Financial Reporting Quality, Auditor Remuneration and Corporate Governance: UK Evidence

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by

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Abstract

The recent global financial crisis has added fuel to the heated debate on whether boards of directors in general and audit committees in particular are effective in curtailing aggressive financial reporting practices and maintaining a transparent audit process. Specifically, UK regulators raised widespread concerns about the criteria of revenue recognition and the role of external auditors during and after the crisis, and re-emphasize the crucial role that audit committees could play in ameliorating financial reporting quality and safeguarding the quality of external audit. Despite this intense emphasis on the financial reporting and external audit oversight roles of internal governance mechanisms, there is still no empirical evidence confirming the effectiveness of these roles after the financial crisis. As such, this thesis contributes to the literature by using a sample of FTSE 350 firms listed on the London Stock of Exchange during the period between 2008 and 2010 to address two main empirical questions in two investigations. The first empirical investigation deals with the impact of audit committee and board characteristics on financial reporting quality. Two measures are employed to serve as surrogates for financial reporting quality. The first measure, which contributes to the uniqueness of this study, is discretionary revenues used to address misleading revenue recognition concerns by UK regulators, and discretionary accruals employed to account for the possibility of firms shifting from one earnings management method to another. The results reveal significant associations between a number of governance characteristics and discretionary revenues, but not discretionary accruals. This suggests that in response to UK intense regulatory scrutiny over the criteria of revenue recognition, firms' revenue recognition process was subject to increased monitoring by boards in general and audit committees in particular, leading to better quality financial reporting. The second empirical investigation of this thesis examines the association between audit committee and board characteristics on the one hand and audit fees and non-audit fees on the other. The findings reveal that audit fees are positively related to governance mechanisms indicating that the oversight roles of audit committees and boards have positive impact on enhancing audit quality through demanding wider audit scope from external auditors. However, non-audit fees are also found to be positively related to audit committee meetings and board size, suggesting that the committee and the board support the simultaneous provision of audit services and non-audit services to facilitate a beneficial knowledge spill-over between the two services which in turn results in a better audit quality. Comparing the main results with those obtained from an additional analysis of a sample of firms listed in the pre-financial crisis period between 2005 and 2007 indicates that the effectiveness of governance mechanisms in enhancing financial reporting quality differs between regular and recession periods. Overall, most of the findings are consistent with the agency perspective. Those which are not consistent open avenues for future research to explore a multi-theoretical approach which takes into consideration the complexities of firms and their environmental circumstances.

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List of Acronyms

AAER	Accounting and Auditing Enforcement Releases
APB	The Auditing Practices Board
LM	Breusch-Pagan Lagrange Multiplier
CEO	Chief Executive Officer
FIFO	First In First Out
ICB	Industry Classification Benchmark
IFRS	International Financial Reporting Standards
IPOs	Initial Public offerings
LIFO	Last In First Out
LSE	London Stock of Exchange
OLS	Ordinary Least Square
R&D	Research and Development
SEC	Securities and Exchange Commission
SG&A	Selling, General and Administrative
SOX	Sarbanes-Oxley Act
FRC	The Financial Reporting Council
FRRP	The Financial Reporting Review Panel
GAAP	The Generally Accepted Accounting Principles
HCTC	The House of Commons Treasury Committee
HOL	The House of Lords

Declaration

I declare that this thesis is my own work and has not been submitted in any form for any other degree or qualification in this or any other university. Information derived from the published and unpublished work of others has been acknowledged in the text.

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All praise is due to God for the intellect and perseverance that he has bestowed upon me during my doctoral journey, and indeed, throughout my life.

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Dedication

I dedicate this work to the memory of my Father, Mounib, who did all he could do to maintain the best education for me, and my beloved Mother, Hoda, who always stood behind me with her blessings and prayers.

Chapter 1. Introduction

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Introduction

1.1 Research Background

The oversight roles of audit committees and boards of directors over a firm's financial reporting and external audit processes have been given considerable attention by regulators, practitioners and researchers all over the world, especially after the high-profile corporate financial debacles of Enron and WorldCom.

For instance, in the United States (hereafter US), following the collapse of Enron and WorldCom in the onset of the second millennium, standard setters went for more reforms and updates of the existing provisions. The Sarbanes-Oxley (hereafter SOX) Act that was passed by the US Congress in the aftermath of Enron's scandal, made several amendments to enhance the effectiveness of boards of directors in general and audit committees in particular. In addition to re-emphasizing the independence of each member in the committee, it is the first legal Act to mandate the establishment of audit committees and address their responsibilities (Brian 2003).

Specifically, the Act requires audit committees to be:

> established by and amongst the board of directors of an issuer for the purpose of overseeing the accounting and financial reporting processes of the issuer and audits of the financial statements of the issuer (SOX 2002b, SEC.2(a)(3)(A)).

Moreover, one of the remedies suggested by the SOX Act in order to enhance US financial reporting quality is addressed by requesting the Security and Exchange Commission (hereafter SEC) to "conduct a study on the adoption by the United States financial system of a principles-based accounting system" (SOX 2002b,

SEC.108;(d)(1)(A)). Attempting to adopt a principles-based accounting system is due to the belief that the current US rules-based system with its bright-line tests and its focus on the form of the rule rather than its substance invites executives to behave opportunistically (Agoglia et al. 2011).

Congruently in the United Kingdom (hereafter UK), although such financial failures were not expected to happen[1] (Hayward 2002), improvements and reforms of the existing standards had been made as they were essential to restore global confidence and public trust[2]. Standard setters revised the combined code in 2003 and incorporated the recommendations of the Smith and Higgs reports, dealing with audit committees' responsibilities and the effectiveness of non-executive directors respectively[3].

The Smith report addresses the concerns of regulators and investors over the role of audit committees in the financial reporting and external audit processes. Specifically, the report defines the main roles of audit committees as "monitor[ing] the integrity of the financial statements of the company", recommending to the board on the appointment of the external auditors, "approving the remuneration and terms of engagement of the external auditor" and monitoring "the external auditor's independence, objectivity and effectiveness (Smith 2003, (2.1)). In terms of membership and procedures, the report recommends that: audit committees should be composed of at least three independent non-executive directors (3.1); the company's chairman should not be a member of the audit committee (3.2); the

[1] Expectations stemmed from two factors: first, the UK accounting system being principles-based and second, UK exposure to similar failures in the early 1990s where corrective actions had been taken (Kershaw 2005).

[2] The Secretary of State for Trade and Industry, Patricia Hewitt MP; speech delivered to the University of Cambridge Faculty of Law (July 2002). Available from: http://www.guardian.co.uk/business/2002/jul/05/politics.economicpolicy1 [Accessed 30 April 2014].

[3] The UK Combined Code (currently the UK Corporate Governance Code) was issued in 1998 and has been subject to several revisions since then. Major changes were made in 2003 by incorporating the Higgs (Review of the Role and Effectiveness of Non-Executive Directors) and Smith (Audit Committees Combined Code Guidance) reports.

committee should meet at least three times during the year (3.5); and, at least one of the committee members should have recent and relevant financial expertise (3.16). These recommendations are "designed to strengthen the effectiveness of audit committees, clarify and enhance their oversight roles, and enhance their accountability over the financial reporting process" (ACI 2006, p.1).

In parallel to this, the Higgs report gives the board the responsibility to scrutinize the transparency of audit committees in discharging their financial reporting role and the extent to which they are having an appropriate relationship with external auditors (Higgs and Britain 2003, D.3). In addition to holding the board accountable for presenting a "balanced and understandable assessment" of the firm's financial reporting position (D.1) and "maintaining an appropriate relationship with the company's auditors" (D.3), the report recommends that: the chairman and chief executive roles should be separated (5.3); non-executive directors should meet at least once a year without the presence of the chairman or executive directors (8.8); and, at least half of the board members should be independent non-executive directors (9.5).

Recently, in the wake of the 2008 financial crisis, UK standard setters and commentators have raised wide-ranging concerns about corporate financial reporting quality as well as external audit quality. Particularly, financial reporting concerns were about revenue recognition criteria and were derived from the belief that the recession would lead companies to manipulate revenues aggressively for the purpose of improving earnings quality. On the other hand, the integrity of the external audit process has become questionable after the crisis. Although external auditors were not directly blamed for causing the crisis, their role and performance were subject to

criticism that they have not been up to the acceptable level for preventing it (HOL 2011) .

1.2 Research Motivation

This thesis is motivated by calls to enhance the effectiveness of audit committees in a period where wide ranging concerns were raised about the quality of financial reporting as well as external auditing.

In the post-financial crisis period between 2008 and 2010, regulators have put intense emphasis on the oversight roles of the board of directors in general and the audit committee in particular, and intend to strengthen the role of audit committees and increase their responsibilities (Beattie et al. 2012).

Specifically, in the above mentioned period, the UK financial reporting 'watchdog', the Financial Reporting Review Panel (hereafter FRRP), have put intense emphasis on the corporate reporting of revenue recognition criteria and investigated the adequacy of disclosures in order to enable users to understand how significant revenue streams were recognized by management (FRRP 2008, 2009). In the same vein, the Financial Reporting Council (hereafter FRC) issued a report in 2009 arguing that as companies suffered from insolvency problems after the recession, managers would face more difficulties, which might boost the risk of non-transparent financial reports with manipulations, errors and omissions (FRC 2009). Moreover, the report shed light on the constructive and transparent application of the UK principles-based accounting and reporting standards with reliable judgements, rather than just the minimum necessary compliance to laws and regulations. In addressing these issues, the report recommends that audit committees should take into consideration key questions while discharging their roles. For instance,

questions include the following: "has the audit committee considered how it should respond to any heightened risk of errors, omissions or manipulation of reporting financial results or balance sheet presentation?" (p.6); "if sales terms and conditions have been changed has the company's revenue recognition policy been reviewed and does it need to be amended?"(p.6); and, "has the committee considered whether the audited financial statements describe fairly all the key judgements about the application of accounting policies and the estimation uncertainties inherent in assets and liabilities?" (p.3).

In parallel to this, and during the same period (2008 to 2010), auditors (particularly the Big four) were put under fire for their performance in the financial crisis. Politicians' and commentators' arguments of 'low-balling' practices by audit firms have come up again after they first arose following the early 1990s recession and then the Enron-Andersen scandal[4] (ACCA 2011). The House of Commons Treasury Committee (hereafter HCTC) published a report on 15 May 2009 expressing their concerns about auditor independence and arguing that "investor confidence, and trust in audit would be enhanced by a prohibition on audit firms conducting non-audit work for the same company, [and recommending] that the FRC consult on this proposal at the earliest opportunity" (HCTC 2009, Sec. 2.1). The Auditing Practices Board (hereafter APB) of the FRC responded to the HCTC's recommendation by issuing a report in July 2010 on "The Provision of Non-Audit Services by Auditors". The report proposed an enhancement of the role of audit committees encouraging the latter to consider the level of non-audit services to be purchased, relative to audit fees, and to provide an explanation of the reasons for purchasing such services as well as of the external auditor's policy related to them.

[4] Low-balling occurs when "audit firms cut their audit fees in order to get a foot in the door for more lucrative non-audit work" (ACCA 2011, p.6).

In the same vein, a report by the UK House of Lords followed to raise widespread concerns about the role of auditors during the crisis (HOL 2011). The report accused the big four of complacency and "dereliction of duty", emphasizing the crucial role that audit committees could play in choosing auditors and maintaining their independence, and recommended restrictions on the auditors' provision of non-audit services to the FTSE 350 firms.

In essence, "[E]ffective audit committees have never been more important in [2008] of unprecedented turmoil in global financial markets" (ACI 2008a, p.5). Similarly, the practitioners' focus on the crucial oversight role that audit committees could play in the financial reporting and audit processes after the financial crisis was consistent with that of standard setters:

> While audit committees will continue to focus on refining their oversight of financial reporting, internal controls, and risk management in 2008, they also will be paying close attention to 'recession-related risks'- and there may be many (ACI 2008b, p.1).

Some of the 'recession-related risks' identified by the ACI report are "liquidity, access to capital, and increased risk of earnings management during an economic down-turn" (ACI 2008b, p.1).

In the same vein, and in response to the HCTC request from the APB to consult on the prohibition on audit firms to provide non-audit services to their audit clients, the Institute of Chartered Accountants of Scotland issued a report in January 2010 recommending that the APB should rather take other actions than the complete prohibition of non-audit services (ICAS 2010). Some of the major actions suggested by the report require the audit committee to publish the extent to which the provision of non-audit services by the external auditor will impair the latter's independence and "to pre-approve all non-audit services above a set fee level" or those which have an internal audit nature (p.8).

1.3 Research Contribution

According to the UK Corporate Governance Code, the main oversight responsibilities of audit committees are generally related to financial reporting, external auditing and internal auditing. Regulators and practitioners have put intense emphasis on the first two areas especially following several high-profile financial reporting and auditing scandals (e.g. Enron, Arthur Andersen etc.) where the transparency of financial reports has become questionable, and some doubt has been cast upon the independence and objectivity of auditors. Eventually, the increased emphasis on the oversight roles of the board and the audit committee has led to an increase in the latters' responsibilities. However, there is still lack of empirical work on the effectiveness of these roles in the UK. Specifically, "the complementary roles of boards and audit committees in monitoring both audit and financial reporting quality" (Zaman et al. 2011, p.192) have not been investigated yet. In this pursuit, this thesis investigates in the first empirical model the effectiveness of some internal governance characteristics in enhancing financial reporting quality. Then in the second model it examines how auditor fees (audit and non-audit) are affected by these characteristics.

Moreover, this thesis makes potential contributions to extant literature in a number of ways. First, despite the increasing emphasis of UK regulatory bodies and practitioners on the effective role that audit committees could play in curtailing aggressive financial reporting and determining appropriate levels of audit and non-audit service fees, the author is not aware of any study examining these relationships

after the global financial crisis in the UK. Particularly, there is not even any published research on the association between audit committees and financial reporting quality in the post- Enron era (Zaman et al. 2011). Moreover, most of the research done pre-Enron, in addition to its paucity, examines the impact of audit committee existence on financial reporting quality, rather than the effectiveness of audit committees in discharging their financial oversight role (e.g., Peasnell et al. 2005, 2000). In contrast, the vast majority of studies tackling this association are conducted in the US where a rules-based accounting system exists (e.g., Agoglia et al. 2011; Ghosh et al. 2010; Farber 2005; Xie et al. 2003; Bedard et al. 2004; Klein 2002a; Krishnan and Visvanathan 2008).

Similarly, post-Enron UK literature suffers from lack of research on the association between corporate governance and both audit fees and non-audit fees. As Zaman et al. (2011) examine these relationships in the period between 2001 and 2004, their sample accounts for only a period of one year after the major changes in the UK Corporate Governance Code which have taken place through the incorporation of the Smith and Higgs reports in 2003. Moreover, Zaman et al. (2011) focus on audit committee effectiveness while controlling for the board variables.

In a more recent investigation, a thesis by Basiruddin (2011) examining the above association on a sample of 674 FTSE 350 firm-year observations listed during the period 2005 to 2008 uses both sets of board and audit committee variables in the same empirical model and reveals inconsistent results with those of Zaman et al. (2011). Basiruddin (2011) results are mainly based on the pre-crisis period and are not robust to the usage of separate regressions for each of the board and audit committee sets of variables. Most recently, Nehme (2013) uses a sample of 908 FTSE 350 firm-year observations listed during the period 2007 to 2010 and examines

the impact of some audit committee and board variables on audit fees. However, his results are questionable as he does not investigate non-audit fees and account for their joint determination with audit fees.

The second empirical model (auditor remuneration) also contributes to the literature by providing evidence on the complementary roles of boards and audit committees. The results reveal that the size of an audit committee does not play an incremental role in determining audit fees in the presence of the board. Moreover, in regular time periods and in the presence of effective boards, audit committees are not found to play an incremental role in determining the level of non-audit services to be purchased from auditors.

Interestingly, by examining the impact of corporate governance on financial reporting quality and auditor remuneration during the 2008 to 2010 period, the author does not only make a unique contribution to the literature, but also addresses the regulatory concerns mentioned in the previous section.

Second, prior research tackling the association between audit committees and financial reporting quality has used three main earnings quality measures (properties of earnings, investor responsiveness to earnings and external indicators of earnings misstatements) as surrogates for financial reporting quality[5]. Extending prior literature centring on the properties of earnings measure, this study uses two models to proxy for financial reporting quality: the revenue discretionary model as being "more likely than accrual models to detect an equal combination of revenue and expense manipulation" (Stubben 2010, p.710), and the performance-adjusted modified Jones discretionary accrual model as it reduces the measurement error associated with alternative accrual models (Kothari et al. 2005). Employing these

[5] The author adopts the Dechow et al. (2010) categorization of earnings quality proxies.

measures, this thesis contributes to the literature in two ways. First, unlike the vast majority of studies that have used discretionary accrual models to proxy for financial reporting quality, this is the first study of its kind to use the discretionary revenue model to proxy for financial reporting quality while examining the latter's association with corporate governance[6]. Second, Zang (2011) provides evidence that there is a "direct substitutive relation between real activities manipulation and accrual-based earnings management" and focusing on either type alone "does not fully explain earnings management activities" (pp.700-701). Knowing that the discretionary revenue model is capable of detecting real activities manipulation (Stubben 2010), in employing the above two measures the author seeks to generalize the results and account for the possibility for firms to shift from one earnings management method to another.

Third, given the current lack of confidence in the rules-based accounting systems, the concerns raised about its accountability for high-profile financial reporting failures, and lack of evidence for the association between audit committees and financial reporting quality in principle-based environments (Agoglia et al. 2011), this thesis makes a potential contribution through providing evidence for the impact of audit committee effectiveness on financial reporting quality in the UK principles-oriented context. This implies that in steady state conditions, principle-based accounting standards lessen the burden on audit committees to curtail managers' aggressive financial reporting practices (Agoglia et al. 2011). Given the same standards, however, higher levels of regulatory monitoring in recession periods may propel larger audit committees, comprising of greater proportions of independent directors to ensure better financial reporting quality.

[6] Refer to chapter three for a detailed justification behind the author's adoption of earnings management measures.

Fourth, it has been argued that corporate governance mechanisms would operate differently in regular periods than in recession periods (Van Essen et al. 2013; Dowell et al. 2011). This thesis contributes to the literature by investigating the effectiveness of governance mechanisms in the post-financial crisis period 2008 to 2010 as well as in the period 2005 to 2007 before the financial crisis. Specifically, it provides evidence suggesting that some governance characteristics would operate more effectively in recession periods to enhance financial reporting quality.

Fifth, the vast majority of studies in the corporate governance literature have used agency theory as a theoretical underpinning. Others have used management-based theories including stakeholder, resource dependency and institutional theory. Despite that, the agency theory is the main theoretical base of this research; the author has also discussed the applicability of a multi-theoretical approach and provided evidence suggesting that the effectiveness of internal governance mechanisms to enhance financial reporting quality may depend "upon organizational and environmental circumstances" (Van Essen et al. 2013), while more than one theoretical perspective is needed to capture "the greater complexity" in organisations (Eisenhardt 1989).

Finally, prior studies have used various definitions to measure audit committee financial expertise. For instance, Defond et al. (2005) find that market participants favour the appointment of accounting financial experts (versus non-accounting ones) to the audit committee. Unlike the vast majority of studies that have used financial literacy, accounting/financial qualifications, or previous auditing and financial reporting experience to proxy for audit committee financial expertise (e.g., DeZoort and Salterio 2001; Agrawal and Chadha 2005; Nehme 2013), this

study defines financial experts as those members with relevant financial experience as stipulated in the UK Corporate Governance Code.

1.4 Thesis Structure

This chapter has presented the background and the motivation behind conducting this research. Potential contributions to the literature have been also reported. The remainder of this thesis is structured as follows:

Chapter two presents a critical discussion of the prevalent theoretical foundations within corporate governance research, namely, agency, stakeholder, resource dependence and institutional. A multi-theoretical approach suggesting the integration of two or more of these approaches to better explain organizational complexities is also discussed. The main discussion is based on the agency theory and how it links between corporate governance variables on the one hand and financial reporting quality and auditor remuneration on the other. The chapter then concludes with the reasons behind adopting the agency perspective from among its rivals.

Chapter three reviews the literature on earnings management. First, it discusses the most commonly used earnings management definitions as well as the types and methods that firms might use to manage earnings. The incentives that might trigger firms to engage in earnings management practices are then presented, followed by a critical discussion of the alternative techniques used by researchers to detect earnings management. Finally, the chapter concludes with a reasoned justification on the adoption or rejection of each technique.

Chapter four presents a critical review of the literature on the association between corporate governance variables (audit committee and board of directors)

and both financial reporting quality (proxied by earnings management measures) and auditor remuneration (audit fees and non-audit fees). Prior studies on the impact of corporate governance on financial reporting quality are reviewed based on the different categories of earnings quality proxies. Studies on the impact of corporate governance on audit fees and non-audit fees are reviewed based on the different sets of audit committee and board variables. Gaps in the literature are identified in each of these strands and the proposed contributions to fill these gaps are highlighted.

Chapter five outlines the hypotheses of the research and explains the relevant research design. Specifically, after developing the hypotheses for each of the empirical models examined in this thesis, this chapter explains the measurement of the dependent and control variables as well as the specification of the empirical models employed. Then the period of the study and the sample selection procedures are presented followed by a justification of the analytical procedures and methods.

Chapters six and seven present the results and discussion of the empirical findings of the impact of corporate governance on financial reporting quality and auditor remuneration (audit fees and non-audit fees) respectively. Each of these chapters encompasses descriptive analyses, correlation analyses and multivariate analyses. Then robustness tests along with additional tests for the pre-crisis period from 2005 to 2007 are presented in the additional analyses before concluding with a summary of the findings.

Finally, chapter eight concludes the thesis with an overall summary. It synthesizes the findings of the research and highlights the research implications as well as the limitations and the avenues for future research.

Chapter 2. Theoretical Framework

Chapter 2
Theoretical Framework

2.1 Introduction

After identifying the objectives of the research in the first chapter, this chapter demonstrates an overview of corporate governance and an understanding of the relevant research theoretical underpinnings. Several theories have been used in the research of corporate governance including stewardship, managerial hegemony, agency, stakeholder, resource dependence, institutional etc... This chapter focuses specifically on the last four theories as they have been particularly used by researchers in investigating the oversight roles of audit committees (Beattie et al. 2012). Other theories, like stewardship or managerial hegemony are not tackled in this thesis as they are not consistent with the monitoring role of audit committees and their scepticism. For instance, managerial hegemony view audit committees as week and controlled by management (Beasley et al. 2009). Similarly, stewardship assumes that managers are honest and work in the best interests of shareholders to increase their value (Beasley et al. 2009). A limited number of studies have also suggested integration among agency, stakeholder, resource dependence and institutional perspectives (e.g. Hillman and Dalziel 2003; Lynall et al. 2003; Young and Thyil 2008; Christopher 2010) to overcome the limitation of using one theoretical framework and to better address the wider complexities in organizations (Christopher 2010). The agency theory which assumes conflicting interests between management and shareholders is the main theory used in this study. The board of directors and its audit committee are two monitoring mechanisms employed by shareholders to help align managers' actions with shareholders' interests through

ensuring transparent financial reporting and overseeing the management-external auditor relationship. Each of the mentioned theoretical frameworks, along with the multi-theoretical approach, is critically discussed. Finally, the chapter concludes with the main reasons for using the agency theory as a theoretical base for this research.

2.2 Corporate Governance Overview

It has been suggested that the idea of corporate governance has arisen because of the problems related to the separation of ownership and control. In his seminal study "The Wealth of Nations" dated 1776, Adam Smith argued that:

> Being the managers rather of other people's money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the [people] watch over their own. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company (Smith 2010, pp.606-607).

Berle and Means (1932) provide a similar view and argue that as the incentives of firms' managers may not align with those of the owners, the separation between ownership and control will lead to the creation of what is called "Quasi-public Corporation" where the power and control are not in the hands of the shareholders. Although there is a long history of governance issues, however, conflicts of interest between principals (owners) and agents (managers), and the best ways to reduce these conflicts and reduce their effects on the firm's value were brought to the forefront in 1976 by Jensen and Meckling (Baker and Anderson 2010).

Although the term 'Corporate Governance' has been used frequently by researchers, regulators and the general public, there has not been a general agreement on its definition (Brickley and Zimmerman 2010). Shleifer and Vishny (1997) survey research on corporate governance and note that:

> Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment. How do the suppliers of finance get managers to return some of the profits to them? How do they make sure that managers do not steal the capital they supply or invest it in bad projects? How do suppliers of finance control managers? (p.737)

As such they use the agency perspective to investigate how can investors get back their money from managers or prevent their funds from being expropriated or wasted on barren projects. Congruently, La Porta et al. (2000) define corporate governance as "a set of mechanisms through which outside investors protect themselves against expropriation by the insiders" (p.4). They identify the different forms of expropriation that might be conducted by insiders and note that all of these forms are related to the agency problem where insiders rather work to maximize their own wealth than that of outside investors.

Regulators' definitions were also consistent with the agency perspective. For instance, the Cadbury report (1992), which represents the initial version of the UK Corporate Governance Code, defines corporate governance as "the system by which companies are directed and controlled" (FRC 2012). The board of directors and the audit committee are two major mechanisms in the system responsible for supervising the roles and actions of executive management.

Recently, Brickley and Zimmerman (2010) identify what they called "six common myths about corporate governance", with the first being that "a common definition of corporate governance exists". They argue that the choice of definitions is crucial as it can affect how the research is focused, structured and interpreted. Emphasizing the inclusion of all the three firm's top-level decision makers (shareholders, board of directors and key executives) in the definition, Brickley and Zimmerman (2010) note that their preferred definition "includes all significant formal and informal contracts that affect the behaviour of top-level decision makers,

not just those between debt holders and the firm but also between the firm and senior managers" (p.237). They shed light on the challenging task of considering all of a firm's contracts in empirical research, and cast doubt on the validity of results of those studies that have just focused "on a narrower set of agency conflicts" arguing that these studies suffer from the "potential correlated omitted variables problem".

In essence, "there is no general agreement on the definition of corporate governance" (Brickley and Zimmerman 2010, p.236), and the agency theory has been the main theory applied in corporate governance research (Beattie et al. 2012). Recently, theoretical perspectives from management have also been introduced in an attempt to provide a clearer and more complete interpretation of practical observations (Beattie et al. 2012). These theories which "serve to better explain the behavioural mechanisms present in agency interactions and the influence of the external environment include stakeholder theory, resource dependency theory and institutional theory" (Beattie et al. 2012, p.353). The following sections present a critical discussion of these theories as well as of a multi-theoretical approach which provides a holistic view for capturing the wider complexities in corporations.

2.3 Agency Theory

Agency theory is a broadened view of the 1960-1970 literature on "risk sharing among individuals and groups" (Eisenhardt 1989). As the risk-sharing problem occurs when collaborative "parties have different attitudes toward risk", the agency problem occurs when those parties have conflicting interests and goals. Specifically, the agency theory suggests a contractual relationship between two parties (agent and principal) by whom one party (agent) is given decision making authority to perform some services on behalf of the other (principal) (Jensen and

Meckling 1976). As such, agency conflicts arise when the incentives of the agent diverge from those of the principal and the former start behaving in a self-serving manner trying to achieve personal gains at the expense of the latter's wealth. Yet "agency theory is founded on the triad of agent opportunism, information, and risk" (Sharma 1997, p.760).

Eisenhardt (1989) identifies two problems that might occur in the principal-agent relationship. The first problem happens when there are principal-agent conflicting interests and goals, and it is hard for the principal to assert or monitor the actions of the agent. The second is the risk-sharing problem which appears when the actions of the agent are not aligned with the interests of the principal because of the conflicting risk preferences. Sharma (1997) notes that resolving such conflicts is difficult "because of information asymmetry favouring agents and because of potentially differing attitudes toward risk held by the two contracting parties" (p.760).

Broadly speaking, the literature refers to two main aspects of agency conflicts that are caused by information asymmetry, namely, moral hazard and adverse selection (Eisenhardt 1989). "Moral hazard refers to the lack of effort on the part of the agent" or in other words it occurs when managers shirk their responsibilities (Eisenhardt 1989, p.61). On the other hand "adverse selection refers to the misrepresentation of ability by the agent" (Eisenhardt 1989, p.61). This is the case when managers claim to possess a certain level of ability or knowledge that shareholders are unable to observe or verify. In both cases, shareholders cannot prevent such actions if they are unable to monitor managerial behaviour directly, however, they may use governance tools such as managerial ownership to help align their incentives with those of managers (Baker and Anderson 2010).

As the agency relationship is based on a contract, proponents of the agency theory have focused their research to determine the most effective and efficient contract governing this relationship (Eisenhardt 1989). Moreover, they emphasise determining the cases in which conflicting goals between the agent and the principal arise, and how governance mechanisms are expected to limit the self-serving behaviour of agents. Outcome-based contracts and information systems were the proposed governance mechanisms involved in curtailing the opportunism of agents.

An example of outcome-based contracts is how increasing managerial ownership of shares will decrease management opportunism (Jensen and Meckling 1976), and co-align the interest of the agent with that of the principal. Similarly, information systems can reduce the opportunities of the agent to deceive the principal through conveying information to the principal about the agent's actions. Examples about such systems are efficient capital markets and labour markets (Fama 1980), as well as board of directors (Fama and Jensen 1983). Yet, the agency theory contributed to organizational thinking through introducing information as a commodity which has a cost and can be purchased (Eisenhardt 1989). This implies that information systems such as board of directors can be considered by organizations as investments used to restrain agents' opportunism.

In the same vein, Fama and Jensen (1983) evince that there are four steps of an organization's decision process: initiation, implementation, ratification and monitoring. They theorize that the importance of control over agency problems increases when managers who are responsible for initiating and implementing decisions are not the major shareholders and thus "do not bear a major share of the wealth effects of their decisions" (p.344). In such a case, managers are expected to take decisions that are not in the interest of shareholders and effective control

systems are needed to monitor and assure alignment of interests between managers and shareholders. Fama and Jensen (1983) define the effective control system as a system that assures that those who are delegated to take key managerial decisions in the organization are not those who have the "control rights over the same decisions".

The board of directors and its committees are at the top of this control system where they are delegated by the owners (shareholders) to ratify and monitor key decisions taken by top managers who initiate and implement, thus ensuring that decision management and decision control are separated.

The costs associated with the monitoring roles of the board of directors and its committees as well as with the appointment of external auditors, represent part of the monitoring agency costs incurred by shareholders "to limit the aberrant activities of [managers]" (Jensen and Meckling 1976, p.308)[7].

2.3.1 The Board and its Audit Committee

From an agency perspective, the role of the board and its audit committee is to monitor management actions and assure their alignment with the interests of shareholders. The board and its audit committee will not be considered as an effective monitoring mechanism unless they are able to limit the discretionary decisions of top-level managers (Fama and Jensen 1983).

"The board is empowered by the shareholders to exercise ultimate control over top management" (Bathala and Rao 1995, p.59). They can play a crucial role in co-aligning the interests of managers with those of shareholders and consequently

[7] Jensen and Meckling (1976) point out that agency costs constitute monitoring costs, bonding costs and residuals loss. Bonding costs could be related to the compensation of managers to ensure that the latter will act in the best interests of shareholders. Residual loss represents the costs incurred by shareholders because of the failure of monitoring and bonding to fully align the interests of shareholders and managers.

reduce agency conflicts through either altering "the incentives of the managerial team or [dismissing] them" (Sharma 1997, p.767).

Boards include both inside and outside directors. Although insiders are considered to be most influential due to their possession of more firm-specific valuable information, proponents of the agency theory have emphasized the crucial role of outside board members arguing that outsiders are more likely to exert effective separation between decision management and decision control and not collude with management in expropriating shareholders (Fama and Jensen 1983). Moreover, they contend that outside members on the board are more likely to provide crucial monitoring functions to reduce agency problems (Bathala and Rao 1995). One of the purposes of outsiders' focus on providing functional monitoring is to sustain a good reputation as effective decision controllers (Fama and Jensen 1983). Narrowly speaking, the audit committee is the main sub-committee of the board responsible for overseeing a firm's financial reporting process and ensuring a transparent relationship with the external auditors. Pincus et al. (1989) theorize that equity agency costs arise when incentives of managers diverge from those of shareholders and managers find the opportunity to increase their wealth at the expense of shareholders. Therefore, audit committees are employed as monitoring mechanisms to ensure transparent reporting between managers (agents) and shareholders (principals) and consequently reduce agency costs. Further, they argue that effective monitoring by audit committees is indicated by their ability to reduce information asymmetries between managers and the board of directors.

Congruently, Eisenhardt (1989) articulates that the purpose of the audit committee financial reporting oversight role is to reduce information asymmetry between the agent and the principal. She argues that audit firms will also benefit

from the effectiveness of audit committee as the latter will enhance the auditor independence from management and therefore protect the auditor from fraud allegations.

Menon and Williams (1994) contend that a decrease in managerial ownership should be accompanied by an increase in the level of monitoring through enhancing the activity of the audit committee. Similarly, Collier (1999) argues that companies with high agency costs will increase audit committee monitoring activity to reduce these costs.

Agency theorists have also emphasized the presence of financial expertise in the audit committee. They argue that for audit committees to discharge their financial reporting oversight role effectively they should be equipped with financial knowledge and skills, to be able to review management's financial reporting judgments, and thus mitigate agency conflicts between managers and shareholders (Davidson et al. 2004). This is consistent with the audit committee recommendations of the UK Corporate Governance Code which required that at least one of the members of the audit committee have "recent and relevant financial experience".

2.3.2 Financial Reporting Quality

This study uses earnings management as a proxy for financial reporting quality. Earnings management, however, can be either beneficial or opportunistic. From an agency perspective, when managers' incentives diverge from those of shareholders, managers tend to use the flexibility provided in the accounting principles to manipulate earnings opportunistically and therefore distort financial reports (Jiraporn et al. 2008). Hence, this study suggests that any increase in the level of earnings management would lead to a lower quality of financial reporting.

Several incentives to manage earnings have been identified in the literature. Davidson et al. (2005) categorise these incentives into "agency costs, information asymmetries and externalities affecting non-contracting parties" (p.243).

For instance, Jiraporn et al. (2008) contend that agency conflicts are directly related to earning management and that firms with high agency costs are expected to have higher levels of earnings management because of the opportunistic behaviours of their managers. Further, they argue that managers may engage in earnings management practices in an attempt to enhance their own compensation. This is especially the case when some of the compensation components (such as bonuses) are dependent on firm performance.

In the same vein, Beatty and Harris (1999) articulate that earnings management could emerge in response to information asymmetry and agency problems. They theorize that information asymmetry, which occurs when managers have superior information in comparison to shareholders, "may make external financing costly and may lead managers to forgo positive net present value projects" (Beatty and Harris 1999, p.299). On the other hand, agency problems emerge when there is superior information for managers along with opportunities to achieve self-serving goals "at the shareholders' expense".

Moreover, Beatty and Harris (1999) demonstrate that accounting earnings tend to be less informative when managers engage in earnings management practices "to circumvent accounting-based contracts designed to mitigate agency problems" (p.299).

Agency literature has also suggested that contracts between managers and lenders include covenants that restrict the behaviour of managers (Duke and Hunt 1990). Given the fact that these contracts are heavily reliant on the accounting

figures reported in financial statements (Duke and Hunt 1990), they may create incentives for managers to manage earnings (DeFond and Jiambalvo 1994), through choosing "accounting procedures that increase assets and revenues and decrease liabilities and expenses" (Duke and Hunt 1990, p.47).

Warfield et al. (1995) articulate that the agency theory predicts an increase in managers' incentives to shirk and consume perquisites "when managers hold less equity in the corporation" (p.62). Shareholders face difficulty in monitoring managers as the level of asymmetric information increase, thus managers become more able to behave opportunistically and "abuse their discretion over earnings" (Jiraporn et al. 2008, p.628). Earnings management, therefore, is considered an agency problem as the financial information that managers provide to shareholders does not reflect the real economic substance of underlying transactions and prevent shareholders from making informed decisions. Proponents of the agency theory suggest that such problems could be reduced through the board of directors (and its committees), being the apex of the internal governance system of the firm (Fama and Jensen 1983). The board is responsible for overseeing the financial discretion of management and ensuring the validity of managerial accounting choices (Davidson et al. 2005).

2.3.3 Audit Function

An audit is one of the several monitoring mechanisms which have a positive impact on the value of the firm (Jensen and Meckling 1976). Conducting the audit by someone who is independent of management is expected to reduce agency conflicts that result from the divergence of incentives between managers and shareholders (Watts and Zimmerman 1983). Watts and Zimmerman (1983) argue that as contracts

are used between agents and principals to reduce the former's opportunism, their enforcement is done through auditors who monitor the activities of management. The auditor, thus, is said to be successful in reducing the opportunistic behaviour of managers only if they are independent or in other words they are expected to report "some discovered breaches of contract".

Similarly, Colbert and Jahera (2011) contend that external audits exist because of the agency relationship between managers and shareholders. Auditors are considered as one of the governance mechanisms used by shareholders to monitor management's activities and provide reasonable assurance on the fairness and accuracy of the financial reports. For instance, managers compensated based on performance may tend to manipulate reported earnings to increase their compensation. Hence, shareholders support the purchase of audit services in an attempt to ensure alignment of their interests with those of management, reduce information asymmetry and ensure that transparent information is conveyed to them.

Recently, Hope et al. (2012) have examined how the level of agency conflicts would influence a firm's selection of auditors and the degree of audit effort (proxied by audit fees) to be supplied. In general, their main thesis was that auditor's efforts, and thus audit fees, increase as the level of agency conflicts increases. They argue that in the presence of moral hazard and adverse selection problems, auditors tend to supply more audit effort in an attempt to preclude misstatements associated with such problems. Further, they contend that firms facing higher agency costs tend to select "a higher-quality auditor to provide a credible signal of their commitment to higher-quality reporting" (Hope et al. 2012, p.500).

The results of Hope et al. (2012) reveal that audit fees increase with the increase of agency costs and that firms facing higher agency costs are more likely to

attempt higher audit quality of their financial statements through hiring a Big 4 audit firm. Moreover, they find a negative relationship between board independence and audit fees. Specifically, they find that audit fees decrease as the number of directors on the board who are related to the major shareholder increases; however, it increases when the number of directors who are related to the CEO increases. These results suggest that shareholders are more likely to have agency conflicts with CEOs but less likely to have such conflicts with independent board of directors.

Colbert and Jahera (2011) argue that one of the factors that may affect the level of audit to be demanded, or in other words the level of audit effort to be supplied, is the percentage of ownership held by management. The increase in the percentage of ownership held by insiders will help align the latter's incentives with those of shareholders thus lessening the need for higher monitoring levels and therefore fewer audits will be demanded. The empirical results of Hope et al. (2012) are consistent with this argument and reveal a negative association between audit fees and CEO ownership.

Overall, the agency theory provides a justified theoretical explanation of the oversight roles of the audit committee and the board of directors over the financial reporting process and the auditor-management relationship. Vigilant oversight by the board in general and the audit committee in particular tend to reduce agency costs, resolve agency conflicts and alleviate information asymmetry.

2.4 Stakeholder Theory

The term stakeholders dates back to 1963 where it was defined by an internal memorandum at the Stanford Research Institute as "those groups without whose support the organization would cease to exist", and include shareholders, suppliers,

customers, employees, lenders and society (Freeman and Reed 1983, p.89). In 1968 a study by Igor Ansoff discussed what he called "stakeholder theory" stating that "this theory maintains that the objectives of the firms should be derived by balancing the conflicting claims of the various "stakeholders" in the firms: managers, workers, stockholders, suppliers, vendors". (Freeman and Reed 1983, p.89).

Despite this history of the stakeholder concept, stakeholder theory was first publicized and brought to the forefront of the management field in 1984 by Edward Freeman (Stoney and Winstanley 2001), who was later called the father of the stakeholder theory (Laplume et al. 2008). Freeman and Reed (1983), in their seminal work, argue that the Stanford Research Institute definition of stakeholders is too general and proposed a definition which includes both friendly and hostile groups:

> Any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives (p.91).

According to Freeman and Reed (1983), these groups or individuals could include government agencies, unions, competitors, shareholders, customers, protest groups, trade associations etc. Despite this specification of the stakeholder constituencies, the stakeholder theory does not provide guidance on who are the appropriate groups or individuals who should be included in the term stockholders (Sternberg 1999). If stakeholders include all those who are affected or can affect the organization, this would result in an infinite number of groups whose benefits are to be considered (Sternberg 1999).

Freeman and Reed (1983) differentiate between the broadly used stockholder model and their proposed stakeholder model and discuss the implications of the shift from the first view to the second. Particularly, they argue that in contrast to the stockholder model which put intense emphasis on managers to achieve the ultimate

goal of maximizing shareholders' wealth or value, the stakeholder model develops a wider view of corporate life and operations which focuses on addressing the responsibility of the firm not only towards owners, but also towards a broader group of constituencies "who have a stake in the actions of the corporation": the stakeholders (Freeman and Reed 1983, p.89). Further, they contend that in a stakeholder model, public policy questions should be taken into consideration to provide an understanding of how the organization-stakeholders relationships would change in the light of implementing certain policies.

In a more recent study, Donaldson and Preston (1995) criticize the stakeholder literature arguing that it has failed to differentiate among the various aspects of the model, namely, descriptive, instrumental, normative and managerial. They define the first aspect as descriptive by which the theory "describes the corporation as a constellation of cooperative and competitive interests possessing intrinsic value" (p.66). This aspect was used by researchers to describe specific behaviours and characteristics of corporations such as their nature, how they are managed and how their boards perceive stakeholders' interests.

The instrumental aspect views the theory as a base for examining the links between how stakeholders are managed and how different corporate objectives, whether they are financial, economic or societal, are achieved. In other words, proponents of this aspect suggest that adhering to stakeholder practices and principles would help corporations achieve their corporate objectives.

From a normative perspective, the theory was used "to interpret the function of the corporation, including the identification of moral or philosophical guidelines for the operation and management of corporations" (Donaldson and Preston 1995, p.71). Stakeholders are viewed as ends in themselves and not means to other ends,

"and therefore must participate in determining the future direction of the firm in which it has a stake" (Donaldson and Preston 1995, p.73). Donaldson and Preston (1995) conclude that "the three aspects of stakeholder theory are mutually supportive and that the normative base of the theory – which includes the modern theory of property rights – is fundamental" (p.65).

Finally, using the managerial aspect the theory helps managers solve practical problems through offering prescriptive solutions and through recommending "attitudes, structures, and practices that, taken together, constitute stakeholder management" (Donaldson and Preston 1995, p.70). Managers are expected to respond to the various stakeholder interests "within a mutually supportive framework", in an attempt to adhere to "the legitimacy of the management function" (Donaldson and Preston 1995, p.87).

Interestingly, Freeman and Reed (1983) demonstrate how the roles and tasks of the board of directors can be understood from a stakeholder perspective. They articulate that as stakeholders are encouraged to be involved in the governance and decision-making process, the board of directors is expected to "set the tone for how the company deals with stakeholders" and consider how their decision would impact key stakeholder groups (p.96). Yet, the board will not just monitor how managers are managing the firm, but also whether the latter is assessing each stakeholder group in terms of stake and power.

In the same vein, Wang and Dewhirst (1992) contend that the board's role to "manage stakeholders and enhance corporate social performance" is more important than the other roles that the board is expected to discharge such as spanning boundaries (resource dependence perspective) and monitoring agents (agency perspective). "A firm's objectives to identify various key stakeholders concerned,

balance conflicting interests of and manage all key stakeholder groups, and enhance corporate social performance [are achieved] through the board of directors who represent various constituency groups" (p. 116).

Wang and Dewhirst (1992) argue that similar to the agency and resource dependence perspectives, the stakeholder approach considers non-executive directors on the board as crucial instruments to a firm's performance. Such directors serve as delegates and guardians of a wide range of stakeholder groups and their role is to enhance corporate social performance rather than just to promote the financial performance of the firm.

Examining the association between the board of directors and stakeholder orientations, Wang and Dewhirst (1992) find that boards of directors perceive stakeholders distinctly and that stakeholders' orientations differ between CEO directors and non-CEO directors as well as between inside directors and outsiders. Moreover, their results were consistent with the call of stakeholder proponents and reveal that boards of directors have perceived that their responsibilities include a wider group of constituencies than shareholders and that they have moved their belief from "the traditional management for stockholders to the management for stakeholders" (p.120). Finally, Wang and Dewhirst (1992) find that CEO's are more concerned about issues related to customers and government regulations and less concerned about those related to shareholders than non-CEO's.

Unlike agency theory, the stakeholder theory undermines private property and agency (Sternberg 1999). It undermines the former through denying owners the right to choose how they want to use their property; whether their choice is consistent with maximizing their own value or that of stakeholders (Sternberg 1999). On the other hand, it undermines agency through denying "the duty that agents owe

to principals", and being that the agent is accountable to all stakeholders means that he is effectively accountable to no one (Sternberg 1999, p.32).

Despite all the theoretical contributions of the stakeholder theory, it is still "incompatible with corporate governance" (Sternberg 1999, p.20). That is because it rather destroys than support firm's conventional accountability which is the fundamental concept in corporate governance[8] (Sternberg 1999). Moreover, the theory provides no guidance on how to choose among multiple inconsistent and competing interests of different stakeholders (Jensen 2002). Which stakeholder group to prioritize? Do firms focus on customers who want high quality and low prices or employees who want fringe benefits and high salaries? These are some of the questions which the stakeholder theory is not able to answer.

2.5 Resource Dependency Theory

From a resource dependency perspective, the organization represents an integration of resources with a main goal of achieving a competitive advantage over rivals (Reitz 1979). The organization is viewed as an open system influenced by factors from the outside environment (Preffer and Salancik 1978). These external factors can impact the organizational behaviour, at the time that "managers can act to reduce environmental uncertainty and dependence" (Hillman et al. 2009, p.1404). According to the seminal study by Preffer and Salancik (1978) on resource dependence theory, there are five options for a firm to reduce environmental uncertainty, one of which is the board of directors. The board can benefit the firm through providing: access to information through counsel and advice, links to

[8] Accountability involves an agent who is accountable to his principal for a return. The former account to the latter for their practices and use of resources, and a firm and the agents cannot be accountable to all stakeholder groups (Sternberg 1999).

channels of information from the external environment, access to critical resources and legitimacy.

Resource dependence theorists have viewed boards as viable entities which contribute through inter-organizational relationships to increase coordination with other firms, reduce transaction costs, facilitate access to critical resources and consequently reduce uncertainty of a firm's operations (Zahra and Pearce 1989). In other words, they theorize that boards of directors supply firms with scarce resources such as information, skills and knowledge (Boyd 1990; Hillman and Dalziel 2003), and play a crucial role in reducing uncertainty through linking the firm to its outside environment (Hillman et al. 2000; Boyd 1990). As Zahra and Pearce stated: "boards are important boundary spanners that make timely information available to executives" (Zahra and Pearce 1989, p.297).

