The Role of the Corporate Governance Code and its effects on the improvement of the corporate sector in the Kingdom of Bahrain

A thesis submitted for the degree of Doctor of Philosophy

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Abstract

The purpose of a corporate governance code is to put into practice the principles of best corporate governance in Bahrain, and to provide protection to the stakeholders of companies and investors through compliance with those principles. International experience has shown that the results of good corporate governance enhance the value of companies, protecting the investors and attracting investments. This research comprises two empirical studies. In the first study, it examines the relationship between corporