four auditors require a high quality of earnings in order to protect their brand name and reputation from potential risk arising from misleading financial

reports by clients (DeAngelo 1981; Francis and Wang 2008). Hence, high litigation sanctions and reputation risk are considered the main motivations that induce auditors to constrain earnings management or issue a qualified opinion when necessary (Van Tendeloo and Vanstraelen 2008). Hence, if this explanation is true, the quality of auditing will be contingent on the investor protection and the probability of legal exposure risk and one should, as a result, anticipate less audit quality differentiation between high and low audit quality offices in case of absence of these circumstances. Moreover, it is expected that Big Four auditing offices would prefer to provide low auditing when client misreporting is less likely to be detected and auditors are less likely to be punished.

Looking at the Egyptian context, as it reports directly to the People's Assembly, CAO is legally responsible for providing high quality auditing for firms, in which one of the public entities or public sector companies or banks owns 25 per cent or more of the share capital. As a consequence, the present study extends prior studies by examining whether board monitoring and the audit quality plays the same role in constraining opportunistic earnings management behaviour in emerging countries as that documented in countries characterised by strict investor protection regimes and high probability that auditors will be sued for misreporting (Becker et al. 1998; Francis et al. 1999).

Egypt is an ideal setting to examine the potential roles of board mechanisms and audit quality in curbing earnings management for two reasons. First, the recommendations of ECGC are not mandatory or legally binding. Unlike the Code of Best Practice in the UK, compliance with the code is voluntary. The implication of this is that the absence of law enforcement and relatively weak minority shareholders protection might induce controlling shareholders or strong managers to choose a corporate governance structure that serves their own benefits or controlling shareholders' interests at the expense of minority shareholders.

Second, although a large body of empirical research has examined the relation between different corporate governance mechanisms and opportunistic earnings management, most of the work is US or UK-based and relatively few studies have directly addressed that relation in the emerging countries where conflict between majority and minority shareholders is more severe. Given that the standard Berle and Means (1932) firm with diffuse ownership is a rare phenomenon in most economies (La

Porta et al. 1999), paying more attention to different institutional settings is likely to improve our understanding of the monitoring, disciplining and advisory roles of different corporate governance mechanisms in different settings. This is important to investigate whether there is a generally accepted corporate governance structure that firms should adopt irrespective of institutional and economic differences among countries and whether some governance mechanisms may have greater influence than others according to the reporting incentives and type of conflicts that exist among diverse shareowners.

The main objective of the present study is to extend the existing earnings management and corporate governance research by providing additional insights into whether the monitoring and disciplining roles of board of directors and audit quality mechanisms are effective similar to those found in Anglo-Saxon countries (Becker et al. 1998, amo; Klein 2002a; Peasnell et al. 2005; Davidson et al. 2005; Jaggi et al. 2009; Francis and Yu 2009, among others). Although previous Anglo-Saxon studies provide mixed evidence about the importance of outside directors, the effectiveness of outside directors in curbing earnings management in Egypt is an empirical issue that this study aims to explore.

Using the pooled regression and a sample of 442 non-financial Egyptian observations over the period (2005 – 2007), the empirical results, using both the absolute and sign value of both total and current discretionary accruals measured by the performance-adjusted modified Jones model (Ashbaugh et al. 2003; Kothari et al. 2005), show that the magnitude of discretionary accruals is lower for firms audited by Big Five auditors and that have large board size and high executive ownership. However, the results indicate that the monitoring and disciplining roles of outside directors are weak, as the negative association between level of abnormal accruals and the proportions of outside members on the board of directors is not significant at convenient levels. Nonetheless, this relationship becomes statistically strong when the level of executive ownership increases. Furthermore, the incentives of executive and outside directors are more likely to align with minority shareholders for firms with high executive ownership. These results corroborate the complementary roles of proportion of outside directors on the board, executive and outside directors' ownership. The results also provide evidence to oppose the ECGC recommendation to compose audit committees *mostly* of outside members. Specifically, the results reveal that

audit committees composed *entirely* of outside members are not able to perform the constraining and monitoring role adequately.

The results of signed discretionary accruals confirm that the strong constraining role of Big Five auditors holds for both income-increasing and income-decreasing discretionary accruals, although it is more statistically significant for income-increasing choices. Additionally, the results of a separate set of tests conducted using earnings targets as an alternative proxy for earnings management indicate that the incentive of managers to manipulate earnings upward to report small earnings increases is less likely to exist for firms audited by Big Five auditors and with higher executive ownership

The results of the present study contribute to the existing literature in three ways. First, this study investigates the monitoring and disciplining role of a number of board characteristic and audit quality as efficient governance mechanisms in constraining opportunistic earnings management in institutional settings in which the type of ownership undermines the effectiveness of outside directors, and where the incentives of controlling shareholders and strong managers play a crucial role to explain the relation between earnings management and corporate governance mechanisms. Second, most studies that test the relation between earnings management and corporate governance mechanisms focus on an individual governance mechanism, neglecting the impact of other governance variables, which may lead to insufficient evidence about this relation. One such mechanism is that related to executive ownership, which might be an incentive that gives strong managers more power to further manipulate earnings to their reporting objectives. In contrast, executive ownership can be seen as a governance mechanism that helps to prevent potential expropriation of minority shareholders and firm resources in favour of controlling and/or corporate managers. Third, prior studies test the potential role of outside directors in reducing earnings management behaviour and ignore the incentives of those directors to engage in earnings management activities. This study, therefore, tests whether incentives of non-executive directors would align with those of minority shareholders and, thus, constrain the opportunistic earnings manipulation or they would prefer to go with managers' incentives when managers tend to engage in such manipulation.

The remainder of this study is organized as follows. Section 5-2 presents prior research and development of hypotheses. Section 5-3 reports the research design. Section 5-4 discusses the sample characteristics and the empirical results are presented

in Section 5-5, while Section 5-6 presents robustness checks and additional analyses. Finally, Section 5-7 concludes.

5.2 Prior research and hypotheses development

5.2.1 Board characteristics

The board of directors is considered as an internal governance mechanism that helps to alleviate the agency cost resulting from separation of ownership and control (Hermalin and Weisbach 2003), and safeguards the interest of a firm' s stockholders in monitoring decisions made by senior management. It also protects shareholders from managers who may pursue their own personal interests or otherwise may not act in the best interests of shareholders (Fama and Jensen 1983; Peasnell et al. 2003; Kao and Chen 2004; Choi et al. 2007). In addition, the board is considered the shareholders' first line of defence against any possible opportunistic managerial behaviour (Weisbach 1988), as well as an essential mechanism for making important financial and non-financial decisions.

Fama and Jensen (1983) posit that the stockholders' delegation of responsibility for internal control to a board makes the board the apex of decision control within both large and small corporate organizations. This delegation occurs because stockholders generally diversify their risks by owning securities in numerous firms (Fama 1980). Ultimately, the board has responsibility for ensuring that the firm is run in the best interests of stockholders and retains control over top management. Such control includes rights to appoint, dismiss, control and determine the compensation of decision agents, all with a view toward maximizing shareholder value (Peasnell et al. 2003; Denis and McConnell 2003). Many monitoring board characteristics are described in more details in the following sections:

5.2.1.1 The proportion and ownership of non-executive directors

There has been considerable evidence supporting the hypothesis that the likelihood of fraud and earnings management is negatively related to the percentage of outside directors. For example, Dechow et al. (1996) investigate firms subject to accounting enforcement actions by the SEC. They provide evidence that the percentage of outside directors is negatively related to the likelihood of fraud and firms charged with overstating their earnings are more likely to have insider-dominated boards of directors.

In line with this view, Beasley (1996) and Uzun et al. (2004) find that the possibility of financial fraud in the US firms is lower for firms that have a high proportion of outside directors. They argue that outside directors have fewer incentives to commit fraud. Consequently, the greater the number of outside directors, the more likely they are to be able to reduce fraudulent behaviour. Although the results of such studies document a link between board composition and extreme cases of earnings management, however, their results might be biased towards the inclusion of severe cases of earnings management, making their generalizability questionable (Peasnell et al. 1998).

Peasnell et al. (2000a) report a significant negative relationship between income-increasing accruals and the proportion of outside board members during the post-Cadbury period. In a related study, Peasnell et al. (2005) examine whether board monitoring reduces the incidence of earnings management in UK firms when the incentives for manipulation are high. Their results indicate that the possibility of making income-increasing abnormal accruals to avoid reporting losses and earnings reductions is negatively related to the proportion of non-executive directors on the board.

Sánchez-Ballesta and García-Meca (2007) find evidence to support the notion that insider ownership plays a crucial role in constraining earnings management practices and enhancing the informativeness of earnings in Spain. In a similar vein, Sarkar and Sarkar (2009) find it is the board quality as a whole, not board independence *per se*, that has influential impact on constraining such opportunistic behaviour. Likewise, the results of Davidson et al. (2005) indicate that earnings management is lower when the majority of Australian board and audit committees are non-executive members. Similarly, Klein (2002a) finds significantly negative associations between the magnitude of abnormal accruals and the percentage of outside directors on the board, and that firms that change their boards and/or audit committees from majority-independent to minority-independent have significantly larger increases in abnormal accruals.

However, Bradbury et al. (2006) and Piot and Janin (2005) find no association between the proportion of non-executive directors and earnings management in US and French firms, respectively. Denis and Denis (1994) explain that non-executive directors may be used for their contacts and special skills that might be of assistance in running the business rather than monitoring management. To provide evidence that outside directors provide expertise rather than a monitoring service, Rosenstein and Wyatt (1990)

document a positive stock price reaction to the appointment of outside directors even when outside directors already represent a majority. Based on the previous discussion the first hypothesis is formulated (in alternative form) as follows:

> **Hypothesis 5.1.a***: Discretionary accruals as a proxy for earnings management is negatively related to the percentage of non-executive directors on the board.*

One possible explanation for the ineffective role of outside members in constraining earnings management is due to the fact that they have no ties with firms other than being a board member (Park and Shin 2004). It is found that non-executive directors with higher equity ownership have stronger incentives to monitor managers (Jaggi and Leung 2007). Likewise, Park and Shin (2004) explain that adding outside directors to a board may not achieve improvement in governance practices and detecting earnings management, due to the fact that outside directors lack ownership interest in the firm they monitor. This suggests that their monitoring role is more likely to be more effective if they have incentives to constrain earnings management beyond that provided by the capital market. This leads to the following hypothesis (in alternative form):

> **Hypothesis 5.1.b**: *Discretionary accruals as a proxy for earnings management is negatively related to the non-executive ownership.*

5.2.1.2 CEO- duality

Arguably, there are two views regarding the separation of roles of the CEO and the COB. The first view argues that a board's ability to perform a monitoring role is weakened when the CEO and COB positions are held by the same person. This is because the appointment of the CEO to the position of COB may lead to a concentration of power (Beasley 1996; Jensen 1993), encouraging a person to abuse this power to engage in fraudulent activities and take decisions that are not in the best interests of minority shareholders (Chen et al. 2006), suggesting possible conflicts of interest and reduction in the level of monitoring (Davidson et al. 2005). One way stockholders could support outside director monitoring is to segregate the two key positions, which can lead to better board performance and, therefore, fewer agency conflicts (Florackis 2008). Equally,

Jensen (1993) argue that if it is desired that the board be an effective monitoring device, it is important for CEO/president positions to be separated because the CEO cannot perform the chairperson's monitoring duty apart from his/ her personal interests. Consistent with this view, Dechow et al. (1996) find that firms that manipulate earnings have a CEO who at the same time serves as a board chairperson.

However, the opposite view argues that separating the roles of chairperson and CEO can create paralysis if the two powerful positions do not agree on decisions and strategies. It is found that the duality of CEO and chairperson positions does not have an impact on fraud (Chen et al. 2006; Uzun et al. 2004; Beasley 1996), and it is not significantly related to earnings management (Kao and Chen 2004). Based on these views no *priori* prediction is made with the relationship between CEO-COB duality and earnings management. Thus, the following hypotheses (in alternative form) are tested:

Hypothesis 5.2.a: *Discretionary accruals as a proxy for earnings management is positively related to the separation of the positions of CEO and board chairperson.*

Hypothesis 5.2.b: *Discretionary accruals as a proxy for earnings management is negatively related to the separation of the positions of CEO and board chairperson.*

5.2.1.3 Board size

Lipton and Lorsch (1992) and Jensen (1993) were the first to hypothesize that board size is an independent control mechanism and suggest that larger boards may be less effective than smaller boards. The idea behind this assertion is that when boards become too big, the agency problems increase within the board and the board becomes more symbolic and less a part of the management process.

Kao and Chen (2004) show that the extent of earnings management is positively related to board size. Additionally, Dechow et al. (1996) demonstrate that board size is larger for firms engaging in earnings management than for those not engaging in earnings management. Xie et al. (2003) claim that small boards may be less burdened with bureaucratic problems and may provide better financial reporting oversight. Alternately, large boards may be able to draw from a broader range of experience. Even so, some

studies find no association between board size and corporate fraud (Abbott et al. 2000) or firm value (Beiner et al. 2006a).

In essence, the optimal board size reflects the trade off between the firm-specific benefits of increased monitoring and the costs of such monitoring (Gillan et al. 2003; Raheja 2005; Harris and Raviv 2008). Thus, when managers' private benefits are higher than the cost of monitoring, optimal boards will employ large numbers of outside directors, and be larger in overall size. For this reason, Lehn et al. (2003) affirm that high-growth firms will have small boards with a high proportion of insiders because their costs of monitoring are high. Boone et al. (2007) find that board size is positively related to measures of the private benefits available to insiders (e.g., industry concentration and the presence of takeover defence) and negatively related to proxies for the cost of monitoring insiders (e.g., the market-to-book ratio, the firm's R&D expenditure, the return variance, and CEO ownership). In brief, it is argued that regulatory actions applying one-size-fits-all criteria can damage some firms (Coles et al. 2008). Thus, as larger or smaller board size may lead to lower earnings management, no expectation is made with regard the potential impact of board size in curbing earnings management. This leads to the following hypotheses:

Hypothesis 5.3.a: *Discretionary accruals as a proxy for earnings management is positively related to board size.*

Hypothesis 5.3.b: *Discretionary accruals as a proxy for earnings management is negatively related to board size.*

5.2.2 Audit committee composition

An audit committee is seen as the "ultimate monitor" of the financial accounting reporting system, which provides oversight over and serves as a check and balance on a company's financial reporting system. Although the entire board bears the ultimate responsibility for monitoring the financial reporting process, it normally delegates responsibility for the oversight of management's financial reporting to an audit committee.

Thus, an audit committee is seen as an important element in the corporate governance process and is considered as the primary decision-making body that is expected to monitor and enhance the quality of the financial reporting process. From the agent's perspective,

the formation of an audit committee may serve as a signalling device that signals the principal that the agent's behaviour (i.e. managements) is aligned with their expectations (Köhler 2005). Hence, companies with relatively high agency costs are especially inclined to create and enhance audit committee effectiveness. As noted by Pincus et al. (1989), an audit committee enhances the capacity of the board to act as a management control by providing more detailed knowledge and understanding of financial statements. Moreover, it provides efficient means to reduce information asymmetries between insiders and other parties.

The responsibilities of audit committees, as a corporate governance mechanism, include monitoring management, appointing and meeting the external auditors regularly to evaluate the corporation's financial statements, interacting with and questioning the internal financial managers, and reviewing the firm's internal controls (see, e.g., Klein 2002b; DeZoort et al. 2002; Bryan et al. 2004; Song and Windram 2004; Peasnell et al. 2005).

Recent accounting scandals and corporate bankruptcies have raised questions about the effectiveness of audit committees and their role in preventing earnings manipulation. One factor potentially affecting the audit committee's effectiveness is its composition, which has been the focus of many regulatory reform efforts. The view of most reforms is that an audit committee should be composed entirely, or mostly, of non-executive directors. In fact, audit committee independence is considered a vital and dominant characteristic for an audit committee to fulfil its oversight role (Bedard et al. 2004; Mulgrew and Forker 2006). The non-executive directors serving on audit committees are more likely to be free from management's influence in ensuring that objective financial information is conveyed to shareholders (Karamanou and Vafeas 2005).

Results of US based studies provide evidence that audit committees composed of a majority of non-executive directors are associated with lower levels of fraud. Beasley et al. (2000), for example, study Securities and Exchange Commission (SEC) enforcement actions against approximately 200 companies for financial statement fraud during the late 1980s and 1990s in three volatile industries (technologies, health care, and financial services). For each of these three industries, they find, *inter alia*, that fraudulent companies have less independent audit committees. Similarly, Wild (1996) finds a significant increase in capital market reaction to earnings reports subsequent to the voluntary formation of audit committees for a sample of US companies. This

suggests that the market views an audit committee as having a positive effect on the quality of the firm's earnings (Klein 1998). Nevertheless, Beasley (1996) finds that the presence of an audit committee does not significantly affect the likelihood of financial statement fraud, suggesting that audit committees are largely ceremonial and they are largely ineffective in improving financial reporting (Spira 1999).

Several studies support the positive link between the presence of non-executive directors and a committee's monitoring effectiveness. For example, Carcello and Neal (2003) provide evidence that the likelihood of firms receiving a going-concern audit report modification increased as the percentage of outsiders on the audit committee increased. Specifically, they provide evidence that the audit firms are less likely to issue going-concern reports to financially distressed clients whose audit committees lack independence. Accordingly, if the likelihood of auditor dismissal increases after a going-concern report has been issued, an auditor may hesitate to issue such a report.

Some empirical studies provide evidence that independent audit committees have a constraining effect on the managerial behaviour of earnings management. Klein (2002a) reports a negative relation between earnings management and a majority of independent directors on the audit committee. More specifically, she finds that firms with boards and/or audit committees composed of less than a majority of independent directors are more likely to have a larger magnitude of abnormal accruals.

Nonetheless, Xie et al. (2003), Piot and Janin (2005) and Mulgrew and Forker (2006) find little association between presence of non-executive directors and earnings management. In particular, Xie et al. (2003) document the level of audit committee independence is not related to discretionary current accruals, but the level of audit committee members with corporate or investment banking experience and the number of audit committee meetings are associated with a reduced extent of earnings management. The above discussion leads to the following hypothesis (in alternative form):

Hypothesis 5.3: *Discretionary accruals as a proxy for earnings management is negatively related to the presence of majority non-executive directors in audit committees.*

5.2.3 Executive ownership

Conflict of interest between corporate insiders (controlling shareholders and/or managers) and outside shareholders is a central issue to the analysis of a modern corporation in which insiders have less than full ownership of the cash flow rights of a firm. This conflict arises because managers effectively control firms' assets, but usually do not have a significant equity stake in their firms (Jensen and Meckling 1976). One remedy to this problem is to give managers an equity stake in a firm. Doing so probably helps to align managerial interests with those of shareholders (Himmelberg et al. 1999).

Two competing arguments have been provided with regard to the relation between managerial ownership and earnings management. The first view relies on the argument that managerial stock ownership may reduce the underlying agency problems emanating from the agency theory. According to this view, the more stock management owns, the greater the degree of managerial control and the stronger their motivation to take actions that may increase a market value of firm's shares, which may lead to a higher firm value (Hermalin and Weisbach 1991; Holderness 2003), and lower earnings management (Warfield et al. 1995). For example, Klein (2002a) reports a negative and significant association between earnings management and the proportion of total shares held by a CEO. As a result, as the level of managerial ownership increases, earnings management tends to be lower (Warfield et al. 1995), as managing earnings is more likely to affect the corporate value adversely.

On the other hand, the second view relies on the argument that when executives have sufficient holdings of a company's stock, they might put their interests above that of other shareholders and seek to gain private benefits that not shared with other shareholders. This is because high managerial equity ownership may provide managers with freedom to pursue their own objectives or controlling owners' interests without fear of reprisal (Denis and McConnell 2003). As a result, they can expropriate the cash flows of the outside shareholders, which in turn might reduce the firm's value (Hermalin and Weisbach 1991; Peasnell et al. 2003). Building on the results of previous studies, the following hypothesis is formulated (in alternative form):

Hypothesis 5.4: *Discretionary accruals as a proxy for earnings management is negatively related to the executive equity ownership.*

5.2.4 Audit quality

It is widely believed that high audit quality is associated with less earnings management and higher quality of earnings.[70] It is found that Big Four firms with brand names are associated with higher quality audits (DeAngelo 1981; Becker et al. 1998; Gul et al. 2009). Because higher quality auditors are less willing to accept questionable accounting practices and they have more to lose in terms of clients and audit fees, high-quality-auditing firms have stronger incentives to reduce the risk of litigation and protect their reputations, which are more likely to be damaged if misreporting is detected (DeAngelo 1981; Dye 1993; Becker et al. 1998). It is found that large audit firms earn considerably higher fees and use part of the audit fee premium to enhance their technological capability and hire skilled professionals who can design and employ effective tests for detecting misreporting (Craswell et al. 1995; Choi et al. 2008).

That is, clients of higher quality auditors are expected to have smaller abnormal accruals, because high quality auditors are more likely to constrain and detect aggressive earnings management as well as report material misreporting, thereby resulting in more reliable earnings (Krishnan 2003; Francis and Wang 2008; Francis and Yu 2009).

For a large sample of firms from 42 countries over the period 1994-2004, Choi et al. (2008) find no differences in the quality of client earnings of the two groups of auditors in weak legal regimes, whereas the earnings of Big Four clients are more conservative relative to non-Big Four auditors as legal regimes become stronger. Specifically, they find that signed abnormal accruals are smaller and Big Four auditors are more likely to implement higher earnings quality as the investor protection environment becomes stricter. On the contrary, for clients of non-Big Four auditors, abnormal accruals and the likelihood of reporting a loss are unaffected by differences in investor protection regimes because they have less reputation risk and are unlikely to impose a higher earnings quality in order to reduce the risk of client dismissal.

Choi et al. (2008) argue that as legal regimes become stricter, the Big Four premium decreases relative to non-Big Four firms and creates greater litigation risk for auditors. Francis and Wang (2008) point out that because Choi et al. (2008) do not

[70] DeAngelo (1981) defines audit quality as the joint (i) probability that an auditor will detect and discover a material misstatement in the financial report, and (ii) probability that the auditor will report the misstatement if it is detected.

examine directly the association between audit quality and legal regimes, their results implying that higher fees can lead to higher quality audits and Big Four audits are associated with higher quality in relation to non-Big Four auditors in *weak* legal regimes; however, audit quality differences between the two groups of auditors are diminished in *stricter* regimes.

The Big Four auditing firms are global organizations with international operations, have standardized staff training and knowledge-sharing practices, and uniform audit methodologies (Francis and Wang 2008). Further, clients of Big Four auditing firms attract capital from international markets. It is therefore expected that these audit firms have a strong incentive to provide the same high audit quality level across different countries. Under this perspective one would expect to observe a negative association between and discretionary accruals and audit quality.[71] Based on the above discussion the following hypothesis is formulated (in alternative form):

Hypothesis 5.5: *Discretionary accruals as a proxy for earnings management is negatively related to audit quality as measured by Big Five auditors.*

5.3 Research design

5.3.1 Corporate governance variables

The potential role of board characteristics on constraining earnings management practices is tested using different board characteristics; board and audit committee independence, board size, board duality, and the ownership of non-executive directors.

Due to the disclosure limitation and with the lack of a specific definition of independent directors in CL, CML and ECGC, this study uses the proportion of non-executive directors on corporate boards *NEXECD*, measured as the fraction of non-executive directors to the number of total directors on the board, as a proxy for corporate board independence (Peasnell et al. 2005; Jaggi et al. 2009). Accordingly, this definition makes no distinction between non-executives without business relations to management; *independent* non-executives, and non-executives with such relations; *grey*

[71] The choice of auditor in this study is treated as an exogenous variable, and, therefore, the study tests whether the level of discretionary accruals is lower for firms associated with high-quality auditors. However, there is a possibility that managers of firms with high level of discretionary accruals may prefer to select low-quality auditors as a low cost decision that goes with the desire of management.

directors. The duality of board is measured by including a dummy variable *CEODUAL* that takes the value of 1 if the roles of chairperson and CEO are held by the same person and zero otherwise. Regarding the managerial ownership variables, the impact of managerial ownership is examined by including in the analyses an explanatory variable. Also, *EXECOWN*, defined as the percentage of common equity owned by executives of the firm, and *NEXECOWN*, defined as the percentage of common equity owned by the non-executive directors on the board, are included to capture the relationship between executive and non-executive directors' ownership and earnings management, respectively.

Since ECGC requires that the audit committee must be *mostly* composed of board non-executive members, one of whom should have financial and auditing experience, this study considers an audit committee independent if *all* its members are from non-executive directors. As a result, to measure the extent of audit committees' independence, the model includes a dummy variable *AUDCOM* that takes the value of 1 if the audit committee is composed *entirely* of non-executive directors and zero otherwise.

In view of the unique characteristics of Egyptian auditing and the higher quality provided by CAO explained in Chapter 2, audit quality is measured by using the most common proxy which is a dummy variable for *BIG5 / non-BIG5* membership. *BIG5* is a dummy variable that takes the value of 1 if the company is audited by Big four or CAO auditors, and zero otherwise.

5.3.2 Control variables

This study controls for various factors that have been found to be related to corporate governance variable or that may affect discretionary accrual. It is found that institutional investors are sophisticated investors who have the ability and resources that enable them to acquire and process information, which helps them to play a crucial role in monitoring and disciplining managerial discretion, as well as constraining earnings management and improving information efficiency in the capital market (Rajgopal et al. 1999; Chung et al. 2002; Koh 2007; Teshima and Shuto 2008). In addition, Matsumoto (2002) finds that firms with high institutional ownership are expected to be worried about missing earnings benchmarks. Under such a perspective, the association between earnings management and institutional investors is expected to be negative.

However, institutional investors who as "transient owners" overly focus on short-term earnings may encourage or pressure managers to report consistently higher earnings, suggesting a potential collusion between institutional investors and with corporate managers to benefit themselves at the expense of other small shareholders through the abuse of accounting discretion (Graham et al. 2005; Bowen 2008). Under such a view, the association between earnings management and institutional investors is expected to be positive. A variable *INSTOWN*, measured by the percentage of common equity held by the financial institution, is included in order to control for both effects. Accordingly, there is no prediction regarding the association between *INSTOWN* and earnings management.

A number of recent studies provide evidence consistent with the notion that the risk of audit failure is expected to be high in the early years of tenure, because incoming auditors lack client-specific expertise and knowledge (Johnson et al. 2002; Jaggi and Leung 2007). Firms with longer tenure auditors are associated with higher (lower) earnings quality (earnings management) than those with short tenure (Myers et al. 2003; Chen et al. 2008; Gul et al. 2009). To control for such effect, following Heninger (2001) and Johnson et al. (2002), audit tenure *AUDTEN,* is defined as a dummy variable that takes the value of 1 if the client-auditor relation started in year *t-3* or before and 0 otherwise. The sign of audit tenure coefficient is expected to be negative.

Two variables are included to control for the effects of financial stress: *LEV* and *LOSS*. Prior research provides mixed results with regard to the association between the choice of discretionary accruals and leverage. While Sweeney (1994) and DeFond and Jiambalvo (1994) find that violation of debt covenants is associated with discretionary accruals choice, it is also found that managers of troubled companies have a greater incentive to make income-decreasing choices for contractual renegotiations (DeAngelo et al. 1994). Dechow and Skinner (2000) and Ke (2002) find that the likelihood of reporting small earnings increases is less for high leverage firms. In order to control for both positive and negative effects, *LEV*, measured as the ratio of total debt to total assets, is included in the analyses to capture the incentive to manage earnings when the risk of a higher level of debts is high. Furthermore, the intuition documented by prior studies is that firms with negative earnings are less likely to manage earnings to report positive earnings (Brown 2001; Frankel et al. 2002; Francis and Yu 2009). As a result, the regression models include a control variable *LOSS,* defined as a dummy variable

that takes the value of 1 if the firm has two years of negative income and zero otherwise.

It is also found that the magnitude of discretionary accruals reported by larger firms is lower because smaller firms are more likely to manage earnings because their litigation exposure risk is low (Ashbaugh et al. 2003; Xie et al. 2003). Because large firms are politically visible, they may be more exposed to political intrusion and public pressure, which may influence their accounting choices (Watts and Zimmerman 1986). Thus, firm size *FSIZE*, defined as natural logarithm of end-year book value of total assets of firm, is included to control for the actual behaviour of managers of large and small firms, as well as to control for potential effects of size on the choice of discretionary accruals and board independence (Holthausen and Leftwich 1983; Becker et al. 1998; Klein 2002a).

Young (1999) and Darrough et al (1998) provide evidence that income smoothing incentives explain a large portion of discretionary accruals choices. To control for these effects, two variables are included; change in cash from operations Δ*CFO*, measured by cash from operating activities in the current year less cash from operating activities in the prior year, scaled by lagged total assets, accounts for the smoothing inherent in accrual generation, while *SMOOTH*, measured as a dummy variable defined as the difference between unmanaged (non-discretionary) earnings *UME* and the prior firm's earnings benchmark taking the value of 1 if unmanaged earnings are above earnings benchmark, and zero otherwise, accounts for the possibility of managing earnings in order to achieve specific earnings (Burgstahler and Dichev 1997; Degeorge et al. 1999; Peasnell et al. 2000a; Park and Shin 2004).

It is found that firms with high cash flow are more likely to beat earnings benchmarks and are associated with better performance (Frankel et al. 2002; Myers et al. 2003; Peasnell et al. 2003). To capture this possibility and control for errors in the measurement of abnormal accruals and the negative association with discretionary accruals (Young 1998; Dechow 1994), *CFO*, measured as current year cash from operating activities scaled by lagged total assets, is included in the analysis.

Similarly, the ratio of gross fixed assets to total market capitalisation *ASSINT* is used as a proxy for assets intensity to control for the effects of depreciation charge on estimations of discretionary accruals (Young 1998). The absolute current year earnings *ABSNI*, measured as net income before extraordinary items scaled by lagged total assets,

and market-to-book ratios *MTBOOK*, measured as the ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets, are included to control for the positive association between audit committee and board independence and growth effects (Klein 2002a; Francis and Yu 2009). *ABSNI* is also included to control further for firm performance (Frankel et al. 2002). In addition, *EGX30* is a dummy variable that takes the value of 1 if the firm is an EGX30 index firm and zero otherwise, to account for the likelihood that firms have greater incentives and resources to sustain reported earnings as well as maintain a stable pattern of earnings benchmarks. Finally, *IndustryDum* and *TimeDum* are included to control for effects of industry and year. The definitions of all variables are provided in Table 5.1.

Table 5.1 Variables definition

Variable	Definition
Earnings management variables	
PATDA	The absolute value of estimated discretionary total accruals scaled by lagged total assets as measured using the cross-sectional performance-adjusted Jones model.
PACDA	The absolute value of estimated discretionary current accruals scaled by lagged total assets as measured using the cross-sectional performance-adjusted Jones model.
POSDA	Income-increasing discretionary accruals.
NEGDA	Income-decreasing discretionary accruals.
Corporate governance variables	
NEXECD	The percentage of non-executive directors on the board.
BODSIZE	The total number of directors on the board.
CEODUAL	A dummy variable that takes the value of 1 if the roles of chairperson and CEO are held by the same person, and zero otherwise.
AUDCOM	A dummy variable that takes the value of 1 if the audit committee is comprised entirely of non-executive directors, and zero otherwise.
BIG5	A dummy variable that takes the value of 1 if the company is audited by Big Four or Central Auditing Organization (CAO) auditors, and zero otherwise.
EXECOWN	The percentage of common equity owned by the CEO and executives of the firm.
NEXECOWN	The percentage of common equity owned by the outsider directors on the board.
INSTOWN	The percentage of common equity held by financial institutions.
Control Variables	
AUDTEN	A dummy variable that takes the value of 1 if the client-auditor relation has started at least before three years, and zero otherwise.
LEV	The ratio of total debts debt to total assets.
FSIZE	Natural logarithm of end-year book value of total assets of firm in million (Egyptian) pounds.
LOSS	A dummy variable that takes the value of 1 if the firm has two year of negative income, and zero otherwise.
MTBOOK	The ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets.