Reviewing the functions that a board of directors is expected to fulfil, Johnson et al. (1996) identified three types of roles: control, service and resource dependence. They argue that the resource dependence role of the board is illustrated in helping the firm acquire resources which are very important for its survival and prosperity. Specifically, they have emphasized several board characteristics such as board size, percentage of non-executive directors and aspects of interlocks among firms from diverse economic sectors, arguing that these characteristics are used as facilitators for a firm to gain access to critical resources.

Consistent with the agency perspective, the resource dependence role of the board supports the need for non-executive directors to sit on the board. The percentage of non-executive directors on the board was used by researchers as an indicator of this role (Johnson et al. 1996). Such directors are expected to help the

firm gain resources for successful operations through their popularity and status in their professions and societies (Zahra and Pearce 1989).

Classifying directors based on an agency perspective as insiders and outsiders, however, is different from a classification based on resource dependence. Arguing that this agency classification is considered ineffective from a resource dependence point of view, Hillman et al. (2000) categorize directors into insiders, business experts, support specialists and community influentials.

They define insiders as those who are current or previous employees in the firm and are expected to supply the firm with firm-specific information necessary for its operation and strategies.

With respect to business experts, they are directors who serve in decision making positions in other firms, and bring with them their knowledge and experience. They can provide the firm with a variety of solutions to its internal issues through their experience gained from similar problems that they have faced in other firms (Hillman et al. 2000).

In congruence with business experts, support specialists bring to the firm their knowledge and experience, however, they lack general management skills, and their experience is more specialized and is for the purpose of helping management in certain areas like law, finance and capital markets.

Finally, community influentials are outsiders coming from non-business organizations and other community constituencies, providing their knowledge and experience to the firm aimed at precluding unintentional conflicts with community groups, rather than for gaining competitive advantage over rivals.

Another board characteristic used to support the resource dependence role of the board is the board size (Johnson et al. 1996). Larger boards are expected to better

oversee the CEO and evaluate the performance of the firm than their smaller counterparts, because they can provide the firm with wider channels of information and are less likely to be dominated by the management.

Research suggests that several factors affect board composition and its size, among which are environmental uncertainty and financial performance (Johnson et al. 1996). Johnson et al. (1996) argue that the resource dependence role would be crucial for firms facing unhealthy financial conditions or "trying to emerge from bankruptcy". For instance, research evidence reveals that in comparison to survivor firms, bankrupt firms have smaller boards "before and after bankruptcy" and that the number of bankrupt firms' board members decreases in the two-year period before bankruptcy. Further, they contend that appointing directors of interdependent organizations to the board would be more beneficial to the organization in terms of performance than directors who are completely independent as the former provide the firm an access to resources which are crucial to its success.

In the same vein, resources can be accessed through board interlocks which occur when directors serve on the boards of directors of two firms. Board interlocks are one of the examples of the resource dependency role that could be discharged by the directors on the board (Johnson et al. 1996). For instance, such interlocks of a firm's board with financial institutions will help the firm to gain access to important resources such as cash. Interlocks are of two types: direct and indirect (Zahra and Pearce 1989). Direct interlock occurs when directors of a firm sit as directors on the board of a second firm. Indirect interlock, however, occurs "when directors of two different companies serve on the board of a third company, often with the intention to coordinate the activities of the firms involved" (Zahra and Pearce 1989, p.297).

Zahra and Pearce (1989) argue that although board interlocks were seen

theoretically identical to the resource dependence role of the board, a fundamental difference exists between the two approaches. That is, board interlocks emphasize the firm's relation or link with its competitors at the time that the resource dependence approach extends this link to the general environment of the firm.

Although the resource dependence theory assumes that the board plays an important resource provision role through interlocking directories, the theory does not account for the possibility of infiltration through board interlocks (Mizruchi and Stearns 1988; Hillman and Dalziel 2003; Palmer 1983). Mizruchi and Stearns (1988) find that "financial institutions may attempt to infiltrate the decision-making structures of firms that are experiencing difficulty" (p.206). They suggest that during financial crisis periods, financial institutions may attempt to monitor the investments of non-financial firms through gaining positions on the latters' boards. Similarly, Hillman and Dalziel (2003) note that firms may become infiltrated in that the monitoring role that the board is expected to play on behalf of shareholders is rather played on behalf of the linked organization.

The resource dependence theory is considered a strong theoretical underpinning for corporate governance, however, there is still not much research on how it can enhance governance practices and frameworks (Zahra and Pearce 1989). The theory does not theorize on the role that directors play in linking the firm and its environment (Zahra and Pearce 1989). Moreover, it has been subject to criticism that it "ignores the dynamics of power associated with board composition and change" and that it does not make clear how different environmental settings would impact on board characteristics and composition (Zahra and Pearce 1989, p.299).

2.6 Institutional Theory

After reviewing four sociological conceptions proposed to reflect the institutional perspective, Scott (1987) remarks that definitions for the concept of institution or institutionalization are diverse and the ways by which they are approached are also varied. He notes that institutional theorists have suggested that organizational structures are acquired or deliberately chosen "by organizational actors" who are expected to adopt these structures "because of mimetic or normative mechanisms".

Scott (1987) adopts Selznick (1957)'s argument that institutionalization is a process "that happens to the organization over time" and the structure of organizations is shaped in response to the characteristics of participants and influences from the outside environment (p.16). In the same vein, institutional theorists have contended that organizational structures are not only shaped by their transactions and technologies but have "directed attention to the importance of symbolic aspects of organizations and their environments" (Scott 1987, p.507). They raise awareness that organizations are not just production systems, nor do their environments represent just "task environments: as stocks of resources, sources of information, or loci of competitors and exchange partners" (Scott 1987, p.507).

Greenwood and Hinings (1996) examine how organizations change within their institutional context. They differentiate between two changes in organizations: a convergent change which occurs within the parameters of the existing template and radical change which occurs when organizations adopt a template different from the one in use. Furthermore, Greenwood and Hinings (1996) hypothesize that "organizations are structured in terms of archetypes (templates of organizing), which are institutionally derived", and remark that rather than studying how organizations

change, the institutional theory deals with how organizations maintain stability and similarity (isomorphism) with other organizations of their field in terms of organizational arrangements and structures (p.1028). They identify several reasons for the resistance of organizations to radical change. The first main reason is because they are normatively embedded in their institutional contexts. This suggests that regularized behaviours of organizations are the output of "ideas, values, beliefs that originate in the institutional context" (p.1025). In order to survive, organizations "must accommodate institutional expectations", even if these expectations are not much related to performance achievements. This view is consistent with Powell and DiMaggio (1983) who argue that changes occur in organizations in response to processes that increase similarity rather than efficiency. Second, Greenwood and Hinings (1996) pose that for any radical change to occur in an organization, its incidence must "vary across institutional sectors" and specifically "in the extents to which sectors are tightly coupled and insulated from ideas practised in other sectors" (p.1023). Finally, they suggest that institutional changes may vary across sectors as "organizations vary in their internal organizational dynamics" (p.1023).

Powell and DiMaggio (1983) provide a time pace for changes to occur within organizations. They argue that although organizations may show diversity in their structures and forms at their early stages of their lifecycle, these forms tend to be more homogeneous in the long-run. This is because organizational decision makers build in their field an environment that limits their ability to change existing "goals or develop new practices" in later years. Powell and DiMaggio (1983) use the term 'isomorphism' for this homogeneous process that took place in the long-run of an organization's lifecycle, identifying two corresponding types: competitive isomorphism which focuses on "market competition, niche change and fitness

measures", supplemented by institutional isomorphism which extends the competitive view from customers and resources to "political power and institutional legitimacy". According to Powell and DiMaggio (1983), the institutional isomorphism is considered "a useful tool for understanding the politics and ceremony that pervade much modern organizational life" (p.150).

Powell and DiMaggio (1983) theorize that isomorphic change may occur through three processes: coercive isomorphism, mimetic isomorphism and normative isomorphism. Coercive isomorphism stems from the effects of politics and the legitimacy problem. Organizations may face pressures (formal or informal) either from other organizations in their field or from cultural expectations in the environment within which they operate. For instance, changes may occur in response to mandates from governments: adoption of "new pollution control technologies to conform to environmental regulations" or maintaining accounts by non-profit organizations "in order to meet tax law requirements" (p.150). Mimetic isomorphism is an output of "standard responses to uncertainty". So organizations may tend to adopt other organizations' structures and forms when they do not possess a good understanding of their technologies or when their goals are obscure. As such, institutions tend to shape themselves based on similar institutions that they consider more legitimate and prosperous. This adoption could be done either through employee transfer or by the help of consulting firms. Finally, normative isomorphism deals with professionalism. Professionals within organizations tend to be similar to their counterparts in other organizations. Greenwood and Hinings (1996) theorize that organizational behaviours not only reflect responses to pressures from the market, but also to pressures from professions where "templates for organizing" are provided by the institutional context leading organizations "to adopt the same

organizational form". Powell and DiMaggio (1983) articulate that similar to organizations, professions are also subject to coercive and mimetic pressures. For instance, the accounting profession has "mimicked the law and adopted the partnership organizational form" providing a professional view of independence and autonomy (Greenwood and Hinings 1996). Powell and DiMaggio (1983) remark that filtering personnel is considered an important process for promoting normative isomorphism. This could be done through recruiting staff from organizations working in the same industry or asking for skill-level requirements for specific jobs. Unlike the agency theory, which suggests that discretionary actions of management are curbed by the oversight roles of the board of directors in general and the audit committee in particular, the institutional theory presumes that the actions are constrained by the systematic behaviour of organizations (Fogarty and Rogers 2005). Using an institutional perspective, Spira (1999) adopts the "translation" concept from the actor-network theory, and argues that the ritualistic activities of audit committees help enhance the ceremony of the financial reporting process. Interestingly, she notes that such ceremonial activities give the audit committee a protection reliant upon image, leading to an independent reporting by the external auditor free from management intervention.

In the same vein, Cohen et al. (2008) consider the institutional environment and the ceremonial structures of organizations and articulate that through institutional isomorphism organizations tend to adapt to other organizations in their institutional context and thus similarity increases over time. They contend that under the institutional theory and in obscure environments audit committees may perform their roles and responsibilities ceremonially and symbolically. For instance, they argue that the role assigned to the audit committee (instead of management) to

appoint or remove the external auditor is a ceremonial role that is expected to improve the independent and objective image of the relationship between the auditor and the client. Similarly, companies may seek for independent directors in their boards to improve their objectivity image and ranking instead of doing that which best fits their operations and industry. Yet, the audit committee, as part of the board of directors and the whole organization, will tend throughout the lifecycle of the organization to be more similar to other audit committees within the same institutional context.

As far as this study is concerned, the perspectives of isomorphism and ceremonial behaviours are not valid for answering the research questions. That is because "[o]rganizations whose structures become isomorphic with the myths of the institutional environment – in contrast with those primarily structured by demands of technical production and exchange – decrease internal coordination and control in order to maintain legitimacy" (Meyer and Rowan 1977, p.340). This is not the case in this study which suggests that internal governance mechanisms enhance internal coordination and control to ensure high quality financial reporting, and a transparent relationship between the firm's management and the external auditors.

2.7 Multi-theoretical Approach

The most prevalent theory in the literature of corporate governance is the agency theory (Beattie et al. 2012), however, a growing strand of research has raised concerns about the use of this theory as a sole underpinning for governance (Christopher 2010). Eisenhardt (1989) argues that the agency theory should be used with complementary theories. She stated that agency theory is subject to the criticism that it "presents a partial view of the world that, although it is valid, also ignores a

good bit of the complexity of organizations" (p.71). Similarly, Christopher (2010) contends that agency theory does not capture the broader environmental affecting forces that have an impact on organizations. Clarke (2005) criticizes agency theory stating that it only tackles the economic relation between management and shareholders and thus fails to sufficiently encompass all the main factors influencing corporate governance good practices as well as the wider range of corporate relationships' complexities that take place under different environmental market changes. The environmental influencing forces that might affect the organization include: legal issues, social issues, behavioural issues, ethical issues, regulatory issues and human resource issues (Christopher 2010). These forces are arguably "external and internal forces not normally captured in the contractual obligations between management and shareholders in an agency-oriented paradigm" (Christopher 2010, p.686).

To reach what is called an "extended governance paradigm", Christopher (2010) argues that the agency-oriented model should be augmented through including two things. First, researchers should consider the wider environmental forces affecting firm's operations and recognize "a wider set of contractual arrangements between management, the shareholders and an extended stakeholder base" (Christopher 2010, p.686). Second, the governance paradigm should be considered as "being a cycle that extends from the directional and monitoring role of the board, to the management and operational role of the chief executive officer and his management team, and to the assurance role of the external and internal auditor" (Christopher 2010, p.686).

In the same vein, Eisenhardt (1989) addresses the criticism of agency theory and remarks that researchers should use a multi-theoretical approach to capture the

broader environmental forces that would impact on an organization. The need for considering such forces arises from "the increased sophistication and complexity of operations of organizations" (Christopher 2010, p.693).

Few studies have discussed the applicability of a multi-theoretical approach in the field of corporate governance. For instance, Hillman and Dalziel (2003) combines resource dependence and agency theories in an attempt to provide a better interpretation of how directors function in governance. They argue that theoretically combining agency and resource dependence theories in an integrative approach is important in order to capture the practical roles of the board in terms of monitoring and providing resources. This implies that using either of the theories separately would not provide a complete understanding of a board's practices and its effective monitoring role. Hillman and Dalziel (2003) further contend that an integrative approach of these two theories would "help overcome a current myopia" within the literature of the two theories, where researchers have tackled one theory (agency/resource dependence) at the expense of the other in explaining the functions (monitoring/providing resources) of the board (p.383). Similarly, Lynall et al. (2003) integrate the resource dependence, agency, institutional and power theories in a multi-theoretical view to explain how board's composition is likely to be shaped throughout the lifecycle stages of organizations. Young and Thyil (2008) propose a holistic model of governance which is able to incorporate internal along with other environmental factors (ethical, behavioural, legal, corporate strategic, sociological etc.) in an attempt to provide an understanding and explanation of the occurrence of certain behaviours and practices. Above all, Christopher (2010) proposes a multi-theoretical approach that encompasses in addition to the economic-based agency theory, the three management-based theories: resource dependence, stakeholder and

stewardship. Whilst retaining agency theory as the main theory, he suggests that any shortcoming of one of the theories "can be complemented with another theory or group of theories" (Christopher 2010, p.690).

By the same token, some studies have suggested the integration of management-based theories with the agency theory to overcome the limitation of using one theoretical framework (Christopher 2010).

For instance, some have proposed integrating agency and stakeholder theories. Hill and Jones (1992) suggest that the agency theory could be reconceptualised from a nexus of contracts between an agent and a principal to a wider nexus between stakeholders. Others suggest that the agency theory should be "subsumed within a general stakeholder model of the firm" (Culpan and Trussel 2005, p.65). Examining the failure of Enron, Culpan and Trussel (2005) argue that both of the agency and stakeholder theories are valid theoretical underpinnings for this debacle. Specifically, they argue that in the case of Enron, agency theory would only be able to explain the opportunistic behaviours of managers and the consequences of such behaviours on shareholders; however, it has nothing to do with addressing the consequences for stakeholders and how their interests could be protected. In other words, agency theory is not able to provide a complete understanding of the Enron debacle as its main focus is on the agent-principal relationship between managers and shareholders. Culpan and Trussel (2005) added that the importance of using stakeholder theory along with agency theory, is because of the fact that more constituents than only managers and shareholders have either effected or been affected by the failure of Enron. For instance, Arthur Andersen, the external auditor of Enron, is one of the stakeholders of the firm and had "allegedly colluded with Enron officials and destroyed some financial documents related to its

audit" (Fernando 2009, p.230). On the other hand, the management of Enron have not only hurt the interests of shareholders but also those of other stakeholders comprising employees, creditors, competitors, etc. (Culpan and Trussel 2005).

Cohen et al. (2008) suggest the integration of agency and institutional theories contending that a board and its committees might be fulfilling their regulatory requirements of monitoring (agency perspective), and "are merely fulfilling symbolic roles" (institutional perspective) (p.193). They argue that using the agency theory alone may not reflect the true and effective role that audit committees may play in the oversight process, as its perspective focuses on the outward form of the board and audit committee, such as independence, number of meetings, number of financial experts, etc. Institutional theory, however, "suggests that it is insufficient to focus on isolated audit committee or board surface characteristics in determining the driving factors that affect reporting quality. Rather, it is also necessary to consider the nature of the relationship between management and other corporate governance players" (p.195).

In the same vein, Hillman et al. (2000) argue that agency and resource dependence theories must be examined simultaneously for better understanding of the composition of boards and role of directors. Similarly, Hillman and Dalziel (2003) articulate that using any of these theories alone is insufficient and represents a theoretical weakness. They argue that agency theory focuses on the purposes of the board and its committees for monitoring without taking into consideration their capability of doing so. As such they contend that the effective monitoring role of the board will not be fully understood if their ability to monitor is not taken in consideration.

In essence, there are a limited number of studies which have examined the integration of the theories of corporate governance, and the validity of the integration propositions suggested by these studies even need to be determined through testing real life organizational settings (Christopher 2010).

2.8 Conclusion

Several theories have been used in the literature of corporate governance. What is important is to know when a certain theory should be used and whether it needs to be complemented with any other theory. Lynall et al. (2003) theorize that what matters, rather than choosing one of the theoretical approaches over another, is the applicability of each of the approaches given the phenomena of interest.

As far as this study is concerned, there are four main theoretical frameworks which have been used in the relevant literature: agency, stakeholder, resource dependence, and institutional. This is in addition to a multi-theoretical approach which has been lately introduced to capture the wider complexities in organizations. The agency theory has been the main theory applied in corporate governance research (Beattie et al. 2012), because its "model leads to a higher degree of mathematical tractability than do the competing theoretical perspectives" (Cohen et al. 2008, p.188).

Unlike agency theory which suggests that all of a manager's decisions must align with the sole objective of the firm of maximizing shareholders wealth, the stakeholder theory presumes the alignment of managers' decisions with all the interests of different stakeholder groups. In other words, the stakeholder perspective suggests that managers act as fiduciaries for "the interests of all of a firm's stakeholders" trying to address them equally (Marcoux 2003, p.2). However, the stakeholder theory is unable to achieve this objective of balancing the benefits of all

its stakeholders because different stakeholders have different interests by which what benefits a certain group may harm the other (Sternberg 1999). For instance, increasing the benefits for employees through higher salaries may harm customers who will be paying higher prices. As such this theory provides no guidance on how to balance conflicting interests and which benefits are to be preferred (Sternberg 1999). Moreover, it is considered an unrealistic approach, as it does not set a single-valued objective for managers to attain and leaves for the latter the freedom "to exercise their own preferences in spending the firm's resources" (Jensen 2002, p.237). Finally, the stakeholder theory does not account for the possibility of opportunistic behaviours by managers who may "use stakeholder claims as a smokescreen to obscure what is really their inability to deliver value to the company's shareholders" (Healy 2003, p.24).

Similar to the stakeholder theory, resource dependence theory also does not account for the possibility of managerial opportunistic behaviours to mislead shareholders. However, it is narrowly focused on the boundary spanner role of the board of directors who provide management with timely information to enhance performance. Moreover, resource dependence theorists have been subject to criticism that they have mainly emphasized how the board of directors could facilitate "the provision of resources to the firm" without taking into account the incentives of the directors themselves (Hillman and Dalziel 2003, p.384).

In the same vein, the institutional theory does not account for the self-serving behaviour of managers and their deliberate intentions of hiding the real performance of the firm. It rather deals with the social and political factors that may affect the organization within its institutional context. Neither is the relationship between management and the external auditors delineated by these factors, nor are the

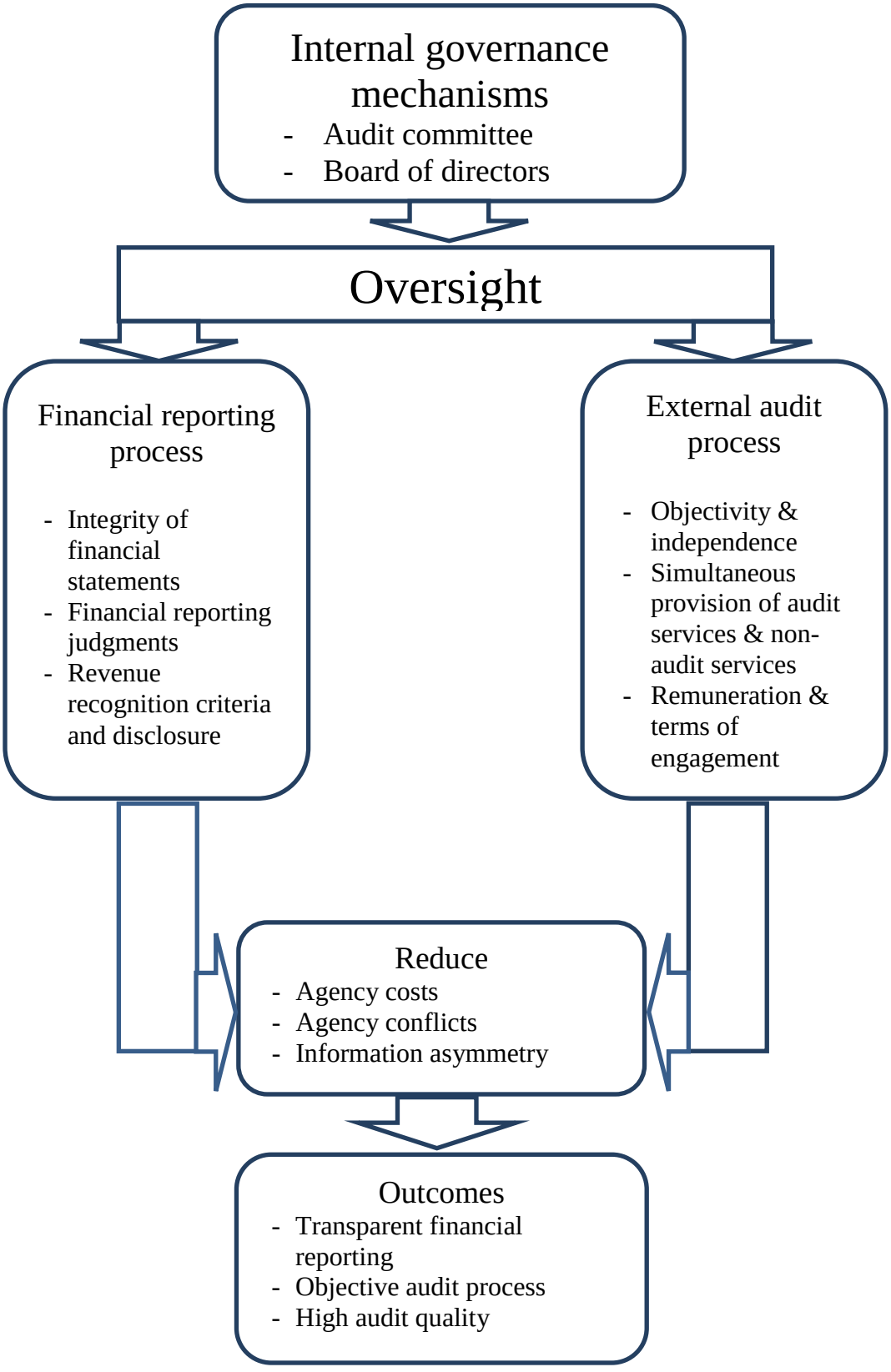
discretionary actions of management constrained by the systematic behaviour of organizations.

Recently, a limited number of studies have suggested a multi-theoretical approach. More research is needed in this area to provide a clear view of the interrelationships of theories and how they might complement each other. The proposed integrative models are simplified and might not be applicable in real life situations where "there might well be complexities that could prevent a clear alignment of the complementary effects" (Christopher 2010, p.693).

This study mainly draws on agency theory to address the research questions and test whether an association exists between corporate governance mechanisms on the one hand and financial reporting quality and auditor remuneration on the other. In contrast to all alternative theories, the agency theory provides better justification of managers' incentives to manage earnings and better explanation of the relationship between auditors and their clients. Figure 2.1 illustrates the agency perspective of the oversight role of the board and the audit committee which is adopted in this study. Earnings management is considered an agency cost. Given the concerns raised about misleading revenue recognition practices during the sample period of this study, earnings are considered to be managed opportunistically to hide poor performance and prevent shareholders from making informed decisions. As such, vigilant oversight from the board of directors in general and the audit committee in particular will enhance the integrity of financial statements, ensure reliable financial reporting judgements and proper revenue recognition and disclosure, and in turn reduce agency costs. On the other hand, simultaneous provision of audit services and non-audit services is more likely to cause moral hazard agency conflicts (Quick et al. 2013), and impair the objectivity and

independence of the external auditors. An attentive oversight from the board and the audit committee is also expected to reduce agency conflicts through monitoring the effectiveness of the audit process while taking into account the provision of non-audit services by the audit firm and its impact on auditors' independence.

Figure 2.1: An Agency Perspective of the Oversight Roles of Internal Governance Mechanisms



Chapter 3. Earnings Management

Chapter 3
Earnings Management

3.1 Introduction

After setting up the theoretical framework, and before reviewing the literature on the association between earnings management and corporate governance, it is necessary to understand what we mean by earnings management and why firms engage in such practices. There have been several definitions for earnings management. The literature has identified different incentives to manipulate earnings, and various techniques have been developed to detect earnings management. This chapter provides a general overview of earnings management and demonstrates various incentives for managing earnings. Then, alternative techniques for detecting earnings management are critically discussed with reasoned justification on the adoption or rejection of each technique.

3.2 Overview of Earnings Management

One of the main roles of financial reports is to convey information about a firm's financial position and performance to owners and stakeholders. To fulfil this role, and given their knowledge about the firm and its operations, managers are given the flexibility to select estimates, disclosures and reporting methods which (as they believe) best reflect the business economics of the firm and potentially increase the value of the financial information communicated. However, from an agency perspective, divergence in interests between managers and shareholders along with imperfect auditing may create opportunities for managers to engage in earnings management practices through opportunistically choosing estimates and reporting

methods that do not reflect the economic reality of the business operations (Healy and Wahlen 1999).

Loosely speaking, there are two perspectives of earnings management that have been examined in the earnings management literature: information and opportunistic. The information perspective views accounting discretion as beneficial for investors and holds when managers use accounting discretion to either "smooth reported earnings relative to the underlying cash flows" (Dechow and Skinner 2000, p.238), or "reveal to investors their private expectations about the firm's future cash flows" (Beneish 2001, p.5). Specifically, managers may use their accounting discretion to increase the informative-ness of financial reports through credibly estimating net receivables and providing reliable forecasts of cash collections (Healy and Wahlen 1999). On the other hand, the opportunistic perspective holds when managers use accounting discretion to mislead shareholders (Beneish 2001), through choosing accrual decisions that result in excessive smoothing (Dechow and Skinner 2000).

Studies tackling these two perspectives have been conducted since the 1970s, and are generally categorized into two main eras (Beneish 2001). In the first era between the 1970s and early 1980s, studies were more focused on the information perspective where they "provided evidence consistent with managers' incentives to choose beneficial ways of reporting earnings in regulatory and contractual contexts" (Beneish 2001, p.3). However, in the second era starting from the mid-1980s, researchers' emphasis has been more focused on the opportunistic perspective and the investigation of earnings manipulation through accruals. Beneish (2001) provides several reasons for this "explosive growth" in the accrual-based earnings management literature. He claims that the great emphasis on accruals is because the

latter are the main product of Generally Accepted Accounting Principles (hereafter GAAP), and that earnings are more likely to be manipulated through accruals than through cash flows. Moreover, he argues that if earnings management occurs through an unobservable accrual, it is less likely to be unravelled by investors. To date, several regression accrual models have been developed and modified in an attempt to improve the power of these models in detecting earnings management[9].

Whether managers' discretion is beneficial or opportunistic depends on managerial intent. For example, accrual decisions which fall within GAAP "are considered to be earnings management if they are used [with intent] to obscure or mask true economic performance" (Dechow and Skinner 2000, p.240). The vast majority of research done on earnings management has predicated their arguments and conclusions on the opportunistic perspective (Beneish 2001), especially in the aftermath of several high-profile earnings management scandals such as Enron, WorldCom, Tyco and Global Crossing.

3.2.1 Definition

The literature has not revealed a general agreement on a single definition of earnings management; however, the definitions provided "differ depending on the instruments of manipulation, on the purpose of the earnings management behaviour and the timing of earnings management" (Goncharov 2005, p.20). The most commonly used definitions in the literature are those provided by Schipper (1989) and Healy and Wahlen (1999) respectively:

> [Earnings management is] a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process)…A minor extension to the definition would encompass

[9] The main models are discussed in the detection of earnings management section.

> "real" earnings management, accomplished by timing investment or financing decisions to alter reported earnings or some subset to it (Schipper 1989, p.92).

> Earnings management occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (Healy and Wahlen 1999, p.368).

Schipper (1989) notes that her definition focuses on the external reporting role and that it does not include managerial accounting activities that could be used to change or affect GAAP. Moreover, she adds that her definition views accounting numbers as general information and does not depend on any concept or type of earnings.

Unlike the definition of Healy and Wahlen (1999), Schipper (1989)'s definition provides the possibility of earnings management to occur through real activities management. However, both of the definitions refer to an intervention in the financial reporting process which could be facilitated through the use of managers' judgements.

Judgment in financial reporting refers to the opportunistic use of estimates and accounting choices that are adopted by managers "to mislead stakeholders (or some class of stakeholders) about the underlying economic performance of the firm"[10], rather than to provide informative reports and credible signals about the financial performance of the firm (Healy and Wahlen 1999, p.369).

[10] Stakeholders are misled through information asymmetry and manager's favourable access to information.

Table 3.1 An Overview of Earnings Management Methods[11]

Earnings management type	Specific method	Example
Accounting decisions: Within-GAAP earnings management.	Exploiting the available flexibility within GAAP	- LIFO vs. FIFO - Accelerated vs. straight line depreciation. - Change in useful life of asset - Recording/taking back provisions
Accounting decisions: Out-of-GAAP earnings management	Not applying/violating GAAP	- Early recognition of revenue (for example, before goods are shipped)
Real transactions	Managing earnings by managing real transactions	- Timing of asset disposals, R&D and maintenance expenses, purchases of inventory (in the case of application of LIFO)

Table 3.1 presents the types of earnings management along with methods and examples about how they are practised. Through within-GAAP earnings management, several accounts, including non-current assets, inventory, receivables, etc. could be managed by managers' choice of estimates and accounting methods. For instance, estimates are required to be taken for the useful life and salvage value of non-current assets. Similarly, the use of estimates involves bad debt expenses and asset impairment losses. In the same vein, judgement is required in choosing from among accounting methods to report for depreciation (straight line or accelerated), and inventory valuation methods (LIFO, FIFO, weighted-average). For example, during inflationary periods, valuing inventory under LIFO will result in less reported earnings than when they are valued under FIFO. Similarly, switching between

[11] Adopted from (Goncharov 2005, p.21).

depreciation methods can result in an increase or decrease in reported earnings[12] (Goncharov 2005).

Extreme forms of earnings management could be also practised through out-of-GAAP activities or fraudulent reporting (Dechow and Skinner 2000). Financial fraud is "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" (Dechow and Skinner 2000, p.238). Fraud activities are therefore deliberate manipulations of accounting figures affecting reported earnings. These activities include recording unrealized and fictitious sales, backdating sales invoices, and "overstating inventory by recording fictitious inventory" (Dechow and Skinner 2000, p.239).

Finally, managers can manage real activities to achieve a certain reported earnings target. Rather than affecting accruals, real activities affect cash flows and encompass both operating and investing decisions. Operating decisions might be through the timing of advertising costs, maintenance costs and product shipments to customers, whilst investing decisions are through the timing of sale of non-current assets "and the timing of investing or disinvesting in research and development" (Goncharov 2005, p.23). The conventional perspective in the earnings management literature is that accrual-based earnings management is more prevalent than its real activities counterpart as the latter decisions are more costly (Goncharov 2005), and more likely to be unravelled by auditors (Beneish 2001).

Dechow and Skinner (2000) contend that academics perceive earnings management differently to practitioners and regulators. They argue that the latter

[12] In first periods, lower depreciation expenses are reported under the straight-line depreciation method than under its accelerated counterpart.

have more aggressive views of earnings management. In order to know whether firms' managers are engaged in earnings management, Dechow and Skinner (2000) argue that the emphasis should be on managerial incentives. Similarly, Healy and Wahlen (1999) articulate that in order to identify whether a firm is managing earnings, "researchers first have to estimate earnings before the effects of earnings management" (p.370). Describing this as a difficult task, Healy and Wahlen (1999) suggest a common approach where researchers should first identify managers' incentives and motivations to manage earnings and then "test whether patterns of unexpected accruals (or accounting choices) are consistent with these incentives" (p.370). The following sections tackle the motivations for earnings management followed by the most prevalent techniques used in the literature for detecting earnings management.

3.3 Motivations for Earnings Management

Healy and Wahlen (1999) identify three main incentives for earnings management. These incentives are categorized into: Capital market, Contracting and Regulatory.

3.3.1 Capital Market Incentives

Healy and Wahlen (1999) argue that the wide usage of accounting figures by investors and analysts for stock valuation can create incentives for managers to manage earnings "in an attempt to influence short-term stock price performance" (p.371). Several studies reveal that earnings could be manipulated for stock market purposes (e.g., Teoh et al. 1998; Aharony et al. 2010; Burgstahler and Eames 2006).

For instance, Teoh et al. (1998) argue that managers of firms issuing initial public offerings (hereafter IPOs) tend to make discretionary accrual choices to report high earnings and raise the selling price of their firm's share. Further, they argue that IPO firms have incentives to manage earnings before and after IPOs. In the pre-IPO period, firms tend to borrow high reported earnings "from either the past or the future" in an attempt to achieve a higher offering price. In the post-IPO period, however, they tend to report high earnings to maintain a high price of the share in the market. There is also another reason that may trigger firms to manage earnings in the post-IPO period. Given the unusual legal and regulatory scrutiny activities which take place in the post-IPO period, issuers who aggressively manipulate earnings prior to IPOs tend also to "manage their first post-IPO earnings" as the immediate reversal of accruals may clearly signal earnings management practices and prompt lawsuits against management and the firm (Teoh et al. 1998, p.1936). Teoh et al. (1998) conclude that issuers of IPOs are more likely to have higher discretionary current accruals around the issue than non-issuers.

Recently, Aharony et al. (2010) used a sample of 185 IPO Chinese firms issuing shares on the Shanghai Stock of Exchange for the period between 1999 and 2001. Unlike the majority of studies that have examined discretionary accruals as a proxy for earnings management, Aharony et al. (2010) investigate related party transactions (purchases and sales of goods and services) as an earnings management instrument during the IPO process. They find that in the pre-IPO period, firms may use related party sales opportunistically to manipulate earnings upwards. As such, they suggest that firms may tend to boost earnings in the pre-IPO period with the intention of grasping "opportunities for tunnelling in the post-IPO period" (p.24). That is, in the post-IPO period, minority shareholders who have bought in at the IPO

will be exploited through not repaying back their debts, which are "in the form of related party corporate loans", to the newly established IPO firms.

In the same vein, existing research finds evidence that firms may engage in earnings management practices to meet management or financial analysts' expectations. Burgstahler and Eames (2006) contend that firms' managers may tend to manage earnings to avoid reporting negative earnings surprises. Managers would exercise such practices through reporting higher earnings than those forecast by analysts. The results of Burgstahler and Eames (2006) are consistent with this argument and find that firms may engage in both "upward management of reported earnings and downward management of analysts' forecasts to achieve zero and small positive earnings surprises" (p.633). They suggest the presence of at least two reasons for beating analyst forecasts and reporting positive earnings surprises. The first reason is because of the incremental benefits which may result from exceeding forecasts. Second, due to the uncertainty of earnings outcomes, firms may aim at achieving positive earnings surprises to mitigate the risk of reporting negative ones. Finally, Burgstahler and Eames (2006) conclude that components of both discretionary accruals (bookkeeping activities) and cash flows (real operating activities) could be used to manage earnings for the purpose of achieving zero earnings surprises.

Roychowdhury (2006) provides evidence consistent with that provided by Burgstahler and Eames (2006). Arguing that meeting earnings targets may create incentives for managers to manage earnings through real activities manipulations[13], Roychowdhury (2006) finds that firms may engage in real activities earnings management, through price discounts, overproduction, and discretionary

[13] "Real activities manipulation is defined as management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds" (Roychowdhury 2006, p.336).

expenditures, to avoid reporting negative earnings surprises and meet zero earnings and annual analyst forecasts[14]. He suggests that although providing sales discounts and reducing discretionary expenditures could be optimal choices in certain circumstances, the extensive engagement in such activities "with the objective of meeting/beating an earnings target" is considered to be real activities manipulation (p.337).

3.3.2 Contracting Incentives

It has been argued that managers who receive earnings-based bonuses may make accounting choices to boost income with the intention of increasing their payoff. This argument suggests that managers' endeavours to meet bonus earning targets incentivize them to engage in income-increasing earnings management. However, Healy (1985) theorizes that if earnings are too low that they cannot reach the target, no matter what the accounting choices, managers will also have incentives to "take a bath" and aim to achieve future earnings' targets. This implies that managers may engage in income-decreasing earnings management and further decrease current earnings in an attempt to meet or beat future targets. In other words, if managers found that bonuses will not be awarded because earnings do not exceed the lower bound, they may have incentives to take income-decreasing discretionary choices so that they can maximize their expected future awards by deferring current earnings.

In the same vein, share ownership and stock-based compensations are some of the tools used to help align the incentives of managers with those of shareholders. However, some have argued that such tools may also serve as incentives for

[14] Price discounts and overproduction are managed for a temporary increase in revenues and for reporting lower cost of sales respectively.

managers to manage earnings. For instance, Cheng and Warfield (2005) examine the association between earnings management and managers' equity incentives emerging from stock ownership and stock-based compensation. In contrast to agency theory proponents who argue that equity incentives could help align managers' incentives with those of shareholders and lead to a reduction in agency costs, Cheng and Warfield (2005) contend that equity incentives might also prompt managers "to increase the short-term stock price through earnings management" (p.442). Specifically, they evince that managers' incentives to manipulate earnings and increase short-term stock price arise from their attempt to diversify the increased risk of stock-based compensation and ownership. Further, they stated that for risk diversification reasons, managers tend to sell their own shares. As their wealth will become more dependent on the short-term price of stock, they tend to use their discretion to manipulate earnings and sustain a high short-term stock price. As a result, and consistent with their hypothesis, Cheng and Warfield (2005) find that equity incentives (ownership and stock-based compensations) are valid incentives for earnings management, and that managers can benefit from managing earnings through increasing the short-term price of shares they are willing to sell.

Similarly, Bergstresser and Philippon (2006) articulate that large options packages may also increase managers' incentives to manage firm's reported earnings. Given the significant increase in accruals along with the increased exposure of "CEO wealth to firm stock prices" during the period 1980 to 2000, they examine whether the increase in accruals is one of the earnings management mechanisms used by CEOs to boost their stock-based compensation. Trying to support their argument, Bergstresser and Philippon (2006) provide examples about several firms like Enron, Tyco, Waste Management, and Xerox which have evidenced inflated earnings along

with significant increase in share sales and options exercises at the same time. During the 1990s, Xerox was one of the firms whose managers were found to have managed reported earnings and to have exercised large quantities of stock options and sold large quantities of shares. In 2002, Xerox was forced by the SEC to restate reported earnings for the period between 1997 and 2001 by reducing "revenues by $2.1 billion" and "net income by $1.4 billion" (Bergstresser and Philippon 2006). During the same period, Xerox's CEO exercised over $20 million of options "almost three times the value of options exercised over the prior five years" (Bergstresser and Philippon 2006, p.513). The results of Bergstresser and Philippon (2006) reveal that equity incentives are positively related to abnormal accruals and that high accrual years evidence the exercise of large quantities of options by CEOs as well as the sale of large numbers of shares.

Lending contracts are another type of contractual incentive. Here income-increasing earnings management could be practised either before or after debt is granted. In the first case, firms exercise such type of earnings management to facilitate financing; however, after debt is granted companies may engage in income-increasing earnings management to avoid debt covenant violations (Goncharov 2005). For instance, Sweeney (1994) examines the association between "managers' accounting responses" and debt covenant violations. She finds that as firms come closer to debt default, their managers may use the accounting flexibility given to them to boost earnings. Her result is consistent with the debt hypothesis conjecturing that: "Ceteris paribus, the larger a firm's debt-equity ratio, the more likely the firm's manager is to select income-increasing accounting procedures" (Sweeney 1994, pp.281-282).

3.3.3 Regulatory Incentives

Several studies have provided evidence that firms tend to manipulate their reported earnings in an attempt to influence the decision making process by regulators (e.g., Jones 1991; Key 1997; Magnan et al. 1999). Results of these studies were consistent with the political cost hypothesis. Based on the political cost theory, firms subject to significant wealth transfers during a political process are expected to make accounting choices or use accounting procedures that mitigate the transfer (Watts and Zimmerman 1986).

Jones (1991) examines whether benefits from import relief would create incentives for relevant firms to manipulate earnings downwards during "import relief investigations by the United States International Trade Commission" (p.193). As managers engage in the manipulation of several accruals to decrease reported earnings, she uses the discretionary component of total accruals, instead of single ones, to detect earnings management. Consistent with her argument, Jones (1991) finds that the use of accounting numbers (profitability) in import relief determination motivates managers to manipulate earnings to obtain or even increase such relief.

In the same vein, Key (1997) examines the impact of political costs on firms' accounting choices in the cable television industry during a period of political scrutiny. Using discretionary accruals as a proxy for earnings management, Key (1997) finds that managers have incentives to engage in earnings management practices to reduce the impact of political scrutiny and industry re-regulation. Specifically, the results reveal the existence of income-decreasing discretionary accruals during the period of political scrutiny (1989-1990). She further finds that firms that are expected to be more influenced by the proposed regulations have greater levels of income-decreasing earnings management.

Magnan et al. (1999) examine whether "Canadian firms lodging antidumping complaints against foreign competitors" engage in income-decreasing earnings management "to obtain favourable rulings from the Canadian External Trade Tribunal" (p.160). The financial condition presented in the financial statement of the plaintiff is one of the factors that the tribunal considers when evaluating if foreign competition is causing harm to domestic producers (Magnan et al. 1999). As such, Magnan et al. (1999) argue that firms which have launched antidumping complaints have incentives to practise income-decreasing earnings management during the period of investigation. The results of Magnan et al. (1999) were consistent with their argument and reveal that Canadian firms manipulated their reported earnings downward by a considerable amount of 6.3% of lagged assets throughout the year of investigation by the tribunal.

In a more recent study, Garrod et al. (2007) examine how political costs can create incentives for managers to manage earnings. Specifically, they use a sample of 25,740 Slovenian private firms for the year 2002 and argue that firms may adopt accounting choices and procedures that will delay their payment of corporate tax. The results of Garrod et al. (2007) reveal that profitable firms tend to manage earnings downwards to reduce, but not completely eliminate, present-period tax obligations.

Most recently, Cheng et al. (2011) examine the association between earnings management and CEO's equity incentives in the banking regulated industry. They provide evidence that regulatory intervention is more likely to motivate, rather than reduce, earnings management emerging from equity incentives. Although higher

regulatory intervention is expected to curb earnings management[15], Cheng et al. (2011) argue that such intervention may also create an incentive for managers to manipulate earnings. They contend that that regulatory intervention could be costly to managers and could result in a decrease in compensation, decrease in the value of stock ownership, or even job loss. To avoid such costs, and avoid regulatory intervention, incentives for managers are created to manipulate earnings or capital. The results of Cheng et al. (2011) reveal that upward earnings management emerging from equity incentives is more likely to be practised by managers of banks with high regulatory intervention.

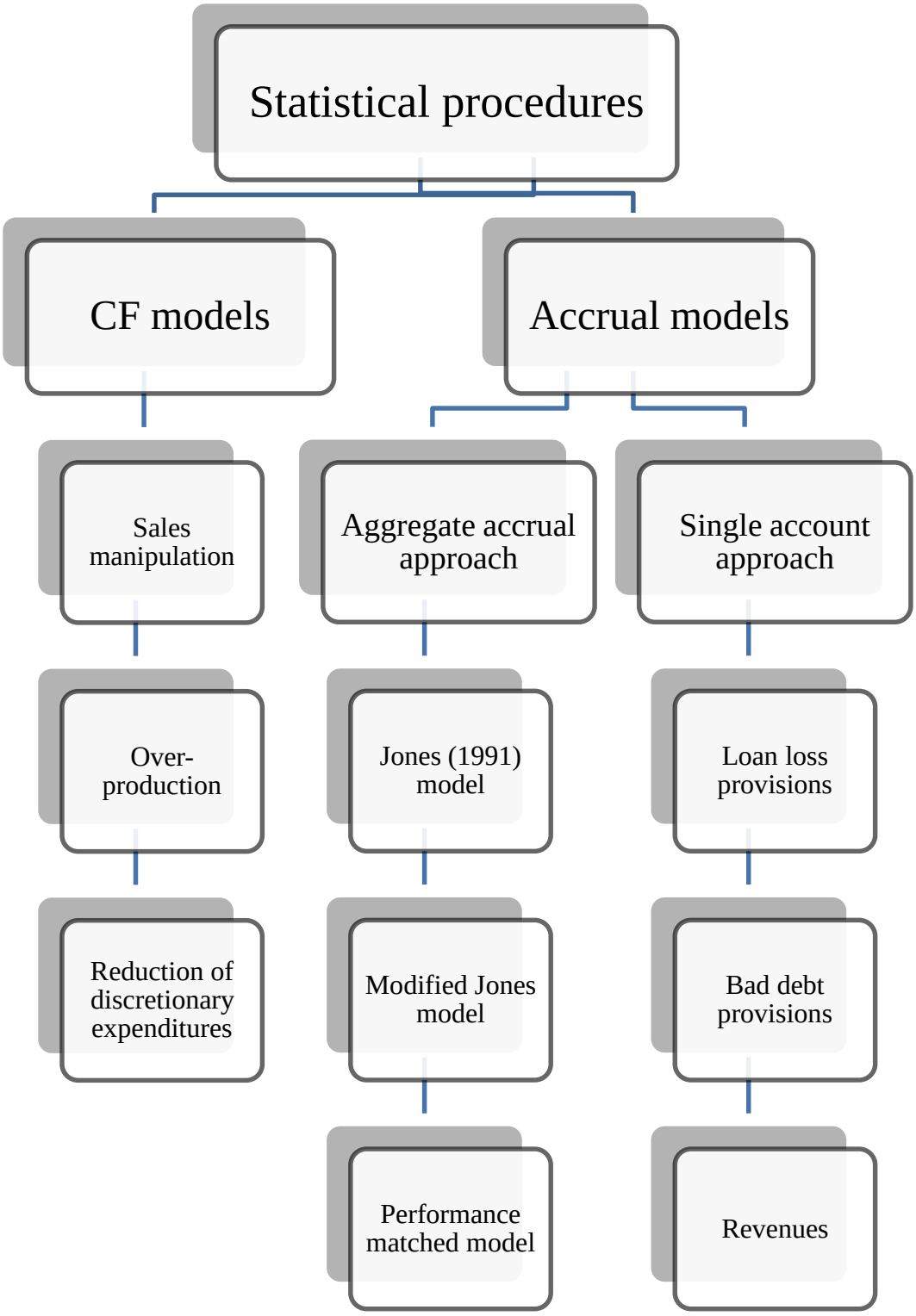
3.4 Detection of Earnings Management

Reported earnings could be managed through one or both of their accruals and cash flow components (Goncharov 2005). In general, researchers have used two main statistical approaches for detecting earnings management, namely, cash flow models and accrual models (Goncharov 2005). Figure 3.1 presents these two approaches along with a classification of the most common earnings quality measures in the literature of earnings management. Cash flow models are used to detect cash flow manipulations resulting from operational and investing decisions. Accrual models are classified into aggregate and specific accrual approaches and are used to detect the accrual portion of earnings which is subject to discretion. Accrual models are to be used to detect irregularities when the research question is related to the correct application of an accounting policy[16](Goncharov 2005).

[15] Earnings management is more likely to be detected when there is monitory intervention from regulators.

[16] This is the case in this study where a specific accrual model (discretionary revenues) is used to detect expected misleading revenue recognition practices.

Figure 3.1 Earnings Management Statistical Models



This section critically discusses the two categories of models illustrated in Figure 3.1 and justifies the study's adoption or rejection of each of the models' relevant earnings proxies.

3.4.1 Cash Flow Models

Healy and Wahlen (1999) and Dechow and Skinner (2000) speculate that earnings management could also be practised through operational and investing decisions rather than just via accounting methods and estimates. Examples of these decisions are: accelerating or delaying sales and accelerating or delaying research and development and advertising expenditures.

Naming these activities as real activities manipulation, Roychowdhury (2006) defines the latter as:

> [D]epartures from normal operational practices, motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations (p.337).

Roychowdhury (2006) contends that in certain economic circumstances, real activities management of those involving discretionary expenditures and sales discounts are possibly considered optimal actions; however, in such cases the extensive engagement in these activities is considered real activities manipulation.

Furthermore, Roychowdhury (2006) evinces that there are several costs associated with the engagement of firms in real activities manipulations and which can have a negative impact on the value of the firm. For instance, a firm which provide aggressive price discounts to increase its current period sales can suffer from lower cash flows in future periods where the firm will seek to meet customers' expectations of the discounts in similar previous periods. Similarly, overproduction

would result in higher inventory holding costs due to the excessive amounts of inventory produced and have to be sold in later periods (Roychowdhury 2006).

There are a limited number of studies which have examined earnings management through operating and investing activities (Goncharov 2005). The most important activities investigated in the literature are: sales manipulation, overproduction and reduction of discretionary expenditures (Roychowdhury 2006). Roychowdhury (2006) develops empirical models to detect these activities arguing that these models are better detectors of the effect of real operations than accruals.

3.4.1.1 Sales Manipulation

Developing a model to detect sales manipulation, Roychowdhury (2006) defines the latter as "accelerating the timing of sales and/or generating additional unsustainable sales through increased price discounts or more lenient credit terms" (p. 339).

Although offering price discounts and lenient credit terms will boost current period reported earnings, it will result in lower net cash flows per sale due to the fall in margins. Following Dechow et al. (1998), Roychowdhury (2006) estimates sales manipulation through cross-sectionally regressing operating cash flow as a function of revenues and change in revenues as follows:

$$OCF_{it}/TA_{it-1} = \alpha_0 + \alpha_1(1/TA_{it-1}) + \alpha_2(REV_{it}/TA_{it-1}) + \alpha_3(\Delta REV_{it}/TA_{it-1}) + \varepsilon_{it} \quad (1)$$

where

OCF_{it} is cash flow from operations for firm *i* in year *t*.

TA_{it-1} is total assets for firm *i* in year *t-1*.

REV_{it} is revenue for firm *i* in year *t*.

ΔREV is the difference between revenues in year *t* and revenues in year *t-1* for firm *i*.

ε_{it} is the error term for firm *i* in year *t*.

The error term in equation (1) represents abnormal cash flows from operation or sales manipulations. It is computed as the difference between actual cash flow from operations and innate (non-discretionary) cash flow from operations using the estimated coefficients from the industry year model in equation (1).

3.4.1.2 Overproduction

Firms may tend to use overproduction strategies in an attempt to manage earnings upward through reporting lower cost of goods sold (COGS) (Roychowdhury 2006). With the increase in production, COGS are reduced as fixed overheads will be spread over a larger amount of units[17]. Following Dechow et al. (1998), Roychowdhury (2006) develops a model for estimating the level of overproduction assuming that production costs constitute COGS and change in inventory (inventory growth). As such, the level of overproduction is estimated using the following model:

$$Prod_{it}/TA_{it-1} = \alpha_0 + \alpha_1(1/TA_{it-1}) + \alpha_2(REV_{it}/TA_{it-1}) + \alpha_3(\Delta REV_{it}/TA_{it-1}) + \alpha_4(\Delta REV_{it-1}/TA_{it-1}) + \varepsilon_{it} \quad (2)$$

where,

$Prod_{it}$ are production costs for firm *i* in year *t*.

TA_{it-1} is total assets for firm *i* in year *t-1*.

REV_{it} is revenue for firm *i* in year *t*.

ΔREV_{it} is the difference between revenues in year *t* and revenues in year *t-1* for firm *i*.

[17] A reduction in COGS is achieved as long as the increase in marginal cost per unit is not larger than that in the fixed cost per unit.

ΔREV_{it-1} is the difference between revenue in year *t-1* and revenue in year *t-2* for firm *i*.

ε_{it} is the error term for firm *i* in year *t*.

Revenues (REV_{it}) are included in equation (2) to control for the COGS portion of the productions costs. However, the current change in revenues (ΔREV_{it}) and the lagged change in revenues are used to account for the change in the inventory portion of production costs. The overproduction level represents the difference between the actual production costs and the normal estimated levels of COGS and the change in inventory.

3.4.1.3 Reduction of Discretionary Expenditures

Discretionary expenditures include research and development, advertising and selling, general and administrative expenses (SG&A)[18] (Roychowdhury 2006). Firms may tend to boost current period reported earnings through deliberately reducing these expenses, especially "when such expenditures do not generate immediate revenues and income" (Roychowdhury 2006, p.340).

Bange and De Bondt (1998) develop a model for detecting the discretionary portion of only one type of expenditures, which is research and development. A more comprehensive model was developed by Roychowdhury (2006), who considers estimating the discretionary component of R&D, advertising, and SG&A expenses through regressing these discretionary expenses as a function of lagged sales[19]. The

[18] Although selling, general and administrative expenses are generally non-discretionary, they are included as they may consist of discretionary components such as maintenance, travel and employee training (Roychowdhury 2006).

[19] Lagged sales are included instead of sales as the model will result in "unusually low residuals" if firms engage in income-increasing earnings management through boosting sales (Roychowdhury 2006).

reduction of discretionary expenditures represents the error term estimated using the following model:

$$Discexp_{it}/TA_{it-1} = \alpha_0 + \alpha_1(1/TA_{it-1}) + \alpha_2(REV_{it-1}/TA_{it-1}) + \varepsilon_{it} \quad (3)$$

where

$Discexp_{it}$ are the discretionary expenditures including R&D, advertising and SG&A expenses.

TA_{it-1} is total assets for firm *i* in year *t-1*.

REV_{it-1} is revenue for firm *i* in year *t-1*.

ε_{it} is the error term for firm *i* in year *t.*

In summary, studies examining earnings management through real activities manipulations are less prevalent in the earnings management literature. Roychowdhury (2006) finds that this type of earnings management is more likely to be constrained by institutional investors. He argues that "institutional investors have a greater ability to analyse the long-term implications of current managerial actions" and therefore they are more likely to distort managers' incentives to engage in real activities earnings management (p.343). As far as this study is concerned, sample firms are not expected to manipulate earnings through real activities as "[i]nstitutional investors are the largest owners of firms listed on the London Stock Exchange"[20] (Goergen and Renneboog 2001, p.264). Therefore, this study does not adopt cash flow models to detect earnings management.

3.4.2 Aggregate Accrual Approach

Those who have used the aggregate accrual approach in measuring earnings management consider that accounting accruals are comprised of two parts: abnormal

[20] As of 31 December 2003, institutional investors owned about 80 percent of UK equity (Mallin et al. 2005).

accruals which are determined based on the discretion of management, and non-discretionary or normal accruals which are determined by the firm's actual economic events. In order to isolate the discretionary part of accruals from the non-discretionary one, total accruals should first be computed. Hence, before discussing the models used in this approach to detect earnings management, it is necessary to highlight the ways of computing total accruals used in the literature. The most widely used aggregate models are then critically discussed and include the Jones (1991) model, Modified Jones model and Performance Matched model. The last two models represent modifications to the original Jones (1991) model and were developed in an attempt to improve the power of the original Jones (1991) model.

3.4.2.1 Computing Total Accruals

Total accruals are computed using two methods, the balance sheet approach (e.g., Healy 1985; Jones 1991) and the cash flow approach (e.g.,Xie et al. 2003; Klein 2002a). According to the balance sheet approach, total accruals are computed as follows:

$$TACC_{it} = \Delta CA_{it} - \Delta CL_{it} - \Delta Cash_{it} + \Delta Debt_{it} - DEP_{it} \quad (4)$$

where:

$TACC_{it}$ is total accruals for firm *i* in year *t*.

ΔCA_{it} is the change in current assets for firm *i* in year *t*.

ΔCL_{it} is the change in current liabilities for firm *i* in year *t*.

$\Delta Debt_{it}$ is the change in debt included in current liabilities for firm *i* in year *t*.

DEP_{it} is the depreciation and amortization expense for firm *i* in year *t*.

All variables in equation (4) "are deflated by lagged total assets (TA_{t-1}) to control for scale differences" (Hribar and Collins 2002, p.107).

The vast majority of studies have been using the balance sheet approach until the latter was criticised for resulting in "measurement error in accruals estimates" (Hribar and Collins 2002, p.105). Moreover, the balance sheet approach was subject to criticism that it accounts only for the depreciation and amortization expense portion of non-current accruals (Habbash 2010).

Unlike the balance sheet method, the cash flow approach considers both current and non-current accruals. Under this approach, total accruals are computed as follows:

$$TACC_{it} = EBXD_{it} - OCF_{it} \qquad (5)$$

where

$TACC_{it}$ is total accruals for firm *i* in year *t*.

$EBXD_{it}$ is earnings before extraordinary items and discontinued operations for firm *i* in year *t*.

OCF_{it} is cash flow from operations for firm *i* in year *t*.

According to Hribar and Collins (2002), the cash flow approach is better than its balance sheet counterpart and the application of the latter to estimate accruals would result in biased estimates and would likely lead researchers to "erroneously conclude that earnings management exists when there is none" (p.105). As such, the author measures total accruals as the difference between earnings before extraordinary items and cash from operations.

3.4.2.2 Original Jones (1991) Model

The Jones (1991) model is the most commonly used aggregate accrual model and suggests that managerial discretion and changes in firms' economic conditions are the two determinants of accounting accruals (Beneish 2001). Controlling for the "changes in the economic circumstances of the firm", the Jones (1991) model

regresses total accruals as a function of the change in revenues and the level of gross property, plant and equipment as follows:

$$TACC_{it}/TA_{it-1} = \alpha_1(1/TA_{it-1}) + \alpha_2(\Delta REV_{it}/TA_{it-1}) + \alpha_3(PPE_{it}/TA_{it-1}) + \varepsilon_{it} \quad (6)$$

where:

$TACC_{it}$ are total accruals for firm *i* in year *t*.

TA_{it-1} is total assets for firm *i* in year *t-1*.

ΔREV_{it} is the difference between revenues in year *t* and revenues in year *t-1* for firm *i*.

PPE_{it} are gross property, plant and equipment for firm *i* in year *t*.

ε_{it} is the error term for firm *i* in year *t*.

All variables in equation (6) "are scaled by lagged assets to reduce heteroskedasticity" (Jones 1991, p.212). The change in revenues and the level of property, plant and equipment are included to control for changes in economic conditions and thus for the changes in non-discretionary accruals. Change in revenues affect to some extent changes in working capital accounts that are included in total accruals such as inventory, accounts receivable and accounts payable. Gross property, plant and equipment are used to "control for the portion of total accruals related to non-discretionary depreciation expense" (Jones 1991, p.212). The level of gross property, plant and equipment is included, rather than the change, as the total accrual measure includes total depreciation expense.

The error term in equation (6) represents discretionary accruals (DA). To calculate non-discretionary accruals (NDA), ordinary least square estimation method is used to obtain estimates a_1, a_2 and a_3 of α_1, α_2 and α_3 respectively.

$$NDA_{it} = a_1 (1/TA_{it-1}) + a_2 (\Delta REV_{it}/TA_{it-1}) + a_3 (PPE_{it}/TA_{it-1}) \quad (7)$$

Theoretically, the sign of a_2 in equation (7) could be either positive or negative[21], however, empirical evidence reveals a strong tendency for a positive sign (Goncharov 2005).

As such, discretionary accruals (DA) are computed as follows:

$$DA_{it} = TACC_{it}/TA_{it-1} - NDA_{it} \quad (8)$$

Despite its simplicity and common usage by researchers, the Jones (1991) model considers revenues as non-discretionary and therefore it is unable to detect revenue manipulations. Given the sample period of this study and the concerns raised about misleading revenue recognition practices during this period, employing the Jones (1991) model will lead to misspecification of discretionary accruals.

3.4.2.3 Modified Jones Model

In an attempt to address the shortcomings of the Jones (1991) model, Dechow et al. (1995) modified the latter model to be able to detect revenue recognition earnings management as well. Unlike Jones (1991), who assumes total revenues as non-discretionary, Dechow et al. (1995) presume that collected revenues are the only non-discretionary part, and that managerial discretion is exercised over the credit sales part of revenues. As such, the Modified Jones model computed non-discretionary accruals as follows:

$$NDA_{it} = a_{1i} (1/TA_{it-1}) + a_{2i} [(\Delta REV_{it} - \Delta AR_{it})/TA_{it-1}] + a_{3i} (PPE_{it}/TA_{it-1}) \quad (9)$$

where

NDA_{it} are non-discretionary accruals for firm *i* in year *t*.

TA_{it-1} is total assets for firm *i* in year *t-1*.

ΔREV_{it} is the difference between revenues in year *t* and revenues in year *t-1* for firm *i*.

[21] Revenue may cause both increase and decrease in working capital accruals.

ΔAR_{it} is the difference between accounts receivable in year *t* and accounts receivable in year *t-1* for firm *i*.

PPE_{it} are gross property, plant and equipment for firm *i* in year *t*.

Comparing the Modified Jones model with that of the original Jones (1991) model, if a firm's change in credit sales is only attributed to earnings management activities, the Modified Jones model is expected to be a better tool to measure earnings management (Goncharov 2005). If this is not the case, the Jones (1991) model would perform better.

Dechow et al. (1995) evaluate five alternative accrual-based models, including the Jones (1991) and the Modified Jones, in terms of their ability to detect earnings management [22]. Their results reveal that the Modified Jones model "provides the most powerful tests of earnings management" (p.223). However, despite its superiority, the Modified Jones model is "mis-specified when applied to samples experiencing extreme performance" (Kothari et al. 2005, p.166).

3.4.2.4 Performance Matched Model

Extensive research has suggested a correlation between accruals and a firm's past and contemporaneous performance (e.g., Healy 1996; Barth et al. 2001; Dechow et al. 1998). In contrast to the Jones (1991) and Modified Jones models, the performance matched model controls for firm's performance and was developed to overcome the misspecification and measurement error that would result when discretionary accruals are estimated using the former two models without controlling for performance. Reviewing the literature on earnings management, McNichols (2000) states:

[22] The evaluated models are: Healy (1985) model, DeAngelo (1986) model, Jones (1991) model, Dechow and Sloan (1991) industry model, and the modified Jones model developed by Dechow et al. (1995).

> [R]esearchers comparing firms that differ in earning performance or growth characteristics may well observe (or not observe) differences in estimated discretionary accruals that relate to the performance characteristics of these firms rather than their incentives to manage earnings (p.333).

Performance influences the estimation of discretionary accruals because abnormal performance may lead to erroneous classification of normal accruals as discretionary and the relationship between performance and accruals as non-linear (Ronen and Yaari 2008).

Kothari et al. (2005) are the first to thoroughly discuss and examine the power and specification of performance matched discretionary accrual models. They test the specification and power of their developed performance matched model as well as of the Jones (1991) and the Modified Jones models. Kothari et al. (2005) find that the latter two are not able to estimate discretionary accruals accurately and that they are severely mis-specified. Moreover, they remark that the Modified Jones model would erroneously conclude earnings management practices if the researcher is not confident of accrual manipulation through credit sales.

Matching performance studies have used several variables to proxy for performance, including earnings growth, size, market to book, earnings yield etc. (Kothari et al. 2005). However, Kothari et al. (2005) use the ROA variable and justify their choice of this variable with two reasons. First, they evince that, by definition, ROA represents earnings scaled by total assets and in turn measures performance. Second, using ROA as a matching variable was found to result in more powerful and better specified tests (relative to other matching variables) in prior literature analysing abnormal operating performance and long run abnormal stock return performance. The choice of ROA as a performance variable by Kothari et al.

(2005) is consistent with the evidence provided by Kasznik (1999) and McNichols (2000) who find a significant and positive relationship between discretionary accruals (estimated using the Jones and Modified Jones models) and ROA.

Kothari et al. (2005) propose two methods to control for performance on estimated discretionary accruals. They suggest that controlling for performance could be done either through matching both of the treatment and control firms based on ROA, or by adding the ROA variable to the accrual model as an additional right-hand variable. Kothari et al. (2005) find that performance matching performs better than adding ROA to the accrual estimation model. However, an advantage of the latter is that it could be applied in relatively small samples as data availability for control firms is not required. The efficacy of whether to match firms based on ROA or to include ROA in the discretionary accrual model is an empirical issue (Kothari et al. 2005).

The performance matched discretionary accrual model is found to be the least biased and most powerful accrual model to detect earnings management. This study employs this model as an additional measure to its cardinal discretionary revenue model employed to address the research question[23]. The ROA variable is added to the estimation model due to the small sample size. As such, discretionary accruals represent the error term of the following model:

$$TACC_{it}/TA_{it-1} = \alpha_1 (1/TA_{it-1}) + \alpha_2 [(\Delta REV_{it} - \Delta AR_{it})/TA_{it-1}] + \alpha_3 (PPE_{it}/TA_{it-1}) + \alpha_4 ROA_{it-1} + \varepsilon_{it} \quad (10)$$

where

$TACC_{it}$ are total accruals for firm *i* in year *t*.

TA_{it-1} is total assets for firm *i* in year *t-1*.

[23] The choice of two models to detect earnings management is justified in the summary of this chapter.

ΔREV_{it} is the difference between revenues in year *t* and revenues in year *t-1* for firm *i*.

ΔAR_{it} is the difference between accounts receivable in year *t* and accounts receivable in year *t-1* for firm *i*.

PPE_{it} are gross property, plant and equipment for firm *i* in year *t*.

ε_{it} is the error term for firm *i* in year *t*.

3.4.3 Single Account Approach

One of the limitations of aggregate accrual models is that researchers cannot identify which component of income has been managed by firms (Stubben 2010). This implies that it cannot be known whether earnings management is exercised through revenues or expenses. This shortcoming is conquered by using a single account approach which reduces measurement error, as it permits incorporating essential factors unique to the specific accrual, and provides insights into how earnings management is exercised (Stubben 2010). Moreover, examining a single approach would provide useful information to standard setters on the effectiveness of standards and on how the latter can be improved (Healy and Wahlen 1999). The importance of employing specific accrual models instead of aggregate ones, has been highlighted by several studies (eg., McNichols 2000; Healy and Wahlen 1999; Beneish 2001), as the former is more likely to result in more accurate estimates of discretion (Healy and Wahlen 1999; Bernard and Skinner 1996; McNichols 2000).

The single account approach focuses on a specific accounting item that is subject to substantial managerial judgement and that, in case it is managed, could have a material impact on reported earnings (Goncharov 2005). According to Schipper (1989), this approach has to satisfy three assumptions for its results to be

interpretable. First, the selected account should be a plausible proxy for discretionary accruals. Second, the selected account should be significant, by which its management would have a great impact on reported earnings. Third, the chosen account requires reasonable managerial discretion. Some of the chosen accounts in the literature have satisfied these assumptions and other have not. This section critically discusses three examples of specific accrual models, namely, provision for loan losses (Beaver and Engel 1996; Beatty et al. 1995), bad debt provisions (McNichols and Wilson 1988), and revenues (Stubben 2010), with great emphasis on the latter as it represents the primary measure of earnings management in this study.

3.4.3.1 Provision for Loan Losses

A loan loss reserve is a critical account in commercial banks. It represents a relatively large portion of net income and depends significantly on management's discretion (Healy and Wahlen 1999).

Several studies claim that bank managers tend to manage earnings through using their discretion over loan loss provisions (e.g., Beatty et al. 1995; Collins et al. 1995; Ahmed et al. 1999). Collins et al. (1995) investigate whether banks use loan loss provisions as one of the options to raise capital. They find a positive association between earnings and loan loss provisions, suggesting that bank managers tend to smooth earnings via loan loss provisions. Moreover, they find that managers of banks with low capital tend "to decrease, rather than increase, discretionary loan loss provisions" (p.281). Unlike Collins et al. (1995) results, Beatty et al. (1995) and Ahmed et al. (1999) find evidence that loan loss provisions are used to manage capital rather than to manage earnings.

In the same vein, Ahmed et al. (1999) test the hypothesis of whether banks manage loan loss provisions "to signal private information about future earnings" (p.2). They find no association between loan loss provisions and earnings except when they used the model of non-discretionary provisions adopted in Collins et al. (1995).

Most of the studies in the loan loss provision literature argue that when bank managers expect high (low) levels of non-discretionary earnings, they tend to deliberately overstate (understate) loan loss provisions "to mitigate the adverse effect of other factors on earnings" (Ahmed et al. 1999, p.7). These studies reveal inconsistent results. Despite the fact that they are examining a single account (loan loss provision) which represents a large portion of reported earnings and is subject to substantial managerial discretion, the use of this account is limited to the banking industry.

3.4.3.2 Bad Debt Provisions

McNichols and Wilson (1988) investigate whether firms manage earnings though deliberately manipulating bad debt provisions. They examine two perspectives for managing earnings. The first one is consistent with the incoming-smoothing hypothesis, suggesting that firms tend to engage in income-increasing (income-decreasing) earnings management when their reported earnings are unusually low (high). The second perspective is motivated by Healy (1985)'s argument that managers whose bonuses will not be awarded if earnings do not exceed the lower bound tend to select income-decreasing accrual choices to maximize their expected subsequent future awards. The results of McNichols and Wilson (1988) were consistent with Healy (1985)'s argument, rather than the

smoothing hypothesis, suggesting that firms with unusual and extreme low or high earnings tend to engage in income-decreasing earnings management through manipulating the bad debt provision.

Interpreting this evidence should be done cautiously as there are also other factors than earnings management which can lead to downward change in income through the bad debt provision. These factors can be a change in the firm's credit policy or a shift in demand for its products (DeAngelo 1988). Despite the advantage that this account is common among industries, a potential limitation for its usage lies in the fact that it represents a relatively small fraction of reported earnings.

3.4.3.3 Revenues

Recently, Stubben (2010) has developed a revenue model suggesting its use for studying earnings management where it overcomes the shortcomings of all of the other alternative accrual earnings management detection models.

Stubben (2010) argues that revenues are the typical earnings component to investigate. In comparison to the other single accounts used (bad debt provision, provision for loan losses, etc.) revenue represents the largest income component for most firms and it is the most commonly used account in earnings management practices (Stubben 2010).

Stubben (2010) evaluates the ability of his discretionary revenue model as well as of other four accrual models, namely, Jones (1991), Modified Jones (Dechow et al. 1995), Dechow and Dichev (2002) and performance matched (Kothari et al. 2005), to detect both actual and simulated manipulations. Unlike accrual models, the revenue model was able to detect earnings management in a sample of firms subject to enforcement actions by the SEC. Also, using simulated manipulations, the

revenue model was more effective in detecting "earnings management for equal amounts of revenue and expense manipulation" (Stubben 2010, p.697). Stubben (2010) concludes that the revenue model is more likely to provide precise estimates of discretion than accrual models, whether the earnings management have actually occurred or not.

Similar to the accrual Jones (1991) and Modified Jones models, the discretionary revenue model uses an OLS regression to estimate the level of discretion practised by management. However, it differs in that it uses the change in account receivables, instead of total accruals, as a dependent variable with the change in revenues being the explanatory variable[24]. Moreover, unlike the Modified Jones model which treats collected revenues as non-discretionary, the revenue model includes reported revenues as a right-hand variable.

Stubben (2010) articulates that discretionary revenues could take the form of non-GAAP revenue recognition, revenue deferral and fictitious revenues as well as real activities manipulations such as channel stuffing, sales discounts, bill and hold sales and relaxed credit requirements. He argues that premature revenue recognition "is the most common form of revenue management", and considers in his model the effect of premature revenue recognition (such as non-GAAP revenue recognition, bill and hold and channel stuffing) on the association between account receivable and revenues. As such the error term of the following equation represents the discretionary revenue estimate of a firm:

$$\Delta AR_{it} / TA_{it-1} = \alpha_1(1/TA_{it-1}) + \alpha_2 \Delta REV_{it} / TA_{it-1} + \varepsilon_{it} \qquad (11)$$

where

[24] Receivables is the accrual component having the strongest empirical and conceptual relation to revenues (Stubben 2010).

ΔAR_{it} is the difference between account receivable in year *t* and account receivable in year *t-1* for firm *i*.

TA_{it-1} is the total assets for firm *i* in year *t-1*.

ΔREV_{it} is the difference between revenue in year *t* and revenue in year *t-1* for firm *i*.

ε_{it} is the error term for firm *i* in year *t*.

The revenue model was found to be more specified and less biased than accrual models (Stubben 2010). Given its ability to detect both revenue manipulations and earnings management (Stubben 2010), this study adopts the revenue model as the primary earnings management measure for detecting revenue manipulations in a period where a wide range of regulatory concerns were raised about misleading revenue recognition practices[25].

3.5 Summary

Earnings management could either improve information (be beneficial) or be opportunistic. The first perspective holds when managers attempt to bolster their relationship with owners through using their accounting discretion to signal private or value-relevant information (Ronen and Yaari 2008). On the other hand, opportunistic earnings management takes place as a result of the divergence of interests between managers and owners where the formers use the flexibility in accounting standards to manipulate earnings, either for personal gain or to mislead stakeholders about the real economic performance of the firm (Healy and Wahlen 1999). Whether the exercised discretion is beneficial or opportunistic depends on managerial intent (Dechow and Skinner 2000). This study adopts the opportunistic view of earnings management where sample firms' managements were expected to

[25] Refer to the introduction for more details about the concerns raised by the UK regulatory bodies.

manipulate earnings in the aftermath of the global financial crisis to hide poor performance.

"[W]hile definitions of earnings management are necessarily structured in terms of management "intent", to test hypotheses researchers must "operationalize" these definitions, identifying what accrual or account is being managed and how" (Dechow and Skinner 2000, p.247). Given the concerns raised by regulators about misleading revenue recognition practices after the global financial crisis, this study anticipates a manipulation in the revenue account and consequently uses the discretionary revenue model by Stubben (2010) as a measurement method. Unlike accruals models, which have been criticized for resulting in biased and noisy estimates of discretion, the discretionary revenue model is found to be more reliable and permits more conclusive inferences (Stubben 2010). Moreover, in contrast to all other used single accounts (bad debt provision, provision for loan losses, etc.) revenue represents the largest income component for most firms and is common among all industries.

Finally, the discretionary revenue model is capable of detecting real activities manipulations, such as those which accelerate revenue recognition (e.g., bill and hold sales and channel stuffing) (Stubben 2010). Zang (2011) finds that there is a "direct substitutive relation between real activities manipulation and accrual-based earnings management" and focusing on either type alone "does not fully explain earnings management activities" (pp.700-701). As such, this thesis also employs the performance adjusted discretionary accrual model as a complementary detection method to reduce measurement error and detect the highest possible level of earnings

management[26]. The procedures followed to estimate both discretionary revenue and discretionary accrual models are presented in chapter five under the measurement of the dependent variables section (5.2.3).

[26] The performance adjusted model is chosen from among other discretionary accrual models as it "exhibits the least misspecification of the accrual models" (Stubben 2010, p.710).

Chapter 4. Literature Review

Chapter 4
Literature Review

4.1 Introduction

This thesis examines the questions of how effective audit committees and board of directors are, first, in discharging their oversight responsibilities towards the financial reporting process and second in determining the levels of audit and non-audit service fees. Addressing these questions, this chapter reviews and discusses two strands of prior literature that have tackled the impact of corporate governance, specifically, audit committees and board of directors, on financial reporting quality and auditor remuneration.

The first strand of literature which focuses on the association between internal governance mechanisms and financial reporting quality, is critically reviewed in section 4.2 and classified based on the Dechow et al. (2010) categorization of earnings quality proxies. Critical review of the second strand of literature, tackling the association between internal governance mechanisms on the one hand and audit fees and non-audit service fees on the other, is then presented in section 4.3 based on the sets of variables of the audit committee and the board of directors. The chapter identifies the gaps in the literature and concludes with an overall summary along with a table of existing literature.

4.2 Corporate Governance and Financial Reporting Quality

As the truthfulness of financial reporting figures has become a debatable issue (Noriaki 2011), one of the key remedies suggested to ameliorate financial reporting quality is to enhance the role of the board of directors in general, and audit committee effectiveness in particular.

Researchers have used a wide variety of earnings quality measures as surrogates for financial reporting quality. Recently, Dechow et al. (2010) have reviewed the literature of these proxies and categorized them into three categories: properties of earnings, investor responsiveness to earnings and external indicators of earnings misstatements.

Adopting the categorization of Dechow et al. (2010) for these proxies, this section reviews two streams of prior literature that have employed external indicators of earnings misstatements and properties of earnings as surrogates for financial reporting quality and examined their association with internal governance mechanisms.

4.2.1 External Indicators of Earnings Misstatements

The first stream of research uses external indicators of earnings misstatements as direct measures for financial reporting quality. Examples of external indicators of earnings misstatements include regulatory enforcement releases (e.g., Farber 2005; Beasley 1996; Dechow et al. 1996; Abbott et al. 2000; Persons 2005; Chen et al. 2006), adverse rulings (e.g., Song and Windram 2004; Peasnell et al. 2001) and restatements (e.g., Agrawal and Chadha 2005; Abbott et al.

2004; Lin et al. 2006; Archambeault et al. 2008; Carcello et al. 2011; Abdullah et al. 2010) .

4.2.1.1 Regulatory Enforcement Releases

Dechow et al. (1996) use a sample of 86 US firms subject to SEC enforcement actions for alleged violation of GAAP between 1982 and 1992 as proxy for financial reporting quality[27]. They examine the impact of audit committee existence, proportion of executive directors on the board and CEO duality on fraudulent firms manipulating earnings and find that the latter are "less likely to have an audit committee" and more likely to have boards with CEO duality and a majority of executive directors.

Similarly, Beasley (1996) uses a sample of 75 US firms reported by the Accounting and Auditing Enforcement Releases (AAERs) and the Wall Street Journal Index (WSJ Index) as fraudulent firms between the period of 1980 and 1991. He investigates whether an association exists between the establishment of an audit committee, proportion of non-executive directors on the board and CEO duality on the one hand, and financial statement fraud on the other. His results reveal that fraudulent firms' boards are less likely to comprise outside directors and audit committees are not effective in precluding fraudulent financial reporting. Although the samples of Beasley (1996) and Dechow et al. (1996) are taken from almost the same period, their results regarding audit committees are inconsistent.

In the same vein, Abbott et al. (2000) investigate the role that audit committees could play in reducing the likelihood of fraud. They extend prior literature by examining a composite measure of audit committee independence and

[27] The enforcement actions were published in the Accounting and Auditing Enforcement Releases, by the SEC, against firms alleged to have overstated their reported earnings.

activity instead of audit committee existence. Using a sample of 156 firms, of which 78 firms are subject to SEC enforcement actions in the period between 1980 and 1996, and 78 firms are non-sanctioned control firms, Abbott et al. (2000) argue that for an audit committee to be effective in discharging its financial reporting oversight role it needs to be both active and independent. Consistent with their argument, they find that an audit committee that is comprised solely of independent directors and that meets at least two times per year is more likely to preclude fraudulent financial reporting.

In a more recent study, Persons (2005) examines the association between board of directors and audit committee characteristics on the one hand and the likelihood of fraudulent financial reporting on the other. She hypothesizes that the likelihood of fraudulent financial reporting is negatively associated with independent directors on the board and the audit committee, the proportion of audit committee directors with financial and accounting expertise, the number of board meetings and audit committee meetings, and the non-separation of the roles of the CEO and the chairman of the board. Utilizing a sample of 111 fraudulent firms subject to SEC enforcement actions and 111 non-sanctioned firms between the period of June 1999 and October 2003, Persons (2005) provides evidence suggesting that fraud likelihood is negatively related to entirely independent audit committees and to the non-separation of the roles of the CEO and the chairman of the board. However, the independence of the board and the financial expertise of the audit committee members as well as the number of meetings of the board and the audit committee are not found to be significant variables in reducing the likelihood of fraud.

Using the same measure for financial reporting quality (SEC enforcement actions) in the period between 1982 and 2000, Farber (2005) examines the

relationship between board characteristics (non-executive directors, size, & CEO duality) and audit committee characteristics (non-executive directors, number of meetings, financial expertise and size), on the one hand, and fraudulent financial reporting on the other. Controlling for a sample prior to the year of fraud detection, he finds that fraudulent firms have boards with fewer outside directors, higher percentage of CEO duality, and audit committees that are less active and comprise fewer financial experts. However, as the audit committee effectiveness literature finds consistent evidence of a link between audit committee independence and financial reporting quality (Archambeault et al. 2008), Farber (2005)'s results do not reveal such an association.

Providing evidence from China, Chen et al. (2006) investigate the relationship between board of director's characteristics (non-executive directors, board meetings, board size, and CEO duality) and firms subject to enforcement actions by the Chinese Securities Regulatory Commission (CSRC). Their sample includes 338 firms of which 169 firms are subject to regulatory enforcements and 169 matched non-sanctioned firms. Arguing that the board of directors is responsible for major policy decision making and the oversight of the day-to-day business operations, Chen et al. (2006) find that a higher percentage of non-executive directors on the board is more likely to reduce fraudulent financial reporting. The number of board meetings, however, is found to be positively related to fraud implying that the board increases the frequency of its meetings to discuss the firm's illegal or questionable activities.

4.2.1.2 Adverse Rulings

Song and Windram (2004) and Peasnell et al. (2001) use a construct similar to the regulatory enforcement actions to surrogate for financial reporting quality in the UK context. The two studies examine the impact of board composition and audit committee characteristics on firms subject to adverse rulings by the FRRP for violating accounting and financial reporting standards.

Peasnell et al. (2001) use a sample of 94 firms by which 47 are judged by the FRRP to have faulty financial reporting during the period 1990 to 1998. They find that companies subject to adverse rulings are less likely to have boards with a high percentage of outside members, as well as audit committees. However, they also find that FRRP firms seem to have a higher proportion of non-executive directors on the audit committee and less CEO duality cases on the board.

Song and Windram (2004) examine the effectiveness of audit committee and board characteristics in financial reporting using a sample of 54 firms. They find a significant positive relationship between non-executive directors on the board and financial reporting quality, but no such association with audit committee characteristics (literacy, meeting frequency and outside directorships). Audit committee characteristics are remarked by Song and Windram (2004) that they may contribute to the effectiveness of the audit committee.

4.2.1.3 Restatements

Agrawal and Chadha (2005) examine the association between board of directors and audit committee characteristics including independence, financial expertise and size on the one hand, and earnings restatement on the other. They utilize a sample of 318 US firms of which 159 firms have restated their earnings

during the period from 2000 to 2001, and the other 159 firms are non-restating control firms matched based on size and industry. The results of Agrawal and Chadha (2005) reveal that firms that restate earnings are less likely to have audit committees or boards that comprise independent financial experts. The size and the number of meetings of the board and the audit committee, however, are not found to be significantly related to the probability of a firm restating earnings.

Similarly, Abbott et al. (2004) use the US context and investigate the impact of audit committee characteristics, namely, independence, size, financial expertise and number of meetings, on the probability of firms restating earnings. Moreover, they control for the board size and the percentage of non-executive directors on the board. Using a sample of 88 firms that have restated their earnings during the period 1991 and 1999, and 88 matched non-restated control firms, Abbott et al. (2004) find that the likelihood of financial restatement is reduced in the presence of an audit committee that is independent, meets more frequently, and includes at least one director with financial expertise. On the other hand, board size is found to be positively related to financial restatement likelihood suggesting that larger boards are more likely to suffer from communication problems that might adversely affect their effectiveness in monitoring. The results of Abbott et al. (2004) are robust to the examination of a sample of 44 fraudulent and non-fraudulent firms.

In the same vein, Lin et al. (2006) utilize a sample of 106 US firms that restated their earnings in the fiscal year 2000 along with 106 control firms matched based on total assets and four digits SIC code. They examine whether an association exists between each of the audit committee characteristics: size, independence, activity and financial expertise and financial restatement. Arguing that effective audit committees are less likely to be associated with earnings restatement, Lin et al.

(2006) find that among all the examined audit committee characteristics only audit committee size is negatively related to the likelihood of firms restating earnings. This finding suggests that larger audit committees are more likely to discharge an effective oversight role and enhance the quality of reported earnings.

Recently, Archambeault et al. (2008) have used a sample of 153 US restatement firms for the period between 1999 and 2002 matched with 153 non-restatement firms[28], and find that among the audit committee characteristics of non-executive directors on the audit committee, financial expertise and number of meetings, only non-executive audit committee members are negatively related to the likelihood of earnings restatement.

More recently, Carcello et al. (2011) have examined the effectiveness of audit committees in reducing the likelihood of earnings restatement and whether the effectiveness will be inversely affected by the involvement of the CEO in selecting the members of the board of directors. Audit committee independence and financial expertise are used as constructs for audit committee effectiveness, while audit committee meetings and size along with board size and CEO duality are used as control variables. Utilizing a sample of 104 US firms that restated their earnings during the period between 2000 and 2001, and 104 control firms matched based on stock exchange, industry and size, Carcello et al. (2011) find that firms are less likely to restate their earnings when their audit committees are: solely comprised of independent directors, include at least one financial expert and composed of at least three members. These findings, however, are conditional on the involvement of the CEO in selecting the board members where the latter is suggested to reduce audit committee effectiveness.

[28] Firms are matched based on year, SIC code, size and stock exchange.

Providing evidence from Malaysia, Abdullah et al. (2010) examine the impact of some internal governance characteristics, namely, board independence, audit committee independence and CEO duality, on the likelihood of earnings restatement. They use a sample of 62 firms which include 31 firms that restated their earnings during the period 2002 to 2005 and 31 control firms "matched by size, industry, exchange board classification, and financial year end". Contrary to predictions, the results of Abdullah et al. (2010) reveal only a positive association between the likelihood of financial restatement and audit committees comprised solely of independent directors.

4.2.2 Properties of Earnings

The second stream of literature to which this study is related, uses properties of earnings as a measure for financial reporting quality (Ghosh et al. 2010; Peasnell et al. 2005; Krishnan and Visvanathan 2008; Xie et al. 2003; Klein 2002a; Bedard et al. 2004; Osma and Noguer 2007; Peasnell et al. 2000; Rahman and Ali 2006; Park and Shin 2004; Habbash 2010; Basiruddin 2011; Ebrahim 2007; Davidson et al. 2005).

Using two proxies for earnings quality (small earnings increase and negative earnings avoidance), Vafeas (2005) investigates the impact of audit committee and board characteristics on financial reporting quality. He uses a US sample of 1621 firms between the years 1994 and 2000 and finds that effective boards and audit committees are associated with higher reporting quality. Specifically, his results reveal that non-executive directors on the board and the audit committee as well as audit committee meetings are associated with better financial reporting quality.

In a more recent study, Krishnan and Visvanathan (2008) use a sample of 929 US firms for the period between 2000 and 2002 and examine whether the requirement of the SOX Act to include a financial expert on the audit committee is effective in enhancing financial reporting quality. They employ accounting conservatism as a surrogate for financial reporting quality, and find that among all audit committee characteristics (independence, meetings, size, and financial expertise) only accounting financial expertise is associated with higher reporting quality. This finding is robust after controlling for endogeneity, and does not hold for non-financial experts or non-accounting financial experts.

Alternatively, the vast majority of this line of research uses abnormal accruals (discretionary accruals) as a construct for financial reporting quality (e.g., Klein 2002a; Xie et al. 2003; Bedard et al. 2004; Osma and Noguer 2007; Ebrahim 2007; Park and Shin 2004; Habbash 2010; Basiruddin 2011; Davidson et al. 2005), but their results are also mixed.

For instance, Klein (2002a) investigates the impact of audit committee and board composition on discretionary accruals estimated by the Modified Jones model. Based on a sample of 692 US firms listed in the S&P 500 between 1992 and 1993, she finds a cross-sectional negative association between independent non-executive directors on the board or audit committee and earnings management. However, this finding does not hold when the audit committee or the board comprises solely of independent directors.

Similarly, Xie et al. (2003) use a sample of 282 US firms listed in the S&P 500 for the years 1992, 1994 and 1996. Arguing that managers find it easier to manipulate current accruals than long-term ones, they employ current discretionary accruals as a surrogate for earnings management. Because of correlation between the

audit committee and the board sets of variables, they use two separate regressions and examine how effective these variables are in constraining earnings management. Their findings reveal that audit committees and boards having higher percentage of non-executive directors, more corporate and financial background members and a higher number of meetings are more likely to constrain earnings management.

In the same vein, Bedard et al. (2004) examine the effect of audit committee expertise, audit committee independence, audit committee size and audit committee activity on discretionary accruals. Using a sample of 300 US firms in the year 1996 they find that audit committees comprising of independent directors who are equipped with governance and financial expertise are negatively associated with earnings management. However, audit committee size and number of meetings are not found to have a significant relationship with earnings management.

Ebrahim (2007) uses a sample of 2,360 US firms for the years 1999 and 2000 and examines the association between board and audit committee independence and activity on the one hand and earnings management on the other. Using the discretionary accruals estimated from the Modified Jones model as a proxy for earnings management, Ebrahim (2007) finds that accrual-based earnings management is more likely to be curbed in the presence of independent directors on the audit committee and the board of directors. He further finds evidence that even lower levels of earnings management could be achieved in the presence of independent audit committees who are more active.

Recently, and arguing that the board and audit committee are the "ultimate guardian of financial reporting", Ghosh et al. (2010) use three metrics for earnings management, namely, absolute performance-adjusted discretionary accruals, special item and deferred tax expense, and examine how earnings quality might be

influenced by board and audit committee characteristics pre- and post-SOX. In general, their results are consistent among the three measures and reveal that the size of the audit committee or the board is negatively associated with earnings management. Frequency of audit committee meetings, however, is positively related to earnings management.

Park and Shin (2004) provide evidence from Canada, and examine the impact of board composition on earnings management using a sample of 539 firms during the period between 1991 and 1997. Using discretionary accruals estimated from the Modified Jones model as a dependent variable and the percentage of non-executive directors on the board as an independent variable, they find that the level of accrual manipulation is less likely to be affected by the proportion of non-executive directors on the board. However, directors of financial intermediaries and representatives of institutional shareholders are found to be negatively associated with accrual-based earnings management.

In the same vein, Davidson et al. (2005) provide evidence from Australia and examine the impact of some internal governance characteristics on earnings management. Specifically, they investigate whether an association exists between board independence, CEO duality, audit committee existence, audit committee independence, audit committee meetings and audit committee size on the one hand and the absolute value of discretionary accruals as estimated by the Modified Jones model on the other. Using a sample of 434 firms listed on the Australian Securities Exchange (ASX) in the year ending 2000, Davidson et al. (2005) find that board of directors and audit committees that are comprised of higher proportion of non-executive directors are more likely to curb earnings management. They further find a

negative association between the existence of audit committees and earnings management when the latter is measured by small earnings increase.

Rahman and Ali (2006) investigate the association between internal governance mechanisms and earnings management for a sample of the 97 largest Malaysian firms (by market capitalization) listed on the Bursa Malaysia Main Board during the period from 2002 to 2003. Using the absolute value discretionary accruals as measured by the Modified Jones model to proxy for earnings management, they find that among all the examined independent variables (the proportion of independent directors on the board and on the audit committee, CEO duality, board size, audit committee financial expertise and the number of audit committee meetings) only board size is positively related to earnings management. This finding suggests that smaller boards are more effective in monitoring management and constraining their opportunistic behaviours.

Providing evidence from the UK and before the major improvements of the Smith and Higgs reports to the UK Corporate Governance Code, Peasnell et al. (2000) and Peasnell et al. (2005) use discretionary accruals to proxy for financial reporting quality and find that there is less income-increasing accrual management when the proportion of outside directors on the board is high, and that no association exists with audit committees.

Interestingly, and also using the UK context, Habbash (2010) and Basiruddin (2011) examine the impact of audit committee and board characteristics on earnings management after the incorporation of the Smith and Higgs reports to the UK Corporate Governance Code.

Using a sample of 448 FTSE 350 firms for the period of 2003 to 2006, Habbash (2010) investigates the relation between the absolute value of discretionary

accruals estimated from the performance adjusted Modified Jones model and several audit committee and board characteristics. Using two separate regressions for each of the audit committee and the board sets of variables, Habbash (2010) provides evidence suggesting that independent directors on the audit committee along with financial experts help constrain earnings management. Moreover, his results reveal a negative relationship between board independence, size and chairman independence on the one hand and discretionary accruals on the other.