(The table is continued on the next page)

Table 5.1 (continued)

ΔCFO	Change in cash from operations as measured by cash from operating activities in the current year less cash from operating activities in the prior year, scaled by lagged total assets.
SMOOTH	A dummy variable defined as the difference between pre-managed earnings, measured as reported earnings minus discretionary accruals generated from different discretionary accruals models, and firm's earnings benchmark, measured as firm earnings in the prior year, taking the value of one when pre-managed earnings are above earnings benchmark, and zero otherwise.
CFO	Cash from operations as measured by current year cash from operating activities scaled by lagged total assets.
ABSNI	The absolute value of net income scaled by lagged total assets.
EGX30	A dummy variable that takes the value of 1 if the firm is an EGX30 index firm, and zero otherwise.
IndustryDum	Dummies for the EGX 10 industry group.
TimeDum	Dummies for the fiscal years.

Source: The Egyptian Exchange (i.e. EGID) and Capital Market Authority (CMA).

5.3.3 Regression models

To test the effectiveness of corporate governance mechanisms (i.e., board monitoring and audit quality) in constraining aggressive earnings management behaviour, this study examines the association between corporate governance mechanisms and two properties of earnings (discretionary accruals and earnings benchmarks). To do so, the following two groups of tests are used:

5.3.3.1 Discretionary accruals tests

Drawing on prior research, this study uses discretionary accruals as a proxy for unobservable earnings management behaviour. While the performance-adjusted discretionary accruals suggested by Kothari et al. (2005) are used in the main analysis, the robustness tests are based on the cross-sectional Jones model modified by Dechow et al. (1995).[72] In order to test the relation between the effectiveness of board

[72] These models are explained in more details in Chapter Two. Also, refer to Table 4.A.1 and Table 4.A.2 in Appendix 4.1 for the estimation of coefficients in the first stage to obtain the discretionary accruals component.

monitoring, audit quality and earnings management, the following OLS pooled regression model is used as first test by regressing absolute discretionary accruals on a number of corporate governance variables, coupled with a set of control variables:

$$\begin{aligned}\mathrm{PATDA_{it}}\ or\ \mathrm{PACDA_{it}} = \propto\ &+\beta_1\mathrm{NEXECD_{it}} + \beta_2\mathrm{BODSIZE_{it}} + \beta_3\mathrm{CEODUAL_{it}} + \\ &\beta_4\mathrm{NEXECOWN_{it}} + \beta_5\mathrm{AUDCOM_{it}} + \beta_6\mathrm{BIG5_{it}} + \\ &\beta_7\mathrm{EXECOWN_{it}} + \beta_6\mathrm{INSTOWN_{it}} + \beta_7\mathrm{AUDTEN_{it}} + \beta_8\mathrm{LEV_{it}} + \\ &\beta_9\mathrm{FSIZE_{it}} + \beta_{10}\Delta\mathrm{CFO_{it}} + \beta_{11}\mathrm{SMOOTH_{it}} + \beta_{12}\mathrm{CFO_{it}} + \\ &\beta_{13}\mathrm{ASSINT_{it}} + \beta_{14}\mathrm{ABSNI_{it}} + \beta_{15}\mathrm{LOSS_{it}} + \beta_{16}\mathrm{MTBOOK_{it}} + \\ &\beta_{17}\mathrm{EGX30_{it}} + \beta_j\mathrm{IndustryDum} + \beta_k\mathrm{TimeDum} + \\ &\varepsilon_{it}, \qquad (5.1)\end{aligned}$$

where i is firm subscript; t is time subscript; j = 1, …, 10; k = 1, 2, ε is an error term, and all other variables are provided in Table 5.1.

Since this study does not examine earnings management on a *particular event* and borrowing extensively from prior studies (see, for example, DeFond and Jiambalvo 1994; Kasznik 1999; Frankel et al. 2002; Myers et al. 2003; Ashbaugh et al. 2003; Francis and Yu 2009; Gul et al. 2009), the absolute (unsigned) value of discretionary accruals is used as a dependent variable in the main analysis in order to capture both upward and downward adjustment of earnings management. The *signed* discretionary accruals are also tested by partitioning the sample into two subsamples to include those firms with income-increasing accruals in the first and those with income-decreasing accruals in the second (Hribar and Nichols 2007; Caramanis and Lennox 2008; Francis and Yu 2009).

5.3.3.2 Earnings benchmarks tests

Anecdotal academic evidence suggests that managers' emphasis maintaining steadily earnings increases and avoid reporting losses (e.g., Hayn 1995; Burgstahler and Dichev 1997; Degeorge et al. 1999; Nelson et al. 2002). It found that there are abnormally high (low) frequencies of firms that above (below) earnings benchmark (Burgstahler and Dichev 1997; Degeorge et al. 1999). Similarly, there are abnormally high frequencies of firms meeting or exceeding analysts' forecasts (Menon and Williams 2004; Holland and Ramsay 2003; Matsumoto 2002). Due to the bad consequences of adverse earnings increases on firm value and demands of management (Peasnell et al. 2000a), Barth et al.

(1999) find that the capital market reacts positively to firms that succeed in maintaining a long series of earnings increases. In particular, they point out that those firms achieve higher price-to-earnings multiplies and that premium is reduced significantly when that pattern of earnings increases is broken.

Burgstahler and Dichev (1997) use earnings distribution to test the hypothesis that managers manage earnings to avoid reporting losses and decreases in earnings. In particular, they provide evidence that 8% to 12% of sample firms with small pre-managed earnings decreases use two components of earnings, cash flow from operations and changes in working capital, to achieve small earnings increases. In the same way, 30% to 44% of firms with small negative pre-managed earnings use discretion to avoid reporting losses.

Drawing upon the results of prior research (e.g., Burgstahler and Dichev 1997; Degeorge et al. 1999; Peasnell et al. 2000a; Park and Shin 2004; Francis and Yu 2009), the second approach used to examine the effectiveness of board characteristics and audit quality uses earnings benchmarks as alternative measures of earnings management. This test aims to examine the conjecture that management manage earnings to achieve earnings benchmark (prior year earnings) by reporting small earnings increases.[73]

To run these tests, the sample is partitioned based on whether unmanaged earnings *UME* undershoot or overshoot earnings benchmarks, resulting in two subsamples; *BELOW* (when $UME<EARN_{t-1}$) and *ABOVE* (when $UME \geq EARN_{t-1}$). Accordingly, the above regression model in equation 5.1 is estimated for each subsample. The data used in this study are the same data used in Chapter 4.

5.4 Sample characteristics

Table 5.2 reports summary descriptive statistics for discretionary accruals and other variables used in the study. The absolute value of *PATDA* (*PACDA*), on average, is 0.072 (0.075), and the median value is 0.055 (0.059). While no firm in the sample has a

[73]Although other earnings benchmarks (i.e., reporting small positive earnings, and/or meeting or beating analyst earnings forecasts) were tested in mentioned prior studies, this study could not test the incentives of managers on managing earnings to meet or beat earnings analysts' forecasts due to the unavailability of these forecasts for the sample firms. Similarly, the small number of firms in which managers have incentives to manage earnings upward in order to avoid reporting loss (85 observations) does not help to investigate this incentive, as such sample size may weaken the power of the tests. In Egypt, there is no specific data base or source to disclose analysts' forecasts. On an irregular basis, earnings forecasts are available only from large brokerage firms for firms among the most actively traded 30 companies, resulting in an insufficient degree of freedom to conduct the test (Carey and Simnett 2006).

completely independent board, 66.5%, on average, of board members are outsiders, signifying that the majority of corporate boards are non-executive directors. Moreover, the median value of non-executive directors indicates that 50% of the sample firms have more than 70% non-executive directors. The median number of directors on corporate boards is 7.87.

Table 5.2 Descriptive statistics

Variable	Mean	Std. Dev	Q1	Median	Q3	Min.	Max.
PATDA	0.072	0.067	0.023	0.055	0.097	0	0.434
PACDA	0.075	0.069	0.027	0.059	0.104	0	0.441
NEXECD	0.665	0.217	0.571	0.714	0.8	0	0.933
BODSIZE	7.876	2.899	5	7	9	3	17
NEXECOWN	0.036	0.087	0	0	0.004	0	0.5
EXECOWN	0.11	0.241	0	0	0.08	0	1
INSTOWN	0.164	0.228	0.001	0.055	0.216	0	0.942
LEV	0.158	0.226	0.001	0.079	0.269	0	3.132
FSIZE	12.74	1.585	11.681	12.629	13.786	9.057	17.965
ΔCFO	0.015	0.142	-0.038	0.014	0.069	-0.694	1.614
ABSDNI	0.123	0.108	0.042	0.101	0.157	0.000	0.777
MTBOOK	1.601	1.145	0.892	1.241	1.925	0.261	9.084
CFO	0.108	0.136	0.02	0.092	0.187	-0.444	0.474
ASSINT	0.001	0.002	0	0	0.001	0	0.022
Dichotomous Variables			0			1	
CEODUAL			151 (34.2%)			291 (65.8%)	
AUDCOM			153 (34.6%)			289 (65.4%)	
BIG5			197 (44.6%)			245 (55.4%)	
AUDTEN			6 (10.4%)			396 (89.6%)	
SMOOTH			163 (36.9%)			279 (63.1%)	
LOSS			386 (87.3%)			56 (12.7%)	
EGX30			383 (86.7%)			59 (13.3%)	

Notes: this table shows the descriptive statistics for 442 observations used in the analyses over the period 2005-2007. Definitions for all variables are provided in Table 5.1

This is consistent with the results of Jaggi et al. (2009), who find the median number of board members is approximately 8. On average, the positions of chairperson and CEO are held by the same person in 65.8% of sample firms. This percentage is relatively smaller than that found in prior studies such as Xie et al. (2003) who find 85% of firms have CEO duality and greater than that documented by Jaggi et al. (2009) who find that the duality in their sample is 49.87%. Additionally, 65.4% of sample firms

have audit committees composed solely of outsider members. The analysis indicates that the firms are nearly divided between those that are audited and those that are not audited by Big Five auditors. In addition, there is a variation across firms in the level of non-executive ownership (executive ownership) ranging from zero to 50% (100%) with means equal 3.6% (11%), respectively.

Table 5.3 presents the correlations between the variables used in the analyses. The correlation matrix shows the correlations between corporate governance variables and the measures of discretionary accruals seem to be relatively low. The correlation matrix also shows that *PATDA* (*PACDA*) is negatively correlated with *EXECOWN* at the 10% (5%) level. Similarly, *CEODUAL* is only negatively correlated with *PACDA* at the 10% level. These results suggest that earnings management is lower for firms with high managerial ownership and when the same person holds the positions of chairperson and CEO.

Likewise, *BODSIZE* is positively correlated with *NEXECD* and *AUDCOM* at the 1% level, suggesting that the demand on services of non-executive directors to serve on the board or its audit committee is higher when board size is large. Moreover, board size tends to be smaller when the executive and non-executive ownerships are low. Specifically, board size is negatively correlated with the equity ownership of executive directors (non-executive directors) at the 1 (5) percent level. Table 5.3 also indicates that *BIG5* is significantly negatively correlated with *EXECOWN* and *NEXECOWN* at the 1% level, suggesting that high quality auditing might act as a substitute mechanism for the managerial ownership (i.e., executive and non-executive members).

It is evident from Table 5.3 that relatively high correlations exist among some explanatory variables. For example, the coefficient between *FSIZE* and *EGX30* is 0.415. Likewise, *CFO* and ΔCFO are highly correlated at ($p < 0.01$) with a Spearman correlation coefficient of 0.50. These high correlations raise econometric concern about the possible impact of collinearity on the drawn inferences. Variance Inflation Factor (VIF) scores and condition indices (Belsley et al. 1980) are calculated to ensure that the sample did not suffer from possible harmful collinearity. Belsley et al. (1980) suggest that a condition index greater than 15 signifies a possible problem and in excess of 30 suggests potentially severe collinearity among the explanatory variables. Since the highest VIF score (1.56) is less than 10 and the condition indices are less than 15, multicollinearity is not a problem in this study

Table 5.3 Pearson correlation matrix

	PATDA	PACDA	NEXECD	BODSIZE	CEODUAL	NEXECOWN	EXECOWN	AUDCOM	BIG5	INSTOWN	AUDTEN
PATDA											
PACDA	0.973***										
NEXECD	0.038	0.047									
BODSIZE	-0.056	-0.051	0.512***								
CEODUAL	-0.077	-0.087*	0.028	0.027							
NEXECOWN	-0.039	-0.038	-0.074	-0.106**	-0.056						
EXECOWN	-0.084*	-0.099**	-0.360***	-0.268***	0.057	0.227***					
AUDCOM	-0.004	0.006	0.204***	0.305***	0.118**	-0.042	-0.053				
BIG5	-0.094	-0.075	-0.031	0.087*	-0.089*	-0.193***	-0.270***	0.027			
INSTOWN	0.001	-0.010	0.253***	0.295***	0.067	-0.046	-0.218***	0.114**	0.007		
AUDTEN	-0.121**	-0.120**	-0.026	-0.081*	0.051	0.031	0.022	-0.061	0.097**	-0.046	
LEV	-0.018	0.000	-0.127***	-0.078	0.077	-0.046	0.042	-0.022	0.074	-0.053	0.041
FSIZE	-0.022	-0.004	0.008	0.186***	-0.111**	-0.254***	-0.044	0.078	0.402***	-0.154***	-0.009
ΔCFO	0.088*	0.096**	0.023	-0.028	0.025	-0.009	0.006	-0.026	-0.037	0.015	0.031
SMOOTH	-0.193***	-0.196***	0.003	0.030	0.013	0.029	-0.007	-0.014	-0.053	0.016	-0.061
ABSDNI	0.207***	0.198***	-0.013	0.052	-0.063	-0.039	-0.037	0.039	0.147***	-0.079	-0.053
MTBOOK	0.112**	0.106**	-0.008	0.085*	0.020	-0.136***	-0.074	0.038	0.124***	0.010	-0.061
EGX30	0.000	0.031	0.100**	0.175***	-0.012	-0.080*	-0.063	0.090*	0.218***	-0.053	0.068
CFO	-0.017	0.002	0.049	0.102**	-0.087*	0.019	-0.021	0.066	0.075	0.022	-0.043
ASSINT	-0.057	-0.046	-0.050	-0.077	0.029	0.123***	0.184***	0.043	0.001	-0.082*	0.072

(The correlation matrix is continued on the next page)

Table 5.3 (continued)

	LEV	FSIZE	ΔCFO	SMOOTH	ABSDNI	MTBOOK	EGX30	CFO
FSIZE	0.079							
ΔCFO	0.058	0.038						
SMOOTH	0.005	0.128***	0.387***					
ABSDNI	0.015	0.178***	0.085*	0.079*				
MTBOOK	0.091*	0.160***	-0.033	0.067	0.275***			
EGX30	0.026	0.415***	0.025	0.052	0.033	0.245***		
CFO	-0.252***	0.236***	0.500***	0.434***	0.444***	0.092*	0.034	
ASSINT	0.068	-0.078	0.031	-0.093*	0.041	-0.249***	-0.089*	0.047

Notes: Definitions for all variables are provided in Table 5.1. *, **and *** indicate that correlation is significant at the 10%, 5% and 1% level (two-tailed), respectively.

5.5 Empirical results

5.5.1 Univariate analysis

In order to investigate the potential roles of audit quality and board characteristics in constraining earnings management behaviour, a univariate analysis is conducted as a preliminary test of these roles. This analysis includes a univariate mean-comparison test of the subsamples of firms using *t*-test statistics and median comparisons across the sub-groups using the Wilcoxon-Mann-Whitney. The samples of *PATDA* and *PACDA* are designed on the basis of the median of each explanatory variable in the case of scale variables or using the two categories in the case of dichotomous variables. These tests aim to test whether the mean of discretionary accruals measures differ across the two categories of each explanatory variable.

It is hypothized that there is a difference in terms of board characteristics (i.e., fraction of non-executive directors, board size, CEO duality, executive and non-executive ownerships), and audit quality between firms in the above and below subsamples classified based on the median values.

Table 5.4 indicates that firms with above median values for *BIG5*, *AUDTEN*, *ASSINT* and *SMOOTH* have lower magnitude of discretionary accruals and that difference is statistically significant at the 5% level or best. These results hold irrespective of the used proxy of earnings management, except for *BIG5* which is stronger for PATDA. Nonetheless, firms with above median values of *MTBOOK* and *ABSNI* have higher magnitude of discretionary accruals. Contrary to expectations, the results in Table 5.4 reveal no significant difference between board characteristics subgroups, except for duality, which is positively associated with *PACDA*.

Table 5.4 Univariate results

	Panel A				Panel B			
	PATDA mean above variable median	PATDA mean below variable median	*t*-test	Mann-Whitney	PACDA mean above variable median	PACDA mean below variable median	*t*-test	Mann-Whitney
NEXECD	0.075	0.068	1.020	1.127	0.078	0.071	1.076	0.903
BODSIZE	0.070	0.076	-0.750	-0.671	0.074	0.078	-0.539	-0.430
CEODUAL	0.068	0.079	-1.620	-1.515	0.071	0.083	-1.833	-1.631
NEXECOWN	0.071	0.072	-0.170	-0.457	0.073	0.076	-0.397	-0.630
EXECOWN	0.066	0.074	-1.000	-0.645	0.068	0.077	-1.282	-0.920
AUDCOM	0.072	0.072	0.080	0.298	0.075	0.074	0.130	0.063
BIG5	0.066	0.079	-1.990**	-1.818*	0.070	0.081	-1.581*	-1.829*
INSTOWN	0.068	0.076	-1.250	-1.260	0.070	0.080	-1.590	-1.539
AUDTEN	0.069	0.096	-2.550**	-2.449**	0.072	0.099	-2.528**	-2.254**
LEV	0.071	0.072	-0.160	-0.039	0.076	0.074	0.239	0.352
FSIZE	0.070	0.074	-0.530	-0.484	0.074	0.076	-0.395	-0.405
ΔCFO	0.072	0.072	-0.060	-1.028	0.074	0.075	-0.107	-0.842
SMOOTH	0.062	0.089	-4.120***	-3.755***	0.065	0.092	-4.184***	-4.060***
CFO	0.069	0.074	-0.760	-0.079	0.073	0.077	-0.608	-0.263
ASSINT	0.066	0.081	-2.390**	-1.079	0.069	0.083	-2.203**	-1.023
ABSNI	0.083	0.061	3.580***	3.482***	0.086	0.064	3.428***	2.976***
LOSS	0.064	0.073	-0.950	-1.384	0.066	0.076	-1.083	-1.605
MTBOOK	0.078	0.065	2.070**	0.904	0.081	0.068	2.033**	0.672
EGX30	0.072	0.072	0.010	1.064	0.080	0.074	0.649	0.260

Notes: Panel A (B) reports mean comparisons of absolute value of performance-adjusted discretionary total (current) accruals PATDA (PACDA) - analyzing high (above median) versus low (below median) board characteristics, audit quality and other firm characteristics. In panels A and B, *t*-test and Mann-Whitney statistics are used to compare the mean difference. Definitions of variables are given in Table 5.1. ***, ** and * indicate that the mean difference is statistically significant at the 1%, 5% and 10% level respectively.

5.5.2 Multivariate analysis

The results of univariate analysis reveal a weak association between most board characteristics as well as audit quality and earnings management. The univariate analysis, however, does not control for the effects of other variables that may be related to the abnormal accruals or to one or more of corporate governance mechanisms, resulting in potential effects that may confound the earnings management-corporate governance relation.

Two set of tests are used to investigate the hypotheses. First, the absolute and signed values of discretionary accruals are used as two different proxies for earnings management. Second, the propensity of companies to meet earnings benchmark is also used as an alternative measure of earnings management in an attempt to overcome problems related to the usage of the discretionary accruals approach and also to provide additional evidence for the role of board mechanisms and audit quality in controlling management behaviour to achieve an earnings benchmark.

5.5.2.1 Absolute discretionary accruals

Table 5.5 reports the results of the absolute value of discretionary accruals tests using OLS with robust standard errors to correct for heteroscedasiticity.[74] The results start with a baseline model that includes only control variables in order to test the potential impact of these variables. Then, board monitoring variables are included in model M2 to examine the incremental affects of board characteristics on constraining earnings management followed by M3 to investigate the marginal effects of audit quality and M4 as the full model which includes all explanatory and control variables. All models are significant at $p < 0.0001$ or better, with adj-R^2 ranging from 16.51% to 19.58%.

[74] The coefficients of the industry and time indicator variables are not reported in all regressions results as they are not within the scope of interest of the study.

Table 5.5 Regressions of discretionary accruals on board characteristics, audit quality and control variables

Panel A: dependent variable PATDA					
	Pred. Sign	M1	M2	M3	M4
Constant	+/-	0.128***	0.134***	0.107***	0.115***
		(3.82)	(3.44)	(2.76)	(2.93)
NEXECD	-		0.015	0.010	-0.000
			(0.83)	(0.56)	(-0.03)
BODSIZE	+/-		-0.003**	-0.003**	-0.003**
			(-2.08)	(-2.12)	(-2.37)
CEODUAL	+/-		-0.010	-0.012*	-0.011
			(-1.49)	(-1.72)	(-1.57)
NEXECOWN	-		-0.006	-0.019	-0.005
			(-0.16)	(-0.51)	(-0.14)
AUDCOM	-		0.002	0.001	0.002
			(0.27)	(0.16)	(0.31)
BIG5	-			-0.023***	-0.027***
				(-3.30)	(-3.82)
EXECOWN	-				-0.032**
					(-2.58)
INSTOWN	+/-	0.004	0.009	0.012	0.009
		(0.25)	(0.63)	(0.85)	(0.64)
AUDTEN	-	-0.024**	-0.025**	-0.021**	-0.021**
		(-2.28)	(-2.33)	(-2.05)	(-2.06)
LEV	+/-	-0.032**	-0.031*	-0.029*	-0.028*
		(-2.04)	(-1.96)	(-1.95)	(-1.84)
FSIZE	-	-0.002	-0.001	0.002	0.002
		(-0.79)	(-0.46)	(0.61)	(0.78)
ΔCFO	-	0.133***	0.133***	0.129***	0.129***
		(2.70)	(2.71)	(2.60)	(2.66)
SMOOTH	-	-0.031***	-0.031***	-0.032***	-0.033***
		(-4.25)	(-4.24)	(-4.57)	(-4.71)
CFO	-	-0.108*	-0.108*	-0.104*	-0.102*
		(-1.84)	(-1.85)	(-1.84)	(-1.83)
ASSINT	+	-2.826**	-2.681**	-2.526**	-1.933*
		(-2.44)	(-2.08)	(-2.09)	(-1.71)
ABSDNI	+	0.176***	0.180***	0.191***	0.190***
		(3.33)	(3.50)	(3.76)	(3.74)
LOSS	-	-0.013	-0.013	-0.011	-0.011
		(-1.30)	(-1.22)	(-1.14)	(-1.13)
MTBOOK	+	0.005	0.005	0.005	0.005
		(1.44)	(1.54)	(1.61)	(1.64)
EGX30	+	0.003	0.003	0.004	0.003
		(0.25)	(0.30)	(0.40)	(0.30)
Industry dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		442	442	442	442
R^2		0.2106	0.2224	0.2433	0.2523
adj. R^2		0.1651	0.1677	0.1881	0.1958

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table 5.5 (continued)

Panel B:dependent variable PACDA					
	Pred. Sign	M1	M2	M3	M4
Constant	+/-	0.134***	0.137***	0.112***	0.121***
		(3.82)	(3.39)	(2.77)	(2.98)
NEXECD	-		0.021	0.016	0.004
			(1.11)	(0.87)	(0.20)
BODSIZE	+/-		-0.003**	-0.003**	-0.003***
			(-2.28)	(-2.31)	(-2.62)
CEODUAL	+/-		-0.012	-0.013*	-0.012*
			(-1.61)	(-1.82)	(-1.66)
NEXECOWN	-		-0.003	-0.015	0.001
			(-0.09)	(-0.39)	(0.02)
AUDCOM	-		0.002	0.002	0.003
			(0.30)	(0.20)	(0.38)
BIG5	-			-0.021***	-0.027***
				(-3.04)	(-3.66)
EXECOWN	-				-0.038***
					(-2.89)
INSTOWN	-	0.000	0.006	0.009	0.005
		(0.01)	(0.39)	(0.59)	(0.35)
AUDTEN	-	-0.026**	-0.027**	-0.024**	-0.023**
		(-2.41)	(-2.46)	(-2.21)	(-2.21)
LEV	+/-	-0.025	-0.023	-0.021	-0.020
		(-1.49)	(-1.37)	(-1.33)	(-1.23)
FSIZE	-	-0.002	-0.001	0.002	0.002
		(-0.84)	(-0.46)	(0.52)	(0.72)
ΔCFO	-	0.132**	0.132***	0.128**	0.128**
		(2.59)	(2.60)	(2.50)	(2.57)
SMOOTH	-	-0.034***	-0.033***	-0.035***	-0.036***
		(-4.42)	(-4.42)	(-4.73)	(-4.90)
CFO	-	-0.089	-0.089	-0.085	-0.083
		(-1.46)	(-1.47)	(-1.45)	(-1.43)
ASSINT	+	-2.603**	-2.426*	-2.281*	-1.585
		(-2.25)	(-1.90)	(-1.88)	(-1.36)
ABSDNI	+	0.163***	0.168***	0.178***	0.177***
		(2.86)	(3.02)	(3.24)	(3.22)
LOSS	-	-0.014	-0.013	-0.012	-0.012
		(-1.31)	(-1.24)	(-1.17)	(-1.16)
MTBOOK	+	0.004	0.005	0.005	0.005
		(1.25)	(1.38)	(1.44)	(1.47)
EGX30	+	0.009	0.009	0.010	0.009
		(0.83)	(0.87)	(0.95)	(0.84)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		442	442	442	442
R^2		0.2008	0.2148	0.2322	0.2440
adj. R^2		0.1548	0.1595	0.1761	0.1869

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

In contrast to expectations, the results in Table 5.5 reveal that *NEXECD*, *CEODUAL*, *NEXECOWN*, and *AUDCOM* are not significantly negatively related to the absolute value of discretionary accruals. Generally, this result suggests that the constraining and monitoring role of these mechanisms is weak. Specifically, the coefficient of *NEXECD* in all models is not significant, implying that non-executive directors, as a whole, do not perform their monitoring duties on constraining earnings management. This result is in line with results of other previous studies (e.g., Park and Shin 2004; Bradbury et al. 2006; Piot and Janin 2005; Sarkar and Sarkar 2009).

One possible explanation is that non-executive directors are added to the board for their advisory duties such as special expertise or contracts (Peasnell et al. 2003), rather than their monitoring function. For instance, Sourial (2004) points out that the controlling shareholders have a strong hand in choosing non-executive members who, in many cases, have family or friendship relations with the executive members, and who lack the corporate and financial knowledge.

Contrary to the results of previous studies (e.g., Klein 2002a; Davidson et al. 2005; Bronson et al. 2009), an insignificant relation is also found between absolute value of discretionary accruals and *AUDCOM*. This result indicates that audit committees composed solely of non-executive directors do not add to the monitoring and disciplining role of non-executive directors. A potential interpretation of these results is that executive ownership and high quality audit firms provide a sufficient control for the opportunistic earnings management.

Another potential explanation for the weak associations between board independence as well as its audit committees and discretionary accruals could be attributable to the usage of an individual proxy (the percentage of non-executive board member) to examine a complex construct (board independence) which would be most likely to result in inconsistent regression coefficients (Larcker et al. 2007).

Consistent with the results of previous research (e.g., Dalton et al. 1999; Peasnell et al. 2005), M2 to M4 indicate the coefficients of *BODSIZE* and *BIG5* are negative and significant at the 1% level, signifying that firms with larger board and audited by high quality audit offices are associated with lower magnitude of discretionary accruals. One explanation of the result of board size is that larger boards is more likely to increase the probability of more representation of non-executive directors on the board and audit

committees, as well as increase the diversity of different expertise which presumably leads to less earnings management (Klein 2002a; Xie et al. 2003).

Two different possible explanations concerning the relation between audit quality and the magnitude of abnormal discretionary accruals can be used. The first relies on the argument that firms audited by the Big Five auditors are less likely to allow earnings management due the higher quality of auditing provided by those auditors. The second is based on the high litigation risk that audit firms may face if they fail to detect earnings management or disclose misreporting when discovered.

Because the likelihood of the litigation risk facing Big Five auditors in Egypt is low (Fawzy 2003; Sourial 2004, ROSC 2009), one would expect, if the second explanation is true, no differences between the quality of auditing provided by *Big Five* and *non-Big Five* auditors. Contrary to such argument, the coefficient of *BIG5* is negative and significantly associated with both measures of discretionary accruals, which is consistent with the first explanation. This result is consistent with previous research (e.g, DeFond and Jiambalvo 1991; Francis et al. 1999; Becker et al. 1998).

Consistent with Warfield et al. (1995), Table 5.5 reveals a negative relation between executive stockholdings and the absolute value of discretionary accruals at the 5% and 1% level when using PATDA and PACDA, respectively. This result indicates that firms with higher executive ownership are likely to have lower magnitude of earnings management as the interests of managers and other shareholders are aligned.

Turning to the control variables, M1 in Table 5.5 indicates that the coefficients of several control variables, with the exception of ΔCFO, are significantly associated with the absolute value of discretionary accruals at $p < 0.05$ or better with their expected sign. More specifically, consistent with the results of prior results (e.g., Myers et al. 2003; Carey and Simnett 2006), the coefficient of *CFO* is negatively associated with the absolute value of discretionary accruals. Likewise, the coefficient of audit tenure *AUDTEN* is significantly negative, indicating that longer audit tenure is associated with lower magnitude of discretionary accruals (e.g., Ashbaugh et al. 2003; Gul et al. 2009). In addition, there is evidence that the magnitude of discretionary accruals is lower for highly leveraged firms (consistent with DeAngelo et al. 1994), firms with high asset intensity and firms that tend to smooth earnings to achieve earnings benchmark (consistent with Young, 1998). Specifically, the coefficients of *LEV* and *ASSINT* are negative and significant at $p < 0.05$, while that of *SMOOTH* is significant at $p < 0.01$.

Similarly, the coefficient of *ABSNI* is positively related to the proxies of earnings management at $p < 0.01$, and those of the remaining control variables; *SIZE*, *LOSS*, *MTBOOK*, and *EGX30* are insignificant.

These results, in general, imply that the likelihood of managing earnings is lower when firms are audited by Big Five auditors, have larger board size and with high executive ownership. The results, in general, are stable irrespective of employed measure of discretionary accruals.

The conclusion from the previous results is that the role of board characteristics is generally weak. One potential general explanation for the weak constraining role results from the dominance of management over the board and the selection of outside directors (Holderness and Sheehan 1988; Lee et al. 1992; Denis and McConnell 2003), which might confound the effectiveness of board monitoring.[75] Consequently, it would be useful to shed additional light on this potential confounding role in order to test the extent to which executive ownership and other corporate governance mechanism interact in curbing earnings management behaviour. This type of analysis provides more insights into whether the effectiveness of board characteristics and audit quality in curbing earnings management differ across high and low executive ownership levels. To do so, two tests are conducted. First, interaction terms between *EXECOWN* and each explanatory variable are included in regression models.

The results of Table 5.6, using PATDA, indicate that the coefficients of *BODSIZE* and *BIG5* continue to be negative and highly significant at the 1% level. In addition, the interaction coefficient of *EXECOWN* and *NEXECD* is significantly negative at the 10% level, connoting that the association between earnings management and the proportion of non-executive directors in constraining earnings management is more pronounced when the level of managerial share ownership is high.

Although conducting tests based on a full sample including interaction terms maximize the sample size and increases the test power, it is less precise because it forces the control variables to have the same coefficients across different executive

[75] It is worth noting that this analysis is a combined test of (1) the relation between corporate governance mechanisms, executive equity ownership and earnings management, (2) the appropriateness and accuracy of discretionary accruals used to measure the proxy of earnings management, and (3) the ability and adequacy of empirical tests to control for non-related corporate governance sources of earnings management.

ownership groups.[76] In the face of this restriction, the second test is conducted based upon splitting the full sample according to the level of executive ownership, resulting in subsamples with *EXECOWN* greater than and less than specific cut off points of ownership (i.e., 5% and 10%).