Performing an additional analysis, Habbash (2010) divides the firms in his earnings management sample into those with income-increasing and those with income-decreasing discretionary accruals[29], and examines their association with each of the audit committee and board of directors sets of variables. He finds that audit committee expertise and board independence are effective characteristics in constraining both directions of discretionary accruals. However, the independence of the audit committee, along with its number of meetings, is found to be effective in constraining only income-decreasing discretionary accruals. Although Habbash (2010) shares some common features with this thesis in terms of examining the impact of corporate governance on earnings management in the UK context, his thesis does not include the audit committee and board variables in the same regression model. This might cast doubt on the robustness of his results given that the effectiveness of the audit committee is directly related to that of the board (Vafeas 2005), and the mere presence of an audit committee in a firm "does not mean that the board actually relies on the audit committee to enhance its monitoring ability" (Menon and Williams 1994).

[29] Each of the directions may have different incentives to manage earnings.

More recently, Basiruddin (2011) carries out a number of investigations into the impact of board and audit committee characteristics on several abnormal accrual metrics namely: Jones, Modified Jones and performance adjusted Modified Jones. Using a sample of 674 FTSE 350 firms in the period 2005 to 2008, she argues that joint monitoring of the board and the audit committee is needed to curb earnings management and ensure higher financial reporting quality. As such, she regresses all the governance variables against the three earnings management metrics without separating the board variables from those of the audit committee. Her results do not reveal any association between corporate governance characteristics (board and audit committee) and earnings management except for the size of audit committee when discretionary accruals are estimated by the Jones and Modified Jones models. Although the studies of Basiruddin (2011) and Habbash (2010) are relatively similar to this research in terms of context and sample firms, their results are inconsistent, and are questionable because of their usage of accrual models in measuring earnings management[30].

4.2.3 Summary

The results in the literature on the relationship between internal governance mechanisms (audit committee in particular) and financial reporting quality are inconsistent.

Part of this literature has used external indicators of earnings misstatements, such as regulatory enforcement releases, adverse rulings and restatements, as a direct measure for financial reporting quality. Although these proxies are salient indicators of a firm's low financial reporting quality, not being accused of fraudulent reporting

[30] Refer to chapter 3 for critique of the accrual models in estimating discretionary accruals.

does not mean that a firm is not manipulating its reported earnings. Even if there is compliance with GAAP, there would still be room for managers to manipulate reported earnings as alternative accounting treatments are permitted (Teoh et al. 1998). For instance, a firm can manipulate revenues through using an accounting method that either delays or advances revenue recognition and still complies with GAAP (Park and Shin 2004; Teoh et al. 1998). Thus, results of this line of research cannot be generalized to an exemplary population of firms having less aggressive financial reporting practices, and "more subtle cases of earnings management" (Dechow et al. 1996, p.31).

On the other hand, as the wave of studies examines financial reporting quality through earnings management, their most common used proxy is discretionary accruals (Goncharov 2005, p.10; Pomeroy and Thornton 2008). However, results of such studies are questionable as accrual models are subject to criticism that they provide biased and noisy estimates (Stubben 2010).

4.3 Corporate Governance and Auditor Remuneration

Much of the research which has tackled the pricing of audit services has been engendered from the seminal study by Simunic (1980) who examines how a number of auditor and auditee attributes may affect audit fees either positively or negatively (Hay et al. 2006a). Recently, and especially after the passage of governance regulatory reforms which address the relationship between auditors and their clients[31], researchers started examining audit committees and board of directors as key determinants of audit and non-audit service fees.

[31] Sarbanes Oxley in the US and Smith and Higgs reports in the UK

4.3.1 Audit Committee Effectiveness

Audit committee is the main governance mechanism delegated by the board to monitor the financial reporting process and the relationship between an entity's management and the external auditor (FRC 2012; SOX 2002a). Researchers have studied the impact of an audit committee on external auditor remuneration (audit fees and non-audit fees) considering the latter as an economic aspect of the relationship between management and the auditor. This section reviews prior studies that have investigated the association between auditor remuneration and the following audit committee characteristics: existence, independence, meetings, financial expertise and size.

4.3.1.1 Audit Committee Existence

Evidence provided from different contexts has reported a positive association between audit committee existence and audit fees (e.g., Voeller et al. 2013; O'Sullivan and Diacon 2002; Redmayne et al. 2011; Collier and Gregory 1996).

Collier and Gregory (1996) use a sample of 315 FTSE 500 firms for the year 1991 and find that the presence of an audit committee is more likely to increase audit fees and reduce risks of impairing auditor independence. Similarly, O'Sullivan and Diacon (2002) examine a sample of the UK's largest 117 insurance firms by premium income in the year 1992. Their results are consistent with their argument that the presence of an audit committee will require auditors to do more extensive testing thus leading to higher audit fees.

Redmayne et al. (2011) also provide evidence from a voluntary governance system and use a sample of 204 public firms from New Zealand. They investigate the impact of audit committee existence on audit fees and include an interaction term

of audit committee existence and audit risk to capture their combined effects. Although their results reveal a positive association between the presence of audit committees and audit fees for profit-oriented public firms, they conclude that the role of audit committees is symbolic as the interaction terms are not found to be significant.

In the same vein, Voeller et al. (2013) provide evidence from the German governance system where a two-tier board structure exists[32]. They use a sample of 785 firms listed in the German Prime Standard from 2006 to 2008 and examine whether an association exists between the presence of an audit committee and audit fees. Their results indicate a positive association and are robust to the usage of instrumental variables regressions.

On the other hand, Quick et al. (2013) examine the impact of audit committee existence on the ratio of non-audit fees to total fees for a sample of 330 German firms listed in the period between 2005 and 2007. Their results reveal no significant association between the committee existence variable and the non-audit fee ratio.

4.3.1.2 Audit Committee Independence

Empirical evidence on the independence of audit committees is consistent with the agency perspective where independent members are seen as crucial contributors to the effectiveness of audit committees in discharging their oversight roles.

Using the US context, Carcello et al. (2002) examine the impact of some of the board of directors and audit committee characteristics on audit fees. They use a sample of 258 non-financial firms listed in the Fortune 1000 for the year ended

[32] The two-tier board structure consists of two boards: the supervisory board that represents the interests of the owners and forms the committees (one of which is the audit committee) and the management board which is responsible for operating the business and setting its long-term strategy.

March 1993 and find that audit committee independence is positively related to audit fees. This finding does not hold, however, when they combine both of the audit committee and board variables in the same model. Therefore, Carcello et al. (2002) suggest that in the presence of the board, audit committees do not provide an incremental role.

Similarly, Abbott et al. (2003a) use a sample of 492 US non-regulated firms that are audited by Big 5 auditors and have filed their proxy statements with the SEC for the period between February and June 2001. They examine the association between audit fees and several audit committee characteristics and argue that "independent audit committee directors demand greater levels of audit assurance" leading auditors to increase their audit scope and in turn their audit fees. Their results are consistent with their argument where they find that audit committees which comprise solely of independent directors are associated with higher audit fees.

In a more recent study, Lee and Mande (2005) investigate the impact of some audit committee characteristics on audit fees and non-audit fees. Using a sample of 780 US firms in the year ended December 2000, they contend that unlike inside and grey members, outside directors are more independent of management and therefore are more capable of enhancing audit committee effectiveness. Their findings are robust to the usage of both single and simultaneous equation regressions and reveal a positive association between independent audit committee directors and audit fees. Non-audit fees, however, are only found to be related to the composite measure of independence and number of committee meetings when regressed in a single equation regression.

Boo and Sharma (2008) extend the literature and investigate the association between internal governance mechanisms and audit fees, and how this association

can be affected by regulatory oversight. To observe the differential effect of regulations, they use a sample of 469 US listed firms in the year 2001, by which 252 firms are regulated (financial and utility) and 217 are non-regulated. Their results reveal that the association between audit committee independence and audit fees is stronger for non-regulated firms than that for regulated ones.

Providing evidence from an emerging country, Rustam et al. (2013) and Hassan and Naser (2013) examine the effect of audit committee independence on audit fees and find inconsistent results. Rustam et al. (2013) use a sample of 50 firms for the period between 2007 and 2011 and employ a dichotomous variable having the value of one if at least one executive member serves on the audit committee. They find a significant and negative relationship with audit fees, concluding that the role of the audit committee is complementary to that of the auditor in monitoring management. Hassan and Naser (2013), however, use the percentage of independent directors on the audit committee as a proxy for independence. Based on a sample of 30 non-financial firms listed on the Abu Dhabi Securities Exchange (ADX), they find a negative association between audit committee independence and audit fees. As such they suggest that an increase in audit committee independence will reduce control risk which in turn reduces the audit scope and leads to lower levels of audit fees.

Addressing the concerns raised by regulators and academics on the effect of non-audit services on the client-auditor relationship, Abbott et al. (2003b) investigate the impact of audit committee characteristics on the ratio of non-audit service fees to audit fees. Using a sample of 538 US firms which filed proxies with the SEC between February and June 2001, they find that independence of audit committees is an important characteristic that contributes to the effectiveness of the committees in

enhancing auditor independence through reducing non-audit fees relative to audit fees. The findings of Abbott et al. (2003b) are consistent with those of Parkash and Venable (1993) who find that firms may reduce the purchase of non-audit services from their incumbent auditors in an attempt to reduce agency costs and enhance audit quality.

Interestingly, a recent study by Zaman et al. (2011) provides evidence from the UK context and fills the gap found in the auditor remuneration literature. They examine the association between governance quality on the one hand and audit fees and non-audit service fees on the other. Based on a sample of 540 FTSE 350 non-financial firms for the period between 2001 and 2004, they find that audit committee independence has a positive association with audit fees and a negative one with non-audit fees. Zaman et al. (2011) further investigate the relationship between audit committee independence and a dichotomous variable having the value of one if a firm's non-audit service fees are greater than its audit fees. Their results also reveal a negative association suggesting that independent directors on the audit committee are more likely to decrease the purchase of non-audit services.

Basiruddin (2011), however, uses a similar sample of 674 FTSE 350 firms for the period between 2005 and 2008 and finds no evidence of any relationship between independent directors on the audit committee and either audit fees or non-audit service fees.

4.3.1.3 Audit Committee Meetings

It has been suggested that the more frequently audit committees meet, the more efficiently they discharge their monitoring and oversight roles. Moreover, Menon and Williams (1994) argues that the frequency of meetings is an indicative

measure of an audit committee's diligence. A large and growing body of literature has supported this argument and has investigated meeting frequency as a determinant of audit and non-audit service fees (e.g., Zaman et al. 2011; Abbott et al. 2003b; Lee and Mande 2005; Rustam et al. 2013; Krishnan and Visvanathan 2009; Ittonen et al. 2010; Basiruddin 2011).

Lee and Mande (2005) investigate the association between audit committee characteristics (meeting frequency, independence and expertise) on the one hand and audit fees and non-audit fees on the other for a sample of 780 US firms in the year 2000. They posit that how frequent audit committees meet reflects how effective they are in discharging their responsibilities. Running single and simultaneous equation regressions, Lee and Mande (2005) find that audit committee meetings are significantly and positively related to audit fees. With respect to non-audit fees, however, they find a negative association with audit committee meetings only under the single equation regression. As such they conclude that this finding is spurious as its estimation does not take into account the simultaneity of fees.

Non-audit fees findings of Abbott et al. (2003b) contradict with those of Lee and Mande (2005). Abbott et al. (2003b) use a sample of 538 US firms and find no association between audit committee meetings and independence and the ratio of non-audit fees to audit fees. The composite measure of independence and meeting frequency[33], however, was found to be significantly and negatively related to the non-audit fees ratio. Therefore, Abbott et al. (2003b) conclude that the independence characteristic of the audit committee is likely to be a more significant determinant of the non-audit fee ratio.

[33] The composite measure represents a dichotomous variable equal to one if the audit committee is comprised solely of independent directors and meets at least four times a year.

Similarly, Krishnan and Visvanathan (2009) use the US context and examine the impact of audit committee and board characteristics on audit fees for a sample of 807 firms listed in the S&P 500 during the years 2000 to 2002. Their results are consistent with the demand-side perspective where they find a positive association between audit committee meetings and audit fees. In other words, their finding suggest that the more frequent audit committees meet the better monitoring will be exerted on auditors who in their turn will increase their audit testing leading to higher audit fees.

In the same vein, Ittonen et al. (2010) use a sample of 941 US firms listed in the S&P 500 for the years 2006 to 2008 and examine the effect of female representation on the audit committee, audit committee size, number of meetings and financial expertise on audit fees. They find that audit committees which are chaired by females are associated with lower audit fees, and the number of audit committee meetings as well as size is positively related to audit fees.

Providing evidence from Pakistan, Rustam et al. (2013) use a panel data technique and investigate the relationship between audit committee characteristics and audit fees. They argue that "panel data control for cross-sectional heterogeneity by observing individual firm and reduces the risk of biasness and collinearity among variables" (p.697). Rustam et al. (2013) find that audit committee meetings is positively related to audit fees and conclude that auditors tend to charge higher fees to compensate for the extra time spent on preparing and attending meetings with the audit committee.

Empirical evidence from the UK, however, has provided inconsistent results for the impact of audit committee meetings on audit fees and non-audit service fees. For instance, Zaman et al. (2011) use a sample of 540 FTSE non-financial 350 firms

for the period between 2001 and 2004 and find that audit committee meetings is positively related to audit fees. However, this finding does not hold for non-audit fees, where the results do not reveal any association. In contrast, Basiruddin (2011) uses a similar sample of 674 non-financial 350 firms but for the period from 2005 to 2008, and finds that the number of audit committee meetings is positively related to non-audit fees but does not have a significant impact on audit fees. Basiruddin (2011) findings suggest that in the presence of an active audit committee, a firm purchase more non-audit services leading to a higher ratio of non-audit service fees to total fees.

4.3.1.4 Audit Committee Financial Expertise

"The effectiveness of audit committees is affected, first and foremost, by the expertise of members of audit committees in the areas of accounting and financial reporting, internal controls and auditing" (POB 1994, p.15). Regulatory recommendations suggest that audit committee directors should be equipped with two types of knowledge: "financial reporting knowledge" by which committee members can understand how the economic events are reported in the financial statements and analysed, and "audit reporting knowledge" by which the committee members can understand the purpose and nature of the audit (DeZoort and Salterio 2001).

In addition to its paucity, research on the relationship between audit committee financial expertise and auditor compensation (audit fees and non-audit fees) has revealed inconsistent findings.

Abbott et al. (2003a) employ a dichotomous variable, equal to one if at least one of the audit committee members has financial expertise, and investigate its

impact on audit fees. They argue that financial expertise allows the "committee members to better understand" auditing risks and issues and thus provide more support to the external auditor when discussing these issues with management. Based on a sample of 492 non-regulated firms that have filed proxy statements with the SEC from Feb 2001 to June 2001, Abbott et al. (2003a) find that audit committee financial expertise is positively related to audit fees suggesting that greater expertise of the committee "will lead to enhanced oversight of the management-auditor relationship" (p.29).

Using a similar sample of 538 US firms for the same sample period, Abbott et al. (2003b) examine the effect of audit committee characteristics on the ratio of non-audit service fees to audit fees. They proxy for audit committee expertise by using a dichotomous variable indicating the existence of at least one member with financial management expertise based on the Blue Ribbon Committee's recommendation. Abbott et al. (2003b) find that no relationship exists between the financial expertise variable and the non-audit fees ratio suggesting that the former is not an important determinant of the latter.

In a more recent study, however, Krishnan and Visvanathan (2009) examine the differential impact of accounting and non-accounting financial experts on audit fees and find that in the presence of a strong governance system, accounting financial experts are negatively related to audit fees. Using a sample of 941 US firms listed in the S&P 500 and audited by Big 5 audit firms, they provide evidence that only accounting financial experts can contribute to the effectiveness of audit committees in mitigating control risk. The findings of Krishnan and Visvanathan (2009) are consistent with the risk-based perspective where a higher level of monitoring exerted by the committee accounting financial experts is expected to

reduce the control risk for the auditor who in turn will reduce the audit scope and request lower fees. They further examine the interactive effect of accounting financial expertise and earnings manipulation risk on audit fees, and find that the coefficient of accounting financial expertise remains negative, however, the interaction variable is positively related to audit fees. As such, they conclude that the positive influence of accounting financial expertise is overwhelmed by the risk of earnings manipulation leading to higher levels of audit fees.

Zaman et al. (2011) provide evidence from the UK and investigate the impact of audit committee characteristics on both audit fees and non-audit fees. Based on a sample of 540 non-financial FTSE 350 firms for the period between 2001 and 2004, they contend that an audit committee including at least one financial expert tends to demand a wider audit scope to ensure a higher-quality of audit, which in turn will lead to higher audit fees. On the other hand, they argue that in the presence of financial experts on the audit committee, management are less likely to seek non-audit services due to the former "strict monitoring and awareness of the deficiencies in the system" (p.172). As predicted, the results of Zaman et al. (2011) reveal a negative association between audit committee expertise and non-audit service fees. Audit fees, however, are not found to be affected by the committee financial expertise.

In the same vein, Basiruddin (2011) examines the effect of audit committee and board characteristics on audit and non-audit service fees for a sample of 674 non-financial firms listed in the FTSE 350 during the period 2005 to 2008. Her findings, however, do not reveal any association between audit committee financial expertise and audit fees nor an association with non-audit fees.

4.3.1.5 Audit Committee Size

Vafeas (2005) argues that the relation between the size of an audit committee and its performance is non-linear and thus audit committees should be neither too small nor too large. In other words, adding members to small audit committees may enhance the performance of the latter as there will be more people to draw on. On the other side, audit committees that are too large may tend to be ineffective due to "coordination and process problems" (Jensen 1993).

Recent evidence suggests that audit committee size is positively related to either audit fees or non-audit service fees (e.g.,Ittonen et al. 2010; Vafeas and Waegelein 2007; Boo and Sharma 2008; Zaman et al. 2011).

Vafeas and Waegelein (2007) investigate the impact of audit committee and board characteristics on audit fees. Based on a sample of 767 US firms listed in the Fortune 500 during the years 2001 to 2002, they claim that audit committee size is an important contributor to the effectiveness of the audit committee and predict a positive association between audit committee effectiveness and audit fees. Consistent with their hypothesis, they find a positive relationship between audit committee size and audit fees and conclude "that audit committees complement external audit effort in disciplining management" (p.253).

Boo and Sharma (2008) examine the impact of some audit committee and board characteristics on audit fees for a sample of 469 US listed firms in the year 2001. Their results reveal a positive association between audit committee size and audit fees and are consistent with their argument that larger audit committees boost the risk of errors and misstatements in the financial statements thus leading auditors to extend their audit work and ask for more audit fees. Furthermore, they find that this positive association is stronger for non-regulated firms than for regulated ones.

Boo and Sharma (2008) note that given that their sample includes only three audit committees being comprised of less than three members, they find it empirically meaningless to test for the size-audit fees non-linear association suggested by Vafeas (2005).

In a more recent study, Ittonen et al. (2010) use a sample of 941 US firms listed in the S&P 500 during the period 2006 to 2008 and investigate the effect of female representation and other audit committee characteristics on audit fees. They find that audit fees are negatively associated with female audit committee chairs and positively related to audit committee size.

Interestingly, Zaman et al. (2011) provide evidence from the UK and address the question of the association between audit committee characteristics and both audit fees and non-audit service fees. Based on a sample of 540 FTSE 350 non-financial firms listed in the period between 2001 and 2004, they argue that internal controls quality is more likely to be enhanced by larger audit committees. In other words, the increase in resources provided by larger audit committees will enhance the latter monitoring role therefore leading to higher audit effort. At the same time, knowledge sharing among the members of large committees will help resolve problems and not otherwise seek for non-audit services. Consistent with their predictions, Zaman et al. (2011) find a positive association between audit committee size and audit fees. With respect to non-audit fees, however, results are contrary to their hypothesis and reveal a positive association with audit committee size. The coefficient of audit committee size remained positive even after employing a dependent dichotomous variable equal to one if non-audit fees are greater than audit fees.

Unlike Zaman et al. (2011), Basiruddin (2011) uses the same UK context and finds no association between audit committee size and either audit fees or non-audit fees. Her results are inconsistent with those of Zaman et al. (2011) despite using a similar sample of 674 firms listed in the FTSE 350 but for the period of 2005 to 2008.

4.3.2 Board of Directors

The UK Corporate Governance Code requires the board to "establish formal and transparent arrangements for considering how they should apply the corporate reporting and risk management and internal control principals and for maintaining an appropriate relationship with the company's auditors" (FRC 2012, C.3). Moreover, as a sub-committee of the board, the audit committee is required to recommend to the board how the auditor will be appointed and remunerated and the policy to be implemented regarding the auditor's supply of non-audit services (C.3.1). Therefore, the fact that the audit committee is the primary monitoring mechanism responsible for overseeing the financial reporting process and the management-auditor relationship does not exempt the board of directors from being involved in monitoring how transparent the financial reporting process is and how auditors are appointed, removed or remunerated.

Carcello et al. (2002) identify two types of linkages between the board and audit quality: formal and informal. Formal linkage can be represented through the board selection of the auditors and review of the "planned audit scope and proposed audit fees". Informal linkage, on the other hand, can be illustrated through the fact that high quality and vigilant boards may signal to auditors that high expectations are placed on them to "perform a higher quality audit". This section reviews existing

literature that has used the following board characteristics: non-executive directors on the board, size, CEO duality and number of meetings.

4.3.2.1 Non-Executive Directors on the Board

The agency theory suggests that non-executive directors on the board tend to reduce information asymmetry that may arise between managers and shareholders because of the separation of ownership and control. Consistent with the agency perspective, the UK Corporate Governance Code requires non-executive directors to "scrutinise the performance of management in meeting agreed goals and objectives and monitor the reporting of performance" (FRC 2012, A.4).

A wave of studies has examined the relationship between non-executive directors on the board and audit fees and has revealed consistent results (e.g.,Carcello et al. 2002; Abbott et al. 2003a; Boo and Sharma 2008; Zaman et al. 2011; Basiruddin 2011).

For instance, Carcello et al. (2002) investigate the association between board characteristics and audit fees for 258 non-financial firms from the Fortune 1000 in the year ending April 1992 to March 1993. They argue that non-executive directors are more likely to be concerned about audit quality which helps them achieve their objective of protecting shareholder wealth. Therefore, the more outside directors on the board, the more support will be provided to purchase "higher-quality audit services" which in turn leads to higher audit fees. Consistent with their claim, Carcello et al. (2002) find a positive relationship between the percentage of non-executive directors on the board and audit fees.

Similarly, using the US context, Abbott et al. (2003a) examine the impact of outside directors on the board on audit fees. They find, using a sample of 492 non-

regulated firms in the year 2001, that a positive association exists between the percentage of outside directors on the board and audit fees.

Boo and Sharma (2008) extend the literature and investigate how the relation between board characteristics and audit fees in regulated industries may differ from that in non-regulated ones. Arguing that regulatory oversight may lessen the need for external audit monitoring and make auditors perceive lower risk of financial errors (i.e. less audit work and lower fees), they hypothesize that "regulatory oversight weakens the association between board/audit committee independence and higher audit fees" (p.57). Their results are consistent with their hypotheses and reveal that the association between board independence and audit fees is stronger for non-regulated firms than for regulated ones.

In the same vein, evidence from the UK provides consistent results. O'Sullivan (2000) uses audit fees as a surrogate for audit quality and examines whether the percentage of non-executive directors on the board is associated with better audit quality. Using a sample of 402 quoted large firms for the year 1992, he finds a positive relationship between board independence and audit fees suggesting that outside directors prompt auditors to perform "more intensive audits as a complement to their own monitoring role" (p.397).

More recently, Zaman et al. (2011) and Basiruddin (2011) have addressed the question of the relation between audit committee and board characteristics on the one hand and audit fees and non-audit fees on the other. Findings of both studies reveal a positive association between non-audit service fees and outside directors. Their results regarding the association with audit fees, however, are inconsistent. Zaman et al. (2011) find a negative association between audit fees and non-executive directors at the same time as Basiruddin (2011) finds a positive relationship.

4.3.2.2 Board Size

The UK Corporate Governance Code recommends that "the board should be of sufficient size that the requirements of the business can be met and that changes to the board's composition and that of its committees can be managed without undue disruption, and should not be so large as to be unwieldy" (FRC 2012, B.1). This is consistent with the non-linear relationship perspective suggested by Vafeas (2000) on the association between the size of the board and its performance.

Empirically, in addition to the paucity of research tackling the impact of board size on audit fees and non-audit fees, findings reveal inconsistent results. (e.g.,Rustam et al. 2013; Boo and Sharma 2008; Krishnan and Visvanathan 2009; Basiruddin 2011).

A recent study by Boo and Sharma (2008) reveals that there is a positive association between board size and audit fees. The study examines the association between board size (in addition to other board and audit committee characteristics) and audit fees and how this association would differ between regulated and non-regulated firms. Based on a sample of 469 US firms in the year 2001, they find that the relationship between board size and audit fees is stronger in non-regulated firms than in regulated ones. As such Boo and Sharma (2008) suggest "that regulatory oversight reduces information asymmetry" which in turn reduce auditors' efforts and leads to lower audit fees.

Given the same US context, Vafeas and Waegelein (2007) investigate a sample of 767 US firms listed in the Fortune 500 for the period between 2001 and 2002. Their results, however, reveal insignificant association between board size and audit fees. Similarly, based on a sample of 807 firms listed in the S&P 500 during

the period from 2000 to 2002, the results of Krishnan and Visvanathan (2009) fail to find a significant relationship between board size and audit fees.

Providing evidence from an emerging country, Rustam et al. (2013) examine a sample of 50 Pakistani firms during the period 2007 to 2011. Similar to Vafeas and Waegelein (2007) and Krishnan and Visvanathan (2009), their results reveal that board size does not have a significant impact on audit fees.

As far as this study is concerned, the only study in the UK to examine the impact of board size on audit fees and non-audit service fees is Basiruddin (2011). Her study, however, is based on a different sample size (674) and sample period (2005-2008). She argues that smaller boards are more effective in communicating and predicts board size to have a negative coefficient with audit fees and a positive one with non-audit fees. Basiruddin (2011) findings reveal only a significant and positive relationship between board size and non-audit fees suggesting that smaller boards are more likely to limit the purchase of non-audit services in an attempt to enhance auditor independence.

4.3.2.3 CEO Duality

It has been argued that separating the roles of the chairman of the board and the CEO is perceived by auditors as an indicator of a firm's strong internal control system where lower levels of control risk exist and therefore lower audit efforts are needed (Basiruddin 2011). This is consistent with the agency perspective which suggests that in the presence of role duality on a board there is "absence of separation of decision management and decision control" (Fama and Jensen 1983), and thus higher levels of control risk.

Empirical research, despite its paucity, has supported this argument and attempted to explain the effect of CEO duality on audit fees (e.g., Tsui et al. 2001; Krishnan and Visvanathan 2009; Zaman et al. 2011; Bliss 2011; O'Sullivan 2000; O'Sullivan 1999).

Tsui et al. (2001) investigate the impact of independent boards (where the roles of the chair and the CEO are separated) on audit fees. They argue that in the presence of CEO duality, internal monitoring would be less effective and accounting would be less reliable thus leading to higher control risk and wider audit scope. As such they hypothesize that separating the roles of the CEO and the board's chair will be associated with lower control risk and consequently lower audit fees. Tsui et al. (2001) use a sample of 650 firms from Hong Kong for the period from 1994 to 1996. Their findings are consistent with their argument and reveal a positive and significant relationship between CEO duality and audit fees.

Similarly, Krishnan and Visvanathan (2009) find a positive association between CEO duality and audit fees. Their findings are based on a US sample of 807 S&P 500 firms for the period from 2000 to 2002.

Bliss (2011) extends the literature and examines "whether CEO duality affects the association between board independence and demand for higher quality audits, proxied by audit fees" (p.361). He uses a sample of 799 Australian listed firms in the year 2003 and finds that board independence is positively related to audit fees; however, this relationship does not hold for boards with CEO duality cases.

However, findings from the UK on the relationship between CEO duality and audit fees are inconsistent (e.g., O'Sullivan 1999; O'Sullivan 2000; Zaman et al. 2011).

O'Sullivan (1999) investigates the impact of board characteristics on audit fees for a sample of 146 largest non-financial firms listed on the LSE in the post-

Cadbury period. His results reveal a negative but insignificant relationship between CEO duality and audit fees. Moreover, as none of the board characteristics are found to be significantly related to audit fees, he concludes that "internal governance innovations introduced" after the Cadbury report do not influence "auditor's pricing strategies".

Similarly, O'Sullivan (2000) examines the impact of some board characteristics on audit quality for a sample of 402 quoted firms for the year 1992. Using audit fees as a proxy for audit quality, he argues that the presence of CEO duality is expected to reduce the influence of non-executive directors "in seeking an intensive audit" and thus lower audit fees will be paid. His results, however, are not as predicted and reveal no significant association between CEO duality and audit fees.

More recently, Zaman et al. (2011) examine the effect of board characteristics on audit fees and non-audit fees for a sample of 540 FTSE 350 non-financial firms listed in the period between 2001 and 2004. Their results reveal a negative association between CEO duality and audit fees; however, the coefficient of CEO duality against non-audit fees was insignificant.

4.3.2.4 Board of Directors Meetings

The number of board meetings is the only publicly observable factor that measures the diligence of the board of directors (Carcello et al. 2002). Numerous studies have examined the effect of board meeting frequency on audit fees and have argued that boards that meet more frequently are more likely to enhance the effectiveness of their oversight role and support the conduct of extensive audit work to ensure higher audit quality which in turn leads to higher audit fees (e.g., Zaman et

al. 2011; Carcello et al. 2002; Abbott et al. 2003a; Krishnan and Visvanathan 2009; Basiruddin 2011).

Carcello et al. (2002) examine whether board characteristics have an impact on audit fees in the US. Based on a sample of 258 non-financial firms listed in the Fortune 1000 for the year ended March 1993, their results from multivariate analysis support their argument and reveal a positive association between the number of board meetings and audit fees. This finding is robust to the inclusion and exclusion of audit committee variables from the model.

Abbott et al. (2003a) examine the association between audit committee characteristics for a sample of 492 non-regulated firms filing proxy statements with the SEC from February to June 2001. They use the number of board meetings as one of the board control variables in their model and find a positive and significant board meeting coefficient with audit fees.

More recently, Krishnan and Visvanathan (2009) also use the US context and examine the impact of board meeting frequency on audit fees for a sample of 807 S&P 500 firms for the period from 2006 to 2008. Their argument is based on the demand-based perspective where vigilant boards are expected to ask for a wider audit scope to ensure higher audit quality thus resulting in higher audit fees. The findings of Krishnan and Visvanathan (2009) are consistent with their argument and reveal a positive association between audit fees and the number of board meetings.

Interestingly, Zaman et al. (2011) and Basiruddin (2011) examine the impact of board meeting frequency on both audit fees and non-audit fees for samples of UK FTSE 350 firms, but their results are inconsistent. Based on a sample of 540 non-financial firms, Zaman et al. (2011) argue that more frequent board meetings would "indicate a higher level of control" and therefore predict a positive association with

audit fees and a negative one with non-audit fees. Their results support their prediction only for the relation with audit fees, where the number of board meetings is found to be negatively associated with non-audit fees. On the other hand, Basiruddin (2011) uses a sample of 674 firms listed in the period during 2005 and 2008 and finds a negative association between the frequency of board meetings and audit fees. She suggests that active boards are more likely to exert effective monitoring resulting in reduced assessment of control risk and therefore a narrower audit scope and lower audit fees. Basiruddin (2011) results reveal no significant association between the number of board meetings and non-audit fees.

4.4 Overall Summary

This chapter provides a critical literature review of the impact of audit committees and boards of directors on financial reporting quality and auditor remuneration (audit fees and non-audit service fees).

The review of the studies tackling the impact of internal governance characteristics on financial reporting quality reveals inconsistent results. Some of these studies used external indicators of earnings misstatement, such as regulatory enforcement releases, adverse rulings and restatements, as a direct and salient indicator of low financial reporting quality. However, results of these studies ignore an exemplary population of firms having less aggressive financial reporting practices, and "more subtle cases of earnings management" (Dechow et al. 1996, p.31). The vast majority of financial reporting quality literature has used discretionary accruals as a proxy for the quality of earnings, but the accrual models are criticized of providing noisy and biased estimates. To overcome these shortcomings, this thesis

adopts a discretionary revenue model that was developed recently by Stubben (2010) and proposed as a better specified and less biased estimate of earnings management. On the other hand, the literature on the impact of audit committee and board characteristics on audit fees and non-audit service fees is reviewed based on the individual characteristics of each of the audit committee and board of directors.

In general, there are two main arguments on the association between audit fees and corporate governance characteristics. The first argument is based on the agency theory and suggests that strong governance mechanisms are more concerned about audit quality and therefore tend to demand a wider audit scope which in turn requires greater audit efforts resulting in higher audit fees. The other argument, however, suggests that the presence of strong governance mechanisms reduces the likelihood of risk leading to less audit efforts and thus lower audit fees. Results of the reviewed studies are mixed, however, the majority support the agency perspective argument and reveal a positive association between audit fees and corporate governance characteristics[34].

The non-audit service fees literature is very limited. The prevalent argument is based on the auditor independence impairment perspective suggesting that strong governance mechanisms are more likely to limit the purchase of non-audit services to preserve auditor independence and safeguard audit quality. The results, however, are not supportive of this argument and reveal a positive association between most of the corporate governance characteristics and non-audit service fees (e.g., Zaman et al. 2011; Basiruddin 2011).

Research evidence on the association between corporate governance characteristics and both audit fees and non-audit service fees is inconsistent. Other

[34] These findings are consistent with those reported in the meta-analysis by Hay (2013).

than the study conducted by Zaman et al. (2011) on a sample of 540 FTSE 350 firms listed during the period 2001 to 2004, the author is not aware of any published study that has examined this association in the UK. Thus, there is no UK evidence on the relationship between corporate governance and auditor remuneration (audit fees and non-audit fees) in the period following the financial crisis. Table 4.1 presents a summary of the studies reviewed in this chapter.

Table 4.1 Summary of Reviewed Literature

Study	Sample	Dependent variable(s)	Independent variable(s)	Main results
Dechow et al. (1996)	176 firms: 86 firms subject to SEC enforcement actions for overstating their reported earnings & 90 control firms, between 1982 & 1992 (US)	Dichotomous variable equal to 1 for firms subject to SEC enforcement actions	Audit committee: establishment Board : composition, CEO duality, & ownership	Fraud firms are less likely to have audit committees and more likely to have boards with more executive directors and CEO duality
Beasley (1996)	150 firms: 75 fraud firms reported by SEC & Wall Street Journal Index, and 75 control firms, between 1980 & 1991 (US)	Dichotomous variable equal to 1 for firms subject to SEC enforcement actions	Audit committee: establishment Board : composition, CEO duality, & ownership	Fraud firms' boards are less likely to comprise outside directors and audit committees are not effective in precluding fraudulent financial reporting
Farber (2005)	174 firms: 87 fraud firms reported by SEC, and 87 control firms, between 1982 & 2000 (US)	Dichotomous variable equal to 1 for firms subject to SEC enforcement actions	Audit committee: composition, activity, expertise, & size Board: composition, size, ownership, & CEO duality	Audit committees of fraud firms have fewer financial experts and fewer meetings. Fraud firms' boards have fewer non-executive directors & a higher percentage of CEO duality.
Persons (2005)	222 firms: 111 fraud firms and 111 non-fraud firms between the period June 1999 to October 2003 (US)	Dichotomous variable equal to 1 for firms subject to SEC enforcement actions	Audit committee: composition, expertise, activity Board: composition, CEO duality and activity	The likelihood of fraud is negatively associated with totally independent audit committees and the non-separation of the roles of the CEO and the board chair. No association exists with board and audit committee financial expertise as well as with the board and audit committee number of meetings.

Table 4.1 (cont'd)				
Chen et al. (2006)	338 firms: 169 subject to enforcement actions by CSRC and 169 control firms (China)	Dichotomous variable equal to 1 for firms subject to CSRC enforcement actions	Board: composition, size, activity and CEO duality.	Fraud firms are associated with lower percentage of non-executive directors on the board and more frequent board meetings.
Abbott et al. (2000)	156 firms: 78 fraud firms reported by SEC, and 78 non-fraud firms, for the period between 1980 and 1996 (US)	Dichotomous variable equal to 1 for firms subject to SEC enforcement actions	Audit committee: composite measure of independence and activity and composition	Fraud firms are negatively associated with audit committees that are totally independent and that meet at least twice per year.
Song and Windram (2004)	54 firms: 27 firms subject to adverse rulings by FRRP & 27 control firms, between 1991 & 2000 (UK)	Dichotomous variable equal to 1 for firms subject to adverse rulings by FRRP	Audit committee: composition, activity, & financial or accounting expertise Board: size, composition, & ownership	No association between audit committee characteristics and financial reporting quality. Independent directors on the board have positive impact on financial reporting quality.
Peasnell et al. (2001)	94 firms: 47 firms subject to adverse rulings by FRRP & 47 control firms, between 1990 & 1998 (UK)	Dichotomous variable equal to 1 for firms subject to adverse rulings by FRRP	Audit committee: establishment, composition, & size Board: CEO duality, ownership & composition	Firms with adverse rulings are less likely to have boards with audit committees, high percentage of non-executive directors and CEO duality cases
Agrawal and Chadha (2005)	318 firms: 159 restatement firms and 159 control firms matched based on size and industry for the period between 2000 and 2001 (US)	Dichotomous variable equal to 1 for firms that have restated their earnings	Audit committee: size, composition, financial expertise Board: size, composition, and financial expertise	Restatement firms are less likely to have independent financial experts in their audit committees and boards. No association exist with the size and number of meetings of the board and the audit committee.

Table 4.1 (cont'd)				
Abbott et al. (2004)	176 firms: 88 restatement firms and 88 control firms for the period 1991 to 1999 (US)	Dichotomous variable equal to 1 for firms that have restated their earnings	Audit committee: composition, size, expertise, and activity Board: size, composition, and CEO duality	Restatement firms are negatively associated with audit committees that are independent, meet more frequently and comprise at least one financial expert. Board size is positively related to the likelihood of financial restatement.
Lin et al. (2006)	212 firms: 106 restatement firms and 106 control firms matched based on total assets and SIC code for the fiscal year 2000 (US)	Dichotomous variable equal to 1 for firms that have restated their earnings	Audit committee: composition, size, expertise, and activity	Restatement likelihood is negatively related to audit committee size.
Archambeault et al. (2008)	306 firms: 153 restatement firms and 153 matched control firms, for the period 1999 to 2002 (US)	Dichotomous variable equal to 1 for firms that have restated their earnings	Audit committee: composition, expertise, and activity	Non-executive directors on the audit committee are negatively associated with the likelihood of earnings restatement.
Carcello et al. (2011)	208 firms: 104 restatement firms and 104 control firms matched based on stock exchange, industry and size for the period 2000 to 2001 (US)	Dichotomous variable equal to 1 for firms that have restated their earnings	Audit committee: composition, expertise, activity and size Board: size and CEO duality	Restatement likelihood is negatively associated with audit committees that are solely independent, comprise at least one financial expert and composed of at least three members. CEO involvement in board members selection reduces the effectiveness of these findings.

Table 4.1 (cont'd)				
Abdullah et al. (2010)	62 firms: 31 restatement firms and 31 control firms for the period 2002 and 2005 (Malaysia)	Dichotomous variable equal to 1 for firms that have restated their earnings	Audit committee: composition Board: independence and CEO duality	Audit committees comprised of solely independent members are positively associated with earnings restatements.
Vafeas (2005)	1621 firms between 1994 & 2000 (US)	Small earnings increase and negative earnings avoidance	Audit committee: composition, size & activity Board: composition, size & ownership	Earnings quality is negatively associated with audit committee insiders and positively associated with audit committee frequency and board outsiders
Peasnell et al. (2005)	1271 firms between 1993 and 1995 (UK)	Discretionary accruals: Modified Jones model	Audit committee: establishment Board: composition, size, CEO duality & ownership	There is less income-increasing accrual management when the proportion of outside directors on the board is high, and no association exists with audit committees
Ghosh et al. (2010)	9290 firms between 1998 and 2005 (US)	Performance-adjusted discretionary accruals, special item & deferred tax expense	Audit committee: composition, size, activity, ownership & expertise Board: composition, size & CEO duality	Audit committee & board sizes are negatively associated with earnings management. Frequency of audit committee meetings, however, is positively related to earnings management.

Table 4.1 (Cont'd)				
Krishnan and Visvanathan (2008)	929 firms between 2000 and 2002 (US)	Accounting conservatism	Audit committee: expertise, composition, size & activity Board: size, composition, CEO duality	Accounting financial expertise is positively related to conservatism.
Xie et al. (2003)	282 firms (S&P 500 index) for years 1992, 1994, & 1996 (US)	Discretionary accruals: Jones model	Audit committee: activity, size, composition & expertise Board: CEO duality, activity, composition, size & expertise	Audit committees and boards having higher percentage of non-executive directors, more corporate and financial background members and higher number of meetings are more likely to constrain earnings management
Klein (2002a)	692 firms (S&P 500) for years 1992 & 1993 (US)	Discretionary accruals: Modified-Jones model	Audit committee: composition Board: composition & ownership	Negative association exists between independent non-executive directors on the board and audit committee on the one hand and earnings management on the other. However, no relationship exists when the audit committee or the board comprises only independent directors.
Bedard et al. (2004)	300 firms in the year 1996 (US)	Discretionary accruals: Modified Jones model	Audit committee: expertise, composition, size & activity	The presence of independent audit committee members having financial & governance expertise is negatively associated with earnings management.

Table 4.1 (Cont'd)

Osma and Noguer (2007)	155 firms from 1999 to 2001 (Spain)	Discretionary accruals: Jones model, Jones cash-flow model & the marginal model	Audit committee: composition & ownership Board: composition & ownership	No association exists between the audit committee and earnings management. Independent directors on the board were found to be positively related to EM, except in the presence of a nomination committee including a majority of institutional directors.
Peasnell et al. (2000)	1260 firms divided equally between pre-(1990-1991) & post-Cadbury (1994-1995) periods (UK)	Discretionary accruals: Modified Jones model	Audit committee: establishment Board: composition, size & ownership	Negative association exists between income-increasing accrual management & the proportion of non-executive directors only in the post-Cadbury period
Park and Shin (2004)	539 firms for the period between 1991 and 1997 (Canada)	Discretionary accruals: Modified Jones model	Board: composition	The percentage of non-executive directors on the board has no impact on earnings management.
Ebrahim (2007)	2360 firms for the period from 1999 to 2000 (US)	Discretionary accruals: Modified Jones model	Audit committee: composition and activity Board: composition and activity	Accrual-based earnings management is more likely to be constrained in the presence of independent audit committees and boards. Audit committees that are both independent and active are even more capable of curbing earnings management.

Table 4.1 (Cont'd)

Rahman and Ali (2006)	97 largest listed firms by market capitalization for the period 2002 to 2003 (Malaysia)	Discretionary accruals: Modified Jones model	Audit committee: composition, expertise and activity Board: composition, size and CEO duality	Board size is positively related to earnings management. No association exist with the other audit committee and board characteristics.
Davidson et al. (2005)	434 listed firms in the year ending 2000.	Discretionary accruals: Modified Jones model Small earnings increase	Audit committee: existence, composition, size and activity Board: composition, CEO duality	Accrual-based earnings management is more likely to be constrained with higher percentage of non-executive directors on the board and the audit committee. Audit committee existence is negatively associated with earnings management when the latter is measured by small earnings increase.
Habbash (2010)	448 FTSE 350 firms between the period 2003 and 2006	Discretionary accruals: Performance Adjusted Modified Jones	Audit committee: size, activity, composition & expertise Board: size, activity, composition, chairman independence & female directorship	Among the audit committee characteristics, independence and financial expertise were found to be negatively associated with earnings management. Independent directors on the board and board size were also found to have a negative relationship.

Table 4.1 (Cont'd)

Basiruddin (2011)	674 FTSE 350 firms between the period 2005 and 2008	Discretionary accruals: Jones, Modified-Jones & Performance Adjusted Modified-Jones Audit fees and non-audit fees	Audit committee: composition, expertise, activity & size Board: composition, size, activity & expertise	Among all the audit committee and board characteristics, only audit committee size has a weak negative relationship with earnings management.
Zaman et al. (2011)	540 FTSE 350 non-financial firms for the period 2001 to 2004 (UK)	Audit fees and non-audit fees	Audit committee: effectiveness (composite measure), composition, activity, expertise & size. Board: composition, activity & duality	Audit committee effectiveness in larger clients is positively related to audit fees and non-audit fees. Individually, AC independence, meetings & size along with board meetings are positively related to audit fees. However, CEO duality is negatively related to audit fees. Regarding non-audit fees results reveal a negative association with AC independence and expertise, and a positive one with AC size, non-executive directors on the board and board meetings.
Abbott et al. (2003b)	538 firms that had filed proxies with SEC between February 5 and June 30 2001 (US)	Ratio non-audit fees to audit fees	Audit committee: effectiveness (dichotomous variable equal to 1 if the AC is composed solely of independent directors and meets at least four times a year	Audit committees that include only independent directors and meet at least four times a year are negatively associated with the non-audit to audit fee ratio

Table 4.1 (Cont'd)				
Carcello et al. (2002)	258 non-financial firms from Fortune 1000 for the year ended Apr.1992 to Mar.1993 (US)	Audit fees	Audit committee: composition, expertise & activity Board: composition, expertise & activity	AC expertise and independence were found to be positively related to audit fees. Also the number of board meetings along with board independence and expertise were found to be positively related to audit fees. However, when combining both audit committee and board characteristics in the same model only board characteristics remain related to audit fees
O'Sullivan (2000)	402 quoted large firms for the year 1992 (UK)	Audit fees	Board: composition, ownership & CEO duality	A positive relationship exists between non-executive directors on the board and audit fees. No association exist between audit fees on the one hand and CEO duality and block-holders on the other, but a negative association exists with managerial ownership.
Lee and Mande (2005)	780 firms in the year ended Dec. 31,2000 (US)	Audit fees; Non-audit fees & ratio non-audit to audit fees	Audit committee: effectiveness (independence and activity), composition, activity & financial expertise	Independent and active audit committees are positively associated with audit fees. Modelling non-audit fees endogenously reveals no association with audit committee effectiveness.
Bliss (2011)	799 listed firms in the year 2003 (Australia)	Audit fees	Board: size, composition and CEO duality	Board independence and size are positively associated with audit fees. However, the positive relationship between board independence and audit fees does not hold in firms with CEO duality
Tsui et al. (2001)	650 firms from the period of 1994 to 1996 (Hong Kong)	Audit fees	Board: CEO duality	There is negative association between audit fees and CEO duality suggesting that the latter increases control risk leading to a wider audit scope and higher audit fees

Table 4.1 (Cont'd)				
Voeller et al. (2013)	785 firms from the German Prime Standard for the years 2006,2007 & 2008 (Germany)	Audit fees	Audit committee: Existence Board: activity and size	Audit committee existence and board meetings were found to be positively related to audit fees. An increase in the board size, however, leads to an increase in the audit fees only if this increase (in board size) is required by law and not a result of voluntary appointments.
O'Sullivan and Diacon (2002)	117 largest insurance firms in the year 1992 (UK)	Audit fees	Audit committee: Existence & composition Board: Composition, CEO duality & composition	Audit committee existence was found to be positively related to audit fees. No association exists between either of the audit committee or the board composition and audit fees.
Rustam et al. (2013)	50 firms for the period 2007 to 2011 (Pakistan)	Audit fees	Audit committee: size, activity, composition &financial expertise Board: size, activity & composition	Audit committee independence along with its frequency of meetings are positively related to audit fees
Redmayne et al. (2011)	204 public firms for the years 1998 to 2000 (New Zealand)	Audit fees	Audit committee: existence	Audit committees were found to be positively related to audit fees in profit-oriented public firms, but negatively associated with those in public-benefit entities
Boo and Sharma (2008)	469 listed firms with assets greater than $1bn in 2001 (US)	Audit fees	Audit committee: composition & size Board: composition & size	Associations between audit committee or board independence and size with audit fees are stronger for non-regulated firms than for regulated.

Table 4.1 (Cont'd)				
Hassan and Naser (2013)	30 non-financial firms listed in the ADX in the year 2011 (Abu Dhabi)	Audit fees	Audit committee: composition	Audit committee independence is negatively related to audit fees
O'Sullivan (1999)	146 largest non-financial firms for the year 1995 (UK)	Audit fees	Audit committee: size, composition Board: CEO duality, composition, tenure of non-executive directors	Neither the audit committee nor the board has an effect on audit fees.
Quick et al. (2013)	330 listed firms from 2005 to 2007 (Germany)	Ratio non-audit fees to total fees	Audit committee: existence	No association exists between the existence of audit committees and non-audit fees ratio
Collier and Gregory (1996)	315 FTSE 500 firms for the year 1991 (UK)	Audit fees	Audit committee: existence	The presence of an audit committee is more likely to increase audit fees and reduce risks of auditor independence impairment
Krishnan and Visvanathan (2009)	807 S&P 500 firms for the years from 2000 to 2002 (US)	Audit fees	Audit committee: composition, activity & financial expertise Board: composition, size, CEO duality, ownership & activity	In the presence of a strong governance system, accounting financial experts were found to be negatively related to audit fees. Also the results reveal a negative association of audit fees with CEO duality and a positive one with audit committee and board meetings

Table 4.1 (Cont'd)				
Ittonen et al. (2010)	941 S&P 500 firms for the years 2006 to 2008 (US)	Audit fees	Audit committee: size, activity, financial expertise & female representation	Audit committees chaired by females are associated with lower audit fees. Audit committee meetings and size are positively related to audit fees
Abbott et al. (2003a)	492 non-regulated firms, audited by Big 5 auditors & had filed proxy statements with the SEC from Feb 5,2001 to June 30,2001 (US)	Audit fees	Audit committee: expertise, activity & composition Board: size & composition	Audit committees which comprise solely of independent directors and include at least one member with financial expertise are associated with higher audit fees. Non-executive directors on the board along with board meetings are positively associated with audit fees.
Vafeas and Waegelein (2007)	767 firms listed in the Fortune 500 in the years 2001 to 2002	Audit fees	Audit committee: composition, activity, member expertise and size Board: size, activity and composition	Audit committee size and independence along with committee member expertise and board meetings are found to be positively related to audit fees. Percentage of outside directors on the board, however, is negatively associated with audit fees.

Chapter 5. Hypotheses Development and Research Design

Chapter 5
Hypotheses Development and Research Design

5.1 Introduction

After choosing the theoretical framework of this research and reviewing the relevant literature, this chapter develops the research hypotheses and the relevant methodology used to test these hypotheses. The hypotheses development and the research design of each of the financial reporting quality models and the auditor remuneration models are presented separately. For each model, the hypotheses are stated based on a development of a theoretical link between the dependent and the independent variables. The measurements of the dependent variables (earnings management, auditor remuneration) and the independent variables (audit committee and board characteristics) as well as the control variables (firm-specific characteristics) are presented and discussed. Then the models' specifications along with the sources of data and the sample selection procedures are presented. Finally, before concluding the chapter, the analytical procedures are discussed.

5.2 Hypotheses Development and Research Design– Empirical One

5.2.1 Audit Committee Effectiveness and Financial Reporting Quality

Agency theory suggests that the agent (manager) is given decision-making authority to perform some services on behalf of the principal (shareholders). As the incentives of the agent may sometimes diverge from those of the principal, the former is perceived to behave in a self-serving manner trying to achieve personal

gains at the expense of the latter's wealth. As such, the principal relies on various tools to alleviate any conflict of interest and ensure alignment of incentives with the agent. One of the tools employed by the principal is the board of directors and its committees. The audit committee, being an extension of the board, is "the ultimate monitor" of the financial reporting process (BRC 1999). The UK Corporate Governance Code addresses the concerns regarding the agency conflict between managers and shareholders and delegates to audit committees the responsibility:

> to monitor the integrity of the financial statements of the company and any formal announcements relating to the company's financial performance, reviewing significant financial reporting judgements contained in them (FRC 2012, C.3.2)

Moreover, given that the ownership structure of UK public firms is dispersed, and that shareholders' identity changes from time to time, shareholders are not able to monitor managers effectively (Osma and Noguer 2007). Instead, they rely more on financial statements to exert monitoring and ameliorate information asymmetry (Ball and Shivakumar 2005). Furthermore, given the same fact and due to the agency conflict between managers and shareholders, the likelihood of managers behaving opportunistically and manipulating earnings will increase, and reported earnings will become less informative to shareholders (Osma and Noguer 2007; Park and Shin 2004). Therefore, audit committees are the monitory mechanisms employed to ensure the flow of transparent reporting between management and shareholders (Pincus et al. 1989; Bradbury 1990).

The most common characteristics used in the literature to gauge audit committee effectiveness are independence, financial expertise, meetings frequency and size (e.g., Bedard et al. 2004; Xie et al. 2003; Klein 2002a; Ghosh et al. 2010).

5.2.1.1 Audit Committee Independence

Theoretically, from an agency perspective, shareholders might have conflicts with managers due to a divergence in incentives. In this case, the employment of non-executive directors can alleviate agency conflicts and reduce information asymmetry. Accordingly, intense emphasis is put on audit committees to be totally independent, notwithstanding that executive directors have more firm-specific and industrial information than their non-executive counterparts. An SEC report in 1980 notes that a firm without an audit committee may be better off than having one with executive members, as shareholders will be misled in the belief that the audit committee is discharging its monitory role effectively (Menon and Williams 1994). Interestingly, Carcello and Neal (2000) have investigated the impact of audit committee independence on financially distressed firms with an audit report including a going-concern assumption and find that auditors are less likely to issue going-concern reports when audit committees of financially distressed firms include a high proportion of affiliated directors. Therefore, and consistent with the practitioners' and regulators' call for stronger independence in audit committees after the financial crisis (e.g., KPMG 2012; OECD 2009), this study conjecture that independent audit committee members play a crucial role in enhancing financial reporting quality. As such it hypothesizes that:

Hypothesis 1: There is a positive relationship between audit committee independence and financial reporting quality.

5.2.1.2 Audit Committee Relevant Financial Experience

Based on agency theory, an audit committee is employed in high agency costs situations to alleviate agency problems and ensure the flow of transparent

information between the agent and the principal (Bradbury 1990; Pincus et al. 1989). In addressing agency concerns, the UK Corporate Governance Code requires that audit committees include at least one member with recent and relevant financial experience to be responsible for reviewing significant financial reporting judgements in the financial statements. Recently, scholars have investigated the impact of different types of audit committee financial experts on financial reporting quality. For instance, Krishnan and Visvanathan (2008) have examined the impact of audit committee members with accounting financial expertise, versus those with non-accounting financial expertise, on accounting conservatism and found that only members with accounting expertise can enhance financial reporting quality. Given the concerns raised about firms manipulating revenues after the crisis and that revenue recognition is industry-specific, this study conjectures that audit committee members with relevant financial experience are effective monitors of a firm's financial reporting process.

Hypothesis 2: There is a positive relationship between audit committee relevant financial experience and financial reporting quality.

5.2.1.3 Audit Committee Size

The UK Governance Code requires that audit committees comprise at least three independent non-executive directors. Empirical evidence on the relationship between audit committee size and financial reporting quality is diverse. While Vafeas (2005), Krishnan and Visvanathan (2008), Xie et al. (2003) and Bedard et al. (2004) find that no relationship exists, Ghosh et al. (2010) report that larger audit committees are more effective in overseeing the financial reporting process. Conversely, Jensen (1993) argue that as the size of the board gets larger, the board

will tend to be less effective. Interestingly, Beasley and Salterio (2001) find that the inclusion of more outside directors with "relevant financial reporting and audit committee knowledge and experience" than the mandated minimum requirement will bolster audit committee effectiveness (p.539). Given the UK Governance Code requirement that all audit committee members are independent and the need for directors with relevant financial experience to deal with firm-specific revenue recognition practices post-crisis, this study contends that large audit committees increase the breadth of knowledge needed in the absence of executive directors who are more knowledgeable of the firm-specific information. Therefore, it hypothesizes that:

Hypothesis 3: There is a positive relationship between audit committee size and financial reporting quality.

5.2.1.4 Audit Committee Meetings

Empirical evidence on the relation between audit committee meetings and financial reporting quality is mixed. While Vafeas (2005) and Xie et al. (2003) find that the frequency of audit committee meetings has a positive impact on financial reporting quality, Krishnan and Visvanathan (2008) and Bedard et al. (2004) do not find any association at all. From an agency perspective, companies with high agency costs will increase monitoring activity to reduce these costs (Collier and Gregory 1999). Interestingly, Ghosh et al. (2010) find that discretionary accruals are positively associated with audit committee meetings, suggesting that audit committees have a reactive role in constraining aggressive financial reporting, and that firms increase the frequency of audit committee meetings after periods of high abnormal accruals. In the same vein, and following Jensen (1993)'s argument that

boards become more active after facing problems, Vafeas (1999) argues that boards tend to increase their meeting frequency after the firm's decline in performance. Therefore, given firms' poor performance after the crisis this study hypothesizes that:

Hypothesis 4: There is a negative relationship between audit committee meetings and financial reporting quality.

5.2.2 Corporate Boards and Financial Reporting Quality

Studying the impact of the board of directors' monitory role over financial reporting quality in the UK, Peasnell et al. (2005) argue that establishing an audit committee does not exempt the board from being involved in the financial reporting process, as the latter relies on the accounting figures to compensate management and take operating and investment decisions.

As the audit committee is a sub-committee of the board, audit committee effectiveness is directly related to the effectiveness of the board (Vafeas 2005). Moreover, as a monitory governance mechanism employed by shareholders to mitigate agency conflicts with management, the board will not have effective control unless it is capable of curtailing managerial discretionary decisions (Beasley 1996). This implies that effective boards are associated with higher financial reporting quality. Given that the effectiveness of the board's monitory role depends on its structure and organization (Peasnell et al. 2005), the used board variables are as follows.

5.2.2.1 Non-Executive Directors [35]

Dechow et al. (1996) and Beasley (1996) find that non-executive directors on the board are effective in constraining fraudulent financial reporting. Similarly, Klein (2002a) examines the impact of independent boards on earnings management and finds a negative association. In the UK, while studying the impact of board composition on financial reporting quality pre- and post-Cadbury, Peasnell et al. (2000) find that outside directors became more effective post-Cadbury. These types of evidence are consistent with the agency theory, where non-executive directors on the board are expected to mitigate information asymmetry between managers and shareholders. A board's demand for executive directors having direct knowledge "about their firm's operations and investment horizons", however, "increases with the firms' complexity and uncertainties" (Klein 2002b, p.438). Moreover, a high proportion of outside directors on the board are accused of failing to act instantly and urgently in crisis environments (Williamson 2008), as they may curb the manager's discretion and "limit their capacity to respond to the contingencies of a financial crisis" (Van Essen et al. 2013, p.4). Therefore, this study hypothesizes that:

Hypothesis 5: There is a negative relationship between non-executive directors and financial reporting quality.

5.2.2.2 CEO Duality

Agency problems could occur as a result of the Chief Executive Officer (CEO) serving as a chair of a board. For instance, since the chair is expected to monitor the CEO (Jensen 1993), CEO duality will impair the objectivity of the board

[35] Including both affiliated and non-affiliated directors as "board independence reflects the trade-off between director independence and director expertise" and "affiliated directors or their companies have ties with the firm and often provide expertise to the firm about suppliers, customers, financial opportunities, or legal issues"(Klein 2002b, p.438).

and make its role dysfunctional. Moreover, providing evidence from the UK, Collier and Gregory (1999) find that there is a reduction in audit committee activity when the roles of the CEO and the chairman of the board are not separated. In the context of the financial crisis, however, this study argues that as firms suffer from poor performance, board effectiveness will be associated with CEO duality where the latter "conveys a sense of unity of command and strong leadership to stakeholders […] creating an illusion of managerial efficacy [which] is most important when firm performance is poor" (Finkelstein and D'Aveni 1994, p.1087). As such this study hypothesizes that:

Hypothesis 6: There is a positive relationship between CEO duality and financial reporting quality.

5.2.2.3 Board Meetings

Consistent with the agency perspective, Vafeas (1999) conjectures that the diligence of the board is a determinant of board effectiveness. Moreover, he evinces that as the board members meet more frequently, they will be more likely to achieve the incentives of shareholders. Similarly, Carcello et al. (2002) argue that directors of the board who meet more frequently are more effective in discharging their responsibilities and strengthening the financial reporting oversight process. Given a firm's poor performance after the crisis, and that board meetings become more frequent after a decline in performance (Vafeas 1999), this study hypothesizes that:

Hypothesis 7: There is a negative relationship between board meetings and financial reporting quality.

5.2.2.4 Board Size

Ghosh et al. (2010) examine the impact of board size on financial reporting quality and find that companies with large boards have better financial reporting quality. They suggest that adding members to the board will increase the breadth of knowledge needed to exert an effective monitoring over the financial reporting process. Jensen (1993), however, articulates that adding more members to the board is linked with the incremental cost of poor communication associated with larger groups. Consistent with Jensen (1993), this study argues that small boards could deter confusion and facilitate the quick decision-making processes needed in crisis environments. As such it hypothesizes that:

Hypothesis 8: There is a negative relationship between board size and financial reporting quality.

5.2.3 Measurement of the Dependent Variables

There is no universally agreed upon measure for financial reporting quality (Feng et al. 2011). As mentioned in chapter three, the vast majority of studies use earnings management proxies, and specifically discretionary accruals, to proxy for financial reporting quality. Altamuro et al. (2005) argue that manipulating the recognition of revenues is one of the "earnings management tricks employed to mask the true consequences of management's decisions" (p.376). Given that expected revenue manipulations in the sample period will lead to misleading earnings management (Altamuro et al. 2005), this study adopts the following earnings management definition:

> Earnings management occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of

> the company, or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen 1999, p.368).

As mentioned in chapter three, this study uses the discretionary revenues and the performance adjusted discretionary accruals as surrogates for financial reporting quality. Following Xie et al. (2003), Klein (2002a) and Stubben (2010), cross-sectional estimates of these models are used because they are more specified than the time series ones (Subramanyam 1996). As such, and following similar studies (e.g., Habbash et al. 2012; Ghosh et al. 2010; Basiruddin 2011), both measures are estimated separately for each firm-year group including at least 6 firms with the same two-digit International Classification Benchmark (ICB) code[36].The purpose behind using these proxies is to account for the possibility of a firm switching from one earnings management method to another (Zang 2011), as well as to reduce measurement error. The first cardinal proxy is discretionary revenues, the absolute value of the error term in the following Stubben (2010) model:

$$\Delta AR_{i,t} = \alpha_0 + \beta_1 \Delta R_{i,t} + \varepsilon_{i,t} \,, \qquad (12)$$

where $\Delta AR_{i,t}$ represents the annual change in accounts receivable and $\Delta R_{i,t}$ represents the annual change in revenues, each scaled by lagged total assets. This study's distinction in using this proxy stems from the following: first, addressing the concerns about misleading revenue recognition practices, it is the best measure to detect expected revenue manipulations after the financial crisis; second, the revenue model is less biased, better specified and more likely to reduce measurement error than accrual models (Stubben 2010)[37]. Finally, "improper revenue recognition is the single largest issue contributing to financial restatements" (Altamuro et al. 2005, p.374).

[36] The ICB code is used, instead of the SIC one, because it is adopted by the majority of world's exchanges including the LSE.

[37] Refer to Stubben (2010) for evidence on the reliability of revenue models versus accrual models in their ability to detect actual and simulated manipulations.

Based on Kothari et al. (2005), the second proxy is the absolute value of the error term in the following performance-adjusted Modified Jones model:

$$ACC = \alpha_0 + \alpha_1 (\Delta R_{i,t} - \Delta AR_{i,t}) + \alpha_2 PPE_{i,t} + \alpha_3 ROA_{i,t-1} + \varepsilon_{i,t}, \quad (13)$$

where *ACC* are total accruals measured as the difference between earnings before extraordinary items and cash from operations[38], $\Delta R_{i,t}$ is changes in revenues, $\Delta AR_{i,t}$ is changes in accounts receivable, $PPE_{i,t}$ is end of the year property, plant and equipment, and $ROA_{i,t-1}$ is return on assets for firm *i* at year *t-1*. All variables in the equation above, excluding *ROA* and the intercept, are scaled by total assets at the beginning of the year.

Following Salama et al. (2010) and Warfield et al. (1995), and because of managers' incentives to use both income increasing and income decreasing earnings management, the author uses the absolute value of discretionary accruals and discretionary revenues to include the combined effect of both types of earnings management (Abdul Rahman and Ali 2006). Although managers are expected to manipulate revenues upward in the post-crisis period to hide firms' poor performance, some might have incentives to "take a bath" and aim to achieve future earnings' targets through manipulating revenues downward[39].

5.2.4 Measurement of the Control Variables

This study has adopted firm characteristics variables used in relatively similar studies and found to be significantly correlated with earnings management proxies (e.g., Klein 2002a; Bedard et al. 2004). These variables are:

[38] As stated in chapter three, there are two approaches for computing total accruals, the balance sheet approach and the cash flow approach. The author uses the latter as the former would result in "measurement error in accruals estimates" (Hribar and Collins 2002, p.105).

[39] Taking a bath could be through engaging in income-decreasing earnings management and further decrease current earnings in an attempt to meet or beat future targets.

- Managerial ownership (MANOWN): Jensen and Meckling (1976) suggest that increasing executive ownership will lower agency costs. Managerial ownership is expected to align managers' and shareholders' incentives through curtailing managers' opportunistic behaviours thus leading to better financial reporting quality.
- Block-holders (BLOCK): concentrated ownership is associated with lower agency costs as it provides direct monitory incentives (Abbott et al. 2003b), and is expected to curtail aggressive earnings management (Jensen and Meckling 1976). Moreover, examining the impact of institutional monitoring on aggressive earnings management, Chung et al. (2002) find that managers' opportunistic behaviours are curbed by large institutional owners. Therefore this study expects a positive relationship with financial reporting quality.
- Leverage (LEV): given the recession in the 2008 crisis, this study posits that highly leveraged firms will have incentives to increase income through manipulating revenues to avoid debt covenant violation. Hence, it predicts a negative association between leverage and financial reporting quality.
- Growth (GROWTH): Matsumoto (2002) argues that managers of high-growth firms are inclined to avoid missing earnings targets and manipulate earnings upward. As such, using market-to-book ratio (M/B) as a proxy for growth, this study predicts a negative relationship with financial reporting quality.
- Firm size (SIZE): associated with higher political costs, larger firms are more likely to be involved in aggressive earnings management to reduce these costs (Watts and Zimmerman 1990; Warfield et al. 1995). Thus this study expects a negative association with financial reporting quality.

- Cash flow from operating activities (CFO): Good performance of firms with high operating cash flows reduces their likelihood to engage in income increasing earnings management (Becker et al. 1998; Jiang et al. 2008). However, managers of firms facing economic shocks may go for accelerated revenue recognition practices to hide poor current performance (Leuz et al. 2003). Hence this study predicts a negative relationship with financial reporting quality.
- Loss in either or both of previous two years (LOSS): Burgstahler and Dichev (1997) provide evidence that firms with slightly negative earnings are inclined to exercise discretion to report positive earnings. Moreover, Pucheta-Martínez and de Fuentes (2007) find a significant negative relationship between firms incurring losses in either one or both of the two previous years and financial reporting quality. Therefore this study predicts a negative association between this variable and financial reporting quality.

5.2.5 Model Specification

The hypotheses are tested using the following regression model:

$$FRQ = \beta_0 + \beta_1 ACM + \beta_2 ACS + \beta_3 ACI + \beta_4 ACRX + \beta_5 NEDs + \beta_6 DUAL + \beta_7 BM + \beta_8 BS + \beta_9 MANOWN + \beta_{10} BLOCK + \beta_{11} LEV + \beta_{12} GROWTH + \beta_{13} CFO + \beta_{14} SIZE + \beta_{15} LOSS + \varepsilon \quad (14)$$

where:

Dependent variable

FRQ = Financial reporting quality, measured by the following two ways: (1) *DiscRev*, which is the absolute value of the residuals in the Stubben (2010) discretionary revenue model, and (2) *DiscAcc*, which is the

absolute value of the residuals in the performance-adjusted modified Jones accrual model.

Independent variables

ACM = Number of audit committee meetings held in a given year.

ACS = Total number of audit committee members.

ACI = The percentage of independent directors on the audit committee.

ACRX = The percentage of audit committee directors with relevant financial expertise on the audit committee.

NEDs = The percentage of non-executive directors on the board.

DUAL = Indicator variable with a value of 1 if the CEO also serves as a chair of the board.

BM = Frequency of board meetings held during a year.

BS = Number of directors on the board.

MANOWN = Percentage of total shares held by executive directors to total number of shares.

BLOCK = Percentage ownership of block-holders who hold at least 5 percent or more of outstanding common shares and are unaffiliated with management.

LEV = Total long-term debt to total assets.

GROWTH = Market to book ratio.

CFO = Cash flow from operating activities scaled by lagged total assets.

SIZE = Natural logarithm of total assets at year end.

LOSS = Indicator variable with a value of 1 if a firm incurred losses in either one or both of the previous two years.

ε = Error term

5.3 Hypotheses Development and Research Design – Empirical Two

5.3.1 Audit Committee Effectiveness, Audit Fees and Non-Audit Fees

Audit committees play an important role in determining the scope of audit and the compensation of external auditors (Kalbers and Fogarty 1993). Specifically,

they play a crucial role in appointing, retaining and removing the external auditor as well as in approving the remuneration and terms of engagement of the auditor (FRC 2012). Moreover, the audit committee is responsible to monitor the independence of the external auditor and review the provision of non-audit services by the latter, identifying and recommending to the board on any matters which may arise (FRC 2012). These roles are not just expected to reduce information asymmetry between managers and shareholders, but also to protect external auditors from fraud allegations through enhancing the auditor independence from management (Eisenhardt 1989).

There are a limited number of studies which have examined the impact of corporate governance on audit fees and non-audit fees. In their meta-analysis of the demand and supply attributes of audit fees, Hay et al. (2006b) find that in addition to the scarcity of research on the relationship between audit fees and corporate governance, the direction of this relationship, whether it is positive or negative, is still not understood. Extant literature reveals two theoretical arguments behind this ambiguity in the relationship. The first argument is based on the agency theory and suggests that higher audit fees would result from the audit committee's demand for greater audit efforts to ensure higher audit quality (Zaman et al. 2011). On the other hand, the second argument suggests that strong governance mechanisms are more likely to reduce risk thus leading to decrease in audit efforts and in turn audit fees (Zaman et al. 2011).

In the same vein, an important aspect of the oversight role that audit committees are expected to discharge is illustrated in monitoring the provision of non-audit services and the extent to which this provision will have a negative effect on auditor independence. Abbott et al. (2003b) argue that at the time that non-audit

services have a slight impact on the ability of the auditor to detect a material misstatement, these services are perceived to reduce "the auditor's willingness to report a material misstatement" (Abbott et al. 2003b, p.221). Several studies have supported this argument confirming that the provision of non-audit services by the incumbent auditor would impair auditors' objectivity and compromise their independence (e.g., Hay et al. 2006a; Firth 1997). They suggest that the simultaneous provision of audit services and non-audit services might create excessively high desires for auditors to maintain their clients and sustain lucrative income even if this is at the expense of compromising the auditors' independence (Zaman et al. 2011). This is consistent with the agency perspective where the joint provision of audit services and non-audit services is expected to result in moral hazard agency conflicts (Quick et al. 2013). As such, the audit committee is the monitoring mechanism delegated by the board of directors to reduce these conflicts through reviewing the external auditors' supply of non-audit services and monitoring auditors' independence.

Regulatory recommendations about auditor independence are also consistent with the agency perspective and suggest that the audit committee is not only incentivised to limit non-audit services purchases, but also has the right to act as a stakeholder in the purchase decision (Abbott et al. 2003b). Abbott et al. (2003b) argue that the committee could either directly or indirectly affect the purchase of non-audit services. First, impairing the independence of auditors represents a direct reasonable reason for the audit committee to influence the purchase of non-audit services decisions. Alternatively, an indirect effect suggests that management would respond to an effective and vigilant audit committee by voluntarily limiting the purchase of non-audit services.

The most common audit committee characteristics used by scholars to examine the effectiveness of audit committees on audit fees and non-audit service fees are: independence, financial expertise, size and meetings (e.g., Zaman et al. 2011; Lee and Mande 2005; Basiruddin 2011; Rustam et al. 2013; Ittonen et al. 2010; Carcello et al. 2002).

5.3.1.1 Audit Committee Independence

Watts and Zimmerman (1983) theorize that the conduction of an audit by someone who is independent of management (the external auditor) tends to reduce agency conflicts that result from the divergence of interests between managers and shareholders. Independent directors are therefore appointed to the board to attentively oversee the management-auditor relationship, monitor the audit process and ultimately protect the independence of auditors from management. Empirical evidence from different contexts supports this argument.

For instance, Hope et al. (2012) find that shareholders have more agency conflicts with CEOs than with independent directors. Similarly, providing evidence from an emerging country, Rustam et al. (2013) find that audit fees are negatively related to executive directors on the audit committee and conclude that the roles of the audit committee and the external auditors are complementary in monitoring management.

On the other hand, evidence from the non-audit fees literature reveals a negative association between non-audit service fees and audit committee independence. Abbott et al. (2003b) find that an independent audit committee is more likely to enhance auditor independence through limiting the purchase of non-audit service fees in relation to audit fees. Similarly, Parkash and Venable (1993)

find that firms attempt to reduce their agency costs and enhance audit quality through reducing the purchase of non-audit service fees from the incumbent auditors. Moreover, providing evidence from the UK, Zaman et al. (2011) find that there is a negative relationship between audit committee independence and non-audit fees. This finding is robust to the use of an indicator variable with a value of one if a firm's non-audit service fees are greater than its audit fees.

Zaman et al. (2011) argue that independent directors tend to be more concerned about the impairment of auditor independence and its effect on audit quality than are executives. Such directors have interests to serve in the decision control and protect audit quality in order to enhance their reputational capital as experts (Abbott et al. 2003b). Unlike executive directors, independent directors are more likely to ensure higher audit quality through exercising more power on management and demanding a wider audit scope (i.e. higher audit fees) (Zaman et al. 2011), as well as through limiting the purchase of non-audit services from the incumbent auditor[40] (Zaman et al. 2011; Abbott et al. 2003b). As such this study hypothesizes that:

Hypothesis 9_a: There is a positive relationship between audit committee independence and audit fees.

Hypothesis 9_b: There is a negative relationship between audit committee independence and non-audit service fees.

5.3.1.2 Audit Committee Relevant Financial Experience

"The effectiveness of audit committees is affected, first and foremost, by the expertise of members of audit committees in the areas of accounting and financial

[40] Independent directors are keener than executives to reduce moral hazard agency conflicts which may emerge from the simultaneous provision of audit services and non-audit services.

reporting, internal controls and auditing" (POB 1994, p.15). Regulatory recommendations on audit committee financial expertise highlight the importance of the possession of two types of knowledge by audit committee members. "Financial reporting knowledge" which enables the committee members to understand and analyse accounting figures in the financial reports, and "audit reporting knowledge" which will help the committee members to have a better understanding of the purpose and nature of the audit (DeZoort and Salterio 2001).

In the same vein, several studies have emphasized the importance of the audit committee including members with financial expertise in order to understand external auditors' judgements and deal with the disputes that might occur between auditors and management (e.g., Defond et al. 2005; Kalbers and Fogarty 1993; Davidson et al. 2004). Such members are found more likely to detect material misstatements (Defond et al. 2005; Davidson et al. 2004), and reduce internal control problems (Krishnan 2005).

Similarly, Defond et al. (2005) argue that financial and accounting experts in the audit committee are needed to deal with higher levels of accounting sophistication in organizations. They contend that the presence of such experts in the audit committee will enable the latter to assess the level of aggressiveness or conservativeness of accounting policies, evaluate accounting judgements, review management's actions against the audit adjustments proposed by the external auditor "and appraise the quality of the firm's financial reports and not just their acceptability" (p.155).

Zaman et al. (2011) articulate that audit committee members lacking the financial experience required to effectively monitor the financial reporting process are more likely to impair audit quality. Their results reveal no association between

audit committee financial expertise and audit fees; however, they find that financial experts on the audit committee are associated with lower levels of non-audit service fees.

The UK Corporate Governance Code recommends that a firm's audit committee should include at least one member with recent and relevant financial experience. This recommendation is consistent with the agency theory which suggests that an audit committee comprising of financially knowledgeable members is more able to understand and monitor management accounting judgements and the overall financial reporting process thus leading to reduction in information asymmetry.

This study argues that audit committee members with relevant financial experience are more likely to obtain better understanding of management accounting judgements and discretions and often ensure a higher audit quality through demanding a broader audit scope thus leading to higher audit fees. On the other side, as these members are more knowledgeable about the system's deficiencies, they are more likely to discourage managers from seeking non-audit services (Zaman et al. 2011). As such this study hypothesizes that:

Hypothesis 10_a: There is a positive relationship between audit committee relevant financial experience and audit fees.

Hypothesis 10_b: There is a negative relationship between audit committee relevant financial experience and non-audit service fees.

5.3.1.3 Audit Committee Size

Jensen (1993) argues that a large number of directors on the audit committee tend to adversely affect the latter's effectiveness because of process and coordination

problems. This argument, however, is less valid in small audit committees where the addition of directors is expected to enhance audit committee effectiveness as there will be more people to draw on. Empirically, several studies have emphasized the effectiveness of large audit committees in discharging a strong oversight role, and have found a positive association between audit committee size and audit fees (Ittonen et al. 2010; Boo and Sharma 2008; Vafeas and Waegelein 2007).

The UK Corporate Governance Code recommends that the number of directors on the audit committee should be at least three, or two in the case of smaller companies (FRC 2012, C.3.1). This is consistent with several studies which have noted that an ideal audit committee size would be between three and four directors (e.g., Xie et al. 2003; Vafeas 2005).

Interestingly, and arguing that audit committees are more likely to enhance the quality of internal controls, Zaman et al. (2011) provide evidence from the UK context that larger audit committees are associated with higher audit fees. They suggest that a higher level of resources provided by larger audit committees will enhance the latter's oversight role leading to higher audit efforts and therefore higher audit fees. Contrary to their predictions, Zaman et al. (2011) find a positive relationship between audit committee size and non-audit service fees.

This study suggests that larger audit committees are better observers of management actions. They are equipped with more resources which enables them to discern substantial problems and improve their oversight quality (Zaman et al. 2011). Their large size helps them enhance their power within organizations and demand a higher audit quality (Zaman et al. 2011), where more substantive audits are performed and higher audit fees are charged. At the same time, the higher level of knowledge found in larger audit committees is more likely to compensate for the

need to purchase non-audit services to resolve problems. As such this study hypothesizes that:

Hypothesis 11_a: There is a positive relationship between audit committee size and audit fees.

Hypothesis 11_b: There is a negative relationship between audit committee size and non-audit service fees.

5.3.1.4 Audit Committee Meetings

Diligent audit committees tend to be proactive in discharging their oversight role (Abbott et al. 2003b), and effective monitors over the audit process (Zaman et al. 2011). The number of audit committee meetings was used as an indicative measure of the committee's diligence (Menon and Williams 1994) and was found to be negatively related to fraud (Zaman et al. 2011).

Active audit committees with frequent meetings are more effective in monitoring the audit process and urging the external auditors to increase their audit testing (Krishnan and Visvanathan 2009). They are more likely to limit the purchase of non-audit services from the incumbent auditor (Abbott et al. 2003b).

Empirically, audit committees with frequent meetings are found to be positively related to audit fees (e.g., Zaman et al. 2011; Rustam et al. 2013; Krishnan and Visvanathan 2009; Lee and Mande 2005). Evidence on non-audit service fees, however, does not reveal a consensus on the relationship with audit committee meetings. For instance, Zaman et al. (2011) and Basiruddin (2011) both provide evidence of a sample of FTSE 350 firms and reveal inconsistent results. Zaman et al. (2011) find no association between audit committee meetings and non-audit service fees at the time that a positive relationship is found by Basiruddin (2011).

This study argues that an audit committee which meets more frequently tends to vigilantly oversee the financial reporting process requiring the auditor to perform a wider audit scope[41], and leading to lower non-audit fees due to less purchases of non-audit services by management (Abbott et al. 2003b; Zaman et al. 2011; Turley and Zaman 2004). As such this study hypothesises that:

Hypothesis 12_a: There is a positive relationship between audit committee meetings and audit fees.

Hypothesis 12_b: There is a negative relationship between audit committee meetings and non-audit service fees.

5.3.2 Corporate Boards, Audit Fees and Non-Audit Fees

Carcello et al. (2002) identify two types of linkages between the board of directors and audit quality, formal and informal. The formal linkage could be through the collaboration between the board and management in choosing the external auditor[42], and reviewing the audit scope and remuneration. On the other hand, the informal linkage can be illustrated by the signalling role that the board could play. That is, high expectations to perform a high quality audit could be signalled to the auditor by a strong board which is committed to vigilant oversight. As such the auditor will ensure the performance of a higher quality audit and sustain a good relationship with the client (Carcello et al. 2002).

According to the UK Corporate Governance Code the board of directors is accountable for establishing formal and transparent arrangements "for maintaining an appropriate relationship with the company's auditors" (FRC 2012, C.3). Although boards delegate the responsibility of overseeing the audit process and approving the

[41] This implies that higher audit fees are charged as a result of more audit efforts exerted by the external auditor.
[42] The selection of the auditor is then subject to ratification by shareholders.

remuneration of external auditors to audit committees, they in their turn review how the latter is discharging their responsibilities and deal with the recommendations raised to them when any matters arise.

Unlike Carcello et al. (2002), who regressed the audit committee and board variables separately, this study combines both variable sets in the same model arguing that the roles of the audit committee and the board are complementary and should be controlled for one another. The most commonly used board characteristics in the literature of audit fees and non-audit service fees are: Non-executive directors, CEO duality, number of meetings and size.

5.3.2.1 Non-Executive Directors

Fama and Jensen (1983) argue that non-executive directors tend to focus on providing functional monitoring in an attempt to sustain a good reputation as effective decision controllers. Such directors are expected to reduce agency costs, enhance the quality of the audit report and narrow the gap between management and the external auditors (Uang et al. 2006).

Empirical evidence confirms a positive association between non-executive directors and either of audit fees (e.g., Abbott et al. 2003a; Carcello et al. 2002) and non-audit service fees (e.g., Zaman et al. 2011; Basiruddin 2011).

From an agency perspective, shareholders are less likely to have agency conflicts with non-executive directors but more likely to have such conflicts with executives. Non-executive directors are expected to "scrutinise the performance of management in meeting agreed goals and objectives and monitor the reporting of performance" (FRC 2012, A.4), in an attempt to reduce agency costs and information asymmetry. As such, seeking to achieve their ultimate objective of

protecting the wealth of shareholders, they will be more likely to be concerned about audit quality (Carcello et al. 2002).

Moreover, non-executive directors on the board tend to be more concerned about audit quality in an attempt to protect their reputation in the market and avoid "potential financial loss that may result from litigation" (Zaman et al. 2011, p.173). Therefore this study argues that non-executive directors on the board are more likely to emphasize higher audit quality which in turn requires the auditor to conduct more substantive audit tests thus leading to higher audit fees. On the other hand, such directors have incentives to limit the purchase of non-audit services from the incumbent auditor in an attempt to protect auditor independence and consequently their reputational capital. As such this study hypothesizes that:

Hypothesis 13_a: There is a positive relationship between Non-executive Directors and audit fees.

Hypothesis 13_b: There is a negative relationship between Non-executive directors and non-audit service fees.

5.3.2.2 CEO Duality

O'Sullivan (2000) argues that the influence of non-executive directors in seeking higher levels of audit quality through emphasizing intensive audit is adversely affected by the presence of CEO duality. CEO duality in a firm tends to lower the effectiveness of internal monitoring and the reliability of accounting thus resulting in higher control risks and a broader audit scope (Tsui et al. 2001).

Several empirical studies provide evidence consistent with this argument (e.g., Krishnan and Visvanathan 2009; Tsui et al. 2001), and find a positive relationship between audit fees and CEO duality. This is consistent with the agency

theory which suggests that when there is non-separation of the roles of the CEO and the chair of the board there is "absence of separation of decision management and decision control" (Fama and Jensen 1983) thus leading to lower internal monitoring and higher control risk. This implies that increased efforts will be exerted by the external auditors to deal with the threat of increased risk.

Therefore a CEO who also serves as a chairman of the board may have an adverse effect on audit quality (Jensen 1993; Collier and Gregory 1996). This may result in higher audit fees because of increased efforts exerted by the external auditor to control for risk and higher non-audit service fees resulting from lower auditor independence. As such this study hypothesizes that:

Hypothesis 14$_a$: There is a positive relationship between CEO duality and audit fees.

Hypothesis 14$_b$: There is a positive relationship between CEO duality and non-audit service fees.

5.4.2.3 Board Meetings

The number of board meetings has been used in the literature to measure how diligent the board is in discharging its oversight role. It is the only observable factor that gauges the diligence of the board of directors (Carcello et al. 2002).

The vast majority of those who empirically examined the association between board meetings and audit fees find a positive relationship (e.g., Carcello et al. 2002; Abbott et al. 2003a; Krishnan and Visvanathan 2009; Basiruddin 2011). Krishnan and Visvanathan (2009) argue that this relationship is expected because vigilant boards tend to require a broader audit scope from the external auditor with the intention of achieving a higher audit quality. Similarly, Zaman et al. (2011) argue

that frequent board meetings would be associated with a higher level of control and more emphasis on a higher audit quality.

Empirical research on the association between board meetings and non-audit service fees reveal inconsistent results (e.g., Zaman et al. 2011; Basiruddin 2011). For instance, Zaman et al. (2011) find a negative relationship between board meetings and non-audit service fees at the same time that Basiruddin (2011) finds no significant association at all.

This study argues that an active board of directors with high frequency of meetings is more likely to be concerned about audit quality. The more frequent board meetings are, the more the board will be able to enhance the effectiveness of its oversight role and support the conduct of a wider and extensive audit work. Therefore an increase in the number of board meetings is expected to result in higher audit fees and lower non-audit service fees. As such this study hypothesizes that:

Hypothesis 15_a: There is a positive relationship between board meetings and audit fees.

Hypothesis 15_b: There is a negative relationship between board meetings and non-audit service fees.

5.3.2.4 Board Size

According to the UK Corporate Governance Code, "the board should be of sufficient size that the requirements of the business can be met and that changes to the board's composition and that of its committees can be managed without undue disruption, and should not be so large as to be unwieldy" (FRC 2012, B.1).

In comparison to small boards, larger boards are more likely to exert better oversight over management, better evaluation of firm performance and are less likely

to be dominated by management (Johnson et al. 1996). Moreover, such boards are more expected to help their firms emerge from hard financial difficulties (Johnson et al. 1996).

Empirically, most of the research tackling the association between audit fees and board size provides evidence of no association between these two variables (e.g., Vafeas and Waegelein 2007; Krishnan and Visvanathan 2009; Rustam et al. 2013). With respect to non-audit service fees, however, it was found to be negatively related to board size for a sample of FTSE 350 firms in the UK (Basiruddin 2011).

This study argues that larger boards are more likely to heighten risks associated with material mis-statements and consequently require a wider audit scope and more extensive audit procedures (Boo and Sharma 2008). Moreover, such boards tend to support and help the firm in solving problems through their wider breadth of knowledge than otherwise to solve the problems through the purchase of consulting non-audit services. As such, this study hypothesizes that:

Hypothesis 16$_a$: There is a positive relationship between board size and audit fees.

Hypothesis 16$_b$: There is a negative relationship between board size and non-audit service fees.

5.3.3 Measurement of the Dependent Variables

This study tests the hypotheses relating to the impact of audit committee and board of directors on audit fees and non-audit service fees. Audit fees and non-audit fees are examined considering that they are one of the economic aspects of the relationship between external auditors and their clients. They have been tackled in the literature as surrogates for audit quality (O'Sullivan 2000; Basiruddin 2011; Nehme 2013) and auditor independence (Abbott et al. 2003b; Ghosh et al. 2009; Hay

et al. 2006a; Basiruddin 2011) respectively. The first strand of research, which uses audit fees as proxy for audit quality, argues that higher audit fees are a signal for higher audit quality as the former would be charged as a result of increased audit effort by the auditor (see Simunic 1980; Palmrose 1986). The second strand of research views higher levels of non-audit fees in relation to audit fees as an indicator of higher economic bonding between the external auditor and the client which could adversely influence auditor independence (see Abbott et al. 2003b; Becker et al. 1998; Simunic 1984). This study argues that audit fees and non-audit service fees do not represent the entire determinants of audit quality and auditor independence respectively, and therefore it examines these fees *per se* rather than as proxies for other audit factors.

5.3.4 Measurement of the Control Variables

Consistent with prior studies on audit fees and non-audit service fees, this study uses several firm-specific control variables to account for complexity, size, profitability, leverage, form of ownership and industry (e.g., Zaman et al. 2011; Carcello et al. 2002; Abbott et al. 2003b). It intends to control for necessary variables from each of these categories while avoiding 'kitchen sink' models[43] (Hay 2013). These variables are as follows:

- Block-holders (BLOCK): block-holders have higher economic incentives for monitoring than minor shareholders, because their potential benefits outweigh the monitoring costs (Quick et al. 2013). Moreover, management may tend to increase the level of disclosure and voluntary releases in an attempt to gain the confidence of shareholders with concentrated ownership

[43] Audit and non-audit fees models with a large number of control variables have been criticised as being 'kitchen sink' models as they comprise "more control variables than necessary" (Hay 2013) .

(Quick et al. 2013). As such, block-holders tend to demand a higher quality audit which is achieved through a wider audit scope, and therefore higher audit fees, and through reduction in the purchase of non-audit services to protect auditors' independence.

- Mergers and acquisition (ACQ): firms involved in merger and acquisition activities are associated with higher audit fees and higher non-audit service fees. Higher audit fees might result from the increased efforts of the external auditor to deal with internal control problems which might occur as a result of these activities (Zaman et al. 2011). On the other hand, such activities create the demand for the purchase of non-audit services by the relevant firms (Firth 1997).
- Number of business segments (BUSSEG): the number of business segments is used to control for the complexity of firms. Firms with a larger number of business segments are relatively more complex and therefore require higher audit efforts and higher levels of non-audit services. As such, BUSSEG will be positively related to audit fees and non-audit fees.
- Loss in either or both of previous two years (LOSS): LOSS is used in this study as a metric for profitability. Profitability could also be considered as a measure of risk, especially when the firm is not in good financial health. In case of poor performance the auditor is exposed to more risk and consequently charges higher audit fees (Hay et al. 2006b). On the other hand, firms with poor performance tend to demand more consulting non-audit services to improve profitability (Abbott et al. 2003b; Firth 1997).
- Leverage (LEV): leverage is expected to increase agency costs thus leading to increase in audit fees and decrease in non-audit service fees (Abbott et al.

2003b). For instance, highly leveraged firms may tend to opportunistically manage earnings to avoid debt covenant violation (DeFond and Jiambalvo 1994). More audit efforts and higher audit fees, thus, would result from the auditor's attempts to reduce misstatement risks. On the other hand, a higher cost of debt leads firms to limit the purchase of non-audit services in an attempt to strengthen the creditor's perception of auditor independence (Quick et al. 2013). In the same vein, Zaman et al. (2011) argue that highly leveraged firms are more exposed to business and financial risks and need to be protected through higher levels of monitoring . This might result in higher audit fees and lower non-audit service fees.

- Firm size (SIZE): large firms are required to meet higher levels of regulatory recommendations and requirements. They require higher audit quality which could be achieved by increased audit efforts and therefore higher audit fees (Zaman et al. 2011). On the other hand large firms tend also to purchase higher levels of non-audit services to deal with their system complexities and wider range of activities (Abbott et al. 2003b; Zaman et al. 2011) thus leading to higher non-audit service fees.
- Industry (INDY): the difficulty of an audit differs from one industry to another (Simunic 1980; Hay et al. 2006b). For instance, industries characterized by extensive receivables and inventory are relatively harder to audit than others (Hay et al. 2006b). Therefore such industries require more efforts and testing from the auditor leading the latter to charge higher fees. On the other hand, these industries tend to purchase higher levels of non-audit services to help them deal with difficulties and problems.

5.3.5 Models Specification

Model 1: the impact of audit committee and board characteristics on audit fees

$$\text{LnASF} = \beta_0 + \beta_1 ACM + \beta_2 ACS + \beta_3 ACI + \beta_4 ACRX + \beta_5 NEDs + \beta_6 DUAL + \beta_7 BM + \beta_8 BS + \beta_9 BLOCK + \beta_{10} ACQ + \beta_{11} BUSSEG + \beta_{12} LOSS + \beta_{13} LEV + \beta_{14} SIZE + \beta_{15} INDY + \beta_{16} T + \varepsilon \quad (15)$$

Model 2: the impact of audit committee and board characteristics on non-audit fees

$$\text{LnNASF} = \beta_0 + \beta_1 ACM + \beta_2 ACS + \beta_3 ACI + \beta_4 ACRX + \beta_5 NEDs + \beta_6 DUAL + \beta_7 BM + \beta_8 BS + \beta_9 BLOCK + \beta_{10} ACQ + \beta_{11} BUSSEG + \beta_{12} LOSS + \beta_{13} LEV + \beta_{14} SIZE + \beta_{15} INDY + \beta_{16} T + \varepsilon \quad (16)$$

where:

Dependent variables

LnASF = Natural logarithm of audit service fees

LnNASF = Natural logarithm of Non-audit service fees

Independent variables

ACM = Number of audit committee meetings held in a given year.