Table 5.6 Regressions of discretionary accruals on board characteristics, audit quality, and control variables using interaction terms

	Pred. Sign	PATDA		PACDA	
		Coeff.	*p*-value	Coeff.	*p*-value
Constant	+/-	0.113	(0.008)	0.117	(0.008)
NEXECD	-	0.021	(0.363)	0.028	(0.239)
BODSIZE	+/-	-0.004	(0.008)	-0.004	(0.007)
CEODUAL	+/-	-0.008	(0.306)	-0.010	(0.197)
NEXECOWN	-	0.010	(0.868)	-0.004	(0.941)
EXECOWN	-	-0.018	(0.700)	-0.027	(0.578)
AUDCOM	-	0.001	(0.894)	-0.000	(0.980)
BIG5	-	-0.025	(0.001)	-0.024	(0.002)
NEXECD*EXECOWN	?	-0.114	(0.072)	-0.140	(0.032)
BODSIZE*EXECOWN	?	0.007	(0.318)	0.006	(0.406)
CEODUAL*EXECOWN	?	-0.016	(0.635)	-0.002	(0.944)
NEXECOWN*EXECOWN	?	-0.045	(0.809)	0.047	(0.798)
BIG5*EXECOWN	?	-0.029	(0.347)	-0.032	(0.316)
AUDCOM*EXECOWN	?	0.035	(0.283)	0.054	(0.117)
INSTOWN*EXECOWN	?	0.009	(0.566)	0.005	(0.737)
AUDTEN	-	-0.021	(0.040)	-0.024	(0.029)
LEV	-	-0.024	(0.132)	-0.014	(0.415)
FSIZE	-	0.002	(0.595)	0.001	(0.617)
ΔCFO	-	0.129	(0.005)	0.129	(0.007)
SMOOTH	-	-0.033	(0.000)	-0.036	(0.000)
CFO	-	-0.106	(0.060)	-0.088	(0.134)
ASSINT	+	-1.660	(0.162)	-1.509	(0.219)
ABSDNI	+	0.188	(0.000)	0.177	(0.002)
LOSS	-	-0.012	(0.236)	-0.013	(0.225)
MTBOOK	+	0.005	(0.127)	0.005	(0.181)
EGX30	+	0.004	(0.666)	0.010	(0.339)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
Number of observations		442		442	
R^2		0.2623		0.2560	
adj. R^2		0.1947		0.1878	

Notes*:* Definitions for all variables are provided in Table 5.1. For the estimation, the consistent to heteroskedasticity standard errors has been used.

[76] For a similar concern see, for example, (Gul et al. 2009) and (Chi and Lee 2010).

Table 5.7 Regressions of discretionary accruals on board characteristics, audit quality, and control variables partitioned by executive s' ownership

Panel A: dependent variable PATDA					
	Pred.	EXECOWN		EXECOWN	
	Sign	≥ 0.05	< 0.05	≥ 0.10	< 0.10
Constant	+/-	0.298**	0.076	0.216**	0.093*
		(2.61)	(1.48)	(2.21)	(1.84)
NEXECD	-	-0.057*	0.035	-0.093**	0.037
		(-1.38)	(1.45)	(-2.20)	(1.51)
BODSIZE	+/-	0.009**	-0.005***	0.011***	-0.005***
		(2.32)	(-3.15)	(3.27)	(-3.26)
CEODUAL	+/-	-0.027	-0.005	-0.025	-0.005
		(-1.40)	(-0.65)	(-1.47)	(-0.55)
NEXECOWN	-	-0.115**	0.011	-0.089*	0.050
		(-2.16)	(0.16)	(-1.74)	(0.67)
AUDCOM	-	-0.005	0.004	0.006	0.003
		(-0.32)	(0.37)	(0.37)	(0.31)
BIG5	-	-0.021	-0.020**	-0.037*	-0.021**
		(-0.99)	(-2.28)	(-1.84)	(-2.36)
INSTOWN	-	-0.058	0.018	-0.019	0.009
		(-1.54)	(1.02)	(-0.50)	(0.55)
AUDTEN	-	-0.021	-0.028**	-0.011	-0.026**
		(-0.84)	(-2.34)	(-0.42)	(-2.16)
LEV	+/-	-0.035	-0.029*	-0.030	-0.028*
		(-0.92)	(-1.70)	(-0.85)	(-1.65)
FSIZE	-	-0.013*	0.004	-0.009	0.003
		(-1.83)	(1.00)	(-1.43)	(0.71)
ΔCFO	-	0.075	0.148***	0.100*	0.139**
		(1.38)	(2.62)	(1.94)	(2.46)
SMOOTH	-	-0.044***	-0.031***	-0.040***	-0.031***
		(-3.29)	(-3.60)	(-2.68)	(-3.71)
CFO	-	0.051	-0.132**	-0.042	-0.114*
		(0.47)	(-2.01)	(-0.34)	(-1.82)
ASSINT	+	-6.228**	-1.166	-5.135**	-1.879
		(-2.47)	(-0.46)	(-2.42)	(-0.75)
ABSDNI	+	0.172	0.201***	0.240**	0.184***
		(1.51)	(3.32)	(2.19)	(3.15)
LOSS	-	-0.009	-0.012	-0.018	-0.012
		(-0.44)	(-0.97)	(-0.97)	(-0.98)
MTBOOK	+	-0.003	0.006	-0.000	0.005
		(-0.52)	(1.50)	(-0.03)	(1.40)
EGX30	+	0.005	0.005	0.000	0.005
		(0.21)	(0.45)	(0.01)	(0.41)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
Number of observations		116	326	108	334
R^2		0.3703	0.2678	0.4718	0.2514
adj. R^2		0.1580	0.1933	0.2754	0.1773

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table 5.7 (continued)

Panel B: Dependent variable PACDA					
	Pred. Sign	EXECOWN		EXECOWN	
		≥ 0.05	< 0.05	≥ 0.10	< 0.10
Constant	+/-	0.268**	0.083	0.188*	0.100*
		(2.36)	(1.58)	(1.90)	(1.92)
NEXECD	-	-0.054*	0.036	-0.086**	0.037
		(-1.29)	(1.43)	(-2.08)	(1.48)
BODSIZE	+/-	0.009**	-0.005***	0.011***	-0.005***
		(2.36)	(-3.11)	(3.40)	(-3.16)
CEODUAL	+/-	-0.018	-0.009	-0.016	-0.008
		(-0.89)	(-1.01)	(-0.89)	(-0.96)
NEXECOWN	-	-0.091*	0.009	-0.067	0.044
		(-1.70)	(0.13)	(-1.30)	(0.58)
AUDCOM	-	-0.002	0.001	0.009	0.001
		(-0.10)	(0.09)	(0.59)	(0.06)
BIG5	-	-0.016	-0.023**	-0.032	-0.022**
		(-0.77)	(-2.45)	(-1.57)	(-2.47)
INSTOWN	-	-0.085**	0.020	-0.049	0.010
		(-2.62)	(1.13)	(-1.33)	(0.60)
AUDTEN	-	-0.017	-0.031**	-0.008	-0.029**
		(-0.71)	(-2.47)	(-0.33)	(-2.29)
LEV	+/-	-0.002	-0.023	0.002	-0.021
		(-0.04)	(-1.23)	(0.05)	(-1.17)
FSIZE	-	-0.012*	0.004	-0.008	0.003
		(-1.72)	(1.03)	(-1.29)	(0.73)
ΔCFO	-	0.059	0.150**	0.087*	0.140**
		(1.13)	(2.58)	(1.76)	(2.38)
SMOOTH	-	-0.049***	-0.034***	-0.046***	-0.034***
		(-3.66)	(-3.74)	(-3.05)	(-3.85)
CFO	-	0.113	-0.122*	0.021	-0.103
		(1.09)	(-1.80)	(0.18)	(-1.57)
ASSINT	+	-6.646***	-1.839	-5.608***	-2.656
		(-2.81)	(-0.78)	(-2.81)	(-1.11)
ABSNI	+	0.160	0.201***	0.230*	0.181***
		(1.28)	(3.04)	(1.85)	(2.84)
LOSS	-	-0.004	-0.014	-0.012	-0.014
		(-0.19)	(-1.15)	(-0.73)	(-1.11)
MTBOOK	+	-0.005	0.005	-0.002	0.005
		(-0.90)	(1.34)	(-0.42)	(1.28)
EGX30	+	0.001	0.012	-0.004	0.011
		(0.05)	(0.93)	(-0.16)	(0.89)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
Number of observations		116	326	108	334
R^2		0.3538	0.2663	0.4505	0.2473
adj. R^2		0.1359	0.1916	0.2462	0.1727

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Results of these subsamples reported in Table 5.7 show that the coefficient of *NEXECD* is negative and significant at the 10% level, when the executive ownership is 5% or more. As the percentage of shares held by executive directors increases, their incentives are likely to align with that of minority shareholders. This is possibly because executive directors may suffer from value-destroying activities and small owners expect managers might tend to manipulate earnings opportunistically to gain private benefit and/or achieve the controlling shareholders' interest, even if it is contrary to that of small owners. This may induce minority shareholders to protect themselves by paying lower price for firm shares, which is more likely have adverse effects on the firm value and, in turn, on managers and large shareholders' benefits. As a result, managers themselves or under pressure from controlling shareholders commit to consume lower extraction of private benefits by signalling to the capital market and minority shareholders that they have put in place credible and cost-effective device controls that prevent wealth transfer and cash flows expropriation (Denis and Denis 1994; Peasnell et al. 2005). One such device is adding more non-executive directors who act as watch dogs for the minority shareholders at high levels of managerial ownership (Denis and Denis 1994; Peasnell et al. 2003).

Table 5.7 also indicates that the coefficient of *NEXEOWN* is negative and significant at the 10% level for firms with executive ownership 5% or more. Non-executive ownership might encourage them to effectively monitor opportunistic managerial behaviour as they would also bear a share of the costs resulting from activities that adversely impact the firm value and the cost of extracting private benefits, implying a negative association between non-executive ownership and the magnitude of earnings management.

These results suggest that firms with high managerial equity ownership are less likely to manage earnings opportunistically (Gul et al. 2003; Warfield et al. 1995), and suggesting complementary roles between non-executive ownership, proportion of non-executive directors and executive ownership. Thus, the association between earnings management and the proportion of outside directors is more pronounced when the level of managerial share ownership is high. In addition, the coefficient of *BODSIZE* is also significant and positive at the 5% ownership level, whereas it continues to be significantly negative at the 1% level when the executive ownership level is less than 5%. Presumably, the demand for non-executive directors increases the number of

directors on the board and, as a result, increases communication problems among board members resulting in higher opportunity to manage earnings. Furthermore, the coefficient of *BIG5* is significant and negative at ownership level lower than 5%. This result lends support to the conjecture that executive ownership and high quality auditors can be considered to act as substitute devices for curbing earnings management. This result may indicate that managerial ownership can serve as an effective safeguard against earnings manipulation in situations where external auditor independence might be compromised and *vice-versa*. In addition, the coefficient of *AUDCOM* continues to be not significant. These prior inferences hold irrespective of the measure of earnings management used.

5.5.2.2 Signed discretionary accruals

Hribar and Nichols (2007) demonstrate that using absolute discretionary accruals as a proxy of earnings management might bias tests for rejecting the null hypothesis of no earnings management. As a result, it is plausible that the prior results might be driven by the usage of the non-directional "*unsigned*" discretionary accruals. Against this concern and following prior research that used unsigned discretionary accruals as a proxy for earnings management (e.g., Klein 2002a; Caramanis and Lennox 2008; Gul et al. 2009; Francis and Yu 2009), the sample is partitioned into two subsamples based on the sign of discretionary accruals. This partition results in a *POSDA* subsample, which includes firms with positive discretionary accruals and a *NEGDA* subsample which includes those with absolute negative discretionary accruals.[77]

Since the samples are truncated at one end of the distribution and OLS regression approach estimates are generally biased towards zero because it may constrain the distribution of discretionary accruals, using this approach may yield biased coefficients (Myers et al. 2003). To address this potential problem, a maximum likelihood truncated regression approach is used to obtain unbiased coefficients on board monitoring and audit quality variables.[78] Table 5.8 presents results for a signed discretionary accruals test using both measures of abnormal accruals. Consistent with prior results, the

[77] Following Francis and Yu (2009) and Gul et al (2009) the absolute value of negative discretionary accruals is used for the purpose of providing consistent expectations and predictions.

[78] This approach was used in prior earnings management research (e.g., Ashbaugh et al. 2003; Myers et al. 2003; Carey and Simnett 2006; Chen et al. 2008; Gul et al. 2009). See Green (2003, 756-761) for more description of the truncated approach. When the OLS regression approach is applied, the interferences based on a truncated regression are qualitatively similar.

coefficient of *BIG5* is negative and significant for both *POSDA* and *NEGDA*, suggesting that Big Five auditors are effective in monitoring both income-increasing and income-decreasing accruals and that firms audited by *non-BIG5* auditors are associated with higher levels of abnormal accruals. While the Big Five auditors are effective in constraining income-increasing and income-decreasing accruals, they are more effective and conservative with regard to income-increasing than income-decreasing accruals. This is consistent with prior studies (e.g., Becker et al. 1998; Nelson et al. 2002; Prawitt et al. 2009). Emphasis on income-increasing stems from the idea that managers are expected to inflate earnings than deflate earnings (DeFond and Jiambalvo 1991), as the likelihood of litigation risk is more likely to be associated with income-increasing (Myers et al. 2003). However, most board mechanisms are not related to positive or negative accruals, with the exception of *EXECOWN* (*BODSIZE*), which is marginally negatively associated with positive (negative) abnormal accruals at the 10% level when PATDA is employed. In addition, the coefficient of *NEXECD* is negative and significant on the wrong prediction at the 5% level when PACDA is used.

5.5.2.3 Earnings benchmark tests

The second set of tests used to examine the effectiveness of board mechanisms and audit quality relies on situations in which managers' incentives to manage earnings to meet earnings benchmarks are strong. To run the test, the sample is divided into two samples according to whether the unmanaged (pre-managed) earnings *UME* are *below* or *above* earnings target. The prediction behind this test is that managers are more likely to overstate earnings when the measure of *UME* falls below earnings target ($UME < EARN_{t-1}$) (Peasnell et al. 2000a; Park and Shin 2004).[79]

Table 5.9 shows that the coefficients of *EXECOWN* and *BIG5* are negative and significant at 5% (1%) level, irrespective of the model used to measure discretionary accruals. However, the effectiveness of Big Five auditors in curbing earnings management is more pronounced when PACDA is used.

[79] It should be noted that is not clear from the existing literature whether when *UME* is above earnings target, it should be interpreted as downward earnings management using *income-decreasing* accruals or as conservative accounting (Gul et al. 2009). The small number of firms with *UME* falling far short of earnings targets (75 firms) does not help to test the possibility that managers will have incentives to take a "*big bath*" and make income-decreasing choices to make a reserve for future (Healy 1985; Gaver et al. 1995; Holthausen et al. 1995).

Table 5.8 Regressions of signed discretionary accruals on board monitoring, audit quality, and control variables

	Pred. Sign	PATDA		PACDA	
		POSDA	NEGDA*-1	POSDA	NEGDA*-1
Constant	+/-	-0.021	0.073	-0.128	0.165
		(-0.28)	(0.63)	(-1.28)	(1.33)
NEXECD	-	0.029	-0.006	0.114**	-0.030
		(0.88)	(-0.16)	(2.38)	(-0.67)
BODSIZE	+/-	-0.004	-0.006*	-0.006	-0.006
		(-1.26)	(-1.80)	(-1.49)	(-1.51)
CEODUAL	+/-	-0.008	-0.010	-0.012	-0.026
		(-0.94)	(-0.65)	(-1.09)	(-1.44)
NEXECOWN	-	-0.073	-0.082	0.009	-0.138
		(-1.00)	(-0.88)	(0.09)	(-1.37)
EXECOWN	-	-0.029*	-0.019	-0.015	-0.055
		(-1.67)	(-0.54)	(-0.54)	(-1.16)
AUDCOM	-	-0.012	0.023	-0.012	0.021
		(-1.35)	(1.43)	(-1.14)	(1.29)
BIG5	-	-0.029***	-0.034*	-0.030**	-0.048**
		(-2.70)	(-1.89)	(-2.25)	(-2.28)
INSTOWN	-	-0.001	0.013	0.019	0.004
		(-0.07)	(0.46)	(0.64)	(0.13)
AUDTEN	-	-0.037***	-0.029	-0.048***	-0.026
		(-2.86)	(-1.04)	(-2.89)	(-0.86)
LEV	+/-	-0.006	0.065**	-0.027	0.084**
		(-0.17)	(2.07)	(-0.51)	(2.23)
FSIZE	-	0.002	-0.006	0.010	-0.011
		(0.34)	(-0.93)	(1.54)	(-1.50)
ΔCFO	-	0.021	0.160***	-0.004	0.134**
		(0.56)	(3.47)	(-0.07)	(2.51)
SMOOTH	-	-0.052***	-0.018	-0.066***	-0.043*
		(-3.93)	(-0.87)	(-4.22)	(-1.82)
CFO	-	-0.622***	0.550***	-0.596***	0.616***
		(-8.51)	(5.02)	(-8.81)	(4.85)
ASSINT	+	4.105*	-9.012**	5.213*	-8.432**
		(1.82)	(-2.16)	(1.72)	(-1.97)
ABSDNI	+	0.716***	-0.075	0.617***	-0.103
		(10.19)	(-0.52)	(7.64)	(-0.56)
LOSS	-	-0.044	0.077***	-0.061**	0.072***
		(-1.63)	(3.38)	(-2.09)	(2.97)
MTBOOK	+	0.002	-0.002	0.003	-0.006
		(0.45)	(-0.28)	(0.57)	(-0.73)
EGX30	+	0.021	-0.031	0.020	0.019
		(1.50)	(-1.19)	(1.14)	(0.74)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
Number of observations		210	232	215	227
Wald Chi^2		290.97	155.98	275.27	178.84

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table 5.9 Regressions of discretionary accruals on board monitoring, audit quality, and control variables partitioned by whether earnings is below or above earnings benchmarks

	Pred. Sign	PATDA		PACDA	
		BELOW	*ABOVE*	*BELOW*	*ABOVE*
Constant	+/-	0.113**	0.095***	0.122**	0.097**
		(2.32)	(2.60)	(2.32)	(2.59)
NEXECD	-	-0.016	-0.013	-0.007	-0.011
		(-0.62)	(-0.69)	(-0.25)	(-0.59)
BODSIZE	+/-	-0.002	-0.001	-0.003*	-0.000
		(-1.33)	(-0.38)	(-1.67)	(-0.35)
CEODUAL	+/-	-0.011	-0.001	-0.013	-0.001
		(-1.49)	(-0.08)	(-1.62)	(-0.18)
NEXECOWN	-	0.074	-0.042	0.089	-0.039
		(0.95)	(-1.11)	(1.10)	(-0.98)
EXECOWN	-	-0.029**	-0.009	-0.032**	-0.016
		(-1.88)	(-0.61)	(-1.88)	(-1.08)
AUDCOM	-	0.000	0.003	0.002	0.002
		(0.00)	(0.44)	(0.21)	(0.34)
BIG5	-	-0.023**	-0.008	-0.021***	-0.007
		(-2.43)	(-1.17)	(-2.21)	(-1.04)
INSTOWN	-	0.011	-0.016	0.009	-0.022
		(0.61)	(-1.01)	(0.49)	(-1.37)
AUDTEN	-	-0.029**	-0.006	-0.033**	-0.008
		(-1.99)	(-0.64)	(-2.01)	(-0.81)
LEV	+/-	-0.040	0.003	-0.035	0.013
		(-1.15)	(0.24)	(-0.99)	(0.83)
FSIZE	-	0.000	-0.003	-0.000	-0.003
		(0.06)	(-1.22)	(-0.07)	(-1.22)
ΔCFO	-	0.019	0.145***	0.021	0.145***
		(0.46)	(5.52)	(0.50)	(5.04)
CFO	-	-0.544***	0.191***	-0.537***	0.213***
		(-9.00)	(3.94)	(-8.57)	(4.22)
ASSINT	+	3.188	-3.241**	3.939*	-3.087**
		(1.49)	(-2.58)	(1.81)	(-2.32)
ABSNI	+	0.558***	-0.045	0.556***	-0.063
		(9.35)	(-1.07)	(9.18)	(-1.44)
LOSS	-	-0.043***	0.023**	-0.042***	0.021**
		(-2.89)	(2.37)	(-2.70)	(2.06)
MTBOOK	+	0.005	0.004	0.005	0.004
		(1.45)	(1.05)	(1.33)	(0.92)
EGX30	+	0.024*	-0.009	0.028*	-0.003
		(1.95)	(-0.88)	(1.98)	(-0.29)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
Number of observations		163	279	163	279
R^2		0.7269	0.3963	0.7021	0.3971
adj. R^2		0.6648	0.3233	0.6343	0.3242

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Hence, the incentive of managers to manipulate earnings upward to *report small earnings increases* is less likely to exist for firms audited by Big Five auditors and with higher executive ownership. These results also lend support to the notion that adding non-executive members to the board, *ipso facto*, may not achieve an improvement in governance practices or curbing earnings management. What is needed is the presence of non-executives who have financial backgrounds and corporate experience by which they can deter opportunistic earnings management, especially when ownership is highly concentrated and the directors' labour market is not well developed (Park and Shin 2004; Chen et al. 2006; Sarkar and Sarkar 2009).[80]

5.6 Robustness checks

5.6.1 Alternative specifications of discretionary accruals

The regression model is re-estimated using total discretionary accruals MJTDA and current discretionary accruals MJCDA, measured by the modified Jones models, as alternative proxies of earnings management. The results in Panel A of Table A.5.1 in Appendix 5.1 are qualitatively similar to those documented based on PATDA and PACDA. Moreover, the coefficient of *CEODUL* is negative and significant at the 10% level, connoting that the magnitude of earnings management is more likely to be lower for firms where the positions of chairperson and CEO are held by the same person. Likewise, non-executive directors become effective in curbing earnings management when executive ownership increases to 10% level.

Arguably, there is a possibility that the results reported above result from the abnormality of absolute value of discretionary accruals. To correct for this possibility, the dependent variable PATDA (PACDA) is transformed by taking the square root of the absolute value of discretionary accruals.[81] Panel B of Table A.5.1 in Appendix 5.1 shows that the association between the measure of abnormal accruals and the corporate governance mechanisms continues to be statistically significant and the inferences

[80] The unavailability of financial background data of Egyptian non-executive directors does not help to further explore these effects.

[81] To get a normally distributed variable, tests show that transforming the absolute value of discretionary accruals to square root is much better than other transformations such as natural logarithm, used in prior research (e.g., Warfield et al. 1995; Ashbaugh et al. 2003; Ferguson et al. 2004).

drawn earlier do not change, as the results are qualitatively similar to those found earlier.

5.6.2 Tests of non-linearity of executive directors ownership

Building on the prior results, it is found that the effectiveness of outside directors in curbing earnings management might be contingent on the level of executive equity ownership. As a result, the relation between executive ownership and the absolute value of discretionary accruals may be non-linear similar to that found in previous research (Morck et al. 1988; McConnell and Servaes 1990; Teshima and Shuto 2008, among others). In order to test this possibility, the regression models are re-estimated after including the quadratic term of executive equity ownership, $EXECOWN^2$. The results of Panel A in Table A.5.2 in Appendix 5.1 show no indication of a non-linear relation between absolute value of discretionary accruals and executive directors' ownership.

5.6.3 Firm size

To investigate whether the effectiveness of corporate governance mechanisms differs between large and small firms, the sample is partitioned according to whether firm size is above (*Large*) or below (*Small*) the median sample. Table A.5.3 in Appendix 5.1 indicates that different corporate governance variables have varying effectiveness in curbing earnings management according to the size of the firm. It is evident that Big Five auditors play a strong constraining role irrespective of the firm size. In addition, it seems that executive ownership and board size are important in reducing earnings management in small firms, while CEO-duality is more crucial in constrain managers' incentive to manage earnings in large firms. [82]

5.7 Summary and concluding remarks

This study investigates the association between board monitoring mechanisms (board independence, outside members' ownership, CEO duality, and board size), audit quality and earnings management using 442 firm-year observations from 2005 to 2007 extracted from non-financial Egyptian companies where the ownership is concentrated

[82] The correlation matrix in Table 6.5 shows that the coefficients on *EXEOWN* and *FSIZE* are negatively correlated at the 1% level, suggesting that the executive ownership is higher for small firms than for large firms. Thus, in the absence of a strong constraining role of executive ownership, the effectiveness of *Big Five* and duality became more influential on curbing earnings management.

and the conflict is between the majority shareholders and minority shareholders. In addition, it evaluates whether the level of discretionary accruals is lower when the executive ownership increases. The main results based on absolute discretionary accruals as a proxy of earnings management show that firms with larger board size and audited by high quality auditing firms are associated with lower levels of discretionary accruals.

Also, the relation between the proportions of outside board member, audit firms composed entirely of outside members, the outside members' ownership, and earnings management are insignificant. However, in separate tests based on partitioning the full sample according to the level of executive ownership, the results indicate that the constraining role of outside members becomes strong, suggesting that executive members try to signal the minority shareholders that their cash flows are less likely to be expropriated by those managers by increasing the demand on other constraining mechanisms.

To mitigate any concern that these results are due to measurement errors related to the usage of discretionary accruals, the likelihood of reporting small positive earnings or reporting small earnings increases are used as alternative measures of discretionary accruals. The results show that external high quality auditors play a crucial constraining role in reporting both types of earnings benchmarks. Furthermore, the likelihood of reporting small earnings increases is lower for firms with larger boards and when the positions of board chairperson and CEO are held by the same person.

The results of this study provide evidence to support some corporate governance variables, especially the relation between earnings management and audit quality. However, many limitations should be acknowledged. Firstly, it is widely recognized that there is no perfect measure of earnings management due to the measurement errors related to the estimation of discretionary accruals used as a proxy for earnings management.[83] Although different alternative discretionary accruals models are used and different measurement error-related variables are included, some doubt remains about the ability of these models to isolate accurately the discretionary accruals, which means that it is possible that the documented results may be caused by the measurement error related to these models.

[83] Refer to Chapter Two for more discussion about downsides related to the discretionary accruals approach.

Secondly, the two components characterizing board independence, the duality of chairperson/CEO and classifying directors to executive and non-executive directors, are tested based on the information available in the financial reports of sample firms and that collected from the EGID. Accordingly, the reliability of this information depends upon the reliability of its sources.

Thirdly, the corporate governance variables tested in this study are treated as exogenously determined. However, it is possible that the discretionary accruals and some of those variables are endogenously determined, such as those addressed in prior studies (Jaggi and Leung 2007; Gul et al. 2009). Controlling for a possible endogeneity problem falls outside the scope of this study, and this could be an issue left for future investigation.

Fourthly, it is worth noting that investigating board monitoring and audit quality are only limited dimensions of corporate governance, that could be used as effective mechanisms to constrain opportunistic earnings management. Therefore, ignoring other corporate dimensions could cause a correlated omitted variable problem if these dimensions (such as financial literacy of outside members, number of board meetings, number of audit committees' meetings) are correlated to those included in the analysis (Larcker et al. 2007).[84]

Finally, due to the small number of firms with very high managerial ownership, this study has not considered the effects of high managerial ownership, since the relations between board monitoring as well as audit quality and discretionary accruals may differ according to the effects of managerial entrenchment.

[84] The reason behind not testing these governance variables is that disclosure requirements do not impose disclosure of such information. Thus, testing these variables is not possible through publically available information. For instance, Abdel Rahman (2008) points out that 71% of his sample firms do not disclose the number of board meetings, and only 25% of sample firms disclose names of audit committees' members. It important to note that the CMA Decision No. 94 for 2008 which amended the EGX listing rules, emphasises the importance of disclosing more information about most of these governance variables. More information is available at http://www.egyptse.com/English/listing_rules.aspx [accessed on 20/12/2009].

Chapter 6

Agency Costs, Ownership Structure and Corporate Governance Mechanisms

6.1 Introduction

Whilst the ownership-performance relationship has been extensively discussed in the literature, the potential relationships between ownership structure and/or governance mechanisms and agency costs have gained little attention in the empirical literature. This may be, in part, due to difficulties in finding an appropriate measure of agency costs separate from other factors which are out of the control of management (Berger and Bonaccorsi 2006). Despite that, reduction of agency costs resulting from firm-level agency conflicts arising from either the conflict between insiders and outside shareholders or between large and minority shareholders is a potential channel through which ownership structure and governance mechanisms can influence firm value.

Relatively few studies have attempted to tackle the measurement of agency costs. Notable exceptions include Ang et al. (2000), who address the question of whether there is a difference, in the cost of running a firm and in the utilization of its assets, between owner-managed firms (firms with zero equity agency costs) and firms with separated ownership and management (firms with non-zero equity agency costs). They find a positive (negative) relationship between inside ownership asset utilization ratio (operating expenses). They also find that agency cost levels are negatively related to the degree of external bank monitoring and positively related to the number of shareholders and the existence of an outside manager.

Singh and Davidson (2003) find evidence that a higher inside ownership leads to better alignment between management interests and those of outside shareholders. In addition, they find that the proportion of equity held by outside blockowners or higher executive representation on the board do not influence agency costs, and that smaller sized boards are associated with higher asset utilization ratios (i.e., lower agency costs). In a similar spirit, using a sample of Australian small and medium companies, Fleming et al. (2005) find that firms managed by equity holders have lower agency costs. Recently, Florackis (2008) provide support for the importance of the role of debt maturity and managerial compensation as additional governance devices in reducing agency conflicts in the UK. Similarly, McKnight and Weir (2009) find that agency costs are higher with a nomination committee with executive director and with longer tenure of the CEO in office. Their results also indicate that lower agency costs are associated with higher board shareholdings. In the UK, the results of Florackis and

Ozkan (2009a) reveal that high levels of managerial entrenchment are associated with higher agency costs.

Despite the apparent relationship between the roles of managerial ownership and governance mechanisms in determining the levels of agency costs in a dispersed context, the empirical studies mentioned above give only peripheral attention to the influence of ownership concentration and other governance mechanisms, namely short-term debt and dividends on the level of agency costs in countries with high ownership concentration. It is expected that the type of agency conflicts and the effectiveness of corporate governance in highly concentrated settings are likely to differ from those in dispersed contexts. This expectation relies on the argument that a growing number of studies show that the dispersed ownership of publicly listed firms described by Berle and Means (1932) is not the norm in most countries around the world. Rather, these corporations often have a concentrated ownership structure in the form of presence of controlling shareholders (La Porta et al. 1999; Claessens et al. 2000; Lins 2003b).[85]

Since investor protection is an important defence against private benefits and expropriation by managers or controlling shareholders, concentrated ownership in countries with low investor protection may be a logical response to a lack of investor protection can be seen as an appropriate choice that limits expropriation by managers and provides assurance to outsiders that their resources will not be expropriated or diverted (La Porta et al. 1999; Denis and McConnell 2003; Lemmon and Lins 2003). Although ownership concentration is one possible governance mechanism for the conflict between management-outside shareholders, it presents a different type of conflict, which exists between controlling and minority shareholders.

Several governance mechanisms can be to mitigate these agency costs. One such mechanism is dividends. Dividends can be considered as a credible and a costly way by which higher quality firms can reduce information disparities between managers and investors, as well as differentiate between successful and less successful firms (Bhattacharya 1979; Miller and Rock 1985; John and Williams 1985). Specifically, managers might choose to pay dividends in an attempt to achieve, at least, three objectives. First, because minority shareholders aware that debt should be served before paying any dividends, management can use dividends to signal outside shareholders that

[85] In this study the terms *controlling shareholders*, *dominant shareholders*, *large shareholders*, *block owners*, and *blockholders* are used interchangeably throughout.

managers will not tend to expropriate their interests in favor of debtholders or to themselves. Second, dividends can be used as a substitute for the weak legal protection of minority shareholders (La Porta et al. 2000). Third, paying regular dividends might build management reputation and reflect its commitment to maintain this level by not adopting any value-destroying activities.

Relatively few studies explore the nonlinearity association between ownership concentration and agency costs or the role of short-term debt (with the exception of Florackis 2008), or the role of dividends in reducing agency costs. Therefore, the key motivation of this study arises from the scarcity of empirical studies conducted in emerging countries that directly investigate the potential non-linearity relationship between ownership concentration and agency costs. Another motivation stems from the desire to investigate the roles of dividends and debt maturity, which are ignored by prior studies as potential additional determinants of agency costs.