ACS = Total number of audit committee members.

ACI = The percentage of independent directors on the audit committee.

ACRX = The percentage of audit committee directors with relevant financial expertise on the audit committee.

NEDs = The percentage of non-executive directors on the board.

DUAL = Indicator variable with a value of 1 if the CEO also serves as a chair of the board.

BM = Frequency of board meetings held during a year.

BS = Number of directors on the board.

BLOCK = Percentage ownership of block-holders who hold at least 5 percent or more of outstanding common shares and are unaffiliated with management.

ACQ = Indicator variable with a value of 1 if a firm made an acquisition in either one or both of the previous two years.

BUSSEG = Number of a firm's business segments

LOSS = Indicator variable with a value of 1 if a firm incurred losses in either one or both of the previous two years.

LEV = Total long-term debt to total assets.

SIZE = Natural logarithm of total assets at year end.

INDY = Type of industry. Indicator variable of 1 for each of the following industry types: Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecommunications, Technology.

T = Time. Indicator variables of 1 for each of the following years: 2008, 2009 and 2010.

ε = Error term.

5.4 Sample Selection and Data Sources

The initial sample consists of all FTSE 350 companies listed in the London Stock Exchange (LSE), for the three-year period between 2008 and 2010. Conducting this study in the above specifications is fascinating for the following reasons. First, as already mentioned in the introductory chapter, using a sample period between 2008 and 2010 the author attempts to address regulatory concerns about firms having low financial reporting quality and ineffective external audit processes. During the 2008 to 2010 period, the UK financial reporting guardian, the FRRP, had raised concerns regarding the quality of financial reporting due to the belief that firms are more inclined to manipulate revenues after the recession. In parallel, the UK House of Lords criticises the role of Britain's Big 4 auditors during the global financial crisis and recommended restrictions on the auditors' provision of non-audit services to the FTSE 350 firms and an enhanced role for audit committees to monitor the auditor-management relationship aspects, one of which is auditor remuneration. Second, in contrast to the US rules-based accounting system where the

majority of similar studies took place, the UK has a principles-based accounting system which focuses on the substance of the principle rather than its form. Third, in contrast to the US mandatory corporate governance system in which the vast majority of the relevant studies were conducted, the UK follows the 'comply or explain' approach whereby audit committees are voluntary. Fourth, compared to the US, in the UK "there is greater variation in outside director representation on boards" (Peasnell et al. 2005, p.1313). Finally, FTSE 350 firms are the largest UK listed firms by market capitalization. The previously discussed calls to restrict auditors from providing non-audit services to FTSE 350 firms and to enhance the role of the audit committees of these firms make FTSE 350 the ideal sample to examine[44]. Moreover, using FTSE 350 index ensures higher availability of data and similar level of governance recommendations. The largest 350 firms have a higher level of recommendations to comply with, since, for instance, they are required to establish audit committees with at least three independent non-executive directors instead of the two required for smaller firms.

Corporate governance data are collected manually from annual reports. Financial and accounting data are obtained from DataStream. Firms in the insurance, financial and utilities industries are excluded for two reasons. First, with respect to the first empirical model (financial reporting quality), firms in the mentioned industries have revenues and accruals which are different from other firms (Stubben 2010). Second, regarding the second empirical model (auditor remuneration), the excluded industries differ from other industries in terms of their regulatory environment (Zaman et al. 2011) and characteristics. For instance, in the UK, firms in the utilities industry are governed by their own relative service regulatory bodies:

[44] It is worth noting that all of the FTSE 350 firms examined in the auditor remuneration model are audited by one of the Big Four auditors who were criticized by the House of Lords on their role during the financial crisis.

Office for the Regulation of Electricity and Gas, Office of Water Services, Office of Communication etc. Moreover, financial and utility institutions are characterised by relatively large assets, but they entail less audit effort and testing than firms with extensive receivables and inventory (Hay et al. 2006b).

The two empirical models in this study have different sample sizes. For the sample of the first empirical model tackling the impact of audit committee and board characteristics on financial reporting quality, this study further excludes industries consisting of less than six firms to minimize the possibility of biased estimates in calculating discretionary revenues and accruals. Moreover, in order to account for outliers, variables are winsorized at the bottom and top 2 percent. The final samples of the first and second empirical models consist of 662 and 619 observations respectively. Panel A and Panel B in Table 5.1 present the sample selection procedures of the financial reporting quality models and the auditor remuneration models respectively. The sample size of the second empirical study (619) is less than that of the first empirical study (662), despite the exclusion of less than six firm industries in the latter, because of the large number of missing audit fees and non-audit service fees data on DataStream.

Table 5.2, Panel A and Panel B, present the distribution of sample firms by industry and year for the first and second empirical models respectively. The majority of firm observations in both of the empirical models are from the industrials and consumer services industries. Firms in these industries represent about 58% of the total sample of each of the two empirical studies. In Table 5.2, Panel A, the number of sample firms in the telecommunications industry in 2008 is zero due to the exclusion of industries having less than six firms. Graphical representations of sample firms' distribution by industry and year for each of the financial reporting

quality sample and the auditor remuneration sample are presented in Figure 5.1 and Figure 5.2 respectively. Industries in both of the samples are roughly equally distributed over the three years except for the telecommunications industry which is excluded in the year 2008 of the first sample (Figure 5.1).

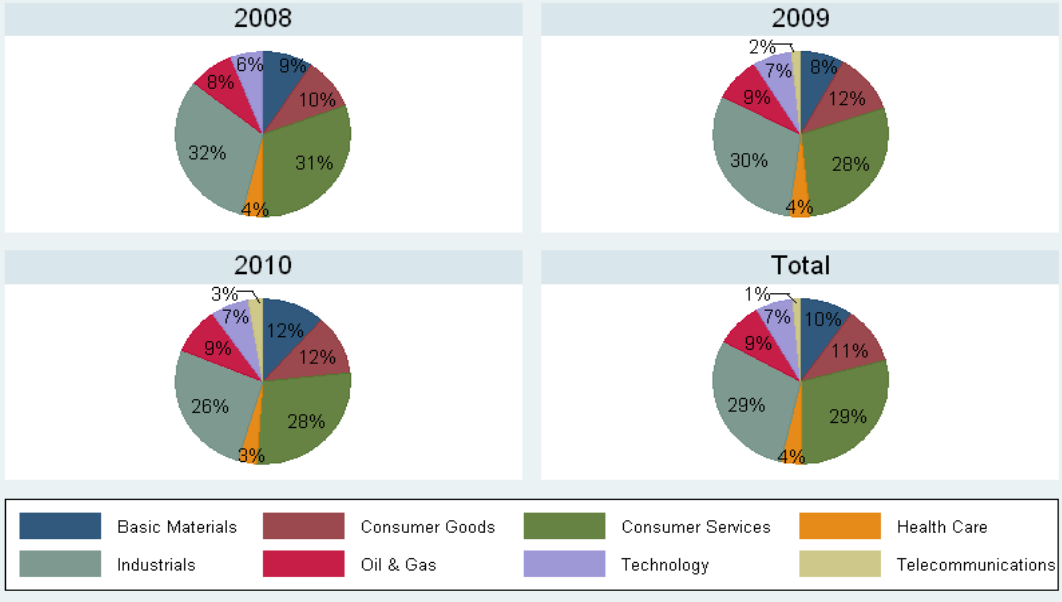
Finally, with respect to the pre-financial crisis sample examined in the additional analysis, the author follows the same sampling procedures mentioned above for both financial reporting and auditor remuneration models. Given that the mandatory adoption of the International Financial Reporting Standards (IFRS) by the UK took place on January 1, 2005, the pre-crisis sample period is chosen to be for the three years from 2005 to 2007 to avoid the effect of the change in standards on accounting quality.

Table 5.1 Sample Selection Procedures

Panel A: Financial reporting models				
	2008	**2009**	**2010**	**Total Sample**
Total firms in FTSE 350 at year end	358	355	356	**1069**
Companies in financial & insurance industries (ICB 8000)	-113	-112	-116	**-341**
Companies in utilities industry (ICB 7000)	-10	-9	-9	**-28**
Companies with missing corporate governance and financial values	-6	-5	-3	**-14**
Industries having less than 6 firms	-13	-7	-4	**-24**
Total sample	**216**	**222**	**224**	**662**
Panel B: Auditor remuneration models				
	2008	**2009**	**2010**	**Total Sample**
Total firms in FTSE 350 at year end	358	355	356	**1069**
Companies in financial & insurance industries (ICB 8000)	-113	-112	-116	**-341**
Companies in utilities industry (ICB 7000)	-10	-9	-9	**-28**
Companies with missing corporate governance and financial values	-29	-21	-31	-81
Total sample	**206**	**213**	**200**	**619**

Figure 5.1

Graphical Representation of Sample Firms' Distribution by Industry and Year



Financial Reporting Quality Sample

Table 5.2 Distribution of Sample Firms by Industry and Year

Panel A: Financial reporting quality models

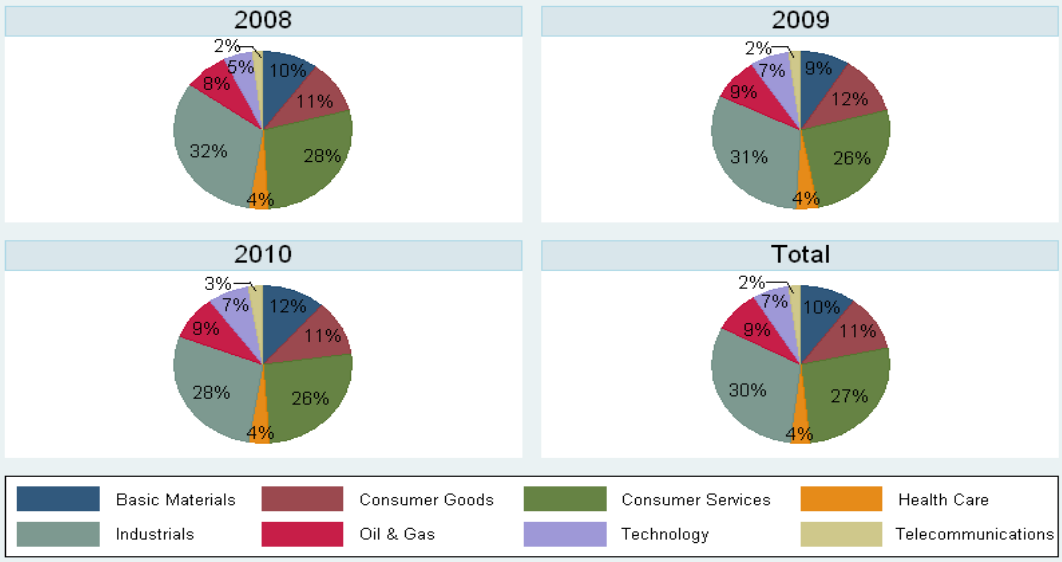
ICB code	Industry	2008	2009	2010	Total
0001	Oil and Gas	18	19	20	57
1000	Basic materials	20	18	26	64
2000	Industrials	69	65	59	195
3000	Consumer goods	23	26	25	74
4000	Health care	8	9	8	25
5000	Consumer services	65	63	64	192
6000	Telecommunications	0	6	6	10
9000	Technology	13	16	16	45
	Total	**216**	**222**	**224**	**662**

Panel B: Auditor remuneration models

ICB code	Industry	2008	2009	2010	Total
0001	Oil and Gas	15	18	15	48
1000	Basic materials	20	20	21	61
2000	Industrials	67	66	60	193
3000	Consumer goods	24	27	24	75
4000	Health care	8	9	8	25
5000	Consumer services	60	55	53	168
6000	Telecommunications	3	4	4	11
9000	Technology	9	14	15	38
	Total	**206**	**213**	**200**	**619**

Figure 5.2

Graphical Representation of Sample Firms' Distribution by Industry and Year



Auditor Remuneration Sample

5.5 Analytical Procedures

This section presents the statistical methods used to analyse the data. All statistics are processed on the STATA 12 statistical software. Data analysis presented in the next two chapters is structured as follows.

First the author describes the data and checks its normality in the descriptive statistics section. The mean, standard deviation, median, minimum, maximum, skewness and kurtosis are the statistics used to describe the data. The skewness and kurtosis determine the nature of the data whether normally distributed (parametric) or not (non-parametric) (Hair 2010). As a rule of thumb the data is normally distributed if its standard skewness and standard kurtosis lie within ±1.96 and ±3 respectively (Gujarati 1995). In case the data is non-parametric, winsorizing or transformation methods are applied to enhance the normality of the distribution.

Then the correlations among variables are reported in the correlation matrix section. Correlation coefficients are used to gauge the strength of linear association between two variables (Gujarati 2003). Both of the Spearman and Pearson correlations are employed, however, the main relevant analysis is based on Spearman if the data is non-parametric and on Pearson if the data is parametric. Correlation coefficients are then used as indicators for multicollinearity problems. As a rule of thumb, if two variables have a correlation coefficient greater than 0.80 then they are considered to be highly collinear (Gujarati 2003).

A multivariate analysis section is after that presented as the multivariate analysis accounts for the variation in firms' characteristics and the other determinants of the dependent variables which are not controlled for under the correlation matrix. Before running the regressions, the validity of applying Ordinary Least Square (OLS) regression, the most commonly used method in the literature, is

tested. There are five basic assumptions to be satisfied in order for the OLS estimator not to be biased (Gujarati 2003). These assumptions are:

- The error term is normally distributed.
- The error term is homoskedastic i.e., it has constant variance
- The error term is not serially correlated.
- The repressors are not highly correlated.
- The model is linear.

The empirical models tested in this thesis are expected to suffer from heteroscedasticity problems. These problems might arise as a result of the presence of outliers especially in the earnings management and auditor remuneration variables. Another source of heteroscedasticity might be the skewness in the distribution of one or more independent variables in the models (e.g., ACM, Manown, Growth, and DUAL). To check for heteroskedasticity, either the Breusch-Pagan/Cook-Weisberg or White's tests for heteroskedasticity is used when the employed regression is pooled OLS. The Modified Wald test, however, is used for group-wise heteroskedasticity in fixed effect regression models. Moreover, autocorrelation problems might arise in case there are omitted variables. Therefore, regression standard errors are adjusted for heteroskedasticity and autocorrelation through the use of robust standard errors and robust standard errors clustered by firm.

In addition to the correlation coefficients, checking for multicollinearity among repressors is done also through the Variance Inflation Factor (VIF) and tolerance value statistics. As a rule of thumb, variables with VIF value in excess of 10 or tolerance value of less than 0.10 are regarded as highly collinear (Gujarati 2003, p.362). Simple and panel effects regressions are used. Where appropriate, the Breusch-Pagan Lagrange Multiplier (LM) test is conducted to help decide on

whether to use a random-effect regression or simple OLS one. The Hausman test is then used to help decide between random and fixed effects regressions.

Similar to other comparative studies in corporate governance, the results of this thesis may suffer from endogeneity problems. The author uses several ways to mitigate such problems including incorporating additional control variables, using fixed effect regression and incorporating residuals as regressors in jointly-determined models.

Finally additional tests to check the robustness of the results are presented in the additional analysis section. Extant research finds that the performance of governance mechanisms may differ between recession periods and regular periods. As such the author includes descriptive and multivariate analysis to test the hypotheses in the pre-financial crisis period from 2005 to 2007. Other tests for additional control variables and different variable definitions are also provided.

5.6 Summary

The author examines the impact of corporate governance on financial reporting quality and auditor remuneration through the use of two empirical models. This chapter presents the hypotheses development and research design of each of these empirical models. Specifically, research hypotheses are developed through the use of theoretical links between the hypotheses variables supported by relevant empirical evidence. The specifications of the models under study are then presented after discussing the measurements of each of the dependent variables and the control variables.

Data for the variables under study are collected from two sources: corporate governance data are collected manually from annual reports, whilst financial data are

obtained from DataStream. The initial sample consists of all FTSE 350 firms listed in the LSE for the three-year period between 2008 and 2010. After excluding firms in the financial, insurance and utilities industries as well as those with missing data, the final size of each of the financial reporting quality and auditor remuneration samples comprises 662 and 619 firm-year observations respectively. OLS regressions (either simple or panel) with robust standard errors and robust standard errors clustered by firm are used to test the hypotheses. The results are presented in the next two chapters.

Chapter 6. Findings and Discussion – Corporate Governance and Financial Reporting Quality

Chapter 6
Findings and Discussion – Corporate Governance and Financial Reporting Quality

6.1 Introduction

The findings of the first empirical investigation tackling the impact of audit committee and board characteristics on financial reporting quality are presented and discussed in this chapter. Two empirical analyses are used for each of the proxies of financial reporting quality (discretionary revenue and the performance-adjusted discretionary accrual model). The structure of this chapter is as follows. Variables' statistics as well as the normality of data is discussed in the following section (6.2). Then the linear association and collinearity among variables are tackled in the correlation matrix section (6.3). Research hypotheses are tested using appropriate regression techniques in the multivariate analyses section (6.4). Additional tests to check the robustness of the main results are discussed in the additional analysis section (6.5). The chapter concludes with a summary of the results in section 6.6.

6.2 Descriptive Statistics

Table 6.1 provides the descriptive statistics for earnings management measures, corporate governance variables and control variables. The statistics used to describe the sample under study are: mean, standard deviation, median, minimum, maximum, skewness and kurtosis.

The mean (median) of absolute discretionary revenues and absolute discretionary accruals is 2.2% (1.3%) and 4.6% (3.0%) of total assets respectively.

The mean (median) of discretionary revenues in a study conducted by Feng et al. (2011) tackling the impact of financial reporting quality (proxied by the discretionary revenue model used in this study) on investment efficiency for a sample of 6,727 private firms from 21 emerging countries for the period between 2002 and 2005 is 4.7% (2.4%)[45]. The mean (median) of Feng et al. (2011) discretionary revenue sample is approximately double that reported in this study. This is probably due to two reasons: first, unlike the UK, where a strong governance system exists, emerging countries tend to have a lower financial reporting quality because of poorer governance systems; second, private firms tend to have a lower financial reporting quality than public ones because of the lower market demand for a higher quality from the former (Ball and Shivakumar 2005; Burghstahler et al. 2006). The mean (median) of discretionary accruals estimated from the performance adjusted Modified Jones model, on the other hand, is comparable to that found in other UK studies using the same measure (e.g., Basiruddin 2011).

The governance structure in the used sample reveals that the average audit committee contains four directors and meets four times a year. This is consistent with a similar UK study conducted by Basiruddin (2011) on 613 FTSE 350 firms for the period from 2005 to 2008. Moreover, these statistics are in compliance with the combined code where audit committees are recommended to be composed of at least three members and to meet at least three times a year. Not all audit committees in our sample, however, comply with the code in consisting solely of independent non-executive directors, as 10.2% of the members are non-independent. Descriptive statistics of a similar UK study conducted by Habbash (2010) for the period 2003 to 2006 reveal that on average 16.4% of the audit committee directors in his sample are

[45] As mentioned in the introductory chapter, the author is not aware of any study that has examined the association between discretionary revenues and corporate governance.

non-independent. This implies that lately there is an increased tendency of the FTSE 350 firms to comply with the recommendations of the UK Corporate Governance Code. On average 30.7% of audit committee directors have relevant financial expertise.

On average, the board comprises nine directors, of which 64.9% are non-executive, and meets nine times a year. The chief executive is acting as the chairman of the board in 3.5% of the cases.

Comparatively, the independence and size statistics of the audit committee and the board are consistent with those reported in similar studies in the US (e.g., Ghosh et al. 2010), notwithstanding the difference in governance regimes[46]. This implies that large companies in the UK tend to meet and sometimes exceed the minimum regulatory governance requirements even if they are not mandated.

Descriptive statistics of the control variables in Table 6.1 reveal that, on average, 3.9% of shares are held by executive directors. Block-holders who are unaffiliated with management own 28.6% of the stock. The mean (median) GROWTH is 2.087 (2.140). These statistics are mildly higher than those reported by Basiruddin (2011) where the mean of the executive directors' ownership, block-holdership, and GROWTH in her 613 FTSE 350 sample for the period between 2005 and 2008 are 4.4%, 23.6% and 3.066 respectively. The mean of CFO and LOSS are 0.135 and 0.177 respectively. Providing evidence from the UK, Basiruddin (2011) documents a similar mean of 0.135 for CFO and 0.052 for LOSS. The author suggests that the higher percentage of firms which have reported losses in either one or both of the previous two years found in this study is attributed to the post-financial crisis period from which this study's sample is taken. Finally the mean

[46] Unlike the US mandatory corporate governance system, the UK follows the "Comply or Explain" corporate governance approach.

(median) of the total assets of this study's sample firms is 6,525,315,000 (1,404,100,000). This is relatively consistent with the UK study conducted recently by Nehme (2013) where the reported mean (median) of total assets is 6,362,582,000 (1,408,132,000)[47].

In general, the data used in this study is found to be non-parametric. As a rule of thumb, for the data to be normally distributed or parametric the standard skewness and standard kurtosis should be within ±1.96 and ±3 respectively (Gujarati 1995; Haniffa and Hudaib 2006). Table 6.1 presents severe levels of skewness and kurtosis for some variables including DiscRev, DiscAcc, ACM, MANOWN and GROWTH. As such and following other similar earnings management studies (e.g., Bergstresser and Philippon 2006; Zang 2011; Hazarika et al. 2012), the author winsorizes each of the continuous variables at the bottom and top 2 percent to reduce the influence of outliers.

[47] The sample of Nehme (2013) comprises of 908 FTSE 350 firms for the period from 2007 to 2010.

Table 6.1 Descriptive Statistics

	Number	Mean	Standard Deviation	Median	Minimum	Maximum	Skewness	Kurtosis
Earnings Management								
DiscRev	662	0.022	0.026	0.013	0.000	0.228	2.741	14.169
DiscAcc	662	0.046	0.056	0.030	0.000	0.644	4.049	30.184
Audit Committee Characteristics								
ACM	662	4.113	1.563	4.000	1.000	15.000	2.560	14.129
ACS	662	3.585	0.886	3.000	2.000	7.000	1.095	4.723
ACI	662	0.898	0.181	1.000	0.000	1.000	-1.770	5.961
ACRX	662	0.307	0.267	0.333	0.000	1.000	1.133	4.128
Board Characteristics								
NEDs	662	0.649	0.116	0.667	0.267	0.929	-0.242	2.828
DUAL	662	0.035	0.183	0.000	0.000	1.000	5.081	26.819
BM	662	8.911	3.190	8.000	3.000	26.000	1.735	8.520
BS	662	9.107	2.452	9.000	5.000	20.000	1.097	4.461
Control Variables								
MANOWN	662	0.039	0.110	0.002	0.000	0.654	3.727	16.847
BLOCK	662	0.286	0.187	0.259	0.000	0.924	0.708	3.289
LEVERAGE	662	0.192	0.164	0.171	0.000	0.807	0.729	3.029
GROWTH	662	2.087	23.309	2.140	-390.460	187.100	-7.641	151.488
CFO	662	0.135	0.111	0.112	-0.237	0.914	2.097	11.973
TA (£'000)	662	6,525,315	20,500,000	1,404,100	44,068	237,000,000	7.435	67.507
SIZE (LnTA)	662	14.305	1.504	14.155	8.644	19.130	0.511	3.481
LOSS	662	0.177	0.382	0.000	0.000	1.000	1.695	3.873

Table 6.1 (Cont'd)

DiscRev is the estimated absolute value of the residuals from the following industry-year regression:

$\Delta AR_{i,t} = \alpha 0 + \beta 1 \Delta R_{i,t} + \varepsilon_{i,t}$

DiscAcc is the estimated absolute value of the residuals from the following industry-year regression:

$ACC_{i,t} = \alpha 0 + \alpha\ 1\ (\Delta R_{i,t} - \Delta AR_{i,t}) + \alpha\ 2\ PPE_{i,t} + \alpha\ 3\ ROA_{i,t-1} + \varepsilon_{i,t}$

ACM is the number of audit committee meetings held in a given year; *ACS* is the total number of audit committee members; *ACI* is the percentage of independent directors in the audit committee; *ACRX* is the percentage of audit committee directors with relevant financial expertise on the audit committee; *NEDs* is the percentage of non-executive directors on the board; *DUAL* is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; *BM* is the frequency of board meetings held in a given year; *BS* is the number of directors in the board; *MANOWN* is the percentage of total shares held by executive directors to total number of shares; *BLOCK* is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; *LEV* is total long-term debt to total assets; *GROWTH* is Market-to-book ratio; *CFO* is cash flow from operating activities scaled by lagged total assets; *TA* is total assets at year end; *SIZE* is the natural logarithm of total assets at year end; *LOSS* is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years.

Table 6.2 presents the yearly statistics of the financial reporting quality models. The decrease in the average levels of DiscRev (DiscAcc) from 0.026(0.058) in 2008 to 0.017(0.039) in 2010 indicate an enhancement in the financial reporting quality of the sample firms throughout this period. There have not been significant changes in the corporate governance structures of the sample firms in the period between 2008 and 2010. The major changes are illustrated in the percentage increase of audit committee members with relevant financial experience from 28.7% in 2008 to 32.1% in 2010 as well as in the CEO duality cases in the sample firms' boards from 2.8% in 2008 to 3.6% in 2010. On average, sample firms' audit committees have complied with the UK Corporate Governance Code, in terms of including at least three members and meeting for at least three times a year, throughout the three-year period from 2008 to 2010. Finally, the increase in the percentage of sample firms that have reported losses in either or both of their previous years from 11.1% in 2008 to 26.9% in 2010 is attributed to the financial distress during and after the 2008 financial crisis.

Table 6.2 Descriptive Statistics by Year

	2008			2009			2010		
	Mean	St. Dev.	Median	Mean	St. Dev.	Median	Mean	St. Dev.	Median
Earnings Management									
DiscRev	0.026	0.032	0.017	0.023	0.026	0.014	0.017	0.019	0.011
DiscAcc	0.058	0.070	0.036	0.042	0.049	0.029	0.039	0.046	0.026
Audit Committee Variables									
ACM	4.032	1.479	4.000	4.176	1.598	4.000	4.130	1.610	4.000
ACS	3.599	0.887	3.000	3.563	0.929	3.000	3.592	0.843	3.000
ACI	0.906	0.165	1.000	0.875	0.197	1.000	0.913	0.179	1.000
ACRX	0.287	0.261	0.250	0.314	0.279	0.250	0.321	0.262	0.333
Board Variables									
NEDs	0.637	0.117	0.636	0.653	0.120	0.667	0.657	0.109	0.667
DUAL	0.028	0.164	0.000	0.041	0.198	0.000	0.036	0.186	0.000
BM	8.954	3.178	8.000	9.050	3.115	9.000	8.731	3.281	8.000
BS	9.313	2.508	9.000	9.045	2.449	9.000	8.969	2.398	9.000
Control Variables									
MANOWN	0.042	0.120	0.002	0.034	0.093	0.002	0.040	0.116	0.002
BLOCK	0.291	0.194	0.265	0.292	0.182	0.268	0.274	0.186	0.241

Table 6.2 (Cont'd)

LEVERAGE	0.205	0.168	0.182	0.197	0.170	0.172	0.176	0.154	0.159
GROWTH	-2.464	33.478	1.510	4.343	20.037	2.340	4.269	9.867	2.620
CFO	0.142	0.117	0.115	0.122	0.099	0.105	0.141	0.115	0.119
TA (£'000)	5,340,162	15,700,000	1,455,100	6,729,503	21,000,000	1,341,517	7,475,308	23,800,000	1,457,393
SIZE	14.280	1.457	14.191	14.266	1.546	14.109	14.368	1.510	14.192
LOSS	0.111	0.314	0.000	0.149	0.357	0.000	0.269	0.444	0.000

DiscRev is the estimated absolute value of the residuals from the following industry-year regression:

$\Delta AR_{i,t} = \alpha 0 + \beta 1 \Delta R_{i,t} + \varepsilon_{i,t}$

DiscAcc is the estimated absolute value of the residuals from the following industry-year regression:

$ACC_{i,t} = \alpha 0 + \alpha\ 1\ (\Delta R_{i,t} - \Delta AR_{i,t}) + \alpha\ 2\ PPE_{i,t} + \alpha\ 3\ ROA_{i,t-1} + \varepsilon_{i,t}$

ACM is the number of audit committee meetings held in a given year; *ACS* is the total number of audit committee members; *ACI* is the percentage of independent directors in the audit committee; *ACRX* is the percentage of audit committee directors with relevant financial expertise on the audit committee; *NEDs* is the percentage of non-executive directors on the board; *DUAL* is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; *BM* is the frequency of board meetings held in a given year; *BS* is the number of directors in the board; *MANOWN* is the percentage of total shares held by executive directors to total number of shares; *BLOCK* is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; *LEV* is total long-term debt to total assets; *GROWTH* is Market-to-book ratio; *CFO* is cash flow from operating activities scaled by lagged total assets; *TA* is total assets at year end; *SIZE* is the natural logarithm of total assets at year end; *LOSS* is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years.

6.3 Correlation Matrix

Table 6.3 reports the Spearman and Pearson correlations among all the variables in the financial reporting quality models. However, given the non-parametric nature of the data set used in this study, the Spearman non-parametric correlations are used by the author more as a basis for the correlation analyses.

Both Spearman and Pearson correlations in Table 6.3 indicate a positive significant correlation between DiscRev and DiscAcc (Spearman 0.13, Pearson 0.23), suggesting that this study's sample firms use both revenue manipulation and accrual-based earnings management at the same time. As predicted in hypothesis 3, Spearman and Pearson correlations point out a negative significant correlation between ACS, on the one hand, and DiscRev and DiscAcc on the other. Moreover, ACS is positively correlated with BS having coefficients above 40 in both correlations, suggesting that large boards are associated with large audit committees. Consistent with hypothesis 7, BM has a positive significant Pearson correlation of 0.07 with DiscRev, suggesting that a board's meeting frequency increases after aggressive revenue recognition practices.

Contrary to the author's predictions, Table 6.3 reports a positive significant correlation between ACRX and DiscRev (Spearman 0.09, Pearson 0.11), suggesting that audit committee members with relevant financial expertise are associated with more revenue manipulations after the financial crisis. This result, however, is indecisive and contributes to the ambiguity and controversy over the definition and kind of financial expertise to be included in audit committees[48]. Thus, such a finding implies that audit committee members with only relevant financial experience may

[48] There is a large stream of research which tackles different types of financial expertise and their fit to the needs of an audit committee's oversight role (e.g., Defond et al. 2005; Krishnan and Lee 2009).

not be sufficient to ameliorate financial reporting quality in financial crisis periods. It might be that accounting financial experts with accounting qualifications and auditing experience are more needed to deal with the accounting complexities and sophistications inherent in financial reporting (Defond et al. 2005), especially in the presence of uncertain conditions. Non-executive directors on the board and board size are found to be negatively correlated with DiscAcc suggesting that large boards are more likely to constrain accrual-based earnings management and enhance financial reporting quality.

Finally, correlation coefficients are also used to test if there is multicollinearity among variables. A variable with a correlation coefficient of more than 0.80 is regarded as highly collinear (Nehme 2013). Table 6.3 shows that correlation coefficients are reasonable and do not indicate multicollinearity problems. The highest Spearman (Pearson) correlation is 0.53 (0.59) between SIZE and BS. The variance inflation factor (VIF) test of multicollinearity is further presented in the multivariate analyses section.

Table 6.3 Spearman (Lower Triangle) and Pearson (Upper Triangle) Correlations

Variables	*DiscRev*	*DiscAcc*	*ACM*	*ACS*	*ACI*	*ACRX*	*NEDs*	*DUAL*	*BM*	*BS*	*MANOWN*	*BLOCK*	*LEV*	*GROWTH*	*CFO*	*SIZE*	*LOSS*
DiscRev	*1*	**0.23**	-0.00	**-0.11**	0.00	**0.11**	-0.03	-0.01	**0.07**	-0.02	0.06	0.00	**-0.2**	0.03	**0.17**	**-0.19**	-0.04
DiscAcc	**0.13**	*1*	-0.03	**-0.09**	-0.02	**0.09**	-0.05	-0.04	-0.01	-0.04	**0.11**	0.04	**-0.1**	0.02	0.05	**-0.08**	0.02
ACM	-0.01	-0.05	*1*	**0.31**	**0.10**	**-0.07**	**0.29**	0.03	**0.26**	**0.36**	**-0.09**	-0.04	0.0	0.02	-0.04	**0.39**	-0.02
ACS	**-0.09**	**-0.08**	**0.28**	*1*	0.02	**-0.20**	**0.30**	0.05	-0.01	**0.44**	**-0.10**	**-0.19**	**0.1**	0.02	**-0.08**	**0.40**	-0.05
ACI	-0.02	0.02	**0.11**	-0.01	*1*	0.03	**0.09**	-0.04	0.03	0.03	**-0.10**	**-0.09**	0.0	-0.05	**0.07**	**0.11**	-0.04
ACRX	**0.09**	**0.07**	**-0.08**	**-0.32**	0.05	*1*	0.02	**0.08**	-0.03	-0.02	**-0.06**	-0.03	0.0	0.00	**0.08**	-0.01	0.03
NEDs	-0.00	**-0.07**	**0.25**	**0.27**	**0.10**	-0.05	*1*	-0.03	-0.03	**0.15**	**-0.20**	**0.07**	**0.1**	0.04	0.00	**0.38**	-0.03
DUAL	-0.03	-0.03	-0.02	0.02	-0.03	**0.07**	-0.02	*1*	-0.06	0.04	**0.17**	**0.06**	0.0	0.01	-0.02	0.00	-0.04
BM	0.03	-0.03	0.20	-0.02	0.03	-0.01	-0.04	-0.06	*1*	-0.04	**-0.09**	-0.06	0.0	-0.01	**-0.14**	0.00	0.04
BS	-0.04	**-0.09**	**0.32**	**0.45**	0.04	**-0.09**	**0.13**	0.04	**-0.10**	*1*	**-0.10**	**-0.09**	**0.1**	0.00	-0.04	**0.59**	-0.04
MANOWN	**0.13**	**0.09**	**-0.24**	**-0.22**	**-0.15**	0.06	**-0.43**	**0.10**	**-0.13**	**-0.18**	*1*	0.02	**-0.1**	0.01	**0.07**	**-0.20**	**0.11**
BLOCK	-0.01	**0.08**	-0.06	**-0.17**	**-0.07**	0.02	0.05	0.06	-0.03	**-0.16**	**0.12**	*1*	**-0.1**	-0.01	0.04	**-0.25**	**0.16**
LEV	**-0.21**	**-0.14**	0.02	**0.08**	-0.04	-0.04	**0.10**	-0.01	0.05	**0.13**	**-0.24**	**-0.10**	*1*	**-0.12**	**-0.21**	**0.25**	0.01
GROWTH	**0.09**	-0.04	0.02	0.06	-0.03	0.00	0.06	0.05	**-0.10**	-0.02	0.02	**-0.09**	**-0.15**	*1*	**0.22**	**-0.10**	-0.03
CFO	**0.16**	-0.01	-0.06	-0.05	0.04	**0.09**	-0.02	-0.01	**-0.15**	-0.03	0.06	-0.05	**-0.20**	**0.41**	*1*	**-0.24**	**-0.20**
SIZE	**-0.20**	**-0.12**	**0.38**	**0.35**	**0.12**	-0.06	**0.36**	0.00	-0.03	**0.53**	**-0.46**	**-0.26**	**0.33**	**-0.21**	**-0.25**	*1*	-0.06
LOSS	-0.02	-0.03	0.01	-0.04	-0.05	0.00	-0.03	-0.04	0.02	-0.04	**0.07**	**0.16**	0.01	**-0.13**	**-0.22**	-0.04	*1*

DiscRev is the estimated residuals from the following industry-year regression:
$\Delta ARi,t = \alpha 0 + \beta 1 \Delta Ri,t + \varepsilon i,t$
DiscAcc is the estimated residuals from the following industry-year regression:
$ACCi,\ t = \alpha 0 + \alpha\ 1\ (\Delta Ri,t - \Delta ARi,t\ ) + \alpha\ 2\ PPE\ i,t + \alpha\ 3\ ROA\ i,t\text{-}1\ + \varepsilon i,t$

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board; MANOWN is the percentage of total shares held by executive directors to total number of shares; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; GROWTH is Market-to-book ratio; CFO is cash flow from operating activities scaled by lagged total assets; Size is the natural logarithm of total assets at year end. LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years.
* Bolded coefficients are statistically significant at 10% level.

6.4 Multivariate Analyses

In this section the author analyses multivariate tests, as correlation tests do not control for variations in firm characteristics and other earnings management determinants.

The author tests the hypotheses using fixed-effect regression with robust standard errors clustered by firm to adjust for heteroskedasticity and possible autocorrelation (Gow et al. 2010; Petersen 2009; Zang 2011). The author decided to use a fixed-effect regression after conducting the Breusch-Pagan Lagrange Multiplier (LM) test and the Hausman test. The LM test helps decide on whether to use a random-effect regression or simple OLS one. Then the Hausman test is used to decide between random or fixed effects.

Table 6.4 presents the LM test for both discretionary revenue and discretionary accrual models in Panel A and Panel B respectively.

Table 6.4 Breusch and Pagan Lagrangian Multiplier Test for Random Effects

Panel A: Discretionary revenue model			***Panel B: Discretionary accrual model***		
DiscRev [cn,t] = Xb + u[cn] + e[cn,t]			DiscAcc [cn,t] = Xb + u[cn] + e[cn,t]		
Estimated results:			Estimated results:		
	Var	sd = sqrt(Var)		Var	sd = sqrt(Var)
DiscRev	0.0005	0.0228	DiscAcc	0.0020	0.0442
E	0.0003	0.0175	e	0.0013	0.0354
U	0.0002	0.0141	u	0.0010	0.0313
Test: Var(u) = 0			Test: Var(u) = 0		
chibar2(01) = 24.51			chibar2(01) = 18.10		
Prob > chibar2 = 0.000			Prob > chibar2 = 0.000		

The null hypothesis tested in the LM test is that there is no panel effect or significant difference across entities. Results of the LM test in both Panels A and B reveal a rejection of the null hypothesis and that random effect regression is appropriate because of significant differences across firms.

Hausman test results for the DiscRev and DiscAcc models are presented in Table 6.5 Panel A and Panel B respectively. They both reveal a rejection of the null hypothesis that the difference between fixed and random coefficients is not systematic and indicate the use of fixed-effect regression.

Table 6.5 Hausman Test

	Panel A: Discretionary revenue model			***Panel B: Discretionary accrual model***		
Variable	**Fixed (b)**	**Random (B)**	**Difference (b-B)**	**Fixed (b)**	**Random (B)**	**Difference (b-B)**
ACM	-0.002	0.000	-0.002	-0.006	-0.001	-0.005
ACS	-0.005	-0.003	-0.002	-0.003	-0.003	0.000
ACI	-0.010	-0.003	-0.007	-0.020	-0.010	-0.010
ACX	0.001	0.005	-0.004	0.014	0.011	0.003
NEDs	0.030	0.019	0.011	-0.001	-0.007	0.007
DUAL	-0.010	-0.003	-0.007	0.012	-0.008	0.020
BM	0.001	0.001	0.000	0.000	0.000	-0.001
BS	0.000	0.001	-0.001	0.001	0.001	0.001
MANOWN	0.010	0.008	0.002	0.075	0.047	0.028
BLOCK	0.009	-0.004	0.013	0.015	0.013	0.002
LEV	0.032	-0.010	0.042	0.034	-0.012	0.046
GROWTH	0.000	0.000	0.000	0.000	0.000	0.000
CFO	0.053	0.029	0.024	0.080	0.022	0.058
SIZE	-0.005	-0.003	-0.001	-0.009	0.000	-0.009
LOSS	-0.004	-0.002	-0.001	-0.022	-0.008	-0.014
	b = consistent under Ho and Ha B = inconsistent under Ha, efficient under Ho Test: Ho: difference in coefficients not systematic Chi2(15) = 31.14 **Prob > Chi2 = 0.0084**			b = consistent under Ho and Ha B = inconsistent under Ha, efficient under Ho Test: Ho: difference in coefficients not systematic Chi2(15) = 28.98 **Prob > Chi2 = 0.0162**		

One of the main assumptions for using an OLS regression is that the variance of the residuals is constant and does not vary from observation to observation. When the error variance is not constant, it is said to be heteroskedastic. The results of the Modified Wald test in Table 6.6 reveal the presence of heteroskedasticity in both of the discretionary revenue (Panel A) and discretionary accrual (Panel B) models[49].

Table 6.6 Modified Wald Test for Group-Wise Heteroskedasticity in Fixed Effect Regression Model

Panel A: Discretionary revenue model		***Panel B: Discretionary accrual model***	
H0: sigma(i)^2 = sigma^2 for all i		H0: sigma(i)^2 = sigma^2 for all i	
chi2 (265) =	5.50E+33	chi2 (265) =	1.60E+34
Prob >chi2 =	**0.0000**	**Prob >chi2 =**	**0.0000**

Due to the presence of heteroskedasticity the author uses robust standard errors clustered by firm to adjust for heteroskedasticity and any possible autocorrelation.

After the correlation analyses in the previous section revealed no signs of multicollinearity and before testing the hypotheses, the author presents the VIF and tolerance value as a further check for multicolinearity among variables. As a rule of thumb, any variable having a VIF value of more than 10 or tolerance value of less than 0.10 is regarded as highly collinear (Gujarati 2003, p.362). Table 6.7 presents the VIF and tolerance values of the variables in both of the financial reporting quality models and confirms the non-existence of any multicolinearity problem in any of the used variables. The highest VIF and lowest tolerance values are for SIZE of 2.31 and 0.43 respectively.

[49] The author presented the Modified Wald test as it is the only heteroskedasticity test that could be used after fixed effect regressions.

Table 6.7 VIF and Tolerance Value of the Financial Reporting Models

Variable	VIF	Tolerance (1/VIF)
SIZE	2.31	0.432
BS	1.84	0.544
ACS	1.51	0.664
ACM	1.45	0.690
NEDs	1.4	0.716
CFO	1.26	0.792
BLOCK	1.21	0.827
BM	1.16	0.863
MANOWN	1.15	0.871
LEV	1.13	0.887
LOSS	1.11	0.903
ACX	1.1	0.913
GROWTH	1.07	0.931
DUAL	1.07	0.936
ACI	1.05	0.952
Mean VIF	1.32	

Hypothesis testing

Tables 6.8 and 6.9 report the results from the discretionary revenues and discretionary accrual models respectively. In each of these tables, the author presents three regression results, by which audit committee and board variables are regressed both together and separately.

Regressions 1 incorporate audit committee characteristics and control variables. Regressions 2 incorporate board characteristics and control variables, and regressions 3 amalgamate both governance characteristics with the control variables. Contrary to a number of prior studies that do not include the variables of the audit committee and the board in the same regression (e.g., Xie et al. 2003; Habbash 2010), this study regresses the two sets of variables in the same model, as well as separately for robustness, arguing that the effectiveness of the audit committee role is directly related to that of the board (Vafeas 2005).

The results of these regressions are consistent, regardless of whether the author separates audit committee and board variables or not. The adjusted coefficient of determination (adjusted R^2) in both of the discretionary revenue and discretionary accrual models are 6.98% and 6.00% respectively and are consistent with other similar earnings management studies (e.g., Xie et al. 2003; Osma and Noguer 2007) Interestingly, audit committees and boards are found to be effective in constraining revenue manipulations. Specifically, the results in Table 6.8 show negative significant coefficients for ACS (-0.005; t-stat= -2.48) and ACI (-0.010; t-stat= -1.91) at 1% and 10% respectively, indicating that financial reporting quality is more likely to be enhanced in the existence of larger audit committees (Ghosh et al. 2010) comprising a higher proportion of independent directors (Vafeas 2005; Bedard et al. 2004; Klein 2002a).

Moreover, the results in Table 6.8 support the validity of hypothesis 6 that not separating the roles of CEO and Chairman would lead to better financial reporting quality, and are consistent with Peasnell et al. (2001), who have found that in the UK context the CEO duality is negatively associated with firms subject to adverse rulings from the FRRP. Consistent with the reactive role theory of the board (Vafeas 1999; Jensen 1993; Ghosh et al. 2010) the BM coefficient is positively significant (0.001; t-stat= 2.00) at 5% suggesting an increase in the frequency of board meetings after periods of misleading revenue recognition. Finally, the results in Table 6.8 show a positive significant coefficient for LEV at 1% (0.032; t-stat=2.53), indicating that highly leveraged firms are more inclined to increase income through manipulating revenues to avoid debt covenant violation, and a positive significant coefficient for CFO at 1% (0.053; t-stat= 2.96), indicating that firms with higher cash flows are more likely to manipulate revenues.

On the other hand, Table 6.9 regression 1, presents the results of the relationship between audit committee characteristics and discretionary accruals and reveals a negative significant coefficient for ACM (-0.006; t-stat= -1.82). This is not the case, however, after the author combined audit committee variables with those of the board. Moreover, among all control variables, three are found to be associated with discretionary accruals. MANOWN is statistically significant at 5% (0.075; t-stat= 2.16), suggesting an increase in the firm's discretionary accruals with the increase in managerial ownership. Firms with higher cash flows are found more likely not just to manipulate revenues, but also accruals (Panel B; 0.080; t-stat= 2.12). Finally, the negative and significant coefficient of LOSS indicates that sample firms reporting losses in either or both of the previous two years are less likely to be involved in accrual-based earnings management (-0.0225; t-stat= -3.01).

In summary, this study finds no association between corporate governance characteristics (audit committee and board) and financial reporting quality when the latter is proxied by the performance-adjusted discretionary accrual model. These findings are consistent with the UK study conducted by Basiruddin (2011) who uses the same earnings management measure and finds similar results. Using discretionary revenue as a surrogate for financial reporting quality, however, the author finds that larger audit committees that comprise a higher proportion of independent directors are more likely to enhance financial reporting quality. Moreover, the board is found to have a reactive role in constraining revenue manipulations, and the presence of CEO duality is more likely to enhance financial reporting quality[50].

[50] To date, no studies have examined the impact of corporate governance on discretionary revenues to compare the results of this study.

Table 6.8 OLS Panel Clustered Robust by Firm. (Dep.: Disc. Rev.)

Variables	*Reg. 1* Coeff. *(t-stat)*	*Reg. 2* Coeff. *(t-stat)*	*Reg. 3* Coeff. *(t-stat)*
INERCEPT	0.089	0.0606	0.077
	(1.23)	*(0.85)*	*(1.09)*
ACM	-0.001		-0.002
	(-0.79)		*(-1.46)*
ACS	**-0.004**		**-0.005**
	(-2.31)*		***(-2.48)*****
ACI	**-0.010**		**-0.010**
	(-1.92)*		***(-1.91)****
ACRX	0.003		0.001
	(0.64)		*(0.28)*
NEDs		0.019	0.030
		(0.95)	*(1.52)*
DUAL		**-0.011**	**-0.010**
		(-2.11)**	***(-1.86)****
BM		**0.001**	**0.001**
		(1.79)*	***(2.00)*****
BS		-0.000	0.000
		(-0.28)	*(0.36)*
MANOWN	0.010	0.011	0.010
	(0.69)	*(0.78)*	*(0.70)*
BLOCK	0.009	0.009	0.009
	(1.04)	*(1.01)*	*(1.00)*
LEV	**0.032**	**0.037**	**0.032**
	(2.43)**	***(2.85)******	***(2.53)******
GROWTH	-0.000	-0.000	-0.000
	(-0.72)	*(-0.60)*	*(-0.79)*
CFO	**0.051**	**0.050**	**0.053**
	(2.64)***	***(2.72)******	***(2.96)******
SIZE	-0.004	-0.005	-0.005
	(-0.77)	*(-1.07)*	*(-1.02)*
LOSS	-0.004	-0.004	-0.003
	(-1.32)	*(-1.25)*	*(-1.16)*
Year and Firm fixed effect	Yes	Yes	Yes
Adjusted R-square	5.36%	5.03%	6.98%
Observations	662	662	662

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.
The dependent variable is Discretionary Revenues, which is the absolute value of the residuals from the following equation:
$\Delta AR_{i,t} = \alpha 0 + \beta 1 \Delta R_{i,t} + \varepsilon_{i,t}$

Table 6.8 (cont'd)

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held in a given year; BS is the number of directors in the board; MANOWN is the percentage of total shares held by executive directors to total number of shares; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; GROWTH is Market-to-book ratio; CFO is cash flow from operating activities scaled by lagged total assets; SIZE is the natural logarithm of total assets at year end. LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years.

Table 6.9 OLS Panel Clustered Robust by Firm. (Dep.: Disc. Acc.)

Variables	*Reg. 1* Coeff. *(t-stat)*	*Reg. 2* Coeff. *(t-stat)*	*Reg. 3* Coeff. *(t-stat)*
INERCEPT	**0.199**	0.150	0.190
	(1.70)*	*(1.26)*	*(1.56)*
ACM	**-0.006**		-0.006
	(-1.82)*		*(-1.62)*
ACS	-0.002		-0.003
	(-0.57)		*(-0.74)*
ACI	-0.019		-0.020
	(-1.24)		*(-1.26)*
ACRX	0.012		0.014
	(1.12)		*(1.26)*
NEDs		-0.012	-0.001
		(-0.36)	*(-0.02)*
DUAL		0.011	0.012
		(0.95)	*(0.95)*
BM		-0.001	-0.000
		(-0.75)	*(-0.44)*
BS		0.001	0.001
		(0.21)	*(0.51)*
MANOWN	**0.076**	**0.073**	**0.075**
	(2.24)	***(2.16)***	***(2.16)****
BLOCK	0.016	0.013	0.014
	(0.75)	*(0.64)*	*(0.68)*
LEV	0.036	0.038	0.034
	(1.21)	*(1.16)*	*(1.10)*
GROWTH	0.000	0.000	0.000
	(0.07)	*(0.41)*	*(0.11)*
CFO	**0.079**	**0.076**	**0.080**
	(2.08)*	***(1.98)****	***(2.12)****
SIZE	-0.009	-0.008	-0.009
	(-1.14)	*(-1.01)*	*(-1.10)*
LOSS	**-0.0224**	**-0.0222**	**-0.022**
	(-2.97)**	***(-2.99)*****	***(-3.01)*****
Year and Firm fixed effect	Yes	Yes	Yes
Adjusted R-square	6.30%	4.66%	6.00%
Observations	662	662	662

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.
The dependent variable is Discretionary Accruals, which is the absolute value of the residuals from the following equation:

$$ACC_{i,t} = \alpha 0 + \alpha\ 1\ (\Delta R_{i,t} - \Delta AR_{i,t}) + \alpha\ 2\ PPE_{i,t} + \alpha\ 3\ ROA_{i,t-1} + \varepsilon_{i,t}$$

Table 6.9 (Cont'd)

ACM is the number of audit committee meetings held in a given year; *ACS* is the total number of audit committee members; *ACI* is the percentage of independent directors in the audit committee; *ACRX* is the percentage of audit committee directors with relevant financial expertise on the audit committee; *NEDs* is the percentage of non-executive directors on the board; *DUAL* is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; *BM* is the frequency of board meetings held in a given year; *BS* is the number of directors in the board; *MANOWN* is the percentage of total shares held by executive directors to total number of shares; *BLOCK* is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; *LEV* is total long-term debt to total assets; *GROWTH* is Market-to-book ratio; *CFO* is cash flow from operating activities scaled by lagged total assets; *SIZE* is the natural logarithm of total assets at year end. *LOSS* is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years.

6.5 Additional Analyses

In order to check the robustness of the main results the author has conducted a number of additional tests.

First, it has been argued that the same corporate governance choices and mechanisms that might be optimal in non-crisis periods might be misaligned in crisis periods (Dowell et al. 2011; Van Essen et al. 2013). Van Essen et al. (2013) argue this point and find that the performance of governance mechanisms is different in crisis periods than in non-crisis periods. As such, the author conducted an additional analysis for the pre-crisis period between 2005 and 2007 to compare the effectiveness of the audit committee and the board in the two periods (pre-crisis (2005-2007) and post-crisis (2008-2010))[51].

Before analysing the multivariate regressions of the pre-crisis period, it is important to present the significant statistical differences of the major variables in the pre- and post-crisis periods. Table 6.10 Panel A reports the differences in the mean and median of both earnings management measures for the pre- and post-crisis periods. Interestingly, the results indicate that the level of discretionary revenues is significantly lower (mean and median differences statistically significant at 1%) after the crisis, at a time when there is a less significant increase in the level of discretionary accruals (mean difference significant at 10%). This finding suggests that intense emphasis and scrutiny activities exerted by regulatory bodies to monitor

[51] Trying to have almost the same number of observations in the pre-crisis and post-crisis periods, and to avoid the effect of the UK adoption of the IFRS that took place at the beginning of 2005 on accounting quality, the author includes the same number of years.

a firm's revenue recognition criteria after the crisis[52], lead up to firms using more accrual-based earnings management and less revenue manipulations.

This is consistent with Zang (2011)'s findings on the substitutive relationship between real earnings management activities and accrual-based earnings management, as well as on the fact that firms suffering from unhealthy financial conditions tend to "use more accrual-based earnings management and less real activities manipulation" (p.700)[53].

Panel B in Table 6.10 reports comparability changes in corporate governance variables between the pre-crisis and post-crisis periods. Most of the significant changes in governance variables are found in board characteristics. The only change in audit committee characteristics is reflected by the significant increase (at 1%) of members having relevant financial expertise after the crisis. This is consistent with the call of regulatory bodies and academics for the inclusion of directors with industry financial expertise in the audit committee. Significant changes in board characteristics after the crisis are represented in the decrease of board size and CEO duality, and an increase of non-executive directors. As a result, these findings suggest that post-crisis our sample firms have responded to corporate governance reform recommendations (e.g., OECD 2009) by adopting more changes in the structure of boards than in that of audit committees.

[52] The 2008 annual review of the FRRP stated that "the reporting of revenue criteria is likely to require greater attention during the coming reporting season" (FRRP 2008, p9). Since 2008 the panel has kept a close eye on the corporate reporting of revenue recognition criteria and investigated the adequacy of disclosures in order to provide users with a clear explanation on how significant revenue streams were recognized by management (FRRP 2008, 2009). In several cases, the Panel find that some companies failed to describe how the underlying principles of revenue recognition were applied to revenue streams, as such, "the Panel took account of the relative significance of the revenue source in determining whether additional or more focused disclosure was necessary" (FRRP 2008, p.9).

[53] Real activities manipulation is one of the forms of discretionary revenues (Stubben 2010).

Table 6.10 Descriptive Statistics for Earnings Management, Audit Committee, and Board Variables Surrounding Crisis

Panel A: Descriptive statistics for earnings management surrounding the crisis						
	Pre-Crisis		Post-Crisis		Differences[(a)]	
	Mean	Median	Mean	Median	Mean	Median
Earnings Management						
DiscRev	0.035	0.015	0.021	0.013	**0.014*** **	**0.002*** **
DiscAcc	0.040	0.028	0.044	0.030	**-0.004***	-0.001
Panel B: Descriptive statistics for governance variables surrounding the crisis						
Audit Committee Variables						
ACM	4.124	4.000	4.074	4.000	0.05	0.000
ACS	3.593	3.000	3.576	3.000	0.017	0.000
ACI	0.902	1.000	0.899	1.000	0.003	0.000
ACRX	0.269	0.250	0.307	0.333	**-0.039*** **	**-0.083*** **
Board Variables						
NEDs	0.618	0.625	0.649	0.667	**-0.031*** **	**-0.042*** **
DUAL	0.054	0.000	0.035	0.000	**0.019***	**0.000***
BM	8.604	8.000	8.817	8.000	-0.213	0.000
BS	9.336	9.000	9.103	9.000	**0.233***	**0.000** **

a) ***, **,* indicate significance at the 1%, 5%, and 10% level respectively, for a two-tailed test.

DiscRev is the estimated absolute value of the residuals from the following industry-year regression:
$\Delta AR_{i,t} = \alpha 0 + \beta 1 \Delta R_{i,t} + \varepsilon_{i,t}$
DiscAcc is the estimated absolute value of the residuals from the following industry-year regression:
$ACC_{i,t} = \alpha 0 + \alpha\ 1\ (\Delta R_{i,t} - \Delta AR_{i,t}) + \alpha\ 2\ PPE_{i,t} + \alpha\ 3\ ROA_{i,t-1} + \varepsilon_{i,t}$

Table 6.10 (Cont'd)

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held in a given year; BS is the number of directors in the board.

In Table 6.11, Panel A and Panel B present the pre-crisis (2005-2007) regression results from the discretionary revenues and discretionary accrual models respectively. In each of these panels, the author presents three regression results, by which audit committee and board variables are regressed both together and separately. The results of these regressions are consistent, regardless of whether we separate audit committee and board variables, and reveal that all audit committee characteristics in the pre-crisis period do not have significant impact on both types of earnings management. Whereas, among board characteristics, the author finds that only BM has a significant positive coefficient at 10% (0.0042; t-stat = 1.71) with discretionary revenues suggesting that the boards of the sample firms behave reactively and increase their meetings' frequency after facing problems (Jensen 1993; Vafeas 1999), such as misleading revenue recognition practices. SIZE coefficients are positively significant at 10% in Panel A (0.0315; t-stat=1.85) and at 5% in Panel B (0.0178; t-stat=2.14), indicating that larger firms report higher discretionary revenues and discretionary accruals. GROWTH is negatively significant in Panel B (-0.0007; t-stat=-2.13) indicating that higher growth firms are less likely to be involved in accrual-based earnings management. In essence, these findings suggest that audit committees do not have an effective role in ameliorating FRQ in steady state conditions, and are consistent with the results of Agoglia et al. (2011) which reveal that audit committees tend not to be effective in curbing aggressive financial reporting in principles-based regimes.

Table 6.11 OLS Panel Clustered Robust by Firm (Sample: 2005-2007)

	Panel A: Discretionary revenue			***Panel B: Discretionary accrual***		
	Reg. 1	*Reg. 2*	*Reg. 3*	*Reg. 1*	*Reg. 2*	*Reg. 3*
Variables	Coeff. (t-stat)	Coeff. (t-stat)	Coeff. (t-stat)	Coeff. (t-stat)	Coeff. (t-stat)	Coeff. (t-stat)
INERCEPT	**-0.443**	**-0.495**	**-0.521**	**-0.208**	**-0.205**	**-0.225**
	(-1.79)*	***(-2.08)****	***(-2.16)****	***(-1.98)****	***(-1.81)****	***(-1.88)****
ACM	0.000		0.000	0.001		0.001
	(0.13)		*(-0.08)*	*(-0.25)*		*(0.42)*
ACS	0.000		-0.001	0.001		-0.000
	(0.09)		*(-0.13)*	*(0.25)*		*(-0.11)*
ACI	0.013		0.019	0.007		0.008
	(0.37)		*(0.55)*	*(0.47)*		*(0.50)*
ACRX	-0.020		-0.022	-0.011		-0.010
	(-1.44)		*(-1.50)*	*(-1.00)*		*(-0.92)*
NEDs		0.066	0.067		0.017	0.017
		(1.24)	*(1.24)*		*(0.43)*	*(0.41)*
DUAL		0.043	0.047		-0.002	0.001
		(1.54)	*(1.58)*		*(-0.22)*	*(0.06)*
BM		**0.004**	**0.004**		-0.002	-0.002
		(1.74)*	***(1.71)****		*(-1.17)*	*(-1.20)*
BS		0.002	0.002		0.001	0.001
		(0.70)	*(0.72)*		*(0.48)*	*(0.48)*
MANOWN	-0.162	-0.163	-0.160	-0.037	-0.043	-0.041
	(-1.02)	*(-1.05)*	*(-1.01)*	*(-1.22)*	*(-1.58)*	*(-1.48)*
BLOCK	0.035	0.025	0.028	0.011	0.009	0.010
	(1.01)	*(0.76)*	*(0.84)*	*(0.54)*	*(0.44)*	*(0.49)*

Table 6.11 (Cont'd)

LEV	-0.041	-0.047	-0.050	-0.027	-0.022	-0.023
	(-0.62)	*(-0.71)*	*(-0.74)*	*(-1.08)*	*(-0.88)*	*(-0.94)*
GROWTH	0.000	0.000	0.000	**-0.001**	**-0.001**	**-0.001**
	(0.45)	*(0.92)*	*(0.62)*	***(-2.12)*****	***(-2.12)*****	***(-2.13)*****
CFO	0.0369	0.0369	0.042	0.069	0.064	0.064
	(0.32)	*(0.34)*	*(0.36)*	*(1.32)*	*(1.22)*	*(1.20)*
SIZE	**0.033**	**0.031**	**0.032**	**0.017**	**0.017**	**0.018**
	(1.82)*	***(1.85)****	***(1.85)****	***(2.36)*****	***(2.10)*****	***(2.14)*****
LOSS	0.007	0.010	0.011	-0.017	-0.018	-0.017
	(0.57)	*(0.70)*	*(0.79)*	*(-1.52)*	*(-1.55)*	*(-1.50)*
Year and Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-square	3.28%	4.83%	4.65%	3.82%	4.12%	3.79%
Observations	614	614	614	614	614	614

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.

The dependent variables are Discretionary Revenues and Discretionary accruals, which are the absolute value of the residuals from the following equations respectively:

$\Delta AR_{i,t} = \alpha 0 + \beta 1 \Delta R_{i,t} + \varepsilon_{i,t}$

$ACC_{i,t} = \alpha 0 + \alpha\ 1\ (\Delta R_{i,t} - \Delta AR_{i,t}) + \alpha\ 2\ PPE_{i,t} + \alpha\ 3\ ROA_{i,t-1} + \varepsilon_{i,t}$

ACM is the number of audit committee meetings held in a given year; *ACS* is the total number of audit committee members; *ACI* is the percentage of independent directors in the audit committee; *ACRX* is the percentage of audit committee directors with relevant financial expertise on the audit committee; *NEDs* is the percentage of non-executive directors on the board; *DUAL* is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; *BM* is the frequency of board meetings held in a given year; *BS* is the number of directors in the board; *MANOWN* is the percentage of total shares held by executive directors to total number of shares; *BLOCK* is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; *LEV* is total long-term debt to total assets; *GROWTH* is Market-to-book ratio; *CFO* is cash flow from operating activities scaled by lagged total assets; *SIZE* is the natural logarithm of total assets at year end. *LOSS* is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years.

Second, in an attempt to mitigate measurement error, the author uses the Jones model as an alternative accrual construct for earnings management and examines its relationship with the right-hand variables in the main model. The results are presented in Table 6.12. They reveal no significant association with any of the corporate governance variables and therefore are qualitatively consistent with those of the performance-adjusted discretionary accrual main model.

Third, this study examines the effectiveness of the audit committee by using audit committee individual characteristics. Following Zaman et al. (2011), the author further tests audit committee effectiveness (ACE) using a composite measure having a value of one if the audit committee is composed of at least three independent directors, includes one member with relevant financial experience and meets at least three times a year, and zero otherwise. Table 6.13 presents the results in regressions 4 of Panel A and B and reveals no significant association between ACE and both of the financial reporting quality proxies (discretionary revenues and discretionary accruals).

Table 6.12 OLS Panel Clustered Robust by Firm. (Dep.: Jones Discretionary Accruals)

Variables	*Reg. 1* Coeff. *(t-stat)*	*Reg. 2* Coeff. *(t-stat)*	*Reg. 3* Coeff. *(t-stat)*
INERCEPT	0.200	0.157	0.184
	(1.51)	*(1.19)*	*(1.36)*
ACM	-0.004		-0.004
	(-1.31)		*(-1.05)*
ACS	-0.001		-0.002
	(-0.41)		*(-0.63)*
ACI	-0.015		-0.016
	(-0.96)		*(-1.02)*
ACRX	0.007		0.008
	(0.64)		*(0.79)*
NEDs		0.001	0.010
		(0.04)	*(0.26)*
DUAL		0.012	0.012
		(0.86)	*(0.85)*
BM		-0.001	-0.001
		(-1.20)	*(-1.02)*
BS		0.001	0.001
		(0.32)	*(0.52)*
MANOWN	**0.070**	0.07	0.070
	(1.67)*	*(1.63)*	*(1.62)*
BLOCK	0.005	0.003	0.003
	(0.23)	*(0.12)*	*(0.14)*
LEV	0.037	0.038	0.034
	(1.11)	*(1.10)*	*(1.03)*
GROWTH	-0.000	-0.000	-0.000
	(-0.31)	*(-0.14)*	*(-0.29)*
CFO	**0.084**	**0.080**	**0.084**
	(2.07)	***(1.99)***	***(2.10)****
SIZE	-0.010	-0.009	-0.009
	(-1.08)	*(-0.98)*	*(-1.02)*
LOSS	**-0.025**	**-0.025**	**-0.025**
	(-3.33)**	***(-3.41)*****	***(-3.37)*****
Year and Firm fixed effect	Yes	Yes	Yes
Adjusted R-square	6.18%	5.78%	6.08%
Observations	662	662	662

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.

Table 6.11 (Cont'd)

The dependent variable is Discretionary Accruals, which is the absolute value of the residuals from the following equation:

$ACC_{i,t} = \alpha 0 + \alpha\ 1\ (\Delta R_{i,t}) + \alpha\ 2\ PPE_{i,t} + \varepsilon_{i,t}$

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held in a given year; BS is the number of directors in the board; MANOWN is the percentage of total shares held by executive directors to total number of shares; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; GROWTH is Market-to-book ratio; CFO is cash flow from operating activities scaled by lagged total assets; SIZE is the natural logarithm of total assets at year end. LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years.

Fourth, the author uses alternative definitions for audit committee independence (ACID) and financial expertise (ACRXD). Consistent with the recommendations of the UK Corporate Governance Code, ACID represents a dummy variable of 1 if the audit committee is solely composed of independent directors, and ACRXD is also a dummy variable of 1 if the audit committee includes at least one member with relevant financial experience. Results presented in Table 6.13 reveal no significant associations between ACID and both discretionary revenues (Panel A, reg. 3) and discretionary accruals (Panel B, reg. 3). Given the significant and negative association between the percentage of audit committee independent directors and discretionary revenues from the main model, this finding suggests that audit committees with a majority of independent directors are more likely to constrain revenue manipulations than solely independent audit committees (Klein 2002a). Results pertaining to ACRXD, however, are qualitatively consistent with those of the main model and reveal no association between

this variable and both discretionary revenue (Panel A, reg. 3) and discretionary accruals (Panel B, reg. 4).

Fifth, the vast majority of prior studies have controlled for whether a firm is audited by a Big Four audit firm. This is because large audit firms are more likely to detect questionable accounting practices and curtail aggressive financial reporting (Becker et al. 1998). As such, the author adds a new dummy variable, having the value of one if the firm is audited by a Big Four audit firm, to the main model and finds qualitatively consistent results with those of the main model.

Finally, similar to other comparative studies in the corporate governance literature, the results of this study may suffer from endogeneity problems[54]. Larcker and Rusticus (2010) state that the endogeneity problem can be mitigated by incorporating "additional control variables or fixed effects". Accordingly, the author accounts for the possible unobserved heterogeneity in the main model by using fixed effect panel data (Coles et al. 2012; Linck et al. 2008; Dittmann et al. 2010) and by including a set of relevant and comprehensive control variables. Nonetheless, as corporate governance research commonly uses instrumental variables (IV) regressions to adjust for endogeneity problems (Larcker and Rusticus 2010), the literature suffers from a lack of convenient instruments (Chhaochharia and Laeven 2009), as "instrumental variables are weak predictors of the endogenous variables and the instrumental variables are themselves partially endogenous" (Larcker et al. 2007, p.1003). Alternatively, some researchers have included the lagged values of the dependent variable to curb endogeneity problems (e.g., Linck et al. 2008). The history of the dependent variable includes all the past firm information, observable and unobservable, which other methods cannot possibly control for" (Li 2011, p.15). In this

[54] Concerns about such problems are reduced in our study, as the financial crisis was not expected to occur (Mitton 2002; Van Essen et al. 2013).

sense, including lagged discretionary revenues may help control for the variation in governance variables that is caused by contemporary variation in discretionary revenues. Therefore, the author further regresses discretionary revenues on lagged discretionary revenues and all other explanatory variables used in the main model. The results in Table 6.13 (regressions 1 of Panels A and B) are qualitatively consistent and echo those in the main model. It is worth noting that although lagging the dependent variable may control for the omitted variables bias (Gatchev et al. 2010), there is a limitation in using this method in OLS regressions. That is, "if residual autocorrelation is present, the lagged dependent variable causes the coefficients for explanatory variables to be biased downward" (Keele and Kelly 2006, p.186).

Table 6.13 OLS Panel Clustered Robust by Firm (Additional Tests)

	Panel A: Discretionary revenue				***Panel B: Discretionary accrual***			
	Reg. 1	*Reg. 2*	*Reg. 3*	*Reg. 4*	*Reg. 1*	*Reg. 2*	*Reg. 3*	*Reg. 4*
Variables	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
	(t-stat)	*(t-stat)*	*(t-stat)*	*(t-stat)*	*(t-stat)*	*(t-stat)*	*(t-stat)*	*(t-stat)*
INERCEPT	0.084	0.089	0.067	0.060	**0.205**	0.142	0.168	0.149
	(1.21)	*(1.22)*	*(0.93)*	*(0.84)*	***(1.65)****	*(1.13)*	*(1.41)*	*(1.26)*
L.DiscRev	-0.000							
	(-0.01)							
L.DiscAcc					**-0.201**			
					(-4.59)**			
ACE				-0.002				-0.005
				(-0.89)				*(-1.14)*
ACM	-0.002	-0.002	-0.002		-0.005	-0.006	-0.005	
	(-1.08)	*(-1.46)*	*(-1.38)*		*(-1.37)*	*(-1.61)*	*(-1.53)*	
ACS	**-0.005**	**-0.005**	**-0.005**		-0.002	-0.003	-0.004	
	(-2.78)**	***(-2.48)*****	***(-2.62)*****		*(-0.61)*	*(-0.74)*	*(-1.01)*	
ACI	**-0.011**	**-0.010**			-0.023	-0.019		
	(-2.00)*	***(-1.91)****			*(-1.54)*	*(-1.25)*		
ACRX	0.001	0.001			0.008	0.014		
	(0.18)	*(0.28)*			*(0.76)*	*(1.27)*		
ACID			-0.003				-0.008	
			(-1.56)				*(-1.43)*	

Table 6.13 (Cont'd)

ACRXD			0.001				0.013	
			(0.56)				*(1.63)*	
NEDs	0.025	0.031	0.030	0.019	0.002	-0.004	0.002	-0.010
	(1.21)	*(1.53)*	*(1.54)*	*(0.98)*	*(0.08)*	*(-0.11)*	*(0.06)*	*(-0.31)*
DUAL	**-0.011**	**-0.010**	**-0.010**	**-0.011**	0.008	0.012	0.012	0.011
	(-1.92)*	***(-1.85)****	***(-1.91)****	***(-2.16)*****	*(0.65)*	*(0.95)*	*(0.90)*	*(0.95)*
BM	**0.001**	**0.001**	**0.001**	**0.001**	-0.000	-0.000	-0.000	-0.001
	(1.71)*	***(2.00)*****	***(1.96)*****	***(1.78)****	*(-0.38)*	*(-0.46)*	*(-0.46)*	*(-0.76)*
BS	0.001	0.000	0.000	-0.000	0.000	0.002	0.002	0.000
	(0.55)	*(0.33)*	*(0.38)*	*(-0.33)*	*(0.08)*	*(0.56)*	*(0.60)*	*(0.16)*
MANOWN	0.012	0.010	0.011	0.010	**0.075**	**0.075**	**0.075**	**0.072**
	(1.32)	*(0.70)*	*(0.74)*	*(0.74)*	***(1.93)*****	***(2.15)*****	***(2.31)*****	***(2.10)*****
BLOCK	0.006	0.008	0.009	0.008	0.015	0.014	0.017	0.013
	(0.73)	*(1.00)*	*(1.04)*	*(0.97)*	*(0.69)*	*(0.67)*	*(0.78)*	*(0.60)*
LEV	**0.032**	**0.032**	**0.031**	**0.036**	0.032	0.035	0.031	0.036
	(2.38)**	***(2.50)*****	***(2.47)*****	***(2.80)*****	*(1.08)*	*(1.14)*	*(1.03)*	*(1.11)*
GROWTH	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000	0.000
	(-0.56)	*(-0.80)*	*(-0.82)*	*(-0.62)*	*(0.01)*	*(0.11)*	*(0.04)*	*(0.35)*
CFO	**0.055**	**0.054**	**0.053**	**0.050**	0.039	**0.078**	**0.082**	**0.075**
	(2.98)**	***(2.96)*****	***(2.95)*****	***(2.71)*****	*(1.10)*	***(2.06)*****	***(2.17)*****	***(1.96)*****
SIZE	-0.005	-0.005	-0.005	-0.005	-0.008	-0.008	-0.009	-0.007
	(-1.12)	*(-1.05)*	*(-0.98)*	*(-1.01)*	*(-1.07)*	*(-1.02)*	*(-1.07)*	*(-0.94)*
LOSS	-0.002	-0.004	-0.004	-0.004	**-0.020**	**-0.022**	**-0.023**	**-0.022**
	(-0.59)	*(-1.16)*	*(-1.20)*	*(-1.24)*	***(-2.69)*****	***(-2.99)*****	***(-2.99)*****	***(-3.00)*****

Table 6.13 (Cont'd)

BIG4		**-0.010**				**0.042**		
		(-1.67)*				***(3.84)*****		
Year and Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-square	6.38%	6.87%	6.88%	5.07%	10.31%	6.02%	6.43%	4.79%
Observations	581	662	662	662	581	662	662	662

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.

The dependent variables are Discretionary Revenues and Discretionary accruals, which are the absolute value of the residuals from the following equations respectively:

$\Delta AR_{i,t} = \alpha 0 + \beta 1 \Delta R_{i,t} + \varepsilon_{i,t}$

$ACC_{i,t} = \alpha 0 + \alpha\ 1\ (\Delta R_{i,t} - \Delta AR_{i,t}) + \alpha\ 2\ PPE_{i,t} + \alpha\ 3\ ROA_{i,t-1} + \varepsilon_{i,t}$

L.DiscRev is the lagged values of discretionary revenue estimates; *L.DiscAcc* is the lagged values of the discretionary accrual estimates; *ACE* is a composite indicator variable with the value of one if the audit committee is comprised of at least three independent directors, include at least one member with relevant financial expertise and meets at least three times a year; *ACM* is the number of audit committee meetings held in a given year; *ACS* is the total number of audit committee members; *ACI* is the percentage of independent directors in the audit committee; *ACRX* is the percentage of audit committee directors with relevant financial expertise on the audit committee; *ACID* is an indicator variable with a value of 1 if the audit committee is totally independent; *ACRXD* is an indicator variable with a value of 1 if the audit committee include at least one member with relevant financial experience; *NEDs* is the percentage of non-executive directors on the board; *DUAL* is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; *BM* is the frequency of board meetings held in a given year; *BS* is the number of directors in the board; *MANOWN* is the percentage of total shares held by executive directors to total number of shares; *BLOCK* is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; *LEV* is total long-term debt to total assets; *GROWTH* is Market-to-book ratio; *CFO* is cash flow from operating activities scaled by lagged total assets; *SIZE* is the natural logarithm of total assets at year end. *LOSS* is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years. *BIG4* is an indicator variable with a value of 1 if the firm is audited by a big-four audit firm.

6.6 Summary

This chapter reports the empirical findings of the impact of audit committee and board characteristics on financial reporting quality as proxied by discretionary revenues and discretionary accruals. The main analysis of the study is based on the post-financial crisis period between 2008 and 2010 in an attempt to address UK regulatory concerns about misleading revenue recognition practices during this period. However, additional analysis for the pre-crisis period between 2005 and 2007 is conducted to provide a comparison of the effectiveness of internal governance mechanisms in enhancing financial reporting quality during pre- and post-crisis periods.

The regression results reveal that audit committees and boards of directors are associated with better financial reporting quality after the financial crisis. This is only the case when the author uses discretionary revenues as a construct for financial reporting quality. Specifically, the author finds that large audit committees comprising independent directors are effective monitors of the firm's financial reporting process. Similarly, not separating the roles of the chairman and the CEO has a positive impact on financial reporting quality post-crisis. Finally, boards are found to have a reactive role, thus tending to increase their meetings' frequency after facing an escalating problem, such as revenues management.

By comparing the alternative measures of earnings management (discretionary revenues and discretionary accruals) and the firms' internal governance mechanisms pre- and post-crisis, the author finds the following. First, there is significant decrease in the level of discretionary revenues after the crisis, at a time when there is less significant increase in the level of discretionary accruals

(Table 6.10, Panel A), suggesting a shift from one earnings management method to another. Second, in terms of corporate governance characteristics, there is significant decrease in board size and CEO duality after the financial crisis along with a significant increase in non-executive directors on the board and relevant financial experience of audit committees. This suggest that sample firms' response to regulators' calls for corporate governance reforms after the crisis (e.g., OECD 2009), is through more changes in the structure of boards than in that of audit committees.

Additional multivariate analysis during the pre-crisis period 2005 to 2007 reveals no significant associations between governance variables and both financial reporting quality proxies, except for BM with discretionary revenues at the 10% level. This finding is consistent with the post-crisis finding confirming the reactive role perspective of the board in constraining revenue manipulations. A summary of the hypotheses related to the impact of audit committee and board characteristics on financial reporting quality, along with the relevant findings, are presented in Table 6.14.

Table 6.14 Summary of Hypotheses and Relevant Findings		
Hypothesis Number	**Hypothesis**	**Findings**
1	*There is a positive relationship between audit committee independence and financial reporting quality.*	Supported (Discretionary revenue proxy)
2	*There is a positive relationship between audit committee relevant financial experience and financial reporting quality.*	Not supported
3	*There is a positive relationship between audit committee size and financial reporting quality.*	Supported (Discretionary revenue proxy)
4	*There is a negative relationship between audit committee meetings and financial reporting quality.*	Not supported
5	*There is a negative relationship between non-executive directors and financial reporting quality.*	Not supported
6	*There is a positive relationship between CEO duality and financial reporting quality.*	Supported (Discretionary revenue proxy)
7	*There is a negative relationship between board meetings and financial reporting quality.*	Supported (Discretionary revenue proxy)
8	*There is a negative relationship between board size and financial reporting quality.*	Not supported

Chapter 7. Findings and Discussion – Corporate Governance, Audit Fees and Non-Audit Fees

Chapter 7
Findings and Discussion – Corporate Governance, Audit Fees and Non-Audit Fees

7.1 Introduction

After presenting the results of the first empirical study in chapter six, this chapter presents the findings of the second empirical investigation tackling the impact of audit committee and board characteristics on auditor remuneration. Two empirical analyses are employed for each of the dependent variables, audit fees and non-audit service fees. Similar to the previous chapter, the remainder of this chapter is structured as follows: the next section (7.2) discusses the descriptive statistics followed by the correlation matrix in section 7.3, while sections 7.4 and 7.5 present the multivariate analysis and additional analysis respectively. Finally the chapter concludes with a summary of the findings in section 7.6.

7.2 Descriptive Statistics

Table 7.1 provides the descriptive statistics for the dependent variables (audit fees and non-audit fees), corporate governance variables and control variables. The statistics used to describe the sample under study are: mean, standard deviation, median, minimum, maximum, skewness and kurtosis. Given that the descriptive statistics of corporate governance variables are discussed in the previous chapter (6.2), this section only discusses the descriptive statistics of audit fees, non-audit fees and the other control variables which are not tackled previously.

The mean (median) of audit fees and non-audit fees for 619 observations for the period from 2008 to 2010 are £2.137 million (£0.800 million) and £1.354 million (£0.495 million) respectively. A similar UK study conducted by Basiruddin (2011) on 674 observations for the period from 2005 to 2008 reports a mean (median) of £1.466 million (£0.805 million) and £1.296 million (£0.600 million) for audit fees and non-audit fees respectively. Comparing the means from the two studies indicates an average increase of audit fees and non-audit fees by 45.77% and 4.48% respectively. Comparisons of the medians, however, indicate roughly similar values for audit fees but a decrease by 17.5% for non-audit fees. The inconsistency of the mean and median is because of the non-parametric nature of the data. As shown in Table 7.1, the skewness (kurtosis) for audit fees and non-audit fees are 5.189 (36.874) and 11.828 (189.318) respectively, and are severely higher than those for normally distributed data of ±1.96 (±3) (Gujarati 1995). As such, and following Zaman et al. (2011) and Basiruddin (2011), the natural logarithm of audit fees and non-audit fees is used as a transformation method.

In addition to the descriptive statistics of the control variables discussed in the previous chapter, Table 7.1 presents the descriptive statistics of ACQ and BUSSEG. On average, sample firms are found to have three business segments and 64.5% of the firms have made acquisitions during the sample period.

The yearly descriptive statistics are presented in Table 7.2. In 2008, the mean of audit fees and non-audit fees are £2.268 million and £1.736 million respectively. Year 2010 shows a decrease in the mean of audit fees and non-audit fees by 7.89% and 37.67% respectively. The significant decrease in non-audit fees suggests that sample firms have responded to the post-financial crisis concerns of low audit quality by reducing the purchase of non-audit services. The average number of

business segments has been approximately constant throughout the three years. However, the percentage of firms that have undertaken acquisition activities decreases from 73.3% in 2008 to 61.5% in 2010. This is probably because of the financial distress experienced by firms after the crisis.

Table 7.1 Descriptive Statistics

	Number	Mean	Standard Deviation	Median	Minimum	Maximum	Skewness	Kurtosis
Dependent variables								
ASF (£'000)	619	2,137,844.000	4,165,314.000	800,000.000	23,000.000	37,400,000.000	5.189	36.874
LnASF	619	13.717	1.260	13.592	10.043	17.437	0.248	3.128
NASF (£'000)	619	1,354,121.000	3,993,373.000	495,375.300	0.000	73,700,000.000	11.828	189.318
LnNASF	619	12.727	2.573	13.113	0.000	18.116	-3.231	16.894
Audit Committee Characteristics								
ACM	619	4.134	1.524	4.000	2.000	15.000	2.500	13.580
ACS	619	3.620	0.901	3.000	2.000	7.000	1.032	4.456
ACI	619	0.907	0.171	1.000	0.000	1.000	-1.769	5.600
ACRX	619	0.321	0.271	0.333	0.000	1.000	1.140	4.031
Board Characteristics								
NEDs	619	0.646	0.117	0.667	0.267	0.929	-0.216	2.821
DUAL	619	0.029	0.168	0.000	0.000	1.000	5.605	32.419
BM	619	8.995	3.151	8.000	3.000	26.000	1.736	8.595
BS	619	9.268	2.494	9.000	5.000	20.000	1.116	4.624
Control Variables								
BLOCK	619	0.278	0.185	0.248	0.000	0.924	0.767	3.457
LEV	619	0.196	0.164	0.174	0.000	0.807	0.704	2.983
TA(£'000)	619	7,294,121.000	21,500,000.000	1,590,572.000	44,068.000	203,000,000.000	6.298	47.658
SIZE	619	14.416	1.510	14.280	10.693	19.130	0.556	3.286
LOSS	619	0.158	0.365	0.000	0.000	1.000	1.872	4.504
ACQ	619	0.645	0.479	1.000	0.000	1.000	-0.604	1.365
BUSSEG	619	3.197	1.941	3.000	1.000	10.000	0.798	3.265

Table 7.1 (Cont'd)

ASF are audit service fees in £; LnASF is the natural logarithm of ASF; NASF are non-audit service fees in £; LnNASF is the natural logarithm of NASF; ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; SIZE is the natural logarithm of total assets at year end; LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years; ACQ is an indicator variable with a value of 1 if a firm made an acquisition during the year; BUSSEG is the number of a firm business segments.

Table 7.2 Descriptive Statistics by Year

	2008			2009			2010		
	Mean	St. Dev.	Median	Mean	St. Dev.	Median	Mean	St. Dev.	Median
Dependent variables									
ASF (£)	2,268,007	4,492,664	900,000	2,057,249	4,121,843	796,805	2,089,611	3,868,012	800,000
LnASF	13.786	1.253	13.710	13.654	1.271	13.588	13.714	1.258	13.592
NASF (£)	1,736,828	5,834,196	517,143	1,239,159	3,112,075	400,000	1,082,367	1,975,383	462,000
LnNASF	12.956	2.339	13.156	12.550	2.744	12.899	12.680	2.610	13.043
Audit Committee Variables									
ACM	4.107	1.616	4.000	4.146	1.467	4.000	4.150	1.493	4.000
ACS	3.665	0.910	3.000	3.577	0.942	3.000	3.620	0.848	3.000
ACI	0.913	0.165	1.000	0.887	0.181	1.000	0.924	0.164	1.000
ACRX	0.309	0.273	0.250	0.326	0.273	0.333	0.329	0.269	0.333
Board Variables									
NEDs	0.634	0.120	0.636	0.650	0.121	0.667	0.654	0.109	0.667
DUAL	0.029	0.169	0.000	0.028	0.166	0.000	0.030	0.171	0.000
BM	8.976	3.026	9.000	9.155	3.164	9.000	8.845	3.270	8.000
BS	9.529	2.642	9.000	9.099	2.447	9.000	9.180	2.376	9.000
Control Variables									
BLOCK	0.278	0.192	0.245	0.287	0.179	0.267	0.269	0.184	0.239
LEV	0.213	0.166	0.186	0.198	0.168	0.173	0.178	0.156	0.158

Table 7.2 (Cont'd)

TA(£'000)	7,210,988	20,600,000	1,636,850	6,814,193	20,400,000	1,454,155	7,890,872	23,600,000	1,689,100
SIZE	14.452	1.512	14.308	14.340	1.497	14.190	14.458	1.526	14.340
LOSS	0.083	0.276	0.000	0.155	0.363	0.000	0.240	0.428	0.000
ACQ	0.733	0.443	1.000	0.587	0.494	1.000	0.615	0.488	1.000
BUSSEG	3.000	1.719	3.000	3.263	1.994	3.000	3.330	2.086	3.000

ASF are audit serivce fees in £; LnASF is the natural logarithm of ASF; NASF are non-audit service fees in £; LnNASF is the natural logarithm of NASF; ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; SIZE is the natural logarithm of total assets at year end; LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years; ACQ is an indicator variable with a value of 1 if a firm made an acquisition during the year; BUSSEG is the number of a firm business segments.

7.3 Correlation Matrix

Table 7.3 reports the Spearman and Pearson correlations among the dependent and independent variables (excluding industry dummies) in the audit fees and non-audit fees models. The analysis is mainly based on the Spearman correlation due to the non-parametric nature of the examined data.

Both Spearman and Pearson correlations in Table 7.3 indicate a positive significant correlation between lnASF and lnNASF (Spearman 0.68, Pearson 0.48). This suggests that sample firms purchase both audit and non-audit services from the incumbent auditor at the same time. All audit committee variables are found to be significantly correlated with both lnASF and lnNASF under the Spearman correlation. Of the board variables, however, only NEDs and BS are significantly correlated with both lnASF and lnNASF, and BM has only a significant correlation with lnASF. Unexpectedly, corporate governance variables that are correlated with lnNASF have positive coefficients, suggesting that good governance mechanisms tend to demand the purchase of greater levels of non-audit services. Moreover, ACRX and BM are found to be negatively correlated with lnASF. This implies that the presence of audit committee members with relevant financial experience as well as the increase in the number of board meetings is expected to reduce the audit efforts of auditors and therefore reduce audit fees.

Correlations among the independent variables do not reveal any multicollinearity problem. The highest correlation of 0.59 is between SIZE and BS. The VIF multicollinearity test is further tested in the multivariate analysis.

Table 7.3 Spearman (Lower Triangle) and Pearson (Upper Triangle) Correlations

Variables	***lnASF***	***lnNASF***	***ACM***	***ACS***	***ACI***	***ACRX***	***NEDs***	***DUAL***	***BM***	***BS***	***BLOCK***	***LEV***	***SIZE***	***LOSS***	***ACQ***	***BUSSEG***
lnASF	*1*	**0.48**	**0.43**	**0.38**	**0.15**	**-0.08**	**0.36**	-0.05	-0.03	**0.52**	**-0.25**	0.04	**0.76**	**-0.10**	**0.32**	**0.37**
lnNASF	**0.68**	*1*	**0.24**	**0.22**	0.05	-0.04	**0.13**	**-0.09**	0.00	**0.32**	**-0.15**	-0.01	**0.39**	**-0.12**	**0.23**	**0.19**
ACM	**0.40**	**0.31**	*1*	**0.26**	**0.07**	-0.07	**0.26**	0.00	**0.27**	**0.36**	-0.04	-0.02	**0.39**	-0.02	0.03	**0.13**
ACS	**0.35**	**0.29**	**0.27**	*1*	0.00	**-0.23**	**0.27**	0.01	-0.01	**0.42**	**-0.19**	**0.07**	**0.38**	-0.05	**0.14**	0.05
ACI	**0.11**	**0.11**	**0.09**	-0.03	*1*	0.03	**0.10**	-0.05	-0.01	0.01	**-0.09**	-0.03	**0.11**	0.00	0.06	-0.03
ACRX	**-0.16**	**-0.11**	**-0.09**	**-0.38**	**0.07**	*1*	0.02	**0.14**	-0.01	-0.06	-0.05	0.01	-0.04	0.02	**-0.08**	0.03
NEDs	**0.36**	**0.23**	**0.25**	**0.25**	**0.09**	-0.06	*1*	-0.02	-0.04	**0.10**	**0.08**	**0.08**	**0.37**	-0.02	-0.01	**0.07**
DUAL	-0.05	-0.05	-0.06	0.00	-0.03	**0.12**	-0.01	*1*	-0.03	0.01	**0.10**	-0.01	-0.01	-0.02	0.03	**-0.07**
BM	**-0.11**	-0.04	**0.19**	-0.03	-0.02	0.03	-0.06	-0.03	*1*	-0.03	**-0.07**	0.03	0.02	0.05	**-0.08**	-0.04
BS	**0.46**	**0.41**	**0.32**	**0.46**	0.01	**-0.14**	**0.10**	0.02	**-0.11**	*1*	**-0.08**	0.06	**0.59**	0.00	**0.14**	**0.21**
BLOCK	**-0.28**	**-0.23**	**-0.07**	**-0.18**	-0.05	-0.01	0.05	**0.09**	-0.03	**-0.18**	*1*	**-0.07**	**-0.25**	**0.14**	**-0.12**	-0.02
LEV	**0.11**	**0.15**	0.02	0.06	-0.05	-0.05	**0.11**	-0.01	0.04	**0.09**	**-0.09**	*1*	**0.22**	0.01	0.06	**0.10**
SIZE	**0.71**	**0.59**	**0.37**	**0.34**	**0.10**	**-0.10**	**0.35**	0.00	-0.04	**0.55**	**-0.28**	**0.32**	*1*	-0.03	**0.18**	**0.28**
LOSS	**-0.08**	-0.04	0.02	-0.04	-0.01	0.00	-0.02	-0.02	0.03	0.00	**0.15**	0.01	-0.02	*1*	**-0.13**	0.00
ACQ	**0.34**	**0.25**	0.04	**0.13**	0.05	**-0.10**	-0.01	0.03	**-0.08**	**0.12**	**-0.14**	**0.10**	**0.19**	**-0.13**	*1*	0.30
BUSSEG	**0.38**	**0.27**	**0.14**	0.03	-0.02	0.01	0.04	**-0.07**	-0.03	**0.17**	**-0.10**	**0.13**	**0.28**	-0.01	**0.33**	*1*

ACM is the number of audit committee meetings held in a given year; *ACS* is the total number of audit committee members; *ACI* is the percentage of independent directors in the audit committee; *ACRX* is the percentage of audit committee directors with relevant financial expertise on the audit committee; *NEDs* is the percentage of non-executive directors on the board; *DUAL* is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; *BM* is the frequency of board meetings held during the financial year; *BS* is the number of directors in the board; *BLOCK* is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; *LEV* is total long-term debt to total assets; *SIZE* is the natural logarithm of total assets at year end; *LOSS* is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years; *ACQ* is an indicator variable with a value of 1 if a firm made an acquisition during the year; *BUSSEG* is the number of a firm business segments.

* Bolded coefficients are statistically significant at 10% level.

7.4 Multivariate Analyses

This section presents a multivariate analysis of the impact of audit committee and board characteristics on audit fees and non-audit fees. Extent literature has shown that audit fees and non-audit fees are jointly determined (Whisenant et al. 2003; Lee and Mande 2005) and examining them in single equation models may lead to biased results. Recently, Zaman et al. (2011) account for what they called this 'complex' relationship between audit fees and non-audit fees as well as the other explanatory variables through incorporating the standardized residuals of the audit fees model into the non-audit fees model. Following Zaman et al. (2011), the author uses OLS regressions for testing the hypotheses. The author opts to use OLS regression for him to be able to predict the standardized residuals and incorporate them in the models. This section present the results of regressions excluding residuals followed in the next section by the robustness-test results of regressions in which the author incorporated the standardized residuals. After checking for the homoskedasticity of residuals and the results were negative, standard errors are adjusted for heteroskedasticity by using the robust standard errors option[55].

Table 7.4 presents the results of the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity of both of the audit fees (Panel A) and non-audit fees (Panel B) models. The null hypothesis tested is that the variance of residuals is constant. Results of the test in both panels reveal a rejection of the null hypothesis and indicate the presence of heteroskedasticity.

[55] Robust standard errors are also called White-Huber standard errors or sandwich estimator of variance. Regressing the models using robust standard errors clustered by firm also provide results which are qualitatively similar.