Hence, the main objective of this study is to test whether the relationship between ownership, governance structure and agency costs in a highly concentrated setting is different from that found in a dispersed ownership context. Studying these relationships is important to enhance researchers' understanding of the conditional nature of different governance mechanisms and to help regulators assess the weaknesses in their corporate governance as well as emphasising effective governance mechanisms that match their institutional, regulatory and needs. This type of analysis, therefore, draws attention to the importance of the appropriateness of employed governance mechanisms to problems arising from specific settings and suggests that no one corporate governance structure fits all, connoting that the Anglo-Saxon corporate governance style may not always be the optimal to follow.[86]

To fulfil this objective, this study not only emphasises the effects of managerial ownership as a determinant of agency costs, but also examines the potential role of ownership concentration and outside block equity holders in disciplining and monitoring management behaviour. In particular, the incentive-alignment and entrenchment (or expropriation) effects on agency costs are examined for both managerial ownership and blockholders. Moreover, this study investigates the potential role of other devices such as short-term debt and dividend payout that are likely to play

[86] This suggestion is in line with the argument provided by recent studies that board characteristics should according to governance environment (Linck et al. 2008; Coles et al. 2008).

different roles in alleviating both types of agency conflicts. In this way, this study extends prior research and fills a part of the gap in the literature which ignores the incentives and influences of large shareholders in exacerbating or alleviating divergence with minority shareholders.

Drawing on the prior studies on agency costs, the asset turnover ratio, defined as the ratio of total sales to total assets, is employed in the main analyses as an inverse proxy for agency costs, whereas the ratio of selling, general and administrative to total sales (SG&A) is used for a robustness check as a direct measure. Explicitly, a higher asset turnover ratio indicates efficient deployment of the firm's assets, suggesting less consumption of firm's resources and lower agency costs, while a higher SG&A ratio signifies less managerial control over discretionary expenses, connoting higher agency costs.

The analyses are conducted using a unique data set of 457 observations representing a sample of non-financial listed firms over the period 2004-2007. The results reveal, in general, a significant role of managerial ownership in alleviating agency conflicts between controlling and minority shareholders, as well as alignment of the interests of managers and outside equity holders (Jensen and Meckling 1976). The results support the two counteracting effects; the incentive-alignment and the entrenchment effects of ownership concentration on agency costs. Specifically, the results confirm the notion that agency costs decline as ownership of large shareholders increases because controlling shareholders are more capable of providing better monitoring and aligning their incentives with those of minority shareholders (see Claessens and Fan 2002; Jiraporn and Gleason 2007). However, beyond some point of ownership concentration, further ownership is more likely to be associated with higher agency costs, reflecting the ability of large shareholders to employ their voting rights in order to expropriate firm resources and gain private benefits that are not shared by minority shareholders (Fama and Jensen 1983; Lasfer 2006).

To take into account the potential effects of growth opportunities in explaining the relationship between ownership structure, governance mechanisms and agency costs, the analysis is also conducted after splitting the sample, based on the median value of market-to-book ratio, into two categories, those above the median value (i.e., firms with high growth opportunities) and those below the median value (i.e., firms with low growth opportunities). For firms with high-growth opportunities, the results provide

evidence to support of both effects of incentive-alignment and entrenchment of executive ownership and large shareholdings. More specifically, agency costs decline as the level of managerial ownership increases up to 35.53% of ownership level. Beyond this level managers become entrenched and have sufficient power to pursue their private benefits at the expense of outside investors. Similarly, it is found that large shareholders have greater incentives and ability to monitor managerial actions up to 63.14% of ownership level. Beyond this level, they have more power over management and they can use firm's resources to gain benefits that may adversely affect the value of minority shareholders.

There is evidence for the role of short-term debt in reducing the under-investment problem and information asymmetry between controlling and minority shareholders. However, the ownership by outside directors or blockholders structure is an important determinant in reducing various forms of agency costs in slow-growth firms. The results also indicate that dividends act as a substitute for poor legal protection of minority shareholders. Moreover, findings are also consistent with the argument of agency theory that the combination of CEO and chairperson positions leads to increased agency problems as it gives CEOs greater power and control over corporate decision-making and other parties (including outside directors).

Contrary to the recommendations of the ECGC, it is noticed that the monitoring role of non-executive directors is ineffective in reducing agency costs, suggesting that the representation of outside directors on the board does not add much to reduction of conflicts between dominant and minority shareholders. This result runs against the conventional wisdom that greater representation of non-executive directors on the board is necessarily associated with higher firm value and lower agency costs. In addition, there is some evidence in the results that more outside directors on the boards in low-growth firms might exacerbate agency conflicts.

These results are robust, in general, to several tests. For instance, the results of robustness checks provide supportive evidence for the passive role of institutional shareholders found in prior studies (e.g., Faccio and Lasfer 2000; Franks et al. 2001; Ozkan and Ozkan 2004). However, it is found that individual blockholders are better capable of monitoring managerial actions. These results provide some hints into the importance of controlling the identity of blockholders when studying the relationships between governance mechanisms, ownership and agency costs. Most importantly, the

results indicate that the role of governance mechanisms is likely to vary depending on a firm's characteristics and on a company's operating environment. It is found that the disciplining role of each governance mechanism is contingent on the type of growth opportunities, supporting the conditional nature of such mechanisms.

This study contributes to the literature in three ways. First, despite the fact that ownership-performance has long been tested in the literature, only few studies investigate this relation through reducing agency costs. Reduction in agency costs can be seen as a useful channel by which the effects of ownership concentration, managerial ownership and the effectiveness of governance mechanisms are more likely to play different roles, particularly in emerging countries. It is noticed that most work is done in the US or UK, neglecting the differences in the degree of ownership concentration, institutional and legal environment among developed and emerging countries. Therefore, much work is still to be done in the emerging countries such as Egypt. Second, this study provides important insights into the non-linear relationship between ownership concentration and agency costs, which has gained little attention from studies that examine the agency costs-corporate governance relationship. Third, the results present short-term debt and dividends as important devices that are likely to alleviate the controlling-minority conflict in high-growth firms and help management to signal its willingness to create value by being under monitoring of lenders and showing their commitment to enhance firm value by paying stable dividends. The study also stresses the importance of evaluating the role of governance mechanisms in light of firm's growth opportunities.

The rest of the study proceeds as follows. Section 6.2 reviews the literature on the relationship among managerial ownership, ownership concentration, board characteristics (i.e., board composition, board leadership style, and board size), and agency costs. It also highlights the interrelationships between debt maturity, dividends, and agency costs in light of growth opportunities. Section 6.3 shows the empirical models and the methodology employed to test the hypotheses. Section 6.4 provides data. Section 6.5 presents the proxies used to measure the level of agency costs, while the definitions and measures of independent variables are provided in Section 6.6. The sample characteristics and the empirical results are discussed in Sections 6.7 and 6.8, respectively. Section 6.9 notes a set of robustness checks. Finally, Section 6.10 concludes.

6.2 Literature review and hypothesis development

6.2.1 Managerial ownership and agency costs

Since Jensen and Meckling (1976) advocated managerial ownership as an important internal control mechanism that helps alleviate agency conflicts, a vast literature has emerged examining the relationship between managerial ownership levels and firm performance. Although this relationship has received considerable attention from both empirical and theoretical researchers, empirical evidence provided by this stream of research, however, does not present a consistent picture or indicate the precise functional form and the direction of this association. Results of this strand of research offer two different effects that may explain this relationship. When the level of managerial ownership increases, the firm value tends to increase because managers bear a larger share of the costs resulting from activities that adversely impact a firm value, "*the incentive-alignment effect*". In contrast, after some level of ownership, managers become entrenched and have sufficient power to pursue their private benefits at the expense of outside investors, "*the entrenchment effect*", which might increase a firm agency costs.

In a seminal study, Morck et al. (1988), using a piecewise regression model, find an inverted U-shaped relationship between managerial equity ownership and firm value. Specifically, they find that Tobin's q first increases as ownership increases, then falls and finally increases as ownership continues to increase. This result was subsequently confirmed by McConnell and Servaes (1990) for a larger sample of US firms. However, the inflection points found in the two studies were not identical. Morck et al. (1988) report a positive relationship in the 0% to 5% range and beyond the 25% ownership level, and that when ownership increases from 5% to 25%, Tobin's q decreases, while McConnell and Servaes (1990) find the turning point is between 40% and 50%.

In a similar spirit, Short and Keasey (1999) reveal a cubic relationship between firm value and managerial ownership for a sample of UK firms. Their results support alignment behaviour at low levels of managerial ownership and entrenchment behaviour at intermediate levels. They demonstrate that managerial ownership is positively related to firm value when managerial ownership is below 12.99% or 15.58% when the measure of firm value is the market to book ratio and return on shareholders' equity, respectively. However, they observe a resurgence of the alignment incentives of

managers at higher levels of managerial ownership (i.e., above 41.99% and 41.84% for the two measures of firm value). More recently, Hu and Zhou (2008), using a unique sample of Chinese firms, confirm the nonlinearity of this relationship and find that the inflection point occurs at ownership above 50%, which is much higher than prior estimates for US firms.

Following Mork et al. (1988) and McConnell and Servaes (1990), a number of studies adopt similar or more complicated functional forms that better describe this relationship. For example, Hermalin and Weisbach (1991) find an inverse W-shaped relationship, while Cui and Mak (2002) observe a W-shaped relationship for a sample of high R&D US firms. In particular, they find that Tobin's q declines with managerial ownership level between 0% and 10%. However, Tobin's q increases when managerial ownership level rises from 10% to 30%, then declines again between 30% and 50% and, finally, increases again above 50% ownership. Similarly, Davies et al (2005),suggest that the proper form for this relationship is the quintic function with a two-hump curve. The parametric results of Florackis et al. (2009) support the quintic structure found by Davies et al. (2005). They indicate that the turning points are 13%, 25%, 49%, and 72%, which are close to those reported in Davies et al. (i.e., 7%, 26%, 51%, and 76%).

The conclusion from these studies lends support to the nonlinear association between managerial ownership and performance. However, several studies find no significant association between managerial ownership and performance and fail to provide strong evidence to support the entrenchment hypothesis (e.g., Loderer and Martin 1997; Demsetz and Villalonga 2001; Dalton et al. 2003; Drakos and Bekiris 2010).

In essence, *a priori* determination of number of turning points used in most of the aforementioned studies can only capture the local stationary points in the ownership-performance curve and, therefore, fail to present an adequate functional form that captures the complex non-linear relationship between managerial ownership and performance Florackis et al. (2009).

To summarize, the interests of managers and those of shareholders may converge when managerial ownership rises and, therefore, one should observe lower agency costs, leading to a potential negative relationship between managerial ownership and agency costs (i.e., positive relationship with asset turnover ratio). In contrast, high levels of managerial ownership may result in divergence of management interests from those

of other shareholders because management tend to reduce their efforts and consume a large amount of corporate resources in the form of perquisites. This is because they will gain a smaller proportion of the benefits associated with their effort, resulting in a decrease in firm value and, as a consequence, larger agency costs. Accordingly, the following hypothesis (in alternative form) is formulated:

> **Hypothesis 6.1:** *At lower levels of ownership, executive ownership has a negative effect on agency costs. At higher levels of ownership, executive ownership has a positive effect on agency costs.*

6.2.2 Ownership concentration and agency costs

The current literature on ownership concentration underlines two main factors that motivate large block ownership; the shared benefits and the private benefits of control (Holderness 2003).[87] Theoretically, the shared benefits arise from the perception that as they own a considerable proportion of shares, blockholders have both the incentive and the power to monitor and reduce the risk of managerial opportunism as well as reduce agency costs to get their money back (e.g., Morck et al. 2000; Jiraporn and Gleason 2007; Boehmer and Kelley 2009; Love 2010).

Numerous studies present evidence to support these benefits. For example, Denis and McConnell (2003) argue that blockholder ownership is associated with a higher firm value in countries with lower levels of investor protection. Similarly, Claessens et al. (2002), for a large sample of firms from eight East Asian economies, find that firm value increases with the cash flow ownership of the controlling shareholder, but falls when the control rights of the largest shareholder exceed its cash flow ownership.

Likewise, Chen and Yur-Austin (2007) find that outside blockholders effectively reduce managerial extravagance, inside blockholders are more vigilant in improving asset management quality and managerial blockholders are more effective in overcoming the under-investment problem. Barclay et al. (2001) compare block trade premiums with private placement discounts, and attribute this difference to blocktraders being more active in monitoring than private placement purchasers. In a related work, Barclay and Holderness (1992) present evidence consistent with both shared and private

[87] For recent corporate governance surveys, see Gillan (2006), Adams and Ferreira (2007), Bebchuk et al. (2009), Connelly et al. (2010) and Love (2010).

benefits. Specifically, they find increases in share prices following acquisitions of large share blocks, reflecting shared benefits resulting from improved monitoring. However, this increase is usually lower than the premium paid by the acquirer of the block, reflecting private benefits of control.

It is anticipated that blockholders would prefer to trade at the exchange price when there are no private benefits. On the contrary, they would trade at a premium over the exchange price if they expect to use their control to obtain private benefits that are not available to minority shareholders (Holderness 2003). This expropriation problem is prone to be more severe in countries where enforcement of laws is weak and when the legal protection is poor, leaving prospective investors unprotected and reluctant to invest (Shleifer and Vishny 1997; La Porta et al. 1999; Bebchuk and Roe 1999).

Providing evidence about private benefits, several studies confirm the notion that the trades of large shareholders are priced at substantial premiums reflecting the anticipated private benefits of control (e.g., Mikkelson and Regassa 1991; Nicodano and Sembenelli 2004).[88] Based on the argument above, the relation between ownership concentration and agency costs is likely to be non-monotonic. Controlling shareholders have greater incentive and power to monitor management and align management to their objectives (i.e., taking governance into their own hands), suggesting a negative association between blockholdings and agency costs (i.e., positive association with assets turnover ratio). Conversely, after some level of ownership, large shareholders tend to expropriate the firm's resources and put their benefits over those of minority shareholders implying positive association between blockholdings and agency costs (i.e., negative association with assets turnover ratio). The following hypothesis (in alternative form) is formulated to test this relationships:

Hypothesis 6.2: *At lower levels of ownership, ownership concentration has a negative effect on agency costs. At higher levels of ownership, ownership concentration has a positive effect on agency costs.*

[88] See Holderness (2003) and Denis and McConnell (2003) for an excellent discussion about blockholders.

6.2.3 Board of directors and agency costs

Three characteristics of the board are tested in this study, namely, board composition, board leadership and board size. A brief discussion about the monitoring role of each mechanism is presented in the following sections.[89]

6.2.3.1 Board composition

Most corporate boards include some of the firm's top management in addition to outside directors. Because they have valuable specific information about the firm's operations and activities, it is natural for the most influential members of the board to be among internal managers (Fama and Jensen 1983). Although inside managers are an important source of firm-specific information, which assists the board in being an effective device for decision control, domination of the board by top management may lead to a possible collusion between inside directors and management to expropriate outside stockholders' wealth, as inside directors are less likely than outside directors to challenge the CEO to whom their jobs are tied (Morck et al. 1988; Borokhovich et al. 1996; Raheja 2005). Inside directors, for example, may have incentives to protect any above-market compensation or excessive non-pecuniary benefits that they receive through their positions as managers (Weisbach 1988).

It may not be ideal, as a consequence, to have a board composed solely of insiders. Commonly, corporate boards include also outside members who are expected to be independent from management. Since they are in a better position to monitor managerial activities, outside members are expected to monitor management more effectively, add expertise and objectivity in evaluating the managers' performance and act as arbiters in disagreement among internal managers as well as ratify decisions that involve serious agency problems (Fama and Jensen 1983; Morck et al. 1988; Choi et al. 2007).

While the importance of having both inside and outside members on the board of directors, the board's effectiveness in monitoring management is a function of the mix of both who serve. Nevertheless, the existing theory is relatively silent regarding the determinants of the optimal mix (Peasnell et al. 2003). Harris and Raviv (2008) point out

[89] See Hermalin and Weisbach (2003) and Adams and Ferreira (2007) for comprehensive surveys of the literature on boards of directors.

that this optimal mix depends on the trade off between costs related to loss of information, when outsiders dominate the board, and the agency cost associated with inside control. Specifically, they argue that if insiders have important information relative to that of outsiders, giving control to outsiders may cause a loss of information that is more costly than the agency costs. On the other hand, if the agency costs are severe, then outsider control will be optimal. Board composition also reflects the trade-off between director independence and director expertise, which, in turn, reflects a balancing of a firm's monitoring needs and its requirements for specialized information (Klein 2002b).

Outside directors is expected to bear reputational costs for financial reporting failure. For example, Srinivasan (2005) finds significantly higher turnover in boards for firms that restate earnings downward and that the likelihood of director departure increases with restatement severity. Similarly, Weisbach (1988) finds that CEOs of poorly performing firms are more likely to be replaced only for firms that have a board dominated by outside directors, implying that outside directors are an important device in monitoring management. Likewise, Gilson (1990) and Kaplan and Reishus (1990) indicate that outside directors who resign from the boards of financially distressed firms subsequently serve less often as directors of other companies. Accordingly, a negative relation is predicted between board independence and agency costs (i.e., positive relation with the assets turnover ratio). To test this relation, the following hypothesis (in alternative form) is formulated:

Hypothesis 6.3: *There is a negative relationship between the proportion of non-executive directors on the board and agency costs.*

6.2.3.2 CEO-Chairperson Duality

Two styles of board leadership can be distinguished: a dual CEO-Chairperson (i.e., one person filling the CEO and board chairperson positions) and a separate CEO-Chairperson with an independent chairperson of the board.[90] The argument of proponents of duality is based on the organization or administrative theories (e.g., stewardship theory) that support centralization of authority as an efficient means for higher firm value (Daily and Dalton 1997). According to this view, duality establishes

[90] Brickley et al (1997) provide a good argument for the two views as well as costs and benefits related to each leadership style.

independence between corporate management and board. It also provides unity of command, decision-making authority, focus, stability and a single focal point for leadership. It is argued that the benefits that result from the duality of the two posts may outweigh the disadvantages of agency problems, leading to greater understanding of the company's operating environment and unity in the decision making process (Davis et al. 1997; Weir et al. 2002). The results of a number of empirical studies suggest that duality enhances the effectiveness of boards and enables managers to act in the best interests of the shareholders (e.g., Donaldson and Davis 1991; Rechner and Dalton 1991; Coles et al. 2001), and that combination of the two posts is associated with superior performance (Dahya and Travlos 2000; Rhoades et al. 2001).

The alternative view relies on the agency theory argument that CEO-Chairperson duality is likely to weaken the balance of power at top level, giving one person too much power over the decision-making process. This allows the CEO to influence the board's processes and control the amount of information available to other board members. This may lead to potential disagreement and conflict of interest, obstructing effective monitoring and highlighting the need for effective governance to protect shareholders' interests (Fama and Jensen 1983; Jensen 1993; Adams et al. 2005). It is argued that two individuals sharing the responsibilities help to provide two different bi-focal lenses, complementary oversight, and effective monitoring. Thus, for the board to be effective, it is desirable to separate the CEO and Chairperson positions, especially when the agency problems are expected to be high (Jensen 1993; Core et al. 1999). Dahya et al. (1996) point out that the stock market reacts positively to the separation of the two posts and accounting performance declines for firms with role duality. More recently, Chi and Lee (2010) point out that investors perceive the appointment of one person to CEO and chairperson positions as a threat of misallocation of discretionary funds. However, some US studies find no relationship between duality and performance (see, Baliga et al. 1996; Brickley et al. 1997; Dalton et al. 1998), and some UK studies corroborate this conclusion (Weir et al. 2002; Dahya et al. 2009).

As the job of the chairperson is to effectively oversee the overall board affairs, run the process of appointing, firing, assessing, and compensating CEO would, it is hard to imagine that the CEOs perform these duties without regard to their personal objectives. As a result, it is predicted that CEO-Chair duality will be positively related to agency costs. Accordingly, the following hypothesis is tested:

Hypothesis 6.4: *There is a positive relation between the duality of the posts of CEO and chairperson and agency costs.*

6.2.3.3 Board size

A number of studies have examined the conventional wisdom that the smaller the board of directors, the higher the monitoring role. Fama and Jensen (1983) indicate that when the board size is large, it may be difficult for members to communicate efficiently with each other; as a result, it may be more difficult for the board members to monitor management. When there are more members on the board, the function of the board might be weakened and it becomes easier for the CEO to exert control (Jensen 1993).

Providing support for this assertion, Coles et al. (2008) and Fuerst and Kang (2004) find a negative association between board size and firm value, although this relationship does not hold for firms with extensive advisory needs. In particular, they find that Tobin's q increases (decreases) in board size for complex (simple) firms. Believing that directors rarely criticize the policies of top managers or hold candid discussions about corporate performance, Yermack (1996) finds that Tobin's q, several accounting profitability ratios, and CEO turnover rates are negatively related to a board size. These results imply that firms with small boards have superior financial performance.

In contrast, some studies document a positive and significant relation between board size and financial performance (Dalton et al. 1999), and the likelihood of financial statement fraud (Beasley 1996). They assert that large boards provide better environmental links and more expertise, help to support the link between corporations and their environments, and provide advice regarding strategic options for the firm (Pearce and Zahra 1992). Based on the previous discussion, it is expected that when the board size is large, it may be more difficult for members to communicate efficiently with each other, leading to ineffective monitoring and higher agency costs (Fama and Jensen 1983). Thus, the following hypothesis is formulated (in alternative form):

Hypothesis 6.5: *There is a positive relationship between board size and agency costs.*

6.2.4 Debt maturity and growth opportunities

Since the seminal work of Jensen and Meckling (1976), a large body of research provides evidence to support the role of debts in mitigating equity agency conflicts.[91] It is widely believed that greater debt generates "*the discipline of debt*" (Jensen 1986); as it helps discourage over-investment of free cash flow by creating contractual obligations to pay fixed interest expense (e.g., Jensen 1986; Jensen 1993; Stulz 1990; Hart and Moore 1995, among others), and reducing the available amount of free cash flow. Thus, high leverage is likely to reduce the degree of potential perquisite consumption and, thus, encourage managers to act in the interest of shareholders, leading to less equity agency problems (Berger and Bonaccorsi 2006; de Toledo 2009). In addition, debt can also be a plausible device that allows managers to signal that managers do not or will not expropriate outside shareholders by distributing cash flows and that they are subject to monitoring by lenders (Harvey et al. 2004; Beiner et al. 2006b).

Nonetheless, greater leverage may create a conflict between outside shareholders and debtholders due the risk of default, leading to what Myers (1977) labelled as an ''under-investment" problem. Myers (1977) argues that high debts persuade managers acting in shareholders' interests to forgo some positive net present value projects, since the cost of external finance is higher than the cost of internal finance; management has to serve debt first before paying dividends. Furthermore, it is optimal, from shareholders' perspective, to undertake riskier projects and managers may prefer to invest in safer projects to protect their human capital.

The magnitude of agency costs related to over-investment and under-investment problems is less likely to be identical across industries. Since low-growth firms have considerable cash and are more prone to undertake risky projects, agency problems in such firms are expected to be related more to conflicts over the use of free-cash-flow (Jensen 1986). Accordingly, long-term debt can mitigate management's over-investment problem for firms with fewer growth opportunities because it is more effective in limiting managerial discretion by forcing them to pay out surplus cash to serve debts and, thereby, reduce the available amount of funds under discretion (Jensen 1993; Jensen 1986; Stulz 1990; Hart and Moore 1995). On the other hand, high-growth firms have greater information asymmetry, different ownership and governance

[91] See Harris and Raviv (1991) and Myers (2001) for a review of literature.

structures, suggesting that agency costs result from shareholders-debtholders conflicts (see for example, Smith 1992; Gaver et al. 1995; Gillan et al. 2003; Dey 2008).

It has been argued that management incentives to deviate from a firm value-maximizing policy can be controlled by a variety of contracting mechanisms; one such mechanism includes the use of short-term debt. Myers (1977) argues that the under-investment problem can be mitigated by issuing short-term debt as such debt needs to be repaid in a timely manner and mature before growth options are exercised. Hence, firms with high-growth opportunities are expected to have more short-term debt in their capital structure to make any positive net present value investment decisions more rapidly in order to meet their financial commitments. Thus, the following hypothesis will be tested:

Hypothesis 6.6: *There is a negative relation between short-term debt and agency costs.*

6.2.5 Dividends and growth opportunities

There is a widely held belief that dividend policies address agency problems related to the conflicts between corporate insiders and outside shareholders (e.g., Easterbrook 1984; Jensen 1986; Zwiebel 1996; Gomes 2000). In a cross country study, La Porta et al. (2000) offer two hypotheses that might explain the relation between shareholder rights and dividend policy; the *outcome hypothesis* and the *substitute hypothesis*. The outcome hypothesis asserts that shareholders in countries with stronger shareholder rights will force managers to pay higher dividends in order to reduce free cash.

This hypothesis relies on the argument of the agency theory that disgorging excess cash and paying out dividends to stockholders would prevent managers from abusing firm resources to build empires in their own interest at the expense of outside shareholders and reduce the opportunity to make sub-optimal investments or invest in nonprofitable projects. Furthermore, in order to raise external funds for new investments, dividend payments force firms to subject themselves to capital market scrutiny and outside shareholders' monitoring (Easterbrook 1984; Jensen 1986). Since dividends reduce firm liquidity, which, in turn, increases the potential default risk of firms, a higher dividend payout is expected to reduce firm-level agency costs resulting

from free cash flow problem because the focus is likely to be on future earnings performance as a means of maintaining the current dividend payout level (Henry 2010).

Alternatively, the substitute hypothesis predicts that managers use dividend payouts as a substitute for weaker legal protection of minority shareholders, build their reputation and reduce the costs of external financing. Furthermore, management tend to use dividends as a signal to convey private information about the firm's cash flow and future profitability (John and Williams 1985; Miller and Rock 1985).

It is found that in firms with high-growth opportunities operating in countries with stronger legal protection of minority shareholders, shareholders may prefer retained earnings over dividend payout as they recognize that their rights are protected against managerial expropriation, being more certain about sharing payoffs gained from these opportunities (Mitton 2004). Put differently, based on contracting arguments, in countries with stronger legal protection, dividend payout for firms with fewer investment opportunities may act as a device that protects shareholders against controlling shareholders' expropriation and high-growth firms in such countries are likely to pay fewer dividends.

By analogy, in countries with weak legal protection and poor corporate governance mechanisms, it is expected that firms with high-growth opportunities may commit to pay higher dividends to reduce information asymmetry and to signal to the market their commitment to sustain earnings. This discussion leads to the following hypothesis:

Hypothesis 6.7: *There is a negative relation between dividends agency costs and this relation is likely to be more dominant for firms with high-growth opportunities.*

6.3 Empirical models and methodology

To test the impact of incentives of both managers and dominant shareholders on the level of agency costs is likely to be determined by firm-specific governance characteristics, namely ownership structure, board characteristics, and capital structure, the following pooled regression model is specified and tested empirically:

$$\text{ASSETTURN}_{it} = \propto + \beta_1 EXECOWN_{it-1} + \beta_2 EXECOWN_{it-1}^2 + \beta_3 NEXECOWN_{it-1} + \beta_4 CONCENTR_{it-1} + \beta_5 CONCENTR_{it-1}^2 + \beta_6 NEXECD_{it-1} + \beta_7 BODSIZE_{it-1} + \beta_8 CEODUL_{it-1} + \beta_9 SHORTDEBT_{it-1} + \beta_{10} FSIZE_{it-1} + \beta_{11} LEV_{it-1} + \beta_{12} BLOCK_{it-1} + \beta_{13} DIVIDEND_{it-1} + \beta_{14} ROA_{it-1} + \beta_{15} MTBOOK_{it-1} + \beta_{ij} IndustryDum + \beta_{ik} TimeDum + \varepsilon_{it} \quad (6.1)$$

Where *i* is firm subscript, *t* is time subscript, $j = 1, \ldots, 10$, and $k = 1, 2$. The dependent variable is the asset turnover ratio *ASSETTURN* which is used in the main analysis as an inverse proxy for agency costs regressed against a set of independent variables whose definitions are provided in Table 6.1. The methodology used herein is the cross-sectional lagged approach as the dependent variable is measured at time *t* and the independent variables are measured at one year lag time, *t-1*. As one potential solution to endogeneity, the lagged values of endogenous variables are used as instruments. More specifically, the dependent variable is measured as of the end of fiscal years in 2005, 2006 and 2007 and matched with the corresponding independent variables as of the end of fiscal years 2004, 2005 and 2006, respectively. That is, it is assumed that the level of agency costs in a particular year is determined by firm specific characteristics and with regard to corporate governance in the prior year.

6.4 Data

The data used in this study is a part of the data used in Chapter 3, drawn from a unique data set representing a sample of publicly traded and quoted firms on EGX. The data period covers the time period from 2004 to 2007. As explained earlier, financial and utilities firms are excluded due to the uniqueness of their disclosure and regulation measurement and their external scrutiny. After dropping observations that have missing ownership or other corporate governance variables and incomplete accounting data, the final sample for the current analyses consists of 457 observations.[92] All data sources as are previously mentioned in Chapter 3.

[92] The sample size in the present study is comparable to that used in the previous studies. Specifically, For example, Singh and Davidson (2003) use 236 observations over two years, Henry (2010) employs 1127 over the 10 years time period, Hutchinson and Gul (2004) use 310 observations, Bozec and Laurin (2008) also use 400 observations of Canadian firms, and McKnight and Weir (2009) employ 534 observations representing a sample of UK firms.

6.5 Agency costs measurement

Two different measures are employed as proxies of the magnitude of agency costs. The main analysis is conducted using the asset turnover ratio (i.e., sales-to-asset ratio sales-to-asset ratio) as inverse proxy for agency costs, while the SG&A ratio is used as a direct proxy. The asset turnover ratio measures how effectively management deploys the firm's assets. That is, managers of firms with lower asset turnover ratio are more likely to have non-optimal investment decisions, exert insufficient effort and use the firm's resources to acquire unproductive assets. It also indicates a potential managerial shirking or consumption of perquisites resulting in higher agency costs for outside shareholders (or minority shareholders). Thus, a negative coefficient suggests high agency costs and a positive one implies low agency costs.

6.6 Independent variables

A set of corporate governance mechanisms are used to predict the determinants of agency costs in the Egyptian context, namely, ownership structure, board structure, and capital structure. In what follows, a set of independent variables related to the ownership structure variables, board characteristics, debt maturity, growth opportunities, and dividends payout is explained in detail.

6.6.1 Ownership structure variables

To capture the potential effects of ownership structure on the level of agency costs, the executive ownership and ownership concentration are the two aspects of ownership incorporated in the analyses. Executive ownership (*EXECOWN*), defined as the percentage of equity ownership held by executive directors to total equity, is firstly included in the analysis as a variable that is likely to negatively influence the magnitude and level of agency costs. Then, the square term of executive ownership ($EXECOWN^2$) is used to control for potential non-linearity between managerial ownership and agency costs. In the same way, the ownership concentration term (*CONCENTR*) and the quadratic term ($CONCENTR^2$) are sequentially included in the analysis in order to allow for the non-linear relationship between ownership concentration and agency costs. The

ownership concentration is defined as the sum of the stakes of non-management shareholders with equity ownership 5% or more to total equity.[93]

6.6.2 Board characteristics variables

As mentioned earlier, the argument concerning the possible effects of board size (*BODSIZE*), defined as the total number of directors on the board, in alleviating agency costs is ambiguous, leading to the expectation that the sign of the board size coefficient could be either positive or negative. The ratio of the number of non-executive directors to the total number of directors on the board (*NEXECD*) is incorporated as a proxy of board independence. In addition, the board leadership (*CEODUAL*) is proxied by a binary variable that takes the value of one when the same person occupies the CEO and chairperson positions and zero otherwise.

6.6.3 Debt maturity, dividends and growth opportunities variables

In order to test the potential effects of short-term debt in alleviating agency costs, the ratio of short-term debt to total debt (*SHORTDEBT*) is included in the analyses. Likewise, the market-to-book value (*MTBOOK*), measured by the ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets, is included to control the effects of growth on value of the firm's agency costs. In general, it is expected that short-term debt is more likely to reduce firm's agency conflicts and that the level of growth is positively associated with asset turnover because high-growth firms are more efficient in using their assets as management have more incentives to built up reputation and signal to the capital markets their commitment to higher efficiency.

6.6.4 Control variables

Several control variables and firm-specific variables commonly used in previous studies are included in the analysis in an attempt to mitigate the omitting variable problem and capture different firm characteristics as well as factors that potentially affect agency costs. The set of control variables includes variables related to firm size, leverage, blockholders' ownership and performance.

[93] The 5% shareholding threshold is used as it is the minimum ownership level at which a disclosure in the financial reports and in the capital market is required by the Listing Rules of the EGX.

Firm size (*FSIZE*) is measured by the natural logarithm of year end book value of total assets of a firm. The effect of this variable is ambiguous. On the one hand, larger firms are expected to be better managed, draw more capital market monitoring, be more diversified and enjoy economies of scale in monitoring managerial opportunism (Himmelberg et al. 1999; Chen and Yur-Austin 2007). This suggests a negative relationship between firm size and agency costs (i.e., positive association with asset turnover ratio). On the other hand, larger firms are more likely to exercise their accounting discretion to meet investors' expectations and minimize political costs (Watts and Zimmerman 1990). Masulis et al. (2007, 1853) conjecture that managers "are more likely to indulge in value-destroying, empire building acquisitions" when (p. 1874) "they are less likely to be disciplined by the market for corporate control for such actions.", suggesting a less effective role of the capital market in disciplining managers of larger firms than those of smaller firms. This indicates a possible positive association between firm size and agency costs level (i.e., negative association between firm size and asset turnover ratio). Thus, no *a priori* prediction about the relationship between the magnitude of agency costs and firm size is made.

It is acknowledged that debt plays an important role in mitigating the agency problem (Jensen 1986; Stulz 1990), as it induces managers to act in the interest of outside shareholders and to meet debt obligations. It also has positive effects on reducing agency costs associated with free cash flow (Jensen 1986). However, Stulz (1990) shows that debt financing can aggravate the under-investment problem. Because debt may have positive effects on agency costs (Ang et al. 2000) or have negative ones (Singh and Davidson 2003), the relation between agency costs level and debt cannot be predicted *a priori*. Leverage (*LEV*), measured by the ratio of total debt to total assets, is included in the analyses to control for the effects of debt on agency costs levels.

Compared to small shareholders, large shareholders who own a substantial percentage of firm's shares have greater incentives to discipline and monitor management to increase their monitoring benefits (Shleifer and Vishny 1986). To control for the potential effects of large shareholders (*BLOCK)*, measured as a dummy variable that takes the value of 1 if the firm has an outside controlling shareholder, defined as a non-managerial and non-board members shareholder, who owns 20% or more of the firm's stakes, and 0 otherwise, is included in the analyses. This variable is

expected to be associated with lower agency (i.e., positively associated with asset turnover ratio).

Table 6.1 Variables definition

Variable	Definition
Dependent variables	
ASSETTURN	The ratio of annual sales to total assets.
SG&A	The ratio of annual selling, general and administrative expenses to total sales.
Independent variables	
EXECOWN	The percentage of equity ownership held by executive directors to total equity.
NEXECOWN	The percentage of equity ownership held by non-executive directors to total equity.
BODOWN	The percentage of equity ownership held by board members.
CONCENTR	The sum of the stakes of non-management shareholders with equity ownership 5 per cent or more to total equity.
BODSIZE	The total number of directors on the board.
NEXECD	The ratio of the number of non-executive directors to the number of total directors on the board.
CEODUAL	A dummy variable coded as 1 if the positions of CEO and COB are held by the same person and zero otherwise.
SHORTDEBT	The ratio of short-term debt to total debt.
DIVIDEND	The ratio of dividend payments to total assets
Control variables	
FSIZE	The natural logarithm of end-year book value of total assets of a firm.
LEV	The ratio of total debt to total assets.
BLOCK	A dummy variable that takes the value of 1 if the firm has an outside controlling shareholder and 0 otherwise. Controlling shareholders are defined as non-managerial and non-board members shareholder who own 20% or more of firm's stakes.
MTBOOK	The ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets.
ROA	The ratio of net income before extraordinary items to total assets.

Source: the Egyptian Exchange (i.e., EGID) and Capital Market Authority (CMA).

Furthermore, return on assets *ROA*, measured as the ratio of net income before extraordinary items to total assets, is incorporated to capture the possibility that the more preferable firms are associated with higher asset turnover ratio (Fleming et al.

2005). Finally, the industry dummy variables (*IndustryDum*) and time dummy variables (*TimeDum)* are also incorporated in the analysis to control for potential differences in industry and time and to capture mean shifts for the agency costs proxy. The variables definition is provided in Table 6.1.

6.7 Sample characteristics

Table 6.2 provides descriptive statistics for the main variables used in the analysis. As shown in the table, the average values of asset turnover ratio and the ratio of SG&A are 0.695 and 0.149 with median values 0.586 and 0.034, respectively. The average value of asset turnover ratio is lower than that reported in the studies of Ang et al. (2000), Singh and Davidson (2003) and Chen and Yur-Austin (2007), which find this value is 4.76, 1.43, and 1.03, respectively.

As reported in Table 6.2, the average outside ownership concentration is 57.3%, which is higher than the value (37.19%) presented in the study by Florackis (2008) and that (29.21%) reported in Florackis and Ozkan (2009a). This is an indicator that the ownership in Egypt is more concentrated than in the UK. Also the average board ownership is 14.5%, among which executives' ownership, on average, is 11.1% while the ownership of non-executive directors is 3.4%. Table 6.2 also indicates that boards comprise, on average, 7.67 members. With regard to the capital structure, Table 6.2 also shows that leverage ratio is 17.3% and short-term debt is 48.3%. On average, firms pay 6.8% of their total assets as dividend payout.

Table 6.3 provides the Pearson correlation matrix for the variables used in this study. It appears that the correlation between asset turnover ratio and short-term debt is positive and significant. That is, short-term debts, in general, play an important role in alleviating the potential conflict between management (or dominant shareholders) and outside shareholders (or minority shareholders). With regard to ownership, executive ownership is positively correlated with the ownership of non-executive directors, ownership concentration and blockholders, suggesting that they are likely to be complementary governance mechanisms. Nevertheless, the negative correlation between executive ownership and the ratio of non-executive directors on the board suggests that the two mechanisms are likely to act as substitute governance devices.

Table 6.2 Descriptive statistics

Variable	Mean	St. Dev	Min	25%	Median	75%	Max
Agency costs proxies							
ASSETTURN	0.695	0.521	0	0.285	0.586	0.963	2.57
SG&A	0.149	1.258	0	0	0.034	0.092	25.064
Ownership structure							
BODOWN	0.145	0.275	0	0	0	0.175	1
EXECOWN	0.111	0.242	0	0	0	0.08	1
NEXECOWN	0.034	0.084	0	0	0	0	0.50
CONCENTR	0.573	0.326	0	0.286	0.658	0.851	1
BLOCK	0.84	0.367	0	1	1	1	1
Board characteristics							
NEXECD	0.654	0.226	0	0.571	0.714	0.8	0.929
BODSIZE	7.672	2.863	3	5	7	9	17
CEODUAL	0.639	0.481	0	0	1	1	1
Capital structure							
SHORTDEBT	0.483	0.425	0	0	0.454	1	1
LEV	0.173	0.230	0	0.004	0.1	0.283	3.132
Firm characteristics							
FSIZE	12.624	1.570	8.978	11.49	12.485	13.645	17.718
DIVIDEND	0.068	0.124	0	0.005	0.034	0.073	1.095
ROA	0.095	0.142	-0.547	0.028	0.078	0.144	1.845
MTBOOK	1.633	1.362	0.261	0.900	1.245	1.935	16.895

Notes: this table shows the descriptive statistics for 457 observations used in the analyses over the period 2004-2006 to measure independent variables and over the period 2005-2007 to measure the agency costs proxies (i.e., asset turnover, as an inverse proxy, and SG&A, as a direct proxy of the agency costs). Definitions for all variables are provided in Table 6.1

Table 6.3 also shows that *MTBOOK* is negatively correlated with *NEXECD* and *BLOCK* at ($p < 0.01$). This is consistent with the notion that high-growth firms rely more on insiders that have specific firm knowledge. However, the correlation matrix reveals that firms with good growth opportunities have larger board size as the correlation coefficient (0.14) is positive and significant at 5%. One possible reason for this result is that larger board size is more likely to increase the possibility that more expertise member is needed to deal with the complex and uncertain environment in which these firms operated. Further, the positive correlation between firm size and board size supports the general notion that larger firms require larger boards because such firms have greater external contracting relationships (Booth and Deli 1996).

The high correlations between board size and non-executive directors' ratio (0.50) as well as between ownership concentration and blockholders (0.683) may suggest a little evidence of multicollinearity between the independent variables included in the

analysis. A formal test is performed to mitigate this concern. Specifically, the variance inflation factor (VIF) is calculated for each independent variable included in the regressions. The highest values of VIF are those related to CONCENTR (2.76) and EXECOWN (2.38). Since none of these values are greater than the general threshold value of 5 which indicates existence of multicollinearity problem (Studenmund 2001), or the value of 10 which indicates a severe case (Neter et al. 1996), multicollinearity does not appear to be a concern in this study.

Table 6.3 Pearson correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13
1.	ASSETTURN	1												
2.	EXECOWN	0.089	1											
3.	NEXECOWN	0.082	0.242*	1										
4.	NEXECD	-0.020	-0.361**	-0.065	1									
5.	BODSIZE	-0.101	-0.256**	-0.100	0.500**	1								
6.	CEODUAL	-0.078	0.066	-0.010	0.039	0.029	1							
7.	CONCENTR	0.005	0.236**	0.054	-0.009	-0.119**	0.085	1						
8.	BLOCK	0.052	0.132**	0.059	-0.079	-0.091**	0.030	0.683	1					
9.	SHORTDEBT	0.165**	0.073	0.135**	0.115**	0.003	-0.075	0.016	-0.037	1				
10.	DIVIDEND	0.018	-0.022	0.007	-0.045	0.021	-0.054	0.025	-0.046	0.030	1			
11.	FSIZE	-0.231**	-0.032	-0.268**	0.019	0.202**	-0.112*	-0.034	0.077	-0.116**	0.008	1		
12.	LEV	-0.021	0.032	-0.038	-0.121**	-0.104**	0.079	-0.037	0.049	0.110**	-0.073	0.100**	1	
13.	ROA	0.117**	0.004	-0.003	0.069	0.142**	-0.109**	0.100*	0.058	-0.040	0.114*	0.144**	-0.261**	1
14.	MTBOOK	-0.033	-0.082	-0.136**	0.033	0.140*	-0.020	-0.057	-0.119**	0.124**	0.054	0.139**	-0.023	0.214**

Notes: Definitions for all variables are provided in Table 6.1. * and ** indicate that correlation is significant at the 5% and 1% level (two-tailed), respectively.

6.8 Empirical results

Two approaches are adopted to explore the determinants of agency costs and test the potential effects of different ownership structure, board characteristics and capital structure in alleviating agency conflicts in the Egyptian context. The first set of tests is based on univariate analysis using both parametric (i.e. *t*-test) and non-parametric (i.e., Mann-Whitney) statistics. The second set considers the effects of these characteristics on agency costs in a multivariate analysis using the multiple regression setting. The following sections discuss these tests in more detail.

6.8.1 Univariate analysis and preliminary analyses

To provide a preliminary evaluation of the hypotheses, a univariate mean-comparison test of the subsamples of firms is conducted using *t*-test statistics and the Wilcoxon-Mann-Whitney tests to carry out median comparisons across the sub-groups. The conjecture is that there is a difference in terms of ownership structure, board characteristics, capital structure and other firm specific characteristics between firms in the above and the below subsamples classified based on the median values of explanatory variables. Panel A in Table 6.4 indicates that firms with above median values for dividend and return on assets have higher asset turnover. These results are statistically significant at the 1% level.

Nonetheless, firms with above median market-to-book and firm size values indicate relatively lower asset turnover. These results hold irrespective of the type of test applied. Moreover, there is no significant difference between ownership subgroups. With regard to board structure variables, firms with above median values of non-executive directors' ratio and those in which the CEO and COB are held by the same person are significantly associated with lower asset turnover at the 1% level. In contrast, the results concerning the capital structure reveal that firms with above median value of short-term debt are more efficient in using their assets as they have an asset turnover of 0.770.

Table 6.4 Univariate results

	Panel A				Panel B			
	Asset turnover mean above variable median	Asset turnover mean below variable median	*t*-test	Mann-Whitney	1st quartile asset turnover	4th quartile asset turnover	*t*-test	Mann-Whitney
Accounting variables								
DIVIDEND	0.806	0.583	4.677***	4.354***	0.073	0.0744	-0.054	-2.591***
FSIZE	0.555	0.835	-5.954***	-5.335***	12.730	11.998	3.920***	4.234***
ROA	0.782	0.606	3.672***	4.752***	0.058	0.114	-3.888***	-4.627***
MTBOOK	0.651	0.737	-1.778*	-1.431	1.581	1.508	0.495	0.863
Ownership structure								
EXECOWN	0.713	0.638	1.335	1.602	0.155	0.105	1.490	1.497
NEXECOWN	0.706	0.691	0.267	0.338	0.031	0.051	-1.560	-1.085
CONCENTR	0.715	0.675	0.819	0.564	0.694	0.725	-0.909	-0.666
BLOCK	0.708	0.625	1.243	1.256	0.80	0.861	-1.229	-1.227
Board structure								
NEXECD	0.633	0.768	-2.765***	-3.001***	0.635	0.614	0.652	2.023
BODSIZE	0.670	0. 715	-0.925	-0.796	7.895	6.965	2.655***	2.274**
CEODUL	0.645	0.783	-2.754***	-3.628***	0.791	0.513	4.612***	4.421***
Capital structure								
SHORTDEBT	0.770	0.620	3.100***	3.250***	0.360	0.549	-3.447***	-2.694***
LEV	0.686	0.703	-0.349	-1.049	0.165	0.155	0.404	0.195

Notes: Panel A reports mean comparisons of asset turnover (sales to assets) - analyzing high (above median) versus low (below median) ownership structure, board structure, capital structure, and other firm characteristics. Panel B presents mean comparisons of firm specific characteristics by assets turnover quartiles (1st vs. 4th quartile). In panels A and B, *t*-test and Mann-Whitney statistics are used to compare the mean difference. Definitions of variables are given in Table 6.1. ***, ** and * indicate that the mean difference is statistically significant at the 1%, 5% and 10% level respectively.

To summarize, the results based on the univariate analysis reveal that boards with a majority of non-executive directors, larger firms and those have a separated roles of CEO and COB are more efficient in utilizing their assets. Also, there is a little evidence that good growth firms are associated with asset turnover higher than those with fewer growth opportunities. However, the results regarding the dividend and return on assets suggest a lower asset turnover for more dividend paying and profitable firms.

In a parallel manner, Panel B of Table 6.4 shows the results of mean comparisons of several corporate governance mechanisms and firm-specific characteristics categorized by asset turnover quartiles. To conduct this test, firms are divided on the basis of asset turnover quartiles to investigate whether firms in low-asset turnover quartile differ from those in high-asset turnover quartile with respect to their governance mechanisms, ownership structure and other firm characteristics. Panel B shows that dividends in high-asset turnover firms are higher than in low-asset turnover firms (albeit only for the non-parametric test). It also appears that firms in the fourth asset turnover quartile are smaller and more profitable than those in the first asset turnover quartile. Likewise, firms in the fourth asset turnover quartile tend to have higher short-term debt levels. However, low-asset turnover firms are more likely to have larger board sizes and to have the same person occupying both CEO and COB positions. Moreover, means of ownership structure do not differ significantly across the first and fourth asset turnover quartiles.

Overall, the univariate results indicate the executive ownership and the ownership concentration seem to play a weak role in mitigating the agency costs in Egypt. However, drawing on prior research, the relations between executive ownership or ownership concentration and agency costs are more likely to be non-monotonic.

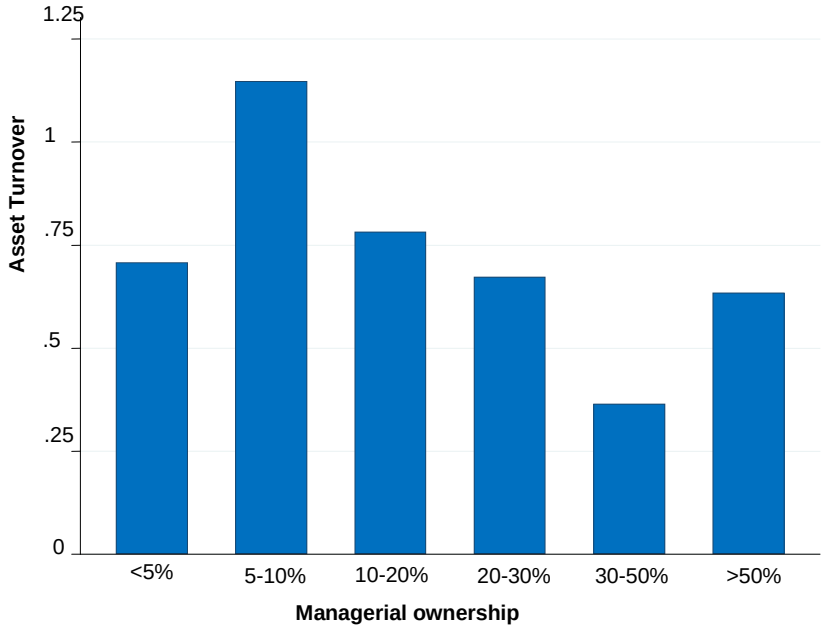

Figure 6.1 Agency costs and managerial ownership

Figures 6.1 and 6.2 provide an initial investigation of the potential relationship between managerial ownership, ownership concentration and agency costs. Figure 6.1 shows that the relationship between executive ownership and asset turnover tend to be positive, suggesting a possible effect for the incentive-alignment hypothesis up to 5-10% executive ownership. Subsequently, the entrenchment effect seems to be dominant up to 50% executive ownership level. It also appears that there is a resurgence of the alignment incentives of managers at managerial ownership above 50%. This depiction indicates a possible non-monotonic association executive ownership and agency costs. This is in line with prior studies mentioned above. Similarly, Figure 6.2 points to a potential non-monotonic association between ownership concentration and agency costs.

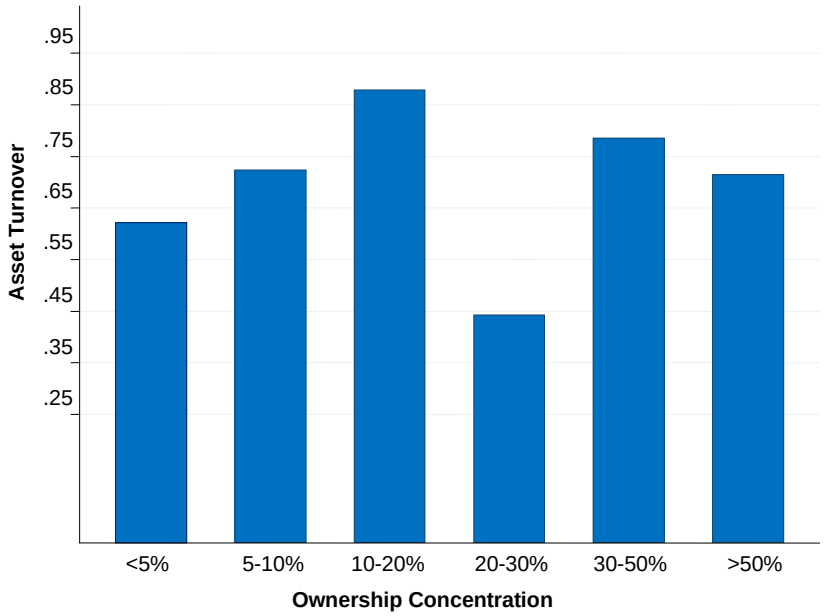

Figure 6.2 Agency costs and ownership concentration

6.8.2 Multivariate analysis

The univariate analysis conducted earlier is indicative because it ignores the potential interactions among the independent variables and the effects of other factors on the levels of agency costs. To allow for these interaction effects and to quantify the marginal effects of ownership structure, board characteristics, debt financing and other firm-specific characteristics on agency costs, multivariate pooled regression analysis is employed.

Table 6.5 presents the results for the main analysis where the asset turnover ratio is used as an inverse proxy for agency costs. Model 1 of Table 6.5 provides effects of control variables on the agency cost level whereas Models 2-5 shed further light on both incremental and joint effects of ownership, board characteristics, and capital structure. It is evident from Model 2 that the inclusion of the individual linear term *EXECOWN* is positively related to the asset turnover ratio, providing evidence for the incentive alignment hypothesis. This result is consistent with prior research which finds that greater managerial ownership enhances asset utilization ratios (e.g., Ang et al. 2000; Singh and Davidson 2003; Fleming et al. 2005). It is also consistent with the agency theory argument that managerial ownership helps to alleviate agency conflicts between management and outside shareholders (Jensen and Meckling 1976). This result suggests that when managerial ownership increases, their incentive tends to rise, since they will

benefit from a larger fraction of the associated net surplus (Faccio and Lasfer 1999; Jensen and Meckling 1976; Burkart et al. 1997).

Table 6.5 Determinants of agency costs

Dependent variable: ASSETTURN (inverse proxy for agency costs)						
	Pred. Sign	M 1	M 2	M 3	M 4	M 5
Constant	+/-	1.683***	1.859***	1.889***	1.708***	1.744***
		(7.83)	(7.55)	(7.57)	(6.62)	(6.56)
EXECOWN	+		0.199***	0.335	0.184***	0.263
			(2.82)	(1.02)	(2.68)	(0.76)
$EXECOWN^2$	-			-0.626*		-0.525
				(-1.78)		(-1.41)
CONCENTR	+		0.152	0.122	0.746*	0.703
			(1.32)	(1.06)	(1.68)	(1.55)
$CONCENTR^2$	-				-0.706**	-0.652*
					(-2.11)	(-1.88)
NEXECD	+		-0.125	-0.148	-0.101	-0.123
			(-1.24)	(-1.48)	(-1.02)	(-1.22)
NEXECOWN	+		0.543**	0.292	0.523**	0.314
			(2.39)	(1.07)	(2.38)	(1.16)
BODSIZE	-		-0.061	-0.052	-0.103	-0.092
			(-0.95)	(-0.81)	(-1.49)	(-1.31)
CEODUAL	-		-0.077*	-0.076*	-0.083**	-0.082**
			(-1.88)	(-1.87)	(-2.06)	(-2.04)
SHORTDEBT	+		0.052	0.037	0.054	0.042
			(1.12)	(0.82)	(1.18)	(0.93)
DIVIDEND	+		0.022	0.028	0.030	0.034
			(0.13)	(0.16)	(0.17)	(0.19)
FSIZE	+/-	-0.091***	-0.084***	-0.087***	-0.079***	-0.083***
		(-5.54)	(-4.59)	(-4.69)	(-4.32)	(-4.35)
LEV	+/-	-0.130	-0.149*	-0.168**	-0.173**	-0.187**
		(-1.50)	(-1.84)	(-2.05)	(-2.07)	(-2.23)
BLOCK	+	0.069	0.148**	0.141**	0.077	0.077
		(1.29)	(2.10)	(1.97)	(1.06)	(1.03)
ROA	+	0.580**	0.592**	0.585**	0.586**	0.581**
		(2.39)	(2.50)	(2.49)	(2.50)	(2.49)
MTBOOK	+	0.020	0.024*	0.025*	0.020	0.021
		(1.50)	(1.83)	(1.90)	(1.49)	(1.56)
Industry dummies?		Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes
No. of observations		457	457	457	457	457
R^2		0.4544	0.4809	0.4842	0.4873	0.4896
adj. R^2		0.4333	0.4508	0.4530	0.4563	0.4575

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

To test the nonlinear relationship between agency costs and managerial ownership, the square term of *EXECOWN* has been included. However, Model 3 of Table 6.5 reveals that only the coefficient of $EXECOWN^2$ is marginally significant at the 10% level. This result is in agreement with the general conclusion provided by previous studies that no evidence for the entrenchment hypothesis (e.g., Himmelberg et al. 1999; Faccio and Lasfer 1999; Dalton et al. 2003).

Following the same reasoning of managerial ownership, it is predicted that at low levels of ownership concentration, the incentives of blockholders and minority shareholders tend to be aligned due to the monitoring role of dominant shareholders who focus on adopting value maximization activities. Nonetheless, at higher levels of ownership concentration, dominant shareholders may have incentive and enough control to expropriate and abuse firm resources to generate private benefits that unlikely to be shared by minority shareholders.

Results of Model 4 in Table 6.5, as expected, confirm the expropriation hypothesis, as the coefficient of *CONCENTR (*$CONCENTR^2$*)* is positively (negatively) related to asset turnover ratio at the 10% (5%) level. This result is consistent with the notion that large shareholders are more capable of providing better monitoring and alignment of managerial incentives (Claessens et al. 2002; Jiraporn and Gleason 2007). Accordingly, agency costs decline as large shareholders' equity increases because equity concentration is more likely to act as a substitute for weak legal protection (Margaritis and Psillaki). However, as ownership concentration increases beyond some point, further ownership is associated with higher agency costs in terms of a lower asset turnover ratio reflecting a possible collusion between large shareholders by employing their voting rights in order to expropriate firm resources and take decisions to gain private benefits that are not shared by other minority shareholders (Faccio and Lasfer 1999; Lasfer 2006). Consequently, while increased ownership is one potential solution for the managers-shareholders conflict, high levels of ownership concentration may exacerbate the possible conflict between blockholders and minority shareholders, suggesting a positive effect on agency costs. This effect is more likely to be apparent in Egypt where the voting procedures combined with the absence of cumulative voting are more likely to induce large shareholders to employ voting rights to their favour (Sourial 2004).

Models 1 and 5 of Table 6.5 show that *NEXECOWN* has a statistically significant positive effect on asset turnover ratio while *CEODUAL* is likely to exhibit a moderate effect on agency costs level as its coefficient has a statistically significant negative effect on asset turnover ratio at the 10% level or best. These results are consistent with the argument that greater ownership of outside directors helps to alleviate firms' agency conflicts, either between management and outside shareholders or between dominant shareholders and minority shareholders (Adams et al. 2005; McKnight and Weir 2009). These results also are consistent with the agency theory conjecture that combination of CEO and chairperson positions is an incitement for increased agency problems because it gives CEOs, who at the same time hold the positions of chairperson, greater power and control over corporate decision-making and other parties (including outside directors).

Turning to other board characteristics, none of them exhibits a statistically significant association with agency costs. For example, the coefficient of *BODSIZE* is not significant at any level, implying that board size does not seem to have any influence on the agency costs level for any regression. Similarly, the estimated coefficient of *NEXECD* is insignificant for all regression models. This result accords with the findings of Singh and Davidson (2003) and McKnight and Weir (2009) that the monitoring role of non-executive directors is ineffective in reducing agency costs, suggesting that the representation of outside directors on the board does not add much to reducing the agency conflicts.

Looking at the capital structure, interestingly, the coefficient of *LEV* is negatively related to asset turnover ratio. This result is somewhat surprising, although it is in line with prior studies (e.g., Ang et al. 2000; Chen and Yur-Austin 2007; Bozec and Laurin 2008). Debt is acknowledged as a possible device that may help mitigate agency costs of outside equity and constrains the managerial expropriation in diffused ownership settings such as the USA and the UK. However, higher levels of debt may create a conflict between shareholders and debtholders (Jensen and Meckling 1976; Myers 1977). This conflict results from the propensity of managers to transfer debtholders' wealth to outside shareholders (i.e., risk-shifting problem) and/or take risky investment decisions that benefit them and outside shareholders even if these decisions are contrary to debtholders' interests (Berger and Bonaccorsi 2006; Shuto and Kitagawa 2010). Consequently, informed lenders might demand a higher interest rate to protect

themselves against the expected expropriation, leading to a higher cost of debt. That is, the higher cost of debts combined with the potential loss of firm value, arising from the suboptimal investment decisions, as well as the cost of contracting mechanisms to mitigate the equity conflicts, are more likely to lead a greater aggregate agency costs (Berger and Bonaccorsi 2006; Billett et al. 2007).[94]

This conflict is expected to be more severe in countries where minority shareholders are more vulnerable to expropriation. In the Egyptian setting, it is reasonable, therefore, to consider the possibility that the decision on debt could be linked more to the interests of controlling shareholders (Faccio et al. 2003), suggesting greater agency costs for firms with higher leverage. Furthermore, it is argued that external financing is costly for small firms because they face more borrowing constraints and higher costs of external financing than large firms (Kim and Ritter 1999; Ozkan and Ozkan 2004). Since firms included in the analyses represent a range of firm size, one possible explanation for leverage result may be related to the differences of debt financing between large and small firms or due to the differential strength of debtholders' monitoring (Singh and Davidson 2003).

In all models of Table 6.5, the coefficient of *SHORTDEBT* is not statistically significant, implying a weak effect of short-term debt on the agency costs. Presumably, this is due to the liquidity risk attributable to short-term debt financing (Diamond 1991; Childs et al. 2005).

Among the control variables, all coefficients have their expected sign. Table 6.5 indicates that the coefficient of *FSIZE* is negative and highly significantly related to asset turnover ratio at the 1% level. This result suggests that agency costs are higher for larger firms. One possibility may be that larger firms are more diversified (Denis et al. 1997), and organisationally complex, which may cause them to incur larger monitoring costs (Williamson 1967; Henry 2010). In addition, larger firms are more likely to be under greater political scrutiny, which may encourage managers to exercise available accounting discretion in an attempt to minimize the potential political costs (Watts and Zimmerman 1990), leading to higher agency costs. Moreover, Table 6.5 reveals a statistically significant and positive association between *ROA* and asset turnover ratio at

[94] Managers may tend not to expropriate debt holders at some point when financial distress and bankruptcy become a serious matter and to the extent that the expropriation harms their links and increases the total agency costs (Berger and Bonaccorsi 2006).

the 5% level. This signifies that firms with higher operating performance tend to have lower agency costs. This is consistent with the results of Fleming et al.(2005) and provides support for the notion that well-performing firms show better asset utilization levels.

The results reported above provide a general picture of types of agency conflicts and the role of internal governance mechanisms that presumably help to alleviate these conflicts. As high growth firms are likely to have different governance mechanisms and ownership structure than those with fewer growth opportunities (Smith and Watts 1992; Gillan 2006), it is a reasonable conjecture, therefore, that influence of governance mechanisms on the agency costs is likely to differ across high and low growth firms. Accordingly, the sample is separated, based on the median value of *MTBOOK*, into two categories. Firms with *MTBOOK* above the median value are included in high growth opportunities category and those with *MTBOOK* below the median value are included in the low growth opportunities category. For each category, the relationships between ownership, board characteristics, capital structure and agency costs are investigated to test whether the effects differ with growth opportunities.

Models 1-3 of Table 6.6 report the results for high-growth firms while Models 4-6 report the results for low-growth firms. For high-growth firms, Models 1 and 3 of Table 6.6 reveal that the coefficient of *EXECOWN* (*EXECOWN*^{2}*)* is positive (negative) and significant at the 5% level while it is not significant for low-growth firms. This result suggests a non-linear relation between managerial ownership and asset turnover ratio and confirms both incentive alignment and entrenchment effects only for high-growth firms. More specifically, the asset turnover ratio increases as managerial ownership increases up to 35.53%, but the asset turnover ratio decreases as managerial ownership continues to increase. Thus, at a lower level of managerial ownership, the interests of managers and shareholders are more likely to be aligned, leading to a negative association between managerial ownership and agency costs (i.e., higher asset turnover ratio). In contrast, at higher managerial ownership levels, the interests of management are likely to deviate from those of outside shareholders, suggesting larger agency costs (i.e., lower asset turnover ratio). These results are consistent with prior research (e.g., Hermalin and Weisbach 1991; Core and Guay 2002; Lasfer 2002; De Miguel et al. 2004).