Table 7.4 Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity

Panel A: Audit fees model	***Panel B: Non-audit fees model***
Ho: Constant variance Variables: fitted values of lnASF	Ho: Constant variance Variables: fitted values of lnNASF
chi2(1) = 2.85 Prob > chi2 = 0.0914	chi2(1) = 174.91 Prob > chi2 = 0.0000

To further check the validity of the OLS estimates, the author uses VIF and tolerance statistics to test for multicollinearity among the independent variables of the audit fees and non-audit fees models and the results are presented in Table 7.5. None of the variables has a VIF of more than 10 or a tolerance value of less than 0.10 (Gujarati 2003), indicating the nonexistence of any multicollinearity problem.

Table 7.5 VIF and Tolerance Value of Audit Fees and Non-Audit Fees Models

Variable	VIF	Tolerance (1/VIF)
INDST	6.32	0.158
CSERV	5.86	0.171
CGOD	3.69	0.271
BMAT	3.44	0.291
O&G	2.87	0.348
TECH	2.52	0.397
SIZE	2.51	0.398
BS	1.94	0.516
TELECOM	1.54	0.647
ACS	1.53	0.656
NEDs	1.48	0.676
2008	1.47	0.682
ACM	1.46	0.684
2009	1.39	0.718
BLOCK	1.34	0.749
ACQ	1.32	0.755
BUSSEG	1.32	0.757
LEV	1.25	0.800
BM	1.17	0.856
ACRX	1.16	0.863
DUAL	1.12	0.897
LOSS	1.1	0.907
ACI	1.07	0.930
Mean VIF	2.13	

Hypothesis testing

Tables 7.6 and 7.7 report the results from the audit fees and non-audit fees models respectively. In each of these tables, the author presents three regression results, by which audit committee and board variables are regressed both together and separately.

Regressions 1 incorporate audit committee characteristics and control variables. Regressions 2 incorporate board characteristics and control variables, and

regressions 3 combine both sets of governance characteristics with the control variables. All of the regressions report R^2s which are comparable to other similar UK studies (Zaman et al. 2011; Nehme 2013).

Audit fees

As predicted in hypotheses 9a, 11a, and 12a, Reg. 1 in Table 7.6 reveals that ACI, ACS and ACM are significant and positively related to audit fees, suggesting that higher audit fees are associated with larger audit committees (Zaman et al. 2011; Boo and Sharma 2008; Ittonen et al. 2010) that are independent (Zaman et al. 2011; Rustam et al. 2013; Lee and Mande 2005) and meet more frequently (Lee and Mande 2005; Zaman et al. 2011; Basiruddin 2011). The significance of the ACS, however, does not hold when combining both sets of audit committee and board variables in the same regression suggesting that the size of audit committee does not play an incremental role in the presence of the board. Contrary to Carcello et al. (2002), who find that the independence of the audit committee is not significant when the audit committee and board variables are combined in the same regression, ACI remains significant at 5% (0.327; t-stat= 1.94) even after combining the two sets of variables (Reg.3).

All board variables are found to be significantly related to audit fees except DUAL (Reg. 3). Consistent with Boo and Sharma (2008), NEDs and BS are positively related to audit fees suggesting that the latter are more likely to increase in the presence of larger boards comprising of a higher proportion of non-executive directors (Carcello et al. 2002; Abbott et al. 2003a). Contrary to hypothesis 15_a and consistent with the UK study conducted by Basiruddin (2011), BM is negatively associated with audit fees at the 5% level (-0.023; t-stat=-2.16) suggesting that the

more frequent board meetings are, the less audit efforts will be exerted by the auditors and therefore the lower audit fees.

All main control variables except LOSS (Reg. 3) are significantly related to audit fees. ACQ, SIZE and BUSSEG are found to have a positive impact on audit fees suggesting that larger firms that engage in acquisition activities and have a larger number of business segments require greater audit efforts from the external auditor leading the latter to charge higher audit fees. Contrary to the author prediction, BLOCK is negatively related to audit fees suggesting that intense monitoring exerted by block-holders reduces the need for extensive audit work thus leading to lower audit fees. LEV is also found to be negatively related to audit fees. Despite that this finding contradicts with the author's prediction of a positive sign, it is consistent with a finding of a UK study conducted by Zaman et al. (2011) on a sample of 540 FTSE firms listed during the period 2001 to 2004. Firms in the basic materials and consumer services industries appear to pay the highest audit fees compared to their counterparts.

Table 7.6 OLS with Robust Standard Errors (Dep.: Nat. Log. of Audit Fees)

Variables	*Reg. 1* Coeff. *(t-stat)*	*Reg. 2* Coeff. *(t-stat)*	*Reg. 3* Coeff. *(t-stat)*
INERCEPT	**4.131**	**4.393**	**4.427**
	(11.14)***	***(12.32)******	***(11.19)******
ACM	**0.090**		**0.089**
	(4.45)***		***(4.03)******
ACS	**0.112**		0.043
	(3.42)***		*(1.22)*
ACI	**0.381**		**0.327**
	(2.28)**		***(1.94)*****
ACRX	-0.060		-0.116
	(-0.53)		*(-1.05)*
NEDs		**1.493**	**1.214**
		(5.18)***	***(4.06)******
DUAL		-0.110	-0.078
		(-0.52)	*(-0.40)*
BM		-0.012	**-0.023**
		(-1.17)	***(-2.16)*****
BS		**0.068**	**0.050**
		(4.56)***	***(3.27)******
BLOCK	-0.134	**-0.356**	**-0.354**
	(-0.69)	***(-1.78)****	***(-1.78)****
LEV	**-0.903**	**-0.955**	**-0.855**
	(-4.65)***	***(-5.13)******	***(-4.65)******
SIZE	**0.587**	**0.547**	**0.516**
	(23.17)***	***(18.48)******	***(16.99)******
LOSS	**-0.158**	**-0.153**	-0.142
	(-1.71)*	***(-1.67)****	*(-1.58)*
ACQ	**0.206**	**0.210**	**0.202**
	(2.96)***	***(2.99)******	***(2.94)******
BUSSEG	**0.100**	**0.093**	**0.096**
	(6.40)***	***(6.09)******	***(6.39)******
O&G	**-0.401**	**-0.393**	**-0.327**
	(-3.22)***	***(-3.00)******	***(-2.37)*****
BMAT	**-0.528**	**-0.570**	**-0.515**
	(-3.36)***	***(-3.63)******	***(-3.27)******
INDST	0.046	0.111	0.139
	(0.48)	*(1.23)*	*(1.43)*
CGOD	**-0.416**	**-0.397**	**-0.320**
	(-3.20)***	***(-3.19)******	***(-2.49)******
HCAR			
CSEV	**-0.425**	**-0.424**	**-0.374**
	(-4.23)***	**(-4.52)*****	**(-3.79)*****

Table 7.6 (Cont'd)			
TELECOM	**-0.469**	-0.396	-0.360
	(-2.23)*	*(-1.50)*	*(-1.41)*
TECH	0.020	0.073	0.077
	(0.14)	*(0.51)*	*(0.53)*
2008	0.095	0.102	0.106
	(1.30)	*(1.42)*	*(1.51)*
2009	0.045	0.040	0.050
	(0.66)	*(0.59)*	*(0.76)*
2010			
R-square	70.99%	71.35%	72.57%
Observations	619	619	619

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; SIZE is the natural logarithm of total assets at year end; LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years; ACQ is an indicator variable with a value of 1 if a firm made an acquisition during the year; BUSSEG is the number of a firm business segments; O&G is oil and gas industry; BMAT is basic materials industry; INDST is industrials industry; CGOD is consumer goods industry; HCAR is health care industry; CSEV is consumer services industry; TELECOM is telecommunications industry; TECH is technology industry.

Non-audit fees

The results of the three regressions in Table 7.7 are consistent, regardless of whether the author separates audit committee and board variables or not. From all audit committee and board variables, only ACM and BS are found to be significant and positively related to non-audit service fees at the 5% (0.131; t-stat=2.12) and 1% (0.108; t-stat=2.68) levels respectively (Reg. 3). These findings are not as predicted in hypothesis 12_b and hypothesis 16_b respectively, but are consistent with the similar UK study conducted by Basiruddin (2011) on a sample of 674 FTSE firms in the period from 2005 to 2008. They suggest that firms with large boards and audit

committees that meet more frequently are more likely to purchase higher levels of non-audit services.

Three of the control variables, namely, LEV, SIZE and ACQ, are found to be significantly related to non-audit service fees and have the predicted coefficient signs (Reg. 3). SIZE and ACQ are positively associated with non-audit service fees suggesting that large firms that undertake acquisition activities demand the purchase of higher levels of non-audit services to deal with their system complexities and wider range of activities (Abbott et al. 2003b).

Table 7.7 OLS with Robust Standard Errors (Dep.: Nat. Log. of Non-Audit Fees)

Variables	*Reg. 1* Coeff. *(t-stat)*	*Reg. 2* Coeff. *(t-stat)*	*Reg. 3* Coeff. *(t-stat)*
INERCEPT	**3.662**	**4.086**	**4.316**
	(3.01)***	***(3.40)******	***(3.30)******
ACM	**0.142**		**0.131**
	(2.29)**		***(2.12)*****
ACS	0.151		0.084
	(1.56)		*(0.81)*
ACI	-0.043		-0.086
	(-0.09)		*(-0.19)*
ACRX	0.058		0.152
	(0.18)		*(0.46)*
NEDs		0.511	0.069
		(0.62)	*(0.08)*
DUAL		-1.210	-1.279
		(-1.17)	*(-1.19)*
BM		0.010	-0.008
		(0.26)	*(-0.20)*
BS		**0.137**	**0.108**
		(3.48)***	***(2.68)******
BLOCK	-0.310	-0.338	-0.300
	(-0.56)	*(-0.63)*	*(-0.53)*
LEV	**-1.480**	**-1.496**	**-1.418**
	(-1.86)*	***(-1.90)****	***(-1.78)****
SIZE	**0.557**	**0.501**	**0.471**
	(6.48)***	***(5.41)******	***(4.72)******
LOSS	-0.550	-0.625	-0.610
	(-1.44)	*(-1.63)*	*(-1.59)*
ACQ	**0.654**	**0.661**	**0.670**
	(2.53)***	***(2.59)******	***(2.60)******
BUSSEG	**0.088**	0.066	0.0633
	(2.01)**	*(1.58)*	*(1.50)*
O&G	-0.288	-0.464	-0.411
	(-0.73)	*(-1.19)*	*(-1.02)*
BMAT	-0.719	-0.717	-0.626
	(-1.50)	*(-1.51)*	*(-1.29)*
INDST	-0.211	-0.230	-0.157
	(-0.61)	*(-0.67)*	*(-0.45)*
CGOD	-0.103	-0.149	-0.042
	(-0.24)	*(-0.36)*	*(-0.10)*
HCAR			
CSEV	-0.501	-0.604	-0.501
	(-1.32)	*(-1.63)*	*(-1.32)*
TELECOM	-1.205	-0.877	-0.800
	(-0.90)	*(-0.60)*	*(-0.54)*

Table 7.7 (Cont'd)			
TECH	-0.459	-0.494	-0.457
	(-0.81)	*(-0.85)*	*(-0.80)*
2008	0.190	0.134	0.137
	(0.83)	*(0.58)*	*(0.59)*
2009	-0.0580	-0.067	-0.069
	(-0.24)	*(-0.27)*	*(-0.28)*
2010			
R-square	22.78%	22.06%	23.28%
Observations	619	619	619

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; SIZE is the natural logarithm of total assets at year end; LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years; ACQ is an indicator variable with a value of 1 if a firm made an acquisition during the year; BUSSEG is the number of a firm business segments; O&G is oil and gas industry; BMAT is basic materials industry; INDST is industrials industry; CGOD is consumer goods industry; HCAR is health care industry; CSEV is consumer services industry; TELECOM is telecommunications industry; TECH is technology industry.

7.5 Additional Analyses

A number of additional tests are conducted in this section to check the robustness of the results.

First, similar to what is done in the previous chapter additional analysis section and with the intention to compare the performance of governance mechanisms in regular vs. financially distressed periods, the author analyses the descriptive statistics of the main variables (dependent and hypotheses variables) surrounding the crisis and then examines the impact of audit committee and board characteristics in the pre-financial crisis period from 2005 to 2007.

Table 7.8 presents the descriptive statistics for audit fees and non-audit fees (Panel A) as well as corporate governance variables (Panel B) surrounding the crisis. Mean and median differences of audit committee and board variables in Table 7.7 (Panel B) are qualitatively similar to those presented in Table 6.10 (Panel B) except for the weak significant changes for BM and BS. Interestingly, the results in Table 7.7 (Panel A) indicate that the level of audit fees is significantly higher (mean and median differences statistically significant at 1%) after the crisis, at a time when there is a less significant decrease in the level of non-audit service fees (median difference significant at 10%). The significant increase in audit fees in the post-financial crisis period is justified by the wider audit scope and therefore increased audit effort that the external auditor would exert for minimizing detection risk. On the other hand, the mild decrease in non-audit service fees in the post-crisis period could be attributed to sample firms demanding lower levels of non-audit services in response to the post-crisis regulatory calls for prohibitions of these services (e.g., HCTC 2009).

Table 7.8 Descriptive Statistics for Audit fees, Non-audit fees, Audit Committee, and Board Variables Surrounding Crisis

Panel A: Descriptive statistics for lnASF and lnNASF surrounding the crisis

	Pre-Crisis		Post-Crisis		Differences[(a)]	
	Mean	Median	Mean	Median	Mean	Median
lnASF	13.540	13.459	13.717	13.592	-0.177***	-0.134***
lnNASF	12.758	13.177	12.727	13.113	0.031	0.064*
Panel B: Descriptive statistics for governance variables surrounding the crisis						
Audit Committee Variables						
ACM	4.176	4.000	4.134	4.000	0.042	0.000
ACS	3.651	3.000	3.620	3.000	0.031	0.000
ACI	0.905	1.000	0.907	1.000	-0.002	0.000
ACRX	0.273	0.250	0.321	0.333	-0.048***	-0.083***
Board Variables						
NEDs	0.620	0.625	0.646	0.667	-0.027***	-0.042***
DUAL	0.054	0.000	0.029	0.000	0.024**	0.000**
BM	8.684	8.000	8.995	8.000	-0.311*	0.000
BS	9.473	9.000	9.268	9.000	0.205	0.000

a) ***, **,* indicate significance at the 1%, 5%, and 10% level respectively, for a two-tailed test.

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board.

In Table 7.9, Panel A and Panel B present the pre-crisis (2005-2007) regression results from the lnASF and lnNASF respectively. In each of these panels, the author presents three regression results, by which audit committee and board variables are regressed both together and separately.

The results of the audit fees regressions in Panel A are consistent regardless of whether the author separates audit committee and board variables or not. ACI is the only exception where it is found to be significant and positively related to lnASF only after combining both sets of variables in the same regression. Results in Reg.3, where both sets of governance variables are included, reveal a significant association between ACM, ACS, ACI, NEDs, BM, and BS on the one hand and lnASF on the other. These findings do not differ from those reported under the post-crisis period in the main model as all of the revealed associations hold except for the ACS one which holds only when board variables are excluded from the regression.

The non-audit service fees regressions reveal a significant and positive association with ACS and ACRX only when the board set of variables are excluded from the regression (Panel B, Reg.1). Boards' results, however, are robust to the inclusion and exclusion of audit committee variables and reveal that lnNASF is positively related to NEDs and BS and negatively related to DUAL. These findings suggest that in regular time periods and in the presence of effective boards of directors, audit committees do not play an incremental role in determining the level of non-audit services to be purchased from the incumbent auditor[56].

[56] Carcello et al. (2002) use a sample of 258 firms for the year ended March 1993 and find that in the presence of the board the audit committee does not play an incremental role in determining the level of audit fees.

Table 7.9 OLS with Robust Standard Errors (2005-2007)

	Panel A: Natural logarithm of audit fees			**Panel B: Natural logarithm of non-audit fees**		
	Reg. 1	*Reg. 2*	*Reg. 3*	*Reg. 1*	*Reg. 2*	*Reg. 3*
Variables	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
	(t-stat)	*(t-stat)*	*(t-stat)*	*(t-stat)*	*(t-stat)*	*(t-stat)*
INERCEPT	**3.666**	**4.322**	**4.197**	**4.472**	**6.768**	**5.418**
	(7.20)*	***(8.93)****	***(8.31)****	***(2.22)****	***(2.90)****	***(2.45)****
ACM	**0.060**		**0.053**	-0.188		-0.228
	(2.71)*		***(2.43)****	*(-1.25)*		*(-1.63)*
ACS	**0.144**		**0.082**	**0.339**		0.174
	(4.23)*		***(2.31)****	***(2.50)****		*(1.36)*
ACI	0.301		**0.388**	0.311		0.33
	(1.46)		***(2.03)****	*(0.44)*		*(0.47)*
ACRX	0.046		0.034	**0.659**		0.589
	(0.33)		*(0.23)*	***(1.76)****		*(1.52)*
NEDs		**1.257**	**0.945**		**3.764**	**3.850**
		(4.16)*	***(2.97)****		***(3.18)****	***(3.26)****
DUAL		-0.216	-0.269		**-1.914**	**-1.792**
		(-1.35)	*(-1.61)*		***(-1.75)****	***(-1.76)****
BM		**-0.02**	**-0.029**		-0.028	0.000
		(-1.90)*	***(-2.62)****		*(-0.79)*	*(0.01)*
BS		**0.089**	**0.075**		**0.105**	**0.130**
		(5.23)*	***(4.05)****		***(1.64)****	***(2.09)****
BLOCK	0.316	-0.035	0.060	0.572	-0.174	-0.129
	(1.51)	*(-0.17)*	*(0.29)*	*(0.82)*	*(-0.26)*	*(-0.19)*
LEV	**-0.571**	**-0.455**	**-0.444**	-0.345	0.042	-0.117
	(-2.44)*	***(-2.05)****	***(-1.95)****	*(-0.42)*	*(0.05)*	*(-0.14)*
SIZE	**0.583**	**0.515**	**0.486**	**0.458**	0.161	**0.217**
	(17.98)*	***(15.95)****	***(13.92)****	***(4.72)****	*(1.18)*	***(1.69)****
LOSS	0.12	0.111	0.123	0.004	-0.182	-0.125
	(1.45)	*(1.28)*	*(1.41)*	*(0.01)*	*(-0.47)*	*(-0.32)*
ACQ	**0.345**	**0.344**	**0.339**	**0.61**	**0.653**	**0.596**
	(4.17)*	***(4.19)****	***(4.24)****	***(2.15)****	***(2.31)****	***(2.12)****
BUSSEG	**0.093**	**0.092**	**0.093**	**0.132**	0.11	**0.120**
	(4.74)*	***(4.67)****	***(4.77)****	***(1.82)****	*(1.63)*	***(1.74)****
O&G	-0.176	-0.259	-0.207	0.584	0.488	0.493
	(-0.68)	*(-0.96)*	*(-0.80)*	*(0.70)*	*(0.56)*	*(0.56)*
BMAT	-0.213	-0.241	-0.189	0.583	0.665	0.538
	(-0.80)	*(-0.89)*	*(-0.72)*	*(0.71)*	*(0.79)*	*(0.64)*
INDST	0.174	0.218	0.256	0.187	0.207	0.116
	(0.70)	*(0.86)*	*(1.04)*	*(0.22)*	*(0.22)*	*(0.12)*
CGOD	-0.223	-0.248	-0.196	0.331	0.423	0.17
	(-0.83)	*(-0.92)*	*(-0.74)*	*(0.42)*	*(0.49)*	*(0.20)*
HCAR						
CSEV	-0.269	-0.298	-0.235	-0.377	-0.431	-0.494
	(-1.07)	*(-1.17)*	*(-0.96)*	*(-0.43)*	*(-0.48)*	*(-0.54)*

Table 7.9 (Cont'd)

TELECOM	-0.288	-0.296	-0.215	0.433	1.264	0.719
	(-0.85)	*(-0.89)*	*(-0.66)*	*(0.51)*	*(1.35)*	*(0.82)*
TECH	0.437	0.35	0.393	1.337	1.155	1.164
	(1.50)	*(1.19)*	*(1.34)*	*(1.54)*	*(1.28)*	*(1.30)*
2005	**0.157**	**0.166**	**0.162**	-0.031	-0.01	0.015
	(1.93)*	***(2.08)****	***(2.04)****	*(-0.13)*	*(-0.04)*	*(0.06)*
2006						
2007	0.038	0.063	0.049	**-0.568**	**-0.517**	**-0.582**
	(0.50)	*(0.84)*	*(0.64)*	***(-1.84)****	***(-1.73)****	***(-1.90)****
R-square	64.07%	65.56%	66.37%	12.32%	14.89%	16.38%
Observations	579	579	579	579	579	579

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; SIZE is the natural logarithm of total assets at year end; LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years; ACQ is an indicator variable with a value of 1 if a firm made an acquisition during the year; BUSSEG is the number of a firm business segments; O&G is oil and gas industry; BMAT is basic materials industry; INDST is industrials industry; CGOD is consumer goods industry; HCAR is health care industry; CSEV is consumer services industry; TELECOM is telecommunications industry; TECH is technology industry.

Second, it has been suggested in the literature that the relationships between audit fees and non-audit service fees, on the one hand, and the determinants of these fees on the other are complex as some factors that affect audit fees also affect non-audit service fees (Zaman et al. 2011). Following Zaman et al. (2011), and to control for the incremental effect of each of the audit fees and non-audit fees on the level of the other, this study incorporates the standardised residuals estimated from each of the fees' models into the model of the other[57]. In other words, the incorporation of the standardized residuals in the regression model accounts for any omitted variables that may determine both audit fees and non-audit fees as well as for the randomness

[57] Zaman et al. (2011) account only for the incremental effect of audit fees on the level of non-audit fees through incorporating the standardised residuals of the audit fees model into the non-audit fees model.

in the variation in some components of the dependent variables. Table 7.10 presents the results of each of the audit fees and non-audit fees models in Panel A (Reg.1) and Panel B (Reg.1) respectively, and reveals qualitatively identical findings to those obtained from the main models (Tables 7.6 and 7.7).

Finally, the author introduces additional control variables into the audit fees and non-audit fees models to check whether the results are robust to the inclusion of other factors that are found to be influential determinants of audit fees and non-audit service fees. The control variables are restructuring (RESTR), return on assets (ROA) and the sum of receivables and inventory divided by total assets (RECINV). RESTR is sourced from DataStream. It is an indicator variable with a value of one if a firm undertakes operational restructuring during the year, and is included to account for the complexity in a firm that would require additional audit efforts and the purchase of more non-audit services. In addition to the LOSS variable, ROA is another control variable that is used to account for the client profitability. RECINV is used to control for the inherent risk in an engagement where specialized audit procedures are needed (Hay et al. 2006b; Simunic 1980). Table 7.10 reports the results of both audit fees (Panel A, Reg.2) and non-audit service fees (Panel B, Reg.2) models. The results are qualitatively similar and echo those obtained from the main model (Tables 7.6 and 7.7). From among the added control variables, only RESTR is found to be significant and positively related to lnASF (0.214; t-stat=3.55) suggesting the increase in audit efforts because of the increase in the complexity of the engagement.

Table 7.10 OLS with Robust Standard Errors (Additional Tests)

	Panel A: Nat. log. of Audit fees		***Panel B: Nat. log. of Non-Audit fees***	
	Reg. 1	*Reg. 2*	*Reg. 1*	*Reg. 2*
Variables	Coeff.	Coeff.	Coeff.	Coeff.
	(t-stat)	*(t-stat)*	*(t-stat)*	*(t-stat)*
INERCEPT	**4.427**	**4.451**	**4.316**	**4.638**
	(11.42)***	***(8.79)******	***(3.37)******	***(3.20)******
ACM	**0.089**	**0.093**	**0.131**	**0.136**
	(4.28)***	***(4.26)******	***(2.29)*****	***(2.14)*****
ACS	0.043	0.04	0.084	0.075
	(1.25)	*(1.13)*	*(0.83)*	*(0.70)*
ACI	**0.327**	**0.337**	-0.086	-0.089
	(1.95)**	***(2.02)*****	*(-0.19)*	*(-0.19)*
ACRX	-0.117	-0.114	0.152	0.143
	(-1.08)	*(-1.03)*	*(0.48)*	*(0.43)*
NEDs	**1.214**	**1.032**	0.069	0.12
	(4.12)***	***(3.35)******	*(0.08)*	*(0.13)*
DUAL	-0.078	-0.039	-1.279	-1.264
	(-0.38)	*(-0.20)*	*(-1.19)*	*(-1.17)*
BM	**-0.023**	**-0.023**	-0.008	-0.012
	(-2.18)**	***(-2.11)*****	*(-0.20)*	*(-0.30)*
BS	**0.050**	**0.05**	**0.108**	**0.116**
	(3.34)***	***(3.10)******	***(2.74)******	***(2.78)******
BLOCK	**-0.354**	-0.33	-0.300	-0.341
	(-1.85)*	*(-1.60)*	*(-0.55)*	*(-0.59)*
LEV	**-0.855**	**-0.965**	**-1.418**	**-1.492**
	(-4.73)***	***(-5.10)******	***(-1.82)****	***(-1.87)****
SIZE	**0.516**	**0.514**	**0.471**	**0.442**
	(17.22)***	***(13.96)******	***(4.78)******	***(4.11)******
LOSS	-0.142	-0.128	-0.61	-0.644
	(-1.58)	*(-1.45)*	*(-1.60)*	*(-1.62)*
ACQ	**0.202**	**0.193**	**0.67**	**0.642**
	(3.02)***	***(2.87)******	***(2.68)******	***(2.48)******
BUSSEG	**0.097**	**0.088**	0.063	0.062
	(6.73)***	***(5.93)******	*(1.60)*	*(1.42)*
RESTR		**0.214**		0.149
		(3.55)***		*(0.65)*
ROA		0.004		-0.006
		(0.94)		*(-0.65)*
RECINV		-0.175		0.092
		(-0.83)		*(0.14)*
O&G	**-0.327**	**-0.243**	-0.411	-0.332
	(-2.42)**	***(-1.74)****	*(-1.03)*	*(-0.79)*
BMAT	**-0.515**	**-0.437**	-0.626	-0.541
	(-3.37)***	***(-2.80)******	*(-1.34)*	*(-1.06)*

Table 7.10 (Cont'd)

INDST	0.139	**0.178**	-0.157	-0.135
	(1.46)	***(1.87)***	*(-0.46)*	*(-0.38)*
CGOD	**-0.320**	**-0.278**	-0.042	-0.04
	(-2.51)***	***(-2.26)*****	*(-0.10)*	*(-0.09)*
HCAR				
CSEV	**-0.374**	**-0.347**	-0.501	-0.455
	(-3.92)***	***(-3.57)******	*(-1.36)*	*(-1.17)*
TELECOM	**-0.360**	-0.277	-0.800	-0.663
	(-1.78)*	*(-1.16)*	*(-0.58)*	*(-0.44)*
TECH	0.077	0.081	-0.457	-0.433
	(0.52)	*(0.56)*	*(-0.79)*	*(-0.76)*
2008	0.107	0.112	0.137	0.127
	(1.50)	*(1.59)*	*(0.59)*	*(0.55)*
2009	0.05	0.045	-0.069	-0.101
	(0.78)	*(0.68)*	*(-0.29)*	*(-0.41)*
2010				
Residuals	**0.063**		**0.729**	
	(3.87)***		***(4.72)******	
R-square	73.82%	73.19%	26.78%	23.42%
Observations	619	619	619	619

***, **, * = significant at the 1%, 5%, and 10% level or better, respectively.

ACM is the number of audit committee meetings held in a given year; ACS is the total number of audit committee members; ACI is the percentage of independent directors in the audit committee; ACRX is the percentage of audit committee directors with relevant financial expertise on the audit committee; NEDs is the percentage of non-executive directors on the board; DUAL is an indicator variable set to 1 when there is no separation between the roles of the CEO and the board chairman; BM is the frequency of board meetings held during the financial year; BS is the number of directors in the board; BLOCK is the percentage ownership of block-holders who hold at least 5 % or more of outstanding common shares and are unaffiliated with management; LEV is total long-term debt to total assets; SIZE is the natural logarithm of total assets at year end; LOSS is an indicator variable with 1 if a firm incurred losses in either one or both of the previous two years; ACQ is an indicator variable with a value of 1 if a firm made an acquisition during the year; BUSSEG is the number of a firm business segments; RESTR is an indicator variable of 1 if a firm undertakes restructuring during the year; ROA is return on assets; RECINV is the sum of inventory and receivables divided by total assets; O&G is a dummy variable for oil and gas firms; BMAT is a dummy variable for basic materials firms; INDST is a dummy variable for industrials firms; CGOD is a dummy variable for consumer goods firms; HCAR is a dummy variable for health care firms; CSEV is a dummy variable for consumer services firms; TELECOM is dummy variable for telecommunications firms; TECH is dummy variable for technology firms.

7.6 Summary

This chapter reports the empirical findings of the impact of audit committee and board characteristics on audit fees and non-audit service fees. Similar to chapter six, this chapter's main analysis is focused on the post-financial crisis period between 2008 and 2010. Additional analysis for the pre-crisis period between 2005 and 2007 is conducted to provide a comparison of the association between governance characteristics and both audit fees and non-audit fees during pre- and post-crisis periods.

Multivariate analysis of the association between audit committee variables and audit fees during the post-financial crisis period 2008 to 2010 supports the agency perspective argument and suggests that large audit committees that are independent and meet more frequently undertake an effective monitoring role that results in extensive audit testing and thus higher audit fees. Similarly, the agency perspective argument is supported by the positive and significant association between audit fees and both board size (BS) and non-executive directors on the board (NEDs). However, board meetings are found to be negatively related to audit fees, thus supporting the risk perspective argument that external auditor will exert higher audit efforts (i.e. higher audit fees) to mitigate risk in the presence of an inactive board that meets infrequently.

With respect to non-audit service fees, the main regression results reveal a positive association between non-audit service fees and each of ACM and BS. These findings do not support the author's predictions in hypotheses 12b and 16b, and suggest that greater levels of non-audit services are purchased by firms of large boards whose audit committees meet more frequently.

The additional multivariate analysis conducted on the pre-financial crisis period from 2005 to 2007, for both of the audit fees and non-audit fees models, reveals consistent findings with those from the main analysis for the post-crisis period 2008 to 2010. This suggests that in terms of determining the levels of audit fees and non-audit fees, there is no change in the performance of governance mechanisms between pre- and post-crisis periods.

Comparison of the mean and median of the dependent variables surrounding the financial crisis reveal a significant increase (at 1% level) in sample firms audit fees (mean and median differences statistically significant at 1%) after the crisis and a less significant decrease in the level of non-audit service fees (median significant at 10%). This finding suggests that sample firms' boards in general and audit committees in particular have responded to regulators' calls for enhancing corporate governance effectiveness through exerting a better monitoring role. This in turn has led external auditors to increase audit efforts (to reduce detection risk) and limit the provision of non-audit services (to safeguard independence) resulting in higher audit fees and lower non-audit service fees.

A summary of the hypotheses related to the impact of audit committee and board characteristics on audit fees and non-audit service fees along with the relevant findings are presented in Table 7.11.

Table 7.11 Summary of Hypotheses and Relevant Findings		
Hypothesis Number	**Hypothesis**	**Findings**
9a	*There is a positive relationship between audit committee independence and audit fees.*	Supported
9b	*There is a negative relationship between audit committee independence and non-audit service fees.*	Not supported
10a	*There is a positive relationship between audit committee relevant financial experience and audit fees.*	Not supported
10b	*There is a negative relationship between audit committee relevant financial experience and non-audit service fees.*	Not supported
11a	*There is a positive relationship between audit committee size and audit fees.*	Supported (when board variables are not included)
11b	*There is a negative relationship between audit committee size and non-audit service fees.*	Not supported
12a	*There is a positive relationship between audit committee meetings and audit fees.*	Supported
12b	*There is a negative relationship between audit committee meetings and non-audit service fees.*	Not supported
13a	*There is a positive relationship between Non-Executive Directors and Audit fees.*	Supported
13b	*There is a negative relationship between Non-executive directors and non-audit service fees.*	Not supported
14a	*There is a positive relationship between CEO duality and audit fees.*	Not supported
14b	*There is a positive relationship between CEO duality and non-audit service fees.*	Not supported
15a	*There is a positive relationship between board meetings and audit fees.*	Not supported
15b	*There is a negative relationship between board meetings and non-audit service fees.*	Not supported
16a	*There is a positive relationship between board size and audit fees.*	Supported
16b	*There is a negative relationship between board size and non-audit service fees.*	Not supported

Chapter 8. Summary and Conclusions

Chapter 8
Summary and Conclusions

8.1 Introduction

Inspired by UK regulatory concerns about the integrity of corporate financial reporting and external audit processes in the post-financial crisis period from 2008 to 2010, and the transparency enhancement roles that the board of directors in general and audit committees in particular could play in this regard, the author examines how effective these governance mechanisms are in: (1) ameliorating the quality of financial reporting and (2) determining proper levels of audit fees and non-audit service fees after the financial crisis.

Particularly, with respect to corporate financial reporting quality, this thesis sought to address the concerns raised by the FRRP and the FRC about misleading revenue recognition practices after the global financial crisis. The FRRP and FRC cast doubt on the criteria that firms used to recognize revenues after the crisis, arguing that insolvency problems during the recession would cause more difficulties to managers incentivising them to manipulate revenues to hide poor performance. Addressing these issues, they emphasize the crucial role that audit committees could play in overseeing the financial reporting process and recommend that audit committees should engage more closely in monitoring the truthfulness of key figures and judgements within the financial reports.

On the other hand, this thesis also sought to address the concerns raised by the HCTC and HOL about the objectivity and independence of external auditors during and after the financial crisis casting doubt on the transparency of the audit

process. Specifically, the HOL accused the Big Four British audit firms of complacency and "dereliction of duty" and emphasized the important role that audit committees could play in terms of external auditor selection, independence and remuneration.

The agency theory is used to shape the link between corporate governance and both financial reporting quality and auditor remuneration (audit fees and non-audit fees). This theory provides superior justification and explanation for the motivations behind earnings management and the relationship between external auditors and their clients. Moreover, given the empirical nature of the studies in this thesis, the agency theory "model leads to a higher degree of mathematical tractability than do the competing theoretical perspectives" (Cohen et al. 2008, p.188). Based on the agency perspective, a vigilant oversight by the audit committee and the board of directors is expected to constrain earnings management and ensure a transparent audit process resulting in a reduction in agency costs.

In this pursuit, two empirical investigations are used to examine the association between corporate governance on the one hand and financial reporting quality and auditor remuneration on the other. Governance characteristics such as composition, size, activity, financial expertise, and CEO duality are used to surrogate for the effectiveness of the audit committee and the board of directors. With respect to the dependent variables, financial reporting quality and auditor remuneration are measured by earnings management and both audit fees and non-audit fees respectively. Specifically, financial reporting quality is measured by a discretionary revenue model, to address the concerns of regulators about misleading revenue recognition practices, and a performance adjusted accrual-based model to account for the possibility for firms to shift from one earnings management method to

another, especially in periods of unhealthy financial conditions (Zang 2011). Empirical models are tested using a sample of FTSE 350 firms listed in the LSE during the period from 2008 to 2010. An additional sample of FTSE 350 firms listed in the period between 2005 and 2007 is tested in the additional analysis to provide a comparison of the effectiveness of corporate governance mechanisms during regular and financially distressed periods. Regression analyses for the financial reporting quality models and auditor remuneration models are conducted using fixed effect and simple OLS regressions respectively.

In the following sections, this chapter presents a summary of the empirical findings followed by the implications for researchers and policy makers and concluding with the limitations of this research as well as avenues for future research.

8.2 Summary of Findings

Empirical findings for the financial reporting quality and auditor remuneration models are presented and summarized in chapters six and seven respectively. This section provides a synthesis of the findings to answer the research questions.

Findings of the financial reporting quality empirical investigation reveal that some internal governance characteristics play a significant role in enhancing financial reporting quality after the financial crisis, through constraining revenue-based earnings management but not accrual-based earnings management. Specifically, it is found that large independent audit committees and boards that include CEO duality cases are negatively associated with discretionary revenues. Board meetings, however, are found to be positively related to discretionary revenues suggesting that the board plays a reactive role in curbing revenue

management. Overall, these findings suggest that, given the regulators' and practitioners' intense emphasis on audit committees and their crucial role in curbing expected revenue manipulations after the financial crisis, firms' revenue recognition process and criteria were subject to increased monitoring by boards in general and audit committees in particular[58], leading to a better financial reporting quality. The findings are robust to the inclusion of the lagged values of the dependent variables as explanatory variables to control for the omitted variables bias, and the inclusion of Big4 dummy variable to control for auditor quality. In estimating discretionary accruals, the results are also robust to the use of the Jones model as an alternative measure to the performance adjusted Modified Jones model. Additional analyses reveal that audit committees with a majority of independent directors are more likely to curb revenue manipulations than solely independent audit committees.

On the other hand, firms with independent audit committees that meet frequently and large boards that include a higher proportion of non-executive directors are associated with higher audit fees. These findings support the agency perspective and suggest that audit committees and boards having such characteristics are more concerned about audit quality where they demand wider external audit scope resulting in higher audit fees. Board meetings, however, are found to be negatively related to audit fees suggesting that the increase in the activity of the board will reduce risk and result in less audit efforts and in turn lower audit fees. Contrary to the author's predictions, audit committee meetings and board size are found to be positively associated with non-audit fees after the financial crisis. These findings do not support the prohibition of non-audit services recommendations by UK regulatory bodies (e.g., HOL 2011; HCTC 2009), who argue that the provision

[58] Refer to the introductory chapter for regulators' reports on the revenue recognition key issues recommended to be taken in consideration by audit committees while discharging their financial reporting oversight role after the financial crisis.

of such services by the incumbent auditor would impair external auditors' independence. However, they suggest that the simultaneous provision of audit and non-audit services by the incumbent auditor would facilitate a beneficial knowledge spill-over between the two services resulting in a better quality of audit (Simunic 1984). The findings of the audit fees and non-audit fees models are robust to the inclusion of the standardized residuals estimated from each of the fees' models into the model of the other to control for the incremental effect of each of the fees on the level of the other. Moreover, they are robust to the inclusion of additional control variables that are found in the literature to be influential determinants of audit fees and non-audit fees.

Comparisons of the samples of the pre- and post-financial crisis periods reveal the following. First, in the presence of unhealthy financial conditions, firms tend to use more accrual-based earnings management and less revenues management, especially when the latter is exposed to higher levels of monitoring from regulators. Second, regulators' calls for corporate governance reforms after the financial crisis have led to more changes in the structure of boards than in that of audit committees. Specifically, the post-crisis findings reveal a significant decrease in CEO duality and board size, along with a significant increase in non-executive directors on boards, and the relevant financial experience of audit committees.

Additional regression results of the impact of audit committee and board characteristics on both of discretionary accruals and discretionary revenues during the pre-financial crisis period from 2005 to 2007 do not reveal significant associations except for board meetings which are found to be positively related to discretionary revenues suggesting that the board also performs a reactive role in constraining revenue management during regular periods. However, findings of the

audit fees and non-audit fees investigations are qualitatively similar to those reported during the post-financial crisis period, and suggest that the association between internal governance mechanisms and both audit fees and non-audit fees does not differ between regular and financially distressed periods.

8.3 Research Implications

There are a very limited number of studies which have examined the impact of corporate governance mechanisms on earnings management and auditor remuneration in the UK. Prior studies tackling the impact of corporate governance on financial reporting quality have only employed discretionary accrual models as proxies for earnings management and have revealed mixed results (e.g., Basiruddin 2011; Habbash 2010). This thesis extends the literature through using discretionary revenues as a surrogate for earnings management and provides unique evidence on the effectiveness of audit committees and board of directors in curtailing revenue manipulation earnings management. Specifically, audit committees and board of directors are found to be effective in curtailing revenue manipulation earnings management but not accrual based earnings management.

Similarly, results of extant research on the association between corporate governance and both audit fees and non-audit fees are mostly inconsistent. The results of this thesis suggest that higher audit fees are associated with independent audit committees that meet more frequently. These findings confirm those of Zaman et al. (2011) and Basiruddin (2011), and support the agency perspective of audit fees. However, the negative relationship between the number of board meetings and audit fees support the risk perspective of audit fees. Therefore, unlike prior studies which have based their arguments on only one of these perspectives (e.g., Zaman et al.

2011; Basiruddin 2011; Boo and Sharma 2008), this thesis suggests that both perspectives should be taken in consideration while formulating the hypotheses.

The results of this study also have other implications for both researchers and policy makers. As far as researchers are concerned, this thesis provides evidence that CEO duality is associated with better financial reporting quality during recession periods. Moreover, board meetings are found to be negatively related to audit fees, suggesting that an increase in the activity of the board will lead to less audit effort from the external auditor resulting in lower audit fees. These two findings are inconsistent with the agency perspective, and imply that the effectiveness of internal governance mechanisms may depend "upon organizational and environmental circumstances" (Van Essen et al. 2013), while more than one theoretical perspective is needed to capture "the greater complexity" in organisations (Eisenhardt 1989).

Moreover, similar UK studies use discretionary accrual models (abnormal accruals) as constructs for earnings management (e.g., Basiruddin 2011; Habbash 2010). The results of this thesis suggest that firms may use different earnings management methods to manipulate earnings. Therefore, different metrics should be employed by researchers to capture the highest possible level of earnings management.

With respect to auditor remuneration, extant UK research on the impact of corporate governance on audit fees examines both sets of audit committee and board variables in the same regression model (e.g., Zaman et al. 2011; Basiruddin 2011). This thesis regresses both sets of variables combined and separately, and find that the board and audit committee play a complementary role in determining audit fees. Specifically, the results reveal a negative and significant relationship between board

meetings and audit fees only when both audit committee and board sets of variables are regressed in the same model.

The findings of this thesis could be of potential interest to policy makers in several ways. First, the author has found that audit committees are not effective in enhancing financial reporting quality in regular periods. This finding is consistent with that of a similar UK study conducted by Basiruddin (2011) on a sample of FTSE 350 firms listed during the period 2005 to 2008, and implies that principles-based accounting standards lessen the burden on audit committees to curtail the "management's aggressive reporting choices" (Agoglia et al. 2011). Given the same standards during crisis periods, however, such governance mechanisms may operate differently (Van Essen et al. 2013), especially under higher levels of monitoring by regulators.

Second, UK corporate governance authorities could consider the findings while setting new governance reform recommendations. The investigations conducted in this thesis provide empirical evidence on the effectiveness of internal governance characteristics during the post-financial crisis period, a period in which such evidence still does not exist. For instance, audit committee members with relevant financial experience are not found to be associated with either of financial reporting quality or auditor remuneration. This finding is inconsistent with the UK Corporate Governance Code recommendation that audit committees should comprise at least one member with relevant financial expertise. Committee members with accounting qualifications and audit experience could be considered to deal with the accounting complexities and sophistications inherent in financial reporting (Defond et al. 2005).

Third, the author finds that there is drastic decrease in the level of discretionary revenues after the financial crisis at a time when there is a mild increase in the level of discretionary accruals. Given the regulatory concerns about misleading revenue recognition practices after the financial crisis and the intense monitoring exerted thereafter, this finding implies that increasing the scrutiny activities and monitoring by regulators on a certain earnings management activity may lead up to a shift "in managers' preference for different earnings management strategies" (Zang 2011, p.701).

Fourth, this thesis provides evidence that audit committee meetings and board size are positively associated with non-audit fees. This suggests that the joint provision of audit services and non-audit services rather enhance the quality of external audit than impair it. As such, this finding supports other UK empirical evidence (e.g., Zaman et al. 2011; Basiruddin 2011), and implies that regulators should take into consideration that the simultaneous provision of audit and non-audit services is not likely to be subject to financial failures.

8.4 Research Limitations and Avenues for Future Research

Despite the unique and potential contributions that this thesis is providing to the literature, there are a number of caveats that should be taken into consideration.

First, regarding the data tested in this research, the author uses a main sample of UK FTSE 350 unregulated firms listed during the period 2008 and 2010. The UK institutional, governance, and accounting systems are different from those of the US in which the vast majority of similar research has been conducted. Also FTSE 350 firms are subject to a higher level of governance recommendations to comply with, in relation to smaller listed firms, and to greater focus and monitoring from

regulatory bodies. Having said that, the findings of this thesis should be cautiously generalized, taking into consideration the context and the period of the study as well as the nature of the examined firms.

Second, similar to the vast majority of relevant extant studies and given the empirical nature of this thesis, the author examines the effectiveness of the audit committee and the board of directors through their individual characteristics. As such, implications of the findings do not provide an explanation of how the audit committee and the board operate and behave especially in the presence of unhealthy financial conditions.

Third, with respect to discretionary revenues, it has been suggested that they should be estimated by separating revenues in the first three-quarters from those in the fourth as "revenues in the early part of the year are more likely to be collected in cash by the end of the year" and thus "these have different implications for year-end receivables than a change in fourth-quarter revenues" (Stubben 2010, p.696). However, discretionary revenues are estimated in this thesis based on annual revenues as quarterly revenue data are not available.

Finally, this research opens several avenues for future research. First, the main oversight responsibilities of audit committees lie within the areas of financial reporting, external audit and internal audit. This thesis contributed to the literature by examining the effectiveness of audit committees in discharging their oversight role over the first two areas. Future research should provide evidence on how effective audit committees are in monitoring the internal audit function.

Second, this thesis proposes the consideration of a multi-theoretical approach in accounting research, while keeping the agency theory as the theoretical base. Still the number of studies that have examined the integration of corporate governance

theories is very limited and the alignment of theories is still not clear (Christopher 2010). Future research should explore holistic theoretical approaches which could better explain organizational complexities and their environmental circumstances.

Third, the main sample used in this thesis is for the three-year period between 2008 and 2010. Data for the years following 2010 were not available at the data collection stage of this research. Therefore, future research could benefit from a larger sample size through extending the sample period and providing more robust results.

Fourth, this thesis examines audit fees and non-audit fees as an economic aspect of the relationship between external auditors and their clients. It provides implications that the simultaneous provision of audit services and non-audit services is not likely to harm auditors' independence. Future research should use the post-financial crisis period to further confirm the validity of these implications by examining the impact of corporate governance mechanisms on the economic bonding between external auditors and their clients. One of the interesting economic bonding proxies used in the literature considers the percentage of a client's audit fees relative to auditor audit revenues per office or country.

Lastly, given the substitutive relationship between real activities earnings management and accrual-based earnings management (Zang 2011), this thesis uses both the discretionary revenue model and the performance adjusted accrual model to account for firms shifting from one earnings management method to another. The employed discretionary revenue model does not only detect real activities manipulations; therefore future research could use pure real activity earnings management measures for more accurate consideration for the shift in earnings management measures.

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