Table 6.6 Determinants of agency costs partitioned by growth opportunities

Dependent variable: ASSETTURN (inverse proxy for agency costs)							
	Pred. Sign	High-growth			Low-growth		
		M 1	M 2	M 3	M 4	M 5	M 6
Constant	+/-	2.357***	2.015***	2.156***	1.142***	1.034***	1.035***
		(6.08)	(5.14)	(5.32)	(3.29)	(3.04)	(3.02)
EXECOWN	+	1.344**	-0.118	1.258**	0.021	-0.185*	-0.032
		(2.34)	(-1.04)	(2.09)	(0.05)	(-1.70)	(-0.07)
$EXECOWN^2$	-	-1.891***		-1.762**	-0.229		-0.168
		(-2.85)		(-2.52)	(-0.51)		(-0.36)
CONCENTR	+	0.153	1.212**	1.151*	-0.259	0.366	0.348
		(1.01)	(2.08)	(1.95)	(-1.55)	(0.70)	(0.64)
$CONCENTR^2$	-		-0.954**	-0.835*		-0.477	-0.459
			(-2.05)	(-1.77)		(-1.22)	(-1.14)
NEXECD	+	-0.018	0.066	0.029	-0.346**	-0.320**	-0.334**
		(-0.13)	(0.45)	(0.21)	(-2.19)	(-2.03)	(-2.10)
NEXECOWN	+	-0.748**	-0.149	-0.688*	1.109***	1.191***	1.118***
		(-1.99)	(-0.61)	(-1.81)	(2.93)	(3.69)	(3.01)
BODSIZE	-	-0.107	-0.164	-0.162	0.080	0.044	0.053
		(-1.04)	(-1.44)	(-1.44)	(0.97)	(0.55)	(0.62)
CEODUAL	-	-0.140**	-0.157***	-0.145***	-0.006	-0.009	-0.010
		(-2.56)	(-2.92)	(-2.76)	(-0.09)	(-0.16)	(-0.17)
SHORTDEBT	+	0.153**	0.176**	0.158**	-0.087	-0.082	-0.088
		(2.17)	(2.57)	(2.33)	(-1.32)	(-1.21)	(-1.34)
DIVIDEND	+	0.360**	0.349**	0.393**	0.123	0.121	0.123
		(2.15)	(2.20)	(2.43)	(0.60)	(0.58)	(0.60)
FSIZE	+/-	-0.122***	-0.101***	-0.114***	-0.035	-0.032	-0.032
		(-4.23)	(-3.69)	(-3.87)	(-1.25)	(-1.15)	(-1.16)
LEV	+/-	-0.136	-0.145	-0.163	-0.215	-0.219	-0.227
		(-1.34)	(-1.46)	(-1.60)	(-1.42)	(-1.45)	(-1.47)
BLOCK	+	-0.061	-0.127	-0.132	0.282***	0.233**	0.235**
		(-0.58)	(-1.24)	(-1.21)	(2.91)	(2.35)	(2.34)
ROA	+	0.517*	0.475*	0.499*	0.561	0.585	0.572
		(1.71)	(1.70)	(1.75)	(1.33)	(1.37)	(1.35)
Industry dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		228	228	228	229	229	229
R^2		0.4663	0.4568	0.4766	0.6228	0.6246	0.6248
adj. R^2		0.4006	0.3899	0.4092	0.5761	0.5782	0.5763

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

A similar pattern of relationship between ownership concentration and agency costs is noticed. Results of Models 2 and 3 of Table 6.6, consistent with the incentive alignment hypothesis, reveal that the increase in outside ownership concentration is associated with lower agency conflict between controlling and minority shareholders up

to 63.14% ownership level whereas higher ownership concentration beyond this level is likely to induce dominant shareholders to expropriate firm resources in an attempt to gain private benefits that are not shared by minority shareholders, leading to a higher agency conflict. Presumably, one plausible interpretation for this result relies on the conjecture that poor Egyptian legal protection of minority shareholders (Djankov et al. 2007; Djankov et al. 2008), along with the weakness of credible mechanisms, is likely to encourage controlling shareholders to benefit from information asymmetry and obtain more private benefit since these benefits outweigh the costs of extracting such benefits.[95]

With regard to the role of outside directors, the results of Table 6.6 show, consistent with Agrawal and Knoeber (1996) and McKnight and Weir (2009), that a significant relation between non-executive director representation and asset turnover ratio is unlikely to exist for high-growth opportunity firms as the coefficient of *NEXECD* is insignificant at any level.

One possible explanation for these results is that firms with high-growth opportunities normally have more specific information unknown to outsiders (Harris and Raviv 1991; Graham and Harvey 2001), which, in turn, leads to a high information asymmetry problem (Myers and Majluf 1984). In addition, the advisory role of insiders is more likely to alleviate agency conflicts in such firms because it is more costly for outside directors to advise and monitor high-growth firms (Linck et al. 2008), leading to less call for outside directors' representation on the board. It has also long been recognized that for high-growth firms with greater information asymmetry, where the firm-specific knowledge of insiders is essential, greater representation of insider directors on boards tends to be dominant (see, e.g, Lehn et al. 2003; Raheja 2005; Coles et al. 2008; Linck et al. 2008). An alternative explanation is that executives' and/or controlling shareholders' ownership provides a sufficient mechanism for agency costs, leading to less dependence on costly representation of outside directors on the boards.

In contrast, the agency problems that arise from the conflict over the free cash flow can make firms with low-growth opportunities prone to benefit from a higher proportion of informed outside directors who are able to discipline and monitor

[95] Given the disclosure secrecy embedded in the Egyptian business environment (Dahawy and Conover 2007) and the weak enforcement of disclosure rules on related-party transactions (ROSC, 2004), it is reasonable to expect that minority shareholders are more likely to be left uninformed, increasing the possibility of gaining more private benefits.

potential expropriation by dominant shareholders over the free cash flow. The results of Models 4-6 are somewhat surprising as there is a negative and significant association between non-executive director ratio and asset turnover ratio, suggesting that higher representation of outside directors on the board is associated with higher agency costs.

One explanation for this result is based on the argument provided by recent studies (e.g., Bebchuk et al. 2009; Duchin et al. 2010), that for outside directors to be effective, they should have superior information compared to corporate insiders and posses specific skills that assist in performing their disciplining and monitoring duties more efficiently than an outside shareholder. Given the lack of such information or skills, non-executives may be inclined to play a less *confrontational role* (Florackis and Ozkan 2009b). Furthermore, the inability of the Egyptian regulatory system to identify and impose obvious duties of directors, as well as giving a specific and definite definition of independence are more likely to encourage non-executive directors being passive (Franks et al. 2001; Ozkan and Ozkan 2004), leading to a positive relationship between non-executive directors and agency costs. That is, outside directors might lack independence from management, as controlling shareholders can select directors that are apparently independent according to the definition of law, but, in practice, are influenced significantly by management and controlling shareholders. Accordingly, increasing outsider representation on boards may exacerbate the free cash flow problem in low-growth firms, leading to higher agency costs and ‘‘*quack corporate governance*’’(Agrawal and Chadha 2005).

To summarize, the results regarding the monitoring or advising role of outside directors are more likely to vary across firms. For high-growth firms greater representation of insiders who have firm specific information might be helpful in providing advice. For low-growth firms, it may be useful to constitute their boards with many outside directors, provided they have also the information required for monitoring. Nevertheless, the monitoring role of outsiders is more likely to be less effective when the cost of acquiring firms’ information is high (Duchin et al. 2010).

These results complement those of Coles et al. (2008) and cast doubt on the validity of the conjecture that a higher proportion of outside directors is necessarily optimal for all firms and suggests that high-growth firms (low-growth firms) may benefit from boards with more insiders (outsiders) representation. They also run against

the conventional wisdom that greater representation of non-executive directors on the board is necessarily associated with higher firm value and, in turn, less agency costs.

Turning to debt maturity, it is quite widely accepted that short-term debt plays an essential role in reducing agency problems related to under-investment and information asymmetry in high-growth firms through the frequent monitoring by lenders and shareholders with least effort (Rajan and Zingales 1995). Consistent with this argument, for high growth opportunities firms, the coefficient of short debt ratio in columns 3-5 of Table 6.6 is positively related to asset turnover ratio at the 5% level. This result indicates that the high cost of external financing and the monitoring imposed by lenders might encourage managers to prefer short-term debt over long-term financing in order to curtail under-investment problem (Flannery 1986; Diamond 1991; Hart and Moore 1995). This result is consistent with several prior studies that found a negative association between debt maturity and growth opportunities (Barclay and Smith 1995; Guedes and Opler 1996; Ozkan 2000; Datta et al. 2000; Chen and Yur-Austin 2007).

Columns 3-5 of Table 6.6 also show a significant positive association between asset turnover ratio and dividend payout. In particular, the coefficient of *DIVIDEND* in all regressions is significant at the 5% level for high-growth firms. This result supports the substitution hypothesis explained by La Porta et al. (2000) and suggests that dividends are likely to serve as a substitute mechanism for inadequate legal protection of minority shareholders, implying that firms with good investment opportunities are more likely to pay higher dividends in an attempt to convey favourable information about firm's future earnings, which helps to build management reputation (e.g., Bhattacharya 1979; John and Williams 1985). This is because high-growth firms are more likely to subject to additional monitoring by the capital markets due to their need to raise external debt (Rozeff 1982; Easterbrook 1984), and increase their financial flexibility.

Taken together, high-growth firms with poor corporate governance in place and operating under weak legal protection of minority shareholders would face a trade-off between choosing pay more dividends to convey favourable information to the capital market and build its reputation, accepting to expose their firms to lower flexibility and higher external financing, and choosing lower dividends payment to decrease the independence on costly external financing. Overall, the above results in Table 6.6 indicate that firms with good growth opportunities tend to prefer reliance on short-term

debt financing to avoid costly long-term debt financing and/or pay more dividends in an attempt to reduce information disparities between management and outsiders in order to build their reputation.[96]

Models 4-6 of Table 6.6 also show that the relationship between ownership structure and agency costs tends to differ across industries. Specifically, the coefficients of *NEXCOWN* and *BLOCK* are positive and significantly associated with asset turnover ratio at the 5% level or best. These results are consistent with the results of McConnell and Servaes (1995) that ownership is likely to be more significant for slow-growth than for high-growth firms to the extent that ownership has a negative effect on agency costs for low-growth firms. This is consistent with the conjecture of La Porta et al. (1997) that in countries with poor legal protection of minority shareholders, blockholder ownership has a considerable positive effect on firm value (i.e., lower agency costs) because they have a great ability to monitor and discipline managerial opportunism and align management to their objectives (Jiraporn and Gleason 2007). Likewise, there is an indication in Table 6.6 that the coefficient of *ROA* is positively related to asset turnover ratio at the 10% level only for the high-growth firms.

6.9 Further checks

In what follows a set of sensitivity tests related to different measure of agency costs, OLS model including lagged dependent variable, specification, and definitions of some independent variables are conducted to investigate the robustness of the results of this study.

6.9.1 Agency costs as measured by the SG&A ratio

Table A.6.1 in Appendix 6.1 presents the results of the analysis using the SG&A as direct proxy of agency costs. This ratio indicates how efficiently the firm's management control operating expenses over which the management has a discretion influence. A higher discretionary expenditure ratio is an indicative of agency misalignment. Hence, a positive coefficient means higher agency costs and a negative one indicates lower

[96] It is worth noting that, while the value shareholder rights reported in Djankov et al. (2007) and Djankov et al. (2008) in Egypt is 2 is lower than the median (2) of civil law country sample, the dividends ratio 4.05 is higher than the median sample (i.e., 1.53). These values, to some extent, support the results above concerning the importance of dividends as an important signalling device that reduce information asymmetry in Egypt.

agency costs. Similar to the results found above, Model 1 and Model 2 report a significant negative (positive) relation between *EXECOWN* (*EXECOWN*^{2}) and SG&A ratio. These results are consistent with the incentive-alignment (entrenchment) effects explained earlier. That is, executive ownership is associated with a negative effect on firm's agency costs at lower levels of ownership while this association is more likely to be positive at higher levels of executive ownership.

Models 3 and 4 of Table A.6.1 reveal that the coefficient of ownership concentration is negative and significant at the 1% level. This result supports the hypothesis that the incentives of blockholders and minority shareholders tend to be aligned because dominant shareholders tend to adopt value maximization activities to reduce managerial discretion over the operating expenses. However, the results do not reveal any indication of entrenchment effects.

Table A.6.1 also indicates a negative effect of *NEXECOWN* and *BODSIZE* on agency costs level while the coefficient of *DIVIDEND* is positive and statistically significant at the 5% level. This result indicates that the agency cost level is lower for firms with larger board size, higher levels of outside directors' ownership and pay more dividends.

The sample is also divided into two sub-samples; the first comprises firms with high-growth opportunities and the second contains low-growth firms. The results in Table A.6.2 are different, to some extent, from those found when asset turnover is used as an inverse proxy for agency costs. For example, the effects of *EXECOWN* and *CONCENTR* are more apparent in low-growth firms than the high-growth sub-sample. These results are in line with the results of McConnell and Servae (1995) and Faccio and Lasfer (1999) that ownership structure has greater impact on firm performance in low-growth firms whereas they are in contrast with results found in the main analyses. Equally, it is evident that dividends confirm the contracting theory that dividends serve an incentive role and alleviate the agency costs of free cash flows in slow growth firms by reducing the available free cash, which may motivate managers or controlling shareholders to expropriate the minority shareholders (Smith and Warner 1979; Jensen 1986). In particular, the coefficient of *DIVIDEND* is negative and statistically significant at the 1% level. It also seems that the coefficient of *SHORTDEBT* is not significant in all regression models, suggesting a weaker role for short-term debts in alleviating the agency costs between dominant and minority shareholders.

Because the sample size used in this study is different from that in Chapter 4 and Chapter 5, the analysis is re-conducted using the same firms included only in these two chapters using both the pooled and lagged regressions and the inferences are qualitatively similar to that reported above.

6.9.2 Concern about endogeneity

As the endogeneity problem is an important concern of corporate governance studies, the lagged dependent variable, along with other independent variables, is incorporated on the right-hand side (see, Klein 1998; Weir et al. 2002; Bozec and Laurin 2008). Specifically, the dependent variable and all independent variables are measured at time *t*, except for the lagged *ASSETTURN* which is measured at time *t-1*. In general, the results of Table A.6.3 in Appendix 6.1 are qualitatively similar to those reported earlier, although they are significant at a lower level. For example, the coefficient of *CONCENTR* is not significant in all regression models. However, following the splitting of the sample into high-growth and low-growth sub-samples, the evidence provided earlier has not been changed, as the results in Table A.6.4 provide supportive evidence for both incentive-alignment and entrenchment (expropriation) hypotheses for executive ownership and ownership concentration.

6.9.3 Identity of controlling shareholders

Generally, the results of the multivariate analyses demonstrate that firms with blockholders are associated with lower agency costs in terms of lower asset turnover ratio. However, it is argued that it is not only the existence of block ownership that disciplines managerial opportunism or enhance firm value, but also the identity of those blockholders. It is found that the incentives and the disciplining ability of large shareholders are likely to vary (e.g., Thomsen et al. 2006; Andres 2008; Renneboog and Trojanowski 2007; Connelly et al. 2010). Hence, it is expected that the monitoring role of controlling shareholders is likely to vary as some large shareholders may prefer to play less monitoring or disciplining role because costly monitoring may outweigh the private benefits (Florackis and Ozkan 2009a).

In an attempt to capture the potential difference in such a role, controlling shareholders are categorized into three groups, namely, individual or managerial blockholders, state and financial institutions. In particular, *BLOCK_INDIV* is a dummy

variable that takes the value of 1 when the largest shareholder is an outside individual and zero otherwise. *BLOCK_STATE* is a dummy variable that takes the value of 1 when the largest shareholder is the state or government and zero otherwise. *BLOCK_INST* is a dummy variable that takes the value of 1 when the largest shareholder is a financial institution and zero otherwise. In Appendix 6.1, the results in Table A.6.5, in general, are similar to those reported previously and the coefficient of *BLOCK_STATE* is positive and marginally significant at the 10% level, but in column 7 of Table A.6.6 it becomes strongly significant at the 1% level for firms with low growth opportunities.

One potential interpretation of this result is that state blockholders and ownership concentration act as a substitute mechanism that alleviate the agency conflict between managers (controlling shareholders) and outside (minority) shareholders. Moreover, none of the financial institution blockholders or outside blockholders seem to have negative effects on agency cost levels. These results provide supportive evidence for the passive role of institutional shareholders. However, consistent with Franks et al. (2001) and Khan (2006), Columns 3-5 of Table A.6.6 indicates that the individual blockholders are better capable of monitoring managerial actions. These results emphasize the importance of controlling the identity of the blockholder when studying the relationships between governance, ownership and agency costs.

6.10 Summary and concluding remarks

This study investigates the relationship between ownership structure, governance mechanisms, and agency costs. To measure the agency costs, the asset turnover ratio is used in the main analyses as an inverse proxy for agency costs whereas the ratio of selling, general and administrative ratio to total sales (SG&A) is employed in the robustness check as a direct measure. The analyses are conducted using a sample of non-financial Egyptian firms over the period 2004-2007. The analysis is motivated by the rarity of studies that explore these relationships in contexts where legal protection of minority shareholders is poor and concentration of ownership is dominant. Prior studies, in general, focus their attention on the effects of managerial ownership on alleviating the agency problem between management and outside shareholders and ignore potential conflicts between controlling and minority shareholders, which is more likely to exist in highly concentrated settings. In addition to the investigation of the potential role of managerial ownership (i.e., executive ownership), this study also analyses the incentive and the disciplining roles of dominant shareholders in reducing the agency costs in light

of the presence of a set of internal corporate governance mechanisms. It also gives more attention to the potential roles of short-term debt and dividends to reduce this conflict.

Overall, the results provide evidence for the two effects, incentive-alignment and expropriation, of controlling ownership on reducing potential agency costs that result from such conflicts. Specifically, it is found that the quadratic function describes better the relationships between asset turnover ratio and the proportion of shares held by controlling shareholders. It is also found that these relationships are more pronounced in firms with high growth opportunities than in those with low growth opportunities. This is because ownership concentration is more likely to act as a substitute for poor legal protection of minority shareholders and it tends to play a crucial role in reducing information asymmetry that exists between controlling and minority shareholders. It has been shown also that the linear function explains better the relationship between executive ownership and asset turnover ratio, although the incentive-alignment and entrenchment effects are pronounced for firms with high-growth opportunities.

The results also indicate that non-executives ownership and blockholders seems to be more important for firms with fewer-growth opportunities. Most importantly, the results present short-term debt and dividends as key devices that possibly reduce the agency problem between controlling and minority shareholders. Specifically, short-term debt is more likely to alleviate the under-investment problem in high-growth firms while dividends act as a substitution for weak legal protection of minority shareholders, as well as reducing the information asymmetry that exists in these firms. Moreover, consistent with the agency theory conjecture the results indicate that the combination of CEO and chairperson positions gives CEOs greater power and control over corporate decision-making and other parties, which lead to higher agency costs.

Contrary to the recommendations of ECGC, the results indicate that the monitoring role of non-executive directors is ineffective in reducing agency costs, signifying that the mere representation of outside directors on the board does not add much to reducing the agency conflicts between dominant and minority shareholders, but it is their knowledge and skills that they may need to affectively discipline and monitor managerial actions. Arguably, there is also some hint in the data that non-executive directors who lack knowledge and experience may exacerbate such conflicts. This evidence is sufficient, to some extent, to run against calls for enhancing the disciplining and monitoring role of the board by adding more outside directors, or at least to show

that outsider-dominant boards act differently than those with more insider representation across different industries. This type of analysis, to some extent, provides new perspectives on the role of outside directors on performance or disciplining managerial actions. One such perspective is exploring the potential behaviour of boards in different information environments (Duchin et al., 2010).

As in any empirical study, a number of caveats should be noted. An important caveat is that related to the potential endogeneity among governance and ownership variables. Different methodologies are adopted in the literature to address the endogeneity problem; these include equation estimator models, such as two-stages or three-stages least squares and maximum likelihood. Although these estimators are efficient in addressing the endogeneity problem, however, they are inconsistent because they do not control for unobservable heterogeneity (Pindado and De la Torre 2006).[97] Zhou (2001) points out that a fixed-effect approach has limited power because intrafirm changes in managerial ownership are small and they are likely to be stable over time, whereas there are differences among firms. Moreover, the fixed-effects approach does not entirely eliminate time-varying omitted variables or tackle reverse causality. Even so, it is effective in controlling the unobserved heterogeneity across industries (Coles et al. 2008; Larcker and Rusticus 2010). Moreover, contrary to what is required for industry to act as an instrument, fixed-effects estimation implicitly assumes that the variation *across* industry, rather than variation *within* industry, is prone to be endogenous (Larcker and Rusticus 2010).

Another popular method for addressing endogeneity is to use some type of instrumental variables model. However, a major problem related to this estimation procedure is to find appropriate exogenous instrument variables that are correlated with endogenous variables (i.e., governance and ownership variables), but they are not correlated with the error in the simultaneous equations (Larcker et al. 2007); that is, the exogenous instrumental variables should not have direct effects on the outcome variable (i.e., the agency costs proxy). Practically, finding such instruments is challenging because the selection of instruments should be guided by an econometric theory that provides explanation regarding the relation of interest and meets the strict identification of exogeneity (Larcker and Rusticus 2010). Thus, the difficulty surrounding the choice

[97] Coles et al. (2007) argue that even using panel data estimation might not adequately address this problem in the absence of well-specified structural model.

of instruments, coupled with the absence of valid econometric theory, may lead to erroneous conclusions concerning the relations of interest, especially with a small sample such as that used in this study.[98] Larcker and Rusticus (2010) analytically demonstrate that OLS estimates exhibit better statistical properties than 2SLS when instrumental variables are weak.

Bearing the above in mind and given the relatively stability of both ownership and governance mechanisms over time found in this study, using OLS estimator and treating these variables as exogenous, therefore, is defensible.[99] It is argued that using single regression estimation models is justifiable when ownership structures are relatively stable over time (Denis and Sarin 1999; Thomsen et al. 2006). Moreover, it is difficult to separate the causal relationships using the cross-sectional data even with simultaneous equation models (Himmelberg et al. 1999; Thomsen et al. 2006). This study attempts to mitigate concerns about the endogeneity problem by using lagged independent variables as instruments, as well as incorporating the lagged value of dependent variable in the analysis. Although this approach may be to some extent effective in addressing endogeneity, it cannot entirely rule out the possibility that some governance variables are endogenously determined.[100]

A second caveat is that related to the difficulty of finding a direct measure of agency costs. Although this study follows previous studies and uses asset turnover ratio and SG&A as proxies for agency costs, these measures, however, are imperfect. For example, asset turnover ratio is subject to measurement errors which include differences in the accounting choices accorded by the GAAP, leading to differences in the level of that measure or productivity even between firms within the same industry (Ang et al. 2000; McKnight and Weir 2009). However, it is difficult to find a proxy that directly and precisely measures agency costs level and is not affected by other factors that are beyond management control (Berger and Bonaccorsi 2006).

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[98] This may also apply to a large sample size study such as that provided by Bound et al.(1995) who preset evidence about the weak instruments problem in the study of Angrist and Krueger (1991) which used over 300,000 observations.

[99] For more discussion about the usefulness and limitations of the instrumental estimation, see Stock et al. (2002), Larcker et al. (2007) and Love (2010).

[100] It is worth noting that lagging the governance and ownership variables might not reduce the endogeneity problem if both agency costs and governance are persistent over time (Henry 2010).

Chapter 7

Conclusions

The aim of this thesis has been to provide additional insights into the understanding of a number of issues relating to the evolution of ownership structure, corporate governance and earnings management in the Egyptian setting and to examine the potential influence of a number of internal and external governance mechanisms in constraining earning management and determining the levels of agency costs.

The main motivations of this thesis are the scarcity of studies that provide detailed descriptive analysis of corporate governance mechanisms and ownership structure at the firm level and the lack of agreement on the role of such mechanisms on curbing earnings management and alleviating firm agency conflicts. In addition, relatively few studies explore trade-offs among various objectives that explain accruals choices.

7.1 The findings of the thesis

Chapter 2 reveals that although several approaches have been suggested to measure earning management, the literature fails to provide a generally accepted model that provides an appropriate measure. This is because *all* measures of earnings management are noisy, imperfect and associated with a degree of measurement error.

Using a unique data set that represents a sample of non-financial listed companies during the period 2004-2007, the descriptive analyses performed in Chapter 3 reveal that corporate ownership in Egypt is similar to that found in most developing countries around the world. It is characterized by a high degree of ownership concentration, which is relatively stable over time and across industries. Families, individuals, the State, banks and financial institutions hold a significant proportion of the shares in most listed firms and they are ranked among the top five largest blockholders. The results indicate that although Egyptian boards are composed of both executives and non-executive directors, and the proportion of outside directors is reasonable, the absence of a precise definition of board independence and specific duties of board members casts a doubt on their fiduciary role as representatives of shareholders' interests. In addition, the absence of effective voting procedure that enables minority shareholders to elect their representative on the board makes board nomination opaque. Consequently, most boards are dominated by family members, close relatives and friends who may represent the interests of controlling shareholders, leading to unskilled boards. Likewise, board members from state-owned firms are commonly insiders who lack independence or

outsiders who lack experience and firm knowledge. This is likely to weaken their monitoring and disciplining governance role.

Recognizing that the reported earnings reflect the accounting choices, the assertion of Chapter 4 is that the inferences concluded from studying a single objective is likely to be inadequate to fully understand the incentives that lie behind accounting choices. Chapter 4 examined whether discretionary accruals choices can be explained by costly contracting incentives (i.e., bonus plans, debt covenants, and the political costs hypotheses) and income smoothing. To conduct the analyses, the modified Jones and performance-adjusted Jones models are used to isolate the discretionary accruals component, which was used as a proxy for capturing earnings management. Based on 442 non-financial observations over the period 2005-2007, the results of year-by-year analyses and pooled regressions estimation indicate that the costly contracting hypothesis explains little of discretionary accruals variations in the Egyptian setting. However, it has been shown that all measures of earnings management are negatively and significantly associated with measures of income smoothing variables and a small portion of the variation in magnitude of abnormal accruals is related to leverage. In particular, firms that have positive operating cash flows and/or with non-discretionary earnings above the firm prior year earnings are more likely to manipulate earnings downward by making income-decreasing choices in an attempt to keep earnings fluctuation to the minimum. In contrast, firms that have negative operating cash flows and/or whose unmanaged earnings are below earnings target tend to adopt income increasing choices. Thus, managers tend to use discretionary accruals to smooth income, when earnings are above the prior year's earnings, and tend to take an *earnings bath* when current period earnings are below the prior year's earnings.

Chapter 5 builds on the analysis of Chapter 4 to investigate the association between board monitoring mechanisms (board independence, outside members' ownership, CEO duality, and board size), audit quality and earnings management using 442 non-financial observations. Using both the absolute value of both total and current discretionary accruals, measured by the performance-adjusted modified Jones model, the empirical results show that the magnitude of discretionary accruals is lower for firms audited by high quality auditors (i.e., Big Five), firms that have large board size and those with high executive ownership. However, the results confirm that outside directors are not effective in curtailing earnings management in Egypt. Nonetheless, they become more

effective when the level of executive ownership increases; the incentives of executive and outside directors are more likely to align with minority shareholders for firms with high executive ownership. These results corroborate the complementary roles of the proportion of outside directors on the board, executive and outside directors' ownership. This result indicates that managerial ownership can serve as an effective safeguard against earnings manipulation in situations where external auditor independence might be compromised and *vice-versa*. It has been shown that indicate that audit committee independence is not an effective device to monitor earnings management even when outsider members represent a majority of the committee.

The results of signed discretionary accruals reveal that the constraining role of high quality auditors is effective for constraining both income-increasing and income-decreasing discretionary accruals, although it is more statistically significant for income-increasing choices. Additionally, the results of using the likelihood of reporting small earnings increases as alternative measures of discretionary accruals indicate that the incentive of managers to manipulate earnings upward to report small earnings increases is less likely to exist for firms audited by Big Five auditors and with higher executive ownership. Furthermore, this incentive is lower for firms with larger boards and when the positions of board chairperson and CEO are held by the same person.

Chapter 6 empirically investigates determinants of agency costs and the potential influence of ownership structure and governance mechanisms on agency costs level. Following prior studies (e.g., Ang et al. 2000; Singh and Davidson 2003), the asset turnover ratio is used in the main analyses as an inverse proxy whereas the ratio of selling, general and administrative to total sales (SG&A) is employed as a direct measure in the robustness check. The results of the empirical analyses, based on 457 observations over the period 2004-2007, reveal a significant role of managerial ownership in alleviating agency conflicts between controlling and minority shareholders, as well as alignment of the interests of managers and equity holders. The results also support the notion that agency costs decline as ownership of large shareholders increases. That is controlling shareholders are more capable of providing better monitoring and aligning their incentives with those of minority shareholders. However, beyond some level, further ownership by large shareholders is more likely to be associated with higher agency costs, reflecting the ability of large shareholders to

employ their voting rights in order to expropriate firm resources and gain private benefits that are not shared by minority shareholders.

After controlling for firm growth opportunities, the results for firms with high-growth opportunities provide evidence to support the effects of both alignment and entrenchment of executive ownership and ownership concentration. More specifically, agency costs decline as the level of managerial ownership increases up to 35.53% of ownership level. Beyond this level managers become entrenched and have sufficient power to pursue their private benefits at the expense of outside investors. In the same way, large shareholders have greater incentives and the ability to monitor managerial actions up to 63.14% of ownership level. Beyond this level, they have more power over management and they can use firm's resources to gain private benefits. There is evidence for the role of short-term debt in reducing the under-investment problem and information asymmetry between controlling and minority shareholders. The results also show that dividends are likely to serve as a substitute mechanism for inadequate legal protection of minority shareholders, implying that firms with good investment opportunities are more likely to pay higher dividends in an attempt to convey favourable information about firm's future earnings, which helps to build management reputation. However, ownership by outside directors or blockholders structure is an important determinant in reducing various forms of agency costs in slow-growth firms. Moreover, findings are also consistent with the argument of agency theory that the combination of CEO and chairperson positions leads to increased agency problems as it gives CEOs greater power and control over corporate decision-making and other parties (including outside directors).

The main conclusions of this thesis can be summarized as follows. As managers have many ways to manipulate earnings, it is costly for outsiders to entirely undo the effects of earnings management. To do so, investors would need to observe managers' actions or, at least, fully understand managers' opportunity sets and all the intricacies of earnings management. The most sophisticated investors may also be fooled by earnings management, even when managers' incentives to mislead the market are evident. Thus, the imperfection in capital markets and inability to write complete contracts might increase the agency costs. Consequently, managers of firms operating in concentrated ownership and in an environment characterized by inadequate legal protection of minority shareholders may have higher incentives to manage earnings aggressively.

Against these difficulties, corporate governance has emerged as a potential device that helps to alleviate various agency conflicts especially that which exists between controlling and minority shareholders. These governance mechanisms comprise the ownership structure (i.e., managerial ownership and ownership concentration), external auditing and capital structure (e.g., short-term debt and dividend payout ratio). The results of this thesis reveal that the effectiveness of these mechanisms is likely to vary depending on the interactions among them and/or firm characteristics (e.g., firm growth opportunities).

7.2 The contributions of the thesis

The results of the present study contribute to the existing earnings management and corporate governance literature in several ways. Firstly, most of the prior studies explore managers' responses only to a single incentive that is assumed to explain accounting choices. Thus, by studying multiple objectives in the same model, the results of this study improve our understanding of the determinants and consequences of earnings management.

Secondly, given that the emerging country setting differs significantly from that in the developed countries, inferences from studies conducted in these countries may be unwarranted and misleading when used to explain discretionary choices or test the effectiveness of corporate governance mechanisms on reducing earnings management or alleviating agency conflicts. As a result, using a new data set that reflects different features helps to shed further light on different institutional aspects of emerging countries.

Thirdly, unlike most studies that test the relationship between earnings management and an individual governance mechanism, this study examine the effectiveness and the interaction of several governance mechanisms in constraining earnings management and reducing agency costs. This study also does not ignore the incentives of outside directors for earnings management and tests whether interests of non-executive directors would align with that of minority shareholders and, thus, constrain opportunistic earnings manipulation or whether they would prefer to go with managers' incentives when managers tend to engage in such manipulation. The results also add to the auditing literature by providing evidence that high quality auditors are an

effective device for curbing earnings management even when the likelihood of exposure to litigation risk is low.

Fourthly, this study does not only contributes to the convergence debate regarding the exact type of relationship between managerial ownership and agency costs, but also sheds further light on the nature of the relationships between ownership concentration and agency costs. Furthermore, this study provides important new insights into the non-linear relationship between ownership concentration and agency costs and explores the potential effects of other instruments, such as short-term debt and dividend payout. The study also stresses the importance of evaluating the role of governance mechanisms in the light of firm characteristics such as growth opportunities.

7.3 The major limitations of the thesis

Despite the evidence documented in this thesis, the results of this study are subject to some caveats. Firstly, as in any accruals-based earnings management study, a key concern regarding the explanation of results relies on the ability of earnings management proxies to adequately capture earnings manipulation activities. Despite the use of alternative discretionary accruals models, the findings are comparatively, but not totally free of this concern. Thus, the possibility remains that measurement errors related to measures of discretionary accruals drive some of the reported results. Consequently, the inferred conclusion is likely to be contingent on the ability of these models to appropriately isolate the discretionary accruals component.

Secondly, misspecification of the accounting choices and agency costs determinants result from using crude proxies may lie behind some of the observed relationships. For example, the duality of chairperson/CEO and classifying directors into executive and non-executive directors are based on the information available in the financial reports of sample firms and that collected from the EGID. Accordingly, the reliability of this information depends upon the reliability of its sources. In addition, although this study follows previous studies and uses asset turnover ratio and SG&A as proxies for agency costs, these measures are imperfect.

Thirdly, the corporate governance variables tested in this study are treated as exogenously determined. However, it is possible that the discretionary accruals and some of those variables are endogenously determined. However, controlling for a

possible endogeneity problem falls outside the scope of this study, and this could be an issue left for future investigation.

7.4 The implications of the thesis

The results of this thesis have implications for standard setting and contribute to the ongoing argument with relation to the optimal flexibility permitted by standard setting. Studying several objectives of earnings management in the same study can help better understand the incentives of earnings management and identify standards that need to be revised as they offer the opportunity to manage earnings and allow managers to opportunistically exercise the allowed reporting latitude. It also helps to identify standards that have significant influence on enhancing financial reporting and show standards that are effective in facilitating communication with outside parties.

The results also have some implications for policy makers. For example, contrary to much of prior corporate governance reforms and the recommendations of the ECGC, the results show that the monitoring role of non-executive directors is ineffective in reducing agency costs or reducing the incidence of opportunistic earnings management. The results also reveal that audit committees composed *entirely* of outside members are not able to adequately constrain earnings management. These results oppose the conventional wisdom that greater representation of non-executive directors on the board is necessarily associated with lower agency costs and earnings management. Thus, adding more outside directors to the board is unlikely to add much to the alleviation of corporate agency conflicts, especially that existing between controlling and minority shareholders. One implication, therefore, is to draw the attention of regulators of assessing the weaknesses in their corporate governance, as well as emphasising other effective governance mechanisms that match their institutional and regulatory needs. The results also reveal that much of weaknesses related to corporate governance in emerging countries might be result from the inadequate enforcement of the law and the weak legal protection of minority shareholders. Another implication is the need for enhancing and empowering minority shareholders. This may include enacting further regulations that protect minority shareholders' rights and adopting cumulative voting, which gives minority shareholders the chance to elect members who represent their interests. One important initial step against corporate governance weaknesses in the Egyptian context is to require listed firms to implement the ECGC on a 'comply-or-explain' basis.

The relationships studied in this study are also important to enhance researchers understanding of incentives of earnings management and weaknesses inherent in earnings management models, which entail further attention and research to make an achievement in earnings management and financial reporting studies. A number of questions remain unanswered, which offer a fertile ground for further theoretical and empirical research. The conditional nature of various governance mechanisms found in this study also draws attention to the importance of the appropriateness of employed governance mechanisms to problems arising from specific settings and suggests that no one corporate governance structure fits all, connoting that the Anglo-Saxon corporate governance style may not always be the optimal to follow. Therefore, more research is needed to explore the effectiveness of other internal and external governance in non-US and UK settings. Other several potential avenues for future research can be suggested.

7.5 Avenues for future research

The results of this study provide several avenues for future research. Firstly, there is a need to further develop a generally accepted model to appropriately isolate the discretionary accruals component and/or providing alternative measure of earnings management. One potential way forward is to emphasis on greater use of specific accruals or a set of accruals in industry other than banks and insurance companies. Despite the difficulties surrounding this task, progress could still be possible by improving research designs and employing more powerful statistical techniques such as simultaneous equations and instrumental variables techniques. Also, the experimental designs can contribute to the earnings management literature by, for example, investigating the conditions under which earnings management can be seen and detected and the differences of shares prices in lights of the disclosure of the balances of potential managed items differ.

Secondly, whereas the focus of the current study is restricted to the contracting and income smoothing objectives, a more comprehensive approach is needed to include other incentives especially that related to the equity market. In the absence of a comprehensive theory of accounting choice and complexities inherent in explaining such choices, progress towards providing a comprehensive model that explains several accounting choices would be valuable. Although one focus of this thesis is to examine multiple objectives in the context of discretionary accruals analyses, there is a need for studies that examine trade-offs among multiple objectives using other accounting

choices, such as real earnings management activities. One potential extension to this work would be to model a joint determination of different accounting choices.

Thirdly, several questions also need further investigation. For example, is earnings management commonplace among firms? To what extent can managers attain multiple objectives using real earnings management compared to accrual manipulations? Would the time of real earnings manipulation differ during the year? Do managers engage in earnings management by adopting a specific accounting choice? Studies that provide answers to such questions might improve the understanding of the potential effects and implications of earnings management.

Fourthly, another interesting avenue for future research is investigating other proxies of audit quality and whether non-audit services can impair the audit quality and lead to higher discretionary accruals and the propensity to meet earnings benchmarks? Will this influence vary conditional upon other auditor characteristics, such as auditor specialization?

Fifthly, while this study covers only the period from 2004-2007, the global financial crisis has caused many economies to be adversely affected. As a result, one natural extension for this study to extend the study period to include 2008 and 2009 in order to investigate the incentives to manage the reported earnings, which are likely to differ in the pre- and post- financial crisis. This analysis will enhance the understanding of earnings management incentives during crisis periods.

Finally, board characteristics investigated in this study are only some dimensions of several characteristics that can be examined. For example, since the board independence is not a comprehensive measure of the effectiveness of the board, it might be interesting to examine other demographic characteristics that might determine this effectiveness, such as age, race, gender, tenure and education. In addition, research also can investigate influences of other characteristics of audit committee, such as the accounting and financial expertise of member(s), the number of meetings, and the busyness of audit committee members who serve on more boards, in constraining earnings management. A comprehensive measure is needed also to adequately capture influences of several internal and external governance mechanisms and the quality of the board of directors. Possibly, this can be done by combining different corporate governance attributes into a summary score that might overcome multicollinearity problem that may arise when several corporate governance mechanisms and control

variables are independently incorporated in empirical models. This can be done, for example, by using principle component analysis that does not require the ex ante determination of the weights and does not assume that corporate governance attributes contribute equally to the corporate governance proxy.

Appendices

Appendix 4.1

Table A.4.1: Results of coefficients estimation using the total discretionary modified Jones and performance-adjusted models

Panel A: The modified Jones model

$$[ACC_{it}/TA_{it-1}] = \alpha + \beta_1(\Delta REV_{it} - \Delta REC_{it}/TA_{it-1}) + \beta_2(GPPE_{it}/TA_{it-1}) + \beta_j IndustryDum + \varepsilon_{it,}$$

	Predicted sign	years			All years
		2005	2006	2007	
Constant	+/-	0.017	0.082**	0.059**	0.059***
		(0.92)	(3.32)	(3.13)	(4.16)
(ΔREV-ΔREC)/TA$_{it-1}$	+	0.040***	0.022	0.022	0.039***
		(4.51)	(0.46)	(0.32)	(4.41)
GPPE/TA$_{it-1}$	-	-0.051*	-0.091*	-0.065**	-0.066***
		(-2.04)	(-2.58)	(-2.62)	(-4.17)
Number of observations		150	145	147	442
R^2		0.2065	0.1368	0.1235	0.1360
adj. R^2		0.1370	0.0583	0.0450	0.1077
F- statistic		11.79***	3.317***	3.491***	10.86***

Panel B: The performance-adjusted Jones model

$$[ACC_{it}/TA_{it-1}] = \alpha + \beta_1(\Delta REV_{it} - \Delta REC_{it}/TA_{it-1}) + \beta_2(GPPE_{it}/TA_{it-1}) + \beta_3 ROA_{it-1} + \beta_j IndustryDum + \varepsilon_{it,}$$

	Predicted sign	years			All years
		2005	2006	2007	
Constant	+/-	-0.0034	0.040	0.052**	0.038*
		(-0.19)	(1.90)	(2.74)	(2.43)
(ΔREV-ΔREC)/TA$_{it-1}$	+	0.040***	0.013	-0.019	0.037***
		(5.14)	(0.33)	(-0.01)	(4.96)
GPPE/TA$_{it-1}$	-	-0.059**	-0.082**	-0.0854***	-0.077***
		(-2.68)	(-2.87)	(-3.58)	(-5.10)
ROA $_{it-1}$	+	0.354***	0.409***	0.189**	0.253***
		(4.85)	(3.52)	(2.64)	(3.43)
Number of observations		150	145	147	442
R^2		0.2998	0.2604	0.2036	0.2207
adj. R^2		0.2329	0.1870	0.1258	0.1932
F- statistic		19.59***	6.962***	6.011***	13.32***

Notes*: ACC* is the total accruals; *TA* is the book value of total assets; *Δ REV* is change in net revenues, measured by net revenue in the current year less net revenue in prior year; Δ*REC* change in receivables, measured by net receivable in the current year less net receivable in prior year; *GPPE* is gross property plant and equipment; *i* firm indicator; and *t* time indicator. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.2: Results of coefficients estimation using the working capital modified Jones and performance-adjusted models

Panel A: The modified Jones model

$$[ACC_{it}/TA_{it-1}] = \alpha + \beta_1(\Delta REV_{it} - \Delta REC_{it}/TA_{it-1}) + \beta_j IndustryDum + \varepsilon_{it,}$$

	Predicted sign	years			All years
		2005	2006	2007	
Constant	+/-	-0.050***	-0.006	-0.010	-0.0145
		(-5.66)	(-0.58)	(-1.01)	(-1.49)
(ΔREV-ΔREC)/TA$_{it-1}$	+	0.037***	-0.003	-0.038	0.0300***
		(4.43)	(-0.06)	(-0.57)	(3.58)
Number of observations		150	145	147	442
R^2		0.1538	0.1003	0.0893	0.1016
adj. R^2		0.0864	0.0259	0.0151	0.0743
F-statistic		19.59***	0.0039***	0.322***	8.039***

Panel B: The performance-adjusted Jones model

$$[ACC_{it}/TA_{it-1}] = \alpha + \beta_1(\Delta REV_{it} - \Delta REC_{it}/TA_{it-1}) + \beta_2 ROA_{it-1} + \beta_j IndustryDum + \varepsilon_{it,}$$

	Predicted sign	years			All years
		2005	2006	2007	
Constant	+/-	-0.072***	-0.042***	-0.022	-0.037**
		(-6.40)	(-3.37)	(-1.72)	(-2.87)
(ΔREV-ΔREC)/TA$_{it-1}$	+	0.037***	-0.011	-0.056	0.029**
		(4.85)	(-0.25)	(-0.83)	(3.31)
ROA $_{it-1}$	+	0.288**	0.411**	0.106	0.191*
		(2.88)	(3.01)	(1.22)	(2.08)
Number of observations		150	145	147	442
R^2		0.2079	0.2125	0.1142	0.1451
adj. R^2		0.1385	0.1409	0.0348	0.1170
F- statistic		16.23***	4.668***	0.906***	6.172***

Notes*: ACC* is the total accruals; *TA* is the book value of total assets; *Δ REV* is change in net revenues, measured by net revenue in the current year less net revenue in prior year; Δ*REC* change in receivables, measured by net receivable in the current year less net receivable in prior year; *GPPE* is gross property plant and equipment; *i* firm indicator; and *t* time indicator. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.3: Cross sectional regressions using discretionary current accruals as measured by the modified Jones model (MJCDA)

	Pred.	2005			2006			2007		
	Sign	M 1	M 2	M 3	M 1	M 2	M 3	M 1	M 2	M 3
Constant	+/-	-0.000	-0.031	0.005	-0.005	-0.003	-0.004	-0.013	-0.114	0.031
		(-0.02)	(-0.57)	(0.08)	(-0.24)	(-0.04)	(-0.05)	(-0.84)	(-1.40)	(0.34)
EXECOWN	-		0.006	0.010		0.014	0.010		0.002	0.010
			(0.29)	(0.49)		(0.53)	(0.42)		(0.09)	(0.36)
LEV	+		-0.041***	-0.060***		-0.104**	-0.089**		-0.070	-0.010
			(-2.83)	(-3.46)		(-2.58)	(-2.20)		(-1.43)	(-0.21)
FSIZE	-		0.008*	0.003		0.006	0.006		0.016***	0.004
			(1.77)	(0.68)		(1.06)	(0.92)		(2.65)	(0.56)
ΔCFO	-		-0.295***	-0.196***		-0.400***	-0.333***		-0.128	-0.155*
			(-5.09)	(-3.35)		(-5.60)	(-4.49)		(-1.50)	(-1.95)
SMOOTH	-		-0.077***	-0.071***		-0.096***	-0.097***		-0.117***	-0.119***
			(-5.68)	(-5.16)		(-4.97)	(-4.69)		(-7.06)	(-7.71)
ASSINT	+	6.431*		1.970	6.877		1.273	6.691***		5.258*
		(1.79)		(0.49)	(1.17)		(0.28)	(3.76)		(1.98)
CFOL	+	0.086***		0.064***	0.156***		0.039	0.043		-0.031
		(2.87)		(2.78)	(4.62)		(1.33)	(1.25)		(-0.93)
CFOH	-	-0.147***		-0.085***	-0.091***		-0.017	-0.083**		-0.034
		(-3.95)		(-3.23)	(-2.96)		(-0.60)	(-2.47)		(-1.17)
EARNL	-	-0.102***		-0.056**	-0.120***		-0.068***	-0.124***		-0.122***
		(-4.07)		(-2.61)	(-4.30)		(-4.02)	(-3.13)		(-3.38)
EARNH	+	0.064*		0.039	-0.007		-0.014	0.040		0.037
		(1.68)		(1.25)	(-0.15)		(-0.37)	(0.94)		(0.87)
MTBOOK	+	0.000		0.006	0.001		0.005	0.012		0.005
		(0.00)		(1.02)	(0.11)		(0.62)	(1.48)		(0.92)
EGX30	+	0.029		0.033	0.033		0.005	0.005		0.007
		(1.23)		(1.60)	(0.77)		(0.19)	(0.17)		(0.26)
Industry Dummies?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		150	150	150	145	145	145	147	147	147
R^2		0.3469	0.4929	0.6121	0.2659	0.5870	0.6173	0.1729	0.3705	0.4785
adj. R^2		0.2627	0.4361	0.5449	0.1676	0.5389	0.5483	0.0639	0.2984	0.3859

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.4: Cross sectional regressions using discretionary current accruals as measured by the performance-adjusted Jones model (PACDA)

	Pred.	2005			2006			2007		
	Sign	M 1	M 2	M 3	M 1	M 2	M 3	M 1	M 2	M 3
Constant	+/-	-0.005	0.003	-0.011	0.005	0.073	0.047	-0.012	-0.110	0.019
		(-0.38)	(0.05)	(-0.15)	(0.31)	(1.09)	(0.57)	(-0.77)	(-1.35)	(0.22)
EXECOWN	-		0.002	0.010		0.010	0.004		0.005	0.010
			(0.10)	(0.52)		(0.45)	(0.17)		(0.21)	(0.36)
LEV	+		0.013	-0.019		-0.004	-0.038		-0.033	0.014
			(0.96)	(-1.17)		(-0.10)	(-0.89)		(-0.70)	(0.27)
FSIZE	-		0.003	0.004		-0.002	0.001		0.014**	0.003
			(0.75)	(0.66)		(-0.36)	(0.13)		(2.33)	(0.50)
ΔCFO	-		-0.296***	-0.171***		-0.410***	-0.303***		-0.195**	-0.204**
			(-4.96)	(-2.99)		(-5.59)	(-4.95)		(-2.16)	(-2.29)
SMOOTH	-		-0.062***	-0.057***		-0.080***	-0.075***		-0.091***	-0.091***
			(-4.44)	(-4.07)		(-4.47)	(-4.14)		(-5.15)	(-5.09)
ASSINT	+	4.913		0.774	5.129		0.510	7.033***		5.782**
		(1.45)		(0.20)	(1.09)		(0.12)	(4.24)		(2.45)
CFOL	+	0.100***		0.075***	0.175***		0.068**	0.055*		-0.018
		(3.97)		(3.22)	(5.67)		(2.55)	(1.66)		(-0.50)
CFOH	-	-0.162***		-0.108***	-0.122***		-0.058**	-0.096***		-0.047*
		(-4.97)		(-4.49)	(-4.95)		(-2.61)	(-3.02)		(-1.71)
EARNL	-	-0.054***		-0.023	-0.066***		-0.026	-0.107***		-0.107***
		(-2.66)		(-1.12)	(-2.90)		(-1.52)	(-2.70)		(-2.84)
EARNH	+	0.045		0.021	-0.029		-0.024	0.037		0.035
		(1.23)		(0.66)	(-0.72)		(-0.70)	(0.89)		(0.83)
MTBOOK	+	0.002		0.006	-0.005		-0.002	0.009		0.003
		(0.41)		(1.06)	(-0.66)		(-0.25)	(1.23)		(0.57)
EGX30	+	0.026		0.029	0.030		0.010	0.014		0.019
		(1.22)		(1.44)	(0.89)		(0.43)	(0.53)		(0.73)
Industry Dummies?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		150	150	145	145	145	147	147	147	147
R^2		0.3787	0.4150	0.5563	0.3788	0.6032	0.6452	0.1804	0.3241	0.4246
adj. R^2		0.2987	0.3496	0.4794	0.2956	0.5571	0.5813	0.0724	0.2467	0.3225

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.5: Pooled regressions using discretionary current accruals as measured by the modified Jones and performance-adjusted Jones models

	Pred. Sign	MJCDA			PACDA		
		M 2	M 1	M 3	M 2	M 1	M 3
Constant	+/-	-0.006	-0.055	0.010	-0.005	-0.013	0.013
		(-0.50)	(-1.31)	(0.20)	(-0.46)	(-0.30)	(0.28)
EXECOWN	-		0.004	-0.000		0.002	-0.005
			(0.31)	(-0.02)		(0.20)	(-0.46)
LEV	+		-0.056***	-0.044***		0.005	-0.003
			(-3.12)	(-2.70)		(0.31)	(-0.16)
FSIZE	-		-0.010***	-0.004*		0.005*	0.003
			(-3.20)	(-1.17)		(1.70)	(0.78)
ΔCFO	-		-0.269***	-0.227***		-0.289***	-0.216***
			(-7.17)	(-5.95)		(-7.90)	(-6.04)
SMOOTH	-		-0.095***	-0.090***		-0.078***	-0.071***
			(-10.83)	(-10.47)		(-9.00)	(-8.28)
ASSINT	+	7.143***		4.252*	6.996***		4.520*
		(3.81)		(1.77)	(3.78)		(1.92)
CFOL	+	0.093***		0.029*	0.108***		0.046***
		(4.81)		(1.73)	(5.95)		(2.70)
CFOH	-	-0.103***		-0.041**	-0.121***		-0.065***
		(-5.21)		(-2.55)	(-6.85)		(-4.51)
EARNL	-	-0.112***		-0.087***	-0.074***		-0.059***
		(-6.43)		(-5.78)	(-4.43)		(-3.60)
EARNH	+	0.031		0.021	0.017		0.008
		(1.34)		(0.98)	(0.74)		(0.39)
MTBOOK	+	0.005		0.005	0.003		0.003
		(0.99)		(1.53)	(0.74)		(0.87)
EGX30	+	0.021		0.018	0.023		0.021
		(1.18)		(1.20)	(1.48)		(1.52)
Industry dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		442	442	442	442	442	442
R^2		0.2231	0.4525	0.5184	0.2592	0.4147	0.4797
adj. R^2		0.1881	0.4306	0.4907	0.2259	0.3912	0.4497

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.6: Piecewise regressions and non-linear test for managerial ownership

	Pred. Sign	MJTDA	PATDA	MJTDA	PATDA
Constant	+/-	0.011	0.019	0.021	0.024
		(0.25)	(0.42)	(0.46)	(0.56)
EXECOWNL	+	0.543	0.358		
		(1.09)	(0.76)		
EXECOWNM	-	-0.113	-0.066		
		(-0.75)	(-0.46)		
EXECOWNH	+	0.007	-0.001		
		(0.26)	(-0.05)		
EXECOWN	-			0.059	0.050
				(1.27)	(1.13)
$EXECOWN^2$	+			-0.058	-0.053
				(-1.09)	(-1.07)
LEV	+	-0.044***	0.001	-0.043***	0.002
		(-2.88)	(0.08)	(-2.78)	(0.12)
FSIZE	-	0.003	0.002	0.003	0.001
		(1.01)	(0.50)	(0.86)	(0.41)
ΔCFO	-	-0.230***	-0.219***	-0.229***	-0.219***
		(-6.25)	(-6.33)	(-6.15)	(-6.27)
SMOOTH	-	-0.089***	-0.068***	-0.090***	-0.068***
		(-10.32)	(-8.01)	(-10.47)	(-8.14)
ASSINT	+	4.516**	4.695**	4.097**	4.404**
		(2.29)	(2.45)	(2.17)	(2.42)
CFOL	+	0.030*	0.049***	0.030*	0.049***
		(1.87)	(3.00)	(1.84)	(2.98)
CFOH	-	-0.031**	-0.057***	-0.031**	-0.057***
		(-2.11)	(-4.28)	(-2.05)	(-4.25)
EARNL	-	-0.094***	-0.063***	-0.094***	-0.063***
		(-6.67)	(-4.16)	(-6.76)	(-4.19)
EARNH	+	0.029	0.015	0.028	0.014
		(1.37)	(0.70)	(1.36)	(0.69)
MTBOOK	+	0.006	0.003	0.005	0.003
		(1.63)	(0.88)	(1.53)	(0.82)
EGX30	+	0.019	0.023*	0.018	0.022
		(1.31)	(1.69)	(1.22)	(1.63)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		442	442	442	442
R^2		0.5366	0.4949	0.5354	0.4946
adj. R^2		0.5076	0.4633	0.5075	0.4643

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.7: Regressions including prior year total and discretionary accruals

Panel A: prior year total and discretionary accruals					
	Pred. Sign	Lagged total accruals		Lagged discretionary accruals	
		MJTDA	PATDA	MJTDA	PATDA
Constant	+/-	0.129*	0.116*	0.125*	0.120*
		(1.90)	(1.75)	(1.78)	(1.78)
EXECOWN	-	0.026	0.012	0.026	0.011
		(1.48)	(0.74)	(1.50)	(0.66)
LEV	+	-0.036	0.012	-0.032	0.008
		(-1.12)	(0.37)	(-0.93)	(0.24)
FSIZE	-	-0.009	-0.008	-0.009	-0.009*
		(-1.63)	(-1.52)	(-1.62)	(-1.66)
ΔCFO	-	-0.470***	-0.401***	-0.445***	-0.387***
		(-8.69)	(-8.11)	(-8.44)	(-7.89)
SMOOTH	-	-0.047***	-0.036***	-0.050***	-0.042***
		(-3.50)	(-2.72)	(-3.69)	(-3.12)
LAGAC	-	-0.059***	-0.041***		
		(-5.64)	(-3.77)		
LAGDA	-			-0.045***	-0.033***
				(-4.00)	(-3.15)
ASSINT	+	6.457***	6.515***	5.647***	6.181***
		(4.12)	(4.43)	(3.39)	(4.11)
CFOL	+	0.031	0.051**	0.038*	0.054**
		(1.39)	(2.23)	(1.69)	(2.37)
CFOH	-	-0.008	-0.044**	-0.022	-0.051***
		(-0.39)	(-2.35)	(-1.09)	(-2.70)
EARNL	-	-0.085***	-0.064***	-0.081***	-0.065***
		(-3.92)	(-2.82)	(-3.64)	(-2.91)
EARNH	+	0.045	0.026	0.048	0.030
		(1.56)	(0.90)	(1.57)	(1.00)
MTBOOK	+	-0.001	-0.004	0.001	-0.001
		(-0.24)	(-0.81)	(0.20)	(-0.20)
EGX30	+	0.005	0.010	0.009	0.014
		(0.28)	(0.57)	(0.50)	(0.77)
Industry Dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		280	280	280	280
R^2		0.4954	0.4559	0.4707	0.4472
adj. R^2		0.4479	0.4046	0.4209	0.3952

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.7: (continued)

Panel B: prior year discretionary accruals and interaction terms					
	Pred. Sign	MJTDA		PATDA	
		M1	M2	M1	M2
Constant	+/-	0.046	0.059	0.035	0.046
		(0.81)	(0.92)	(0.61)	(0.70)
EXECOWN	-	0.027	0.022	0.020	0.020
		(1.56)	(1.35)	(1.15)	(1.12)
LEV	+	-0.041	-0.023	-0.014	-0.0029
		(-1.41)	(-0.78)	(-0.49)	(-0.10)
FSIZE	-	-0.0058	-0.0070	-0.0047	-0.0054
		(-1.30)	(-1.31)	(-1.07)	(-1.00)
ΔCFO	-	-0.57***	-0.56***	-0.56***	-0.52***
		(-9.77)	(-10.13)	(-8.74)	(-7.89)
SMOOTH	-	-0.052***	-0.038***	-0.038***	-0.029**
		(-4.94)	(-3.05)	(-3.70)	(-2.33)
LAGDAC	-	0.021*	0.025**	0.027**	0.029**
		(1.70)	(2.17)	(2.06)	(2.21)
EXECOWN*LAGDAC	?	-0.0011	0.14	0.018	0.0012
		(-0.00)	(0.59)	(0.54)	(0.04)
LEV*LAGDAC	?	0.26	0.17	-0.017	-0.082
		(1.06)	(0.74)	(-0.05)	(-0.27)
FSIZE*LAGDAC	?	0.039***	0.043***	0.043***	0.046***
		(3.24)	(3.81)	(3.36)	(3.76)
ΔCFO *LAGDAC	?	0.14	0.025	0.15	0.11
		(0.78)	(0.15)	(0.66)	(0.49)
SMOOTH*LAGDAC	?	-0.055	-0.078	-0.057	-0.11
		(-0.35)	(-0.52)	(-0.36)	(-0.70)
ASSINT	+		5.38***		5.66***
			(3.47)		(3.65)
CFOL	+		0.031		0.032
			(1.37)		(1.37)
CFOH	-		0.013		-0.0099
			(0.66)		(-0.50)
EARNL	-		-0.079***		-0.067***
			(-3.74)		(-2.94)
EARNH	+		0.034		0.025
			(1.40)		(1.03)
MTBOOK	+		0.0019		-0.00022
			(0.48)		(-0.05)
EGX30	+		-0.014		-0.011
			(-0.84)		(-0.63)
Industry Dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		280	280	280	280
R^2		0.5325	0.5877	0.4957	0.5383
adj. R^2		0.4925	0.5398	0.4525	0.4848

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.8: Nonlinear tests for the firm size

		MJTDA		PATDA	
	Pred. Sign	M1	M2	M3	M4
Constant	+/-	-0.126	-0.373*	-0.107	-0.287
		(-0.64)	(-1.70)	(-0.50)	(-1.22)
EXECOWN	-	0.013	0.013	0.012	0.007
		(0.95)	(0.95)	(0.94)	(0.58)
LEV	+	-0.056***	-0.038**	0.010	0.006
		(-3.19)	(-2.52)	(0.66)	(0.39)
FSIZE	+	0.022	0.068*	0.021	0.052
		(0.73)	(1.94)	(0.64)	(1.41)
$FSIZE^2$	-	-0.000	-0.003*	-0.001	-0.002
		(-0.42)	(-1.88)	(-0.52)	(-1.41)
ΔCFO	-	-0.261***	-0.226***	-0.285***	-0.217***
		(-7.28)	(-6.11)	(-8.20)	(-6.31)
SMOOTH	-	-0.095***	-0.090***	-0.075***	-0.068***
		(-10.86)	(-10.59)	(-8.98)	(-8.23)
ASSINT	+		4.239**		4.512**
			(2.08)		(2.28)
CFOL	+		0.029*		0.049***
			(1.80)		(2.96)
CFOH	-		-0.033**		-0.058***
			(-2.16)		(-4.35)
EARNL	-		-0.095***		-0.064***
			(-6.78)		(-4.20)
EARNH	+		0.046**		0.028
			(2.00)		(1.24)
MTBOOK	+		0.005		0.003
			(1.54)		(0.82)
EGX30	+		0.021		0.024*
			(1.39)		(1.77)
Industry Dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		442	442	442	442
R^2		0.4587	0.5380	0.4244	0.4963
adj. R^2		0.4370	0.5114	0.4013	0.4673

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.4.9: Regressions exclusive FSIZE and using FSIZE2

	Pred. Sign	MJTDA	PATDA	MJTDA	PATDA
Constant	+/-	0.058***	0.042***	0.036	0.044
		(5.45)	(3.92)	(0.96)	(1.15)
EXECOWN	-	0.010	0.005	0.011	0.005
		(0.78)	(0.42)	(0.83)	(0.41)
LEV	+	-0.039***	0.004	-0.040***	0.004
		(-2.61)	(0.28)	(-2.66)	(0.28)
FSIZE2	-			0.002	-0.000
				(0.61)	(-0.04)
ΔCFO	-	-0.231***	-0.219***	-0.232***	-0.219***
		(-6.10)	(-6.24)	(-6.10)	(-6.22)
SMOOTH	-	-0.090***	-0.068***	-0.089***	-0.068***
		(-10.42)	(-8.10)	(-10.39)	(-8.05)
ASSINT	+	4.062**	4.455**	4.060**	4.455**
		(2.12)	(2.39)	(2.10)	(2.39)
CFOL	+	0.028*	0.048***	0.029*	0.048***
		(1.71)	(2.92)	(1.77)	(2.91)
CFOH	-	-0.031**	-0.057***	-0.031**	-0.057***
		(-2.06)	(-4.25)	(-2.05)	(-4.25)
EARNL	-	-0.096***	-0.064***	-0.093***	-0.064***
		(-6.82)	(-4.21)	(-6.38)	(-4.04)
EARNH	+	0.035*	0.017	0.031	0.018
		(1.88)	(0.91)	(1.50)	(0.86)
MTBOOK	+	0.005	0.003	0.005	0.003
		(1.53)	(0.81)	(1.49)	(0.82)
EGX30	+	0.021	0.023*	0.020	0.023*
		(1.44)	(1.81)	(1.36)	(1.78)
Industry dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		442	442	442	442
R^2		0.5336	0.4935	0.5342	0.4935
adj. R^2		0.5080	0.4657	0.5074	0.4644

Notes*:* Definitions for all variables are provided in Table 4.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Appendix 5.1

Table A.5.1: Regressions using the modified Jones model and transformed discretionary accruals

Panel A: Modified Jones model							
	Pred.			EXECOWN ≥ 0.05		EXECOWN ≥ 0.10	
	Sign	MJTDA	MJCDA	MJTDA	MJCDA	MJTDA	MJCDA
Constant	+/-	0.123***	0.123***	0.301**	0.279**	0.203**	0.184*
		(2.97)	(2.93)	(2.55)	(2.40)	(2.16)	(1.94)
NEXECD	-	-0.009	-0.001	-0.067	-0.060	-0.082**	-0.077*
		(-0.51)	(-0.03)	(-1.48)	(-1.34)	(-2.02)	(-1.87)
BODSIZE	+/-	-0.003**	-0.003**	0.011**	0.010**	0.012***	0.011***
		(-2.17)	(-2.44)	(2.51)	(2.45)	(3.23)	(3.26)
CEODUAL	+/-	-0.012*	-0.012*	-0.017	-0.010	-0.015	-0.008
		(-1.69)	(-1.67)	(-0.89)	(-0.51)	(-0.85)	(-0.43)
NEXECOWN	-	-0.006	0.008	-0.153***	-0.110**	-0.134***	-0.091*
		(-0.16)	(0.22)	(-2.99)	(-2.12)	(-2.82)	(-1.89)
EXECOWN	-	-0.030**	-0.035**				
		(-2.34)	(-2.53)				
AUDCOM	-	-0.003	-0.003	-0.021	-0.021	-0.011	-0.011
		(-0.37)	(-0.40)	(-1.25)	(-1.21)	(-0.78)	(-0.73)
BIG5	-	-0.021***	-0.020***	-0.001	0.005	-0.023	-0.016
		(-2.94)	(-2.67)	(-0.05)	(0.21)	(-0.99)	(-0.67)
INSTOWN	-	0.011	0.007	-0.080**	-0.105***	-0.030	-0.056
		(0.71)	(0.45)	(-2.15)	(-3.00)	(-0.76)	(-1.48)
AUDTEN	-	-0.018*	-0.021**	-0.026	-0.025	-0.017	-0.016
		(-1.76)	(-2.00)	(-1.13)	(-1.09)	(-0.69)	(-0.65)
LEV	+/-	-0.012	-0.004	-0.040	0.000	-0.040	0.001
		(-0.74)	(-0.26)	(-0.95)	(0.00)	(-1.00)	(0.01)
FSIZE	-	0.001	0.001	-0.014*	-0.014*	-0.009	-0.008
		(0.38)	(0.41)	(-1.88)	(-1.83)	(-1.44)	(-1.37)
ΔCFO	-	0.148***	0.148***	0.021	0.013	0.052	0.046
		(2.80)	(2.73)	(0.45)	(0.30)	(1.24)	(1.14)
SMOOTH	-	-0.028***	-0.032***	-0.030**	-0.036***	-0.031**	-0.036**
		(-3.89)	(-4.45)	(-2.48)	(-2.79)	(-2.30)	(-2.54)
CFO	-	-0.181***	-0.153**	0.037	0.097	-0.056	0.006
		(-3.09)	(-2.58)	(0.37)	(0.97)	(-0.53)	(0.06)
ASSINT	+	-1.755	-2.016	-7.693***	-8.700***	-6.219***	-7.310***
		(-1.44)	(-1.61)	(-2.95)	(-3.41)	(-2.89)	(-3.45)
ABSNI	+	0.281***	0.271***	0.267*	0.264*	0.349**	0.343**
		(4.61)	(4.47)	(1.96)	(1.77)	(2.56)	(2.24)
LOSS	-	-0.005	-0.009	-0.003	0.004	-0.017	-0.009
		(-0.44)	(-0.80)	(-0.13)	(0.19)	(-0.76)	(-0.40)
MTBOOK	+	0.006*	0.005	-0.003	-0.006	-0.000	-0.003
		(1.75)	(1.60)	(-0.58)	(-0.97)	(-0.02)	(-0.44)
EGX30	+	0.004	0.009	-0.016	-0.016	-0.018	-0.019
		(0.40)	(0.86)	(-0.66)	(-0.67)	(-0.82)	(-0.82)
Industries dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		442	442	116	116	108	108
R^2		0.2803	0.2771	0.4136	0.3931	0.5306	0.5000
adj. R^2		0.2259	0.2225	0.2158	0.1885	0.3561	0.3141

Table A.5.1: (continued)

Panel B: Square root of discretionary accruals							
	Pred.			EXECOWN ≥ 0.05		EXECOWN ≥ 0.10	
	Sign	PATDA	PACDA	PATDA	PACDA	PATDA	PACDA
Constant	+/-	0.369***	0.350***	0.723***	0.627***	0.553***	0.458**
		(5.27)	(5.01)	(3.41)	(2.93)	(2.95)	(2.39)
NEXECD	-	-0.018	-0.007	-0.170**	-0.150*	-0.198**	-0.181**
		(-0.58)	(-0.21)	(-2.03)	(-1.82)	(-2.55)	(-2.35)
BODSIZE	+/-	-0.005**	-0.005**	0.022***	0.022***	0.023***	0.023***
		(-2.02)	(-2.14)	(2.78)	(2.82)	(3.49)	(3.65)
CEODUAL	+/-	-0.020	-0.015	-0.029	-0.009	-0.024	-0.004
		(-1.58)	(-1.25)	(-0.87)	(-0.26)	(-0.81)	(-0.14)
NEXECOWN	-	-0.033	0.008	-0.281***	-0.176*	-0.251**	-0.146
		(-0.49)	(0.12)	(-2.75)	(-1.74)	(-2.62)	(-1.55)
EXECOWN	-	-0.038	-0.058**				
		(-1.59)	(-2.26)				
AUDCOM	-	-0.009	-0.010	-0.026	-0.035	-0.006	-0.015
		(-0.72)	(-0.81)	(-0.80)	(-1.09)	(-0.21)	(-0.53)
BIG5	-	-0.032***	-0.032**	-0.004	-0.005	-0.043	-0.042
		(-2.60)	(-2.59)	(-0.11)	(-0.12)	(-1.14)	(-1.09)
INSTOWN	-	0.013	0.006	-0.127*	-0.180***	-0.025	-0.082
		(0.49)	(0.21)	(-1.87)	(-2.76)	(-0.34)	(-1.12)
AUDTEN	-	-0.034*	-0.038**	-0.050	-0.045	-0.033	-0.028
		(-1.83)	(-2.16)	(-1.20)	(-1.10)	(-0.76)	(-0.65)
LEV	+/-	-0.004	0.011	-0.033	0.027	-0.022	0.038
		(-0.15)	(0.42)	(-0.42)	(0.29)	(-0.29)	(0.42)
FSIZE	-	-0.001	0.001	-0.030**	-0.025*	-0.020*	-0.015
		(-0.13)	(0.21)	(-2.21)	(-1.84)	(-1.68)	(-1.26)
ΔCFO	-	0.195***	0.204***	0.033	0.071	0.088	0.132*
		(3.07)	(3.35)	(0.39)	(0.86)	(1.13)	(1.80)
SMOOTH	-	-0.051***	-0.062***	-0.051**	-0.067**	-0.058**	-0.073***
		(-4.05)	(-5.12)	(-2.03)	(-2.60)	(-2.17)	(-2.65)
CFO	-	-0.191**	-0.153**	0.100	0.166	-0.013	0.051
		(-2.38)	(-1.97)	(0.59)	(0.96)	(-0.07)	(0.29)
ASSINT	+	-2.080	-2.349	-11.261***	-12.663***	-9.040***	-10.511***
		(-1.02)	(-1.14)	(-2.76)	(-3.20)	(-2.68)	(-3.24)
ABSNI	+	0.403***	0.384***	0.364*	0.381	0.476**	0.495**
		(4.85)	(4.90)	(1.75)	(1.63)	(2.29)	(2.05)
LOSS	-	-0.006	-0.017	-0.027	-0.011	-0.055	-0.038
		(-0.35)	(-0.89)	(-0.58)	(-0.22)	(-1.22)	(-0.78)
MTBOOK	+	0.008	0.008	-0.008	-0.010	-0.002	-0.004
		(1.54)	(1.50)	(-0.75)	(-0.87)	(-0.19)	(-0.33)
EGX30	+	0.003	0.012	-0.013	-0.006	-0.016	-0.011
		(0.13)	(0.70)	(-0.27)	(-0.15)	(-0.36)	(-0.26)
Industries dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Year dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		442	442	116	116	108	108
R^2		0.2377	0.2511	0.3689	0.3695	0.4788	0.4745
adj. R^2		0.1801	0.1944	0.1561	0.1569	0.2851	0.2791

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.5.2: Regressions of non-linearity of executive equity ownership

	Pred. Sign	PATDA		PACDA	
		M1	M2	M1	M2
Constant	+/-	0.115***	0.114***	0.121***	0.119***
		(2.93)	(2.89)	(2.98)	(2.93)
NEXECD	-	-0.000	0.000	0.004	0.004
		(-0.03)	(0.00)	(0.20)	(0.24)
BODSIZE	+/-	-0.003**	-0.003**	-0.003***	-0.003***
		(-2.37)	(-2.36)	(-2.62)	(-2.64)
CEODUAL	+/-	-0.011	-0.011	-0.012*	-0.012*
		(-1.57)	(-1.57)	(-1.66)	(-1.66)
NEXECOWN	-	-0.005	0.001	0.001	0.012
		(-0.14)	(0.02)	(0.02)	(0.26)
EXECOWN	-	-0.032**	-0.046	-0.038***	-0.064
		(-2.58)	(-0.99)	(-2.89)	(-1.36)
$EXECOWN^2$	+		0.016		0.030
			(0.33)		(0.60)
AUDCOM	-	0.002	0.003	0.003	0.003
		(0.31)	(0.33)	(0.38)	(0.42)
BIG5	-	-0.027***	-0.028***	-0.027***	-0.027***
		(-3.82)	(-3.77)	(-3.66)	(-3.65)
INSTOWN	-	0.009	0.009	0.005	0.005
		(0.64)	(0.63)	(0.35)	(0.34)
AUDTEN	-	-0.021**	-0.021**	-0.023**	-0.024**
		(-2.06)	(-2.06)	(-2.21)	(-2.22)
LEV	+/-	-0.028*	-0.027*	-0.020	-0.019
		(-1.84)	(-1.79)	(-1.23)	(-1.14)
FSIZE	-	0.002	0.002	0.002	0.002
		(0.78)	(0.80)	(0.72)	(0.77)
ΔCFO	-	0.129***	0.128***	0.128**	0.128**
		(2.66)	(2.67)	(2.57)	(2.58)
SMOOTH	-	-0.033***	-0.033***	-0.036***	-0.036***
		(-4.71)	(-4.71)	(-4.90)	(-4.89)
CFO	-	-0.102*	-0.102*	-0.083	-0.083
		(-1.83)	(-1.83)	(-1.43)	(-1.43)
ASSINT	+	-1.933*	-1.904*	-1.585	-1.532
		(-1.71)	(-1.66)	(-1.36)	(-1.30)
ABSNI	+	0.190***	0.190***	0.177***	0.176***
		(3.74)	(3.74)	(3.22)	(3.22)
LOSS	-	-0.011	-0.011	-0.012	-0.012
		(-1.13)	(-1.13)	(-1.16)	(-1.17)
MTBOOK	+	0.005	0.005	0.005	0.005
		(1.64)	(1.64)	(1.47)	(1.48)
EGX30	+	0.003	0.003	0.009	0.009
		(0.30)	(0.30)	(0.84)	(0.85)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		442	442	442	442
R^2		0.2523	0.2525	0.2440	0.2445
adj. R^2		0.1958	0.1940	0.1869	0.1854

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.5.3: Regressions of discretionary accruals on board monitoring, audit quality, and control variables partitioned by firm size

	Pred. Sign	PATDA		PACDA	
		Large size	Small size	Large size	Small size
Constant	+/-	0.141***	0.148***	0.133***	0.167***
		(4.42)	(5.15)	(4.12)	(5.70)
NEXECD	-	0.019	-0.025	0.028	-0.030
		(0.65)	(-0.93)	(0.94)	(-1.06)
BODSIZE	+/-	-0.003	-0.003**	-0.003	-0.004**
		(-1.49)	(-1.61)	(-1.59)	(-2.18)
CEODUAL	+/-	-0.029***	0.015	-0.029***	0.016
		(-2.77)	(1.44)	(-2.74)	(1.40)
NEXECOWN	-	-0.115	0.008	-0.106	0.007
		(-1.64)	(0.19)	(-1.45)	(0.16)
EXECOWN	-	-0.013	-0.051**	-0.018	-0.062***
		(-0.63)	(-2.36)	(-0.84)	(-2.89)
AUDCOM	-	-0.018	0.013	-0.018	0.013
		(-1.51)	(1.19)	(-1.51)	(1.23)
BIG5	-	-0.026***	-0.031***	-0.025***	-0.028***
		(-2.58)	(-3.19)	(-2.50)	(-2.91)
INSTOWN	-	0.046*	-0.003	0.043	-0.005
		(1.74)	(-0.18)	(1.61)	(-0.23)
AUDTEN	-	-0.030*	-0.019	-0.032*	-0.023
		(-1.78)	(-1.37)	(-1.89)	(-1.48)
LEV	+/-	-0.015	-0.039**	0.004	-0.038*
		(-0.48)	(-2.01)	(0.11)	(-1.88)
ΔCFO	-	0.088	0.130**	0.074	0.137**
		(1.60)	(2.15)	(1.38)	(2.31)
SMOOTH	-	-0.024*	-0.040***	-0.024*	-0.045***
		(-1.88)	(-4.47)	(-1.77)	(-4.85)
CFO	-	-0.158	-0.045	-0.132	-0.035
		(-1.64)	(-0.68)	(-1.29)	(-0.53)
ASSINT	+	-2.007	-2.570*	-1.054	-2.088
		(-0.74)	(-1.80)	(-0.39)	(-1.40)
ABSNI	+	0.256***	0.139**	0.248**	0.116
		(2.70)	(1.99)	(2.42)	(1.50)
LOSS	-	-0.036**	-0.001	-0.038**	-0.002
		(-2.03)	(-0.05)	(-2.07)	(-0.12)
MTBOOK	+	0.004	0.008*	0.004	0.008*
		(0.70)	(1.90)	(0.67)	(1.86)
EGX30	+	0.015	-0.017	0.023*	-0.019
		(1.29)	(-0.69)	(1.89)	(-0.71)
Industries dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		221	221	221	221
R^2		0.3230	0.3059	0.3076	0.3104
adj. R^2		0.2161	0.2005	0.1983	0.2057

Notes*:* Definitions for all variables are provided in Table 5.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Appendix 6.1

Table A.6.1: Determinants of agency costs

Dependent variable: SG&A (proxy for agency costs)					
	Pred. Sign	M1	M2	M3	M4
Constant	+/-	0.187***	0.179***	0.184***	0.173***
		(3.50)	(3.38)	(3.25)	(3.07)
EXECOWN	-	-0.055***	-0.188***	-0.055***	-0.191***
		(-4.00)	(-2.62)	(-3.99)	(-2.63)
$EXECOWN^2$	+		0.156**		0.160**
			(1.99)		(2.01)
CONCENTR	-	-0.080***	-0.088***	-0.065	-0.052
		(-3.18)	(-3.29)	(-0.70)	(-0.56)
$CONCENTR^2$	+			-0.012	-0.028
				(-0.19)	(-0.42)
NEXECD	-	0.012	0.018	0.013	0.019
		(0.44)	(0.65)	(0.45)	(0.67)
NEXECOWN	-	-0.118**	-0.057	-0.119**	-0.056
		(-2.23)	(-1.02)	(-2.23)	(-1.01)
BODSIZE	+	-0.024*	-0.026*	-0.024*	-0.027*
		(-1.73)	(-1.90)	(-1.69)	(-1.89)
CEODUAL	+	0.010	0.009	0.009	0.009
		(1.13)	(1.10)	(1.12)	(1.07)
SHORTDEBT	-	-0.009	-0.006	-0.009	-0.005
		(-0.92)	(-0.54)	(-0.92)	(-0.53)
DIVIDEND	-	0.125***	0.124***	0.126***	0.124***
		(3.33)	(3.40)	(3.34)	(3.40)
FSIZE	+/-	-0.003	-0.002	-0.003	-0.002
		(-0.94)	(-0.66)	(-0.90)	(-0.59)
LEV	+/-	0.095**	0.100**	0.095**	0.099**
		(1.99)	(2.12)	(1.97)	(2.09)
BLOCK	-	0.003	0.005	0.002	0.002
		(0.18)	(0.26)	(0.10)	(0.10)
ROA	-	-0.092***	-0.090***	-0.092***	-0.091***
		(-2.72)	(-2.72)	(-2.72)	(-2.72)
MTBOOK	-	0.005	0.005	0.005	0.004
		(1.35)	(1.24)	(1.32)	(1.19)
Industry dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		457	457	457	457
R^2		0.3217	0.3276	0.3218	0.3279
adj. R^2		0.2824	0.2870	0.2808	0.2856

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.6.2: Determinants of agency costs partitioned by growth opportunities

Dependent variable: SG&A (proxy for agency costs)							
	Pred. Sign	High-growth			Low-growth		
		M1	M2	M3	M4	M5	M6
Constant	+/-	0.170**	0.175**	0.159**	0.123*	0.149*	0.148*
		(2.23)	(2.17)	(1.98)	(1.68)	(1.80)	(1.80)
EXECOWN	-	-0.175	-0.021	-0.180	-0.164**	-0.047***	-0.152*
		(-1.43)	(-0.74)	(-1.45)	(-2.09)	(-2.93)	(-1.83)
EXECOWN^2	+	0.195		0.203	0.130*		0.116
		(1.25)		(1.27)	(1.71)		(1.44)
CONCENTR	-	-0.049	0.002	0.009	-0.114***	-0.269**	-0.256*
		(-1.06)	(0.01)	(0.07)	(-4.73)	(-2.07)	(-1.92)
CONCENTR^2	+		-0.035	-0.049		0.119	0.107
			(-0.35)	(-0.47)		(1.33)	(1.16)
NEXECD	-	0.058	0.056	0.060	-0.037	-0.050	-0.040
		(1.50)	(1.49)	(1.54)	(-1.19)	(-1.47)	(-1.24)
NEXECOWN	-	-0.082	-0.137	-0.079	-0.068	-0.121***	-0.070
		(-0.79)	(-1.19)	(-0.76)	(-1.37)	(-3.16)	(-1.38)
BODSIZE	+	-0.032	-0.035	-0.035	-0.003	0.010	0.003
		(-1.45)	(-1.51)	(-1.53)	(-0.22)	(0.62)	(0.22)
CEODUAL	+	0.022	0.023	0.021	0.006	0.007	0.008
		(1.56)	(1.63)	(1.54)	(0.62)	(0.72)	(0.76)
SHORTDEBT	-	-0.013	-0.015	-0.013	0.015	0.011	0.015
		(-0.74)	(-0.89)	(-0.72)	(1.24)	(0.96)	(1.26)
DIVIDEND	-	0.055	0.063	0.057	0.130***	0.132***	0.130***
		(1.23)	(1.37)	(1.28)	(3.09)	(3.27)	(3.25)
FSIZE	+/-	-0.004	-0.005	-0.003	0.002	0.001	0.001
		(-0.78)	(-0.99)	(-0.66)	(0.41)	(0.24)	(0.27)
LEV	+/-	0.149***	0.145***	0.148***	0.020	0.017	0.023
		(3.57)	(3.40)	(3.50)	(0.81)	(0.64)	(0.91)
BLOCK	-	0.004	-0.000	0.000	-0.003	0.010	0.008
		(0.15)	(-0.01)	(0.00)	(-0.21)	(0.65)	(0.52)
ROA	-	-0.090***	-0.089***	-0.092***	-0.006	-0.018	-0.009
		(-3.00)	(-2.93)	(-2.92)	(-0.13)	(-0.41)	(-0.19)
Industry dummies?		-	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		228	228	228	229	229	229
R^2		0.3876	0.3831	0.3883	0.4341	0.4346	0.4398
adj. R^2		0.3118	0.3068	0.3092	0.3644	0.3649	0.3676

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.6.3: Determinants of agency costs including lagged asset turnover ratio

Dependent variable: ASSETTURN (inverse proxy for agency costs)					
	Pred. Sign	M1	M2	M3	M4
Constant	+/-	1.452***	1.482***	1.328***	1.363***
		(5.86)	(5.88)	(5.29)	(5.25)
EXECOWN	+	-0.157**	0.347	-0.145**	0.282
		(-2.34)	(1.16)	(-2.19)	(0.90)
$EXECOWN^2$	-		-0.591*		-0.502
			(-1.82)		(-1.47)
CONCENTR	+	-0.098	-0.069	0.694*	0.652
		(-0.92)	(-0.66)	(1.70)	(1.57)
$CONCENTR^2$	-			-0.623**	-0.571*
				(-2.03)	(-1.80)
NEXECD	+	-0.088	-0.110	-0.069	-0.089
		(-0.90)	(-1.13)	(-0.71)	(-0.91)
NEXEOWN	+	0.504**	0.267	0.484**	0.285
		(2.26)	(1.03)	(2.23)	(1.10)
BODSIZE	-	-0.048	-0.040	-0.085	-0.075
		(-0.80)	(-0.66)	(-1.32)	(-1.14)
CEODUAL	-	-0.076*	-0.076*	-0.082**	-0.081**
		(-1.96)	(-1.95)	(-2.13)	(-2.10)
SHORTDEBT	+	0.034	0.021	0.037	0.025
		(0.78)	(0.47)	(0.85)	(0.59)
DIVIDEND	+	-0.000	0.005	0.006	0.010
		(-0.00)	(0.03)	(0.04)	(0.06)
SIZE	+/-	-0.064***	-0.068***	-0.061***	-0.064***
		(-3.59)	(-3.69)	(-3.43)	(-3.48)
LEV	+/-	-0.151*	-0.169**	-0.172**	-0.185**
		(-1.89)	(-2.07)	(-2.08)	(-2.22)
BLOCK	+	0.113*	0.106	0.050	0.049
		(1.70)	(1.57)	(0.72)	(0.71)
ROA	+	0.449*	0.444*	0.446*	0.441*
		(1.96)	(1.95)	(1.96)	(1.95)
MTBOOK	+	0.025**	0.026**	0.021*	0.023*
		(2.03)	(2.10)	(1.70)	(1.77)
lagASSETTURN	+	0.173**	0.172**	0.171**	0.170**
		(2.57)	(2.57)	(2.54)	(2.55)
Industry dummies?		Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes
No. of observations		455	455	455	455
R^2		0.5258	0.5288	0.5308	0.5330
adj. R^2		0.4970	0.4990	0.5012	0.5023

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.6.4: Determinants of agency costs including the lagged asset turnover ratio and partitioned by growth opportunities

Dependent variable: ASSETTURN (inverse proxy for agency costs)							
	Pred. Sign	High-growth			Low-growth		
		M1	M2	M3	M4	M5	M6
Constant	+/-	1.311***	0.986***	1.114***	0.911***	0.855**	0.853**
		(3.41)	(2.79)	(2.95)	(2.68)	(2.52)	(2.51)
EXECOWN	+	0.980**	-0.091	0.897**	0.098	-0.161	0.061
		(2.24)	(-0.98)	(1.99)	(0.22)	(-1.47)	(0.14)
EXECOWN^2	-	-1.391***		-1.265**	-0.285		-0.244
		(-2.64)		(-2.34)	(-0.65)		(-0.54)
CONCENTR	+	0.222*	1.245***	1.200***	-0.228	0.189	0.160
		(1.75)	(2.73)	(2.62)	(-1.42)	(0.36)	(0.30)
CONCENTR^2	-		-0.903***	-0.819**		-0.320	-0.293
			(-2.50)	(-2.27)		(-0.83)	(-0.74)
NEXECD	+	-0.075	-0.004	-0.029	-0.332**	-0.306*	-0.327**
		(-0.65)	(-0.04)	(-0.24)	(-2.05)	(-1.90)	(-2.02)
NEXEOWN	+	-0.586**	-0.140	-0.527*	1.107***	1.216***	1.111***
		(-2.07)	(-0.63)	(-1.87)	(3.07)	(3.92)	(3.11)
BODSIZE	-	-0.050	-0.103	-0.103	0.100	0.069	0.083
		(-0.62)	(-1.19)	(-1.21)	(1.25)	(0.91)	(1.03)
CEODUAL	-	-0.132***	-0.145***	-0.136***	0.005	0.003	0.002
		(-2.79)	(-3.13)	(-3.00)	(0.09)	(0.06)	(0.04)
SHORTDEBT	+	0.116*	0.133**	0.121**	-0.092	-0.083	-0.093
		(1.90)	(2.21)	(2.04)	(-1.43)	(-1.26)	(-1.44)
DIVIDEND	+	0.300*	0.300**	0.333**	0.116	0.112	0.116
		(1.82)	(2.02)	(2.13)	(0.57)	(0.55)	(0.57)
FSIZE	+/-	-0.065**	-0.047*	-0.057**	-0.023	-0.022	-0.022
		(-2.42)	(-1.96)	(-2.20)	(-0.83)	(-0.79)	(-0.79)
LEV	+/-	-0.140	-0.154*	-0.167*	-0.242	-0.236	-0.248
		(-1.55)	(-1.75)	(-1.83)	(-1.62)	(-1.59)	(-1.64)
BLOCK	+	-0.124	-0.192**	-0.194**	0.251***	0.217**	0.221**
		(-1.34)	(-2.04)	(-2.01)	(2.65)	(2.23)	(2.23)
ROA	+	0.182	0.138	0.164	0.519	0.545	0.525
		(0.67)	(0.56)	(0.65)	(1.29)	(1.35)	(1.30)
lagASSETTURN	+	0.433***	0.444***	0.433***	0.057	0.055	0.055
		(5.61)	(5.69)	(5.57)	(1.28)	(1.24)	(1.23)
Industry dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		228	228	228	227	227	227
R^2		0.6116	0.6113	0.6214	0.6359	0.6362	0.6367
adj. R^2		0.5616	0.5613	0.5706	0.5883	0.5887	0.5872

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.6.5: Determinants of agency costs including the identity of ownership

Dependent variable: ASSETTURN (inverse proxy for agency costs)							
	Pred. Sign	M1	M2	M3	M4	M5	M6
Constant	+/-	1.878***	1.901***	1.904***	1.671***	1.695***	1.682***
		(7.45)	(7.69)	(7.66)	(6.56)	(6.70)	(6.68)
EXECOWN	+	0.254	0.487	0.368	-0.233**	-0.161**	-0.193***
		(0.63)	(1.46)	(1.11)	(-2.54)	(-2.26)	(-2.82)
$EXECOWN^2$	-	-0.592	-0.765**	-0.687*			
		(-1.48)	(-2.17)	(-1.93)			
CONCENTR	+	0.024	0.020	0.033	0.931**	0.900**	1.028***
		(0.29)	(0.24)	(0.40)	(2.36)	(2.30)	(2.61)
$CONCENTR^2$	-				-0.794**	-0.774**	-0.869***
					(-2.50)	(-2.45)	(-2.73)
NEXECD	+	-0.182*	-0.164*	-0.179*	-0.115	-0.102	-0.101
		(-1.88)	(-1.72)	(-1.85)	(-1.18)	(-1.05)	(-1.03)
NEXECOWN	+	0.264	0.285	0.306	0.451**	0.549**	0.547**
		(0.97)	(1.05)	(1.13)	(1.97)	(2.48)	(2.55)
BODSIZE	-	-0.043	-0.029	-0.029	-0.105	-0.095	-0.090
		(-0.67)	(-0.45)	(-0.42)	(-1.51)	(-1.35)	(-1.27)
CEODUAL	-	-0.076*	-0.096**	-0.080**	-0.082**	-0.096**	-0.088**
		(-1.85)	(-2.30)	(-1.98)	(-2.03)	(-2.32)	(-2.21)
SHORTDEBT	+	0.031	0.040	0.027	0.051	0.058	0.050
		(0.67)	(0.89)	(0.60)	(1.12)	(1.32)	(1.09)
DIVIDEND	+	0.001	0.009	0.002	0.021	0.021	0.024
		(0.01)	(0.05)	(0.01)	(0.12)	(0.12)	(0.13)
FSIZE	+/-	-0.084***	-0.091***	-0.088***	-0.077***	-0.080***	-0.081***
		(-4.47)	(-4.92)	(-4.57)	(-4.22)	(-4.46)	(-4.33)
LEV	+/-	-0.158*	-0.162**	-0.154*	-0.174**	-0.170**	-0.168**
		(-1.94)	(-1.98)	(-1.89)	(-2.08)	(-2.04)	(-2.01)
BLOCK_INDIV	+	0.041			0.049		
		(0.57)			(0.78)		
BLOCK_STATE	+		0.091*			0.054	
			(1.94)			(1.17)	
BLOCK _INST	+			-0.033			-0.050
				(-0.71)			(-1.06)
ROA	+	0.585**	0.602**	0.578**	0.584**	0.596**	0.574**
		(2.54)	(2.56)	(2.48)	(2.53)	(2.53)	(2.45)
MTBOOK	+	0.023*	0.023*	0.022*	0.019	0.018	0.018
		(1.75)	(1.79)	(1.71)	(1.44)	(1.42)	(1.39)
Industry dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		457	457	457	457	457	457
R^2		0.4800	0.4835	0.4802	0.4868	0.4875	0.4875
adj. R^2		0.4486	0.4523	0.4488	0.4558	0.4566	0.4565

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

Table A.6.6: Determinants of agency costs including the identity of ownership partitioned by growth opportunities

Dependent variable: ASSETTURN (inverse proxy for agency costs)

	Pred. Sign	High-growth			Low-growth		
		M1	M2	M3	M4	M5	M6
Constant	+/-	2.315***	2.311***	2.337***	0.972***	1.083***	0.973***
		(5.84)	(6.05)	(6.01)	(2.97)	(3.20)	(2.83)
EXECOWN	+	1.127**	1.185**	1.304**	-0.220	-0.148	-0.204*
		(1.81)	(2.15)	(2.34)	(-1.62)	(-1.41)	(-1.89)
$EXECOWN^2$	-	-1.757***	-1.766***	-1.836***			
		(-2.65)	(-2.77)	(-2.85)			
CONCENTR	+	-0.109	-0.147	-0.108	0.027	-0.005	0.027
		(-1.07)	(-1.39)	(-0.98)	(0.33)	(-0.06)	(0.33)
$CONCENTR^2$	-	-0.130**	-0.101*	-0.135**	-0.001	-0.019	-0.002
		(-2.45)	(-1.67)	(-2.53)	(-0.01)	(-0.31)	(-0.04)
NEXECOWN	+	0.100	0.128	0.089	1.064**	0.870**	1.055**
		(0.72)	(0.93)	(0.66)	(2.29)	(1.93)	(2.22)
NEXECD	+				-0.844**	-0.676**	-0.842**
					(-2.15)	(-1.78)	(-2.13)
BODSIZE	-	0.012	-0.020	-0.006	-0.334**	-0.250	-0.347**
		(0.09)	(-0.15)	(-0.04)	(-2.09)	(-1.60)	(-2.03)
CEODUAL	-	-0.907**	-0.800**	-0.749**	1.167***	1.205***	1.192***
		(-2.50)	(-2.14)	(-2.00)	(3.14)	(3.63)	(3.68)
BLOCK_INDIV	+	0.150**	0.154**	0.156**	-0.087	-0.047	-0.089
		(2.13)	(2.19)	(2.21)	(-1.25)	(-0.71)	(-1.31)
BLOCK_STATE	+	0.387**	0.331*	0.354**	0.082	0.070	0.077
		(2.22)	(1.96)	(2.11)	(0.37)	(0.33)	(0.36)
BLOCK _INST	+	-0.121***	-0.113***	-0.121***	-0.032	-0.042	-0.031
		(-4.14)	(-3.91)	(-3.98)	(-1.19)	(-1.53)	(-1.06)
SHORTDEBT	+	-0.138	-0.119	-0.135	-0.230	-0.201	-0.228
		(-1.33)	(-1.15)	(-1.30)	(-1.54)	(-1.30)	(-1.53)
DIVIDEND	+	0.122***			0.016		
		(1.17)			(0.19)		
FSIZE	+/-		-0.122			0.163***	
			(-1.54)			(2.57)	
LEV	+/-			0.003			0.020
				(0.05)			(0.25)
ROA	+	0.514*	0.507*	0.519*	0.673	0.676	0.673
		(1.71)	(1.65)	(1.71)	(1.58)	(1.59)	(1.59)
Industry dummies?		Yes	Yes	Yes	Yes	Yes	Yes
Time dummies?		Yes	Yes	Yes	Yes	Yes	Yes
No. of observations		228	228	228	229	229	229
R^2		0.4736	0.4767	0.4703	0.6166	0.6262	0.6166
adj. R^2		0.4084	0.4119	0.4048	0.5694	0.5802	0.5694

Notes*:* Definitions for all variables are provided in Table 6.1. *t* statistics in parentheses. *, **, and *** indicate statistical significant at the 10%, 5% and 1% levels, respectively. For the estimation the consistent to heteroskedasticity standard errors has been used.

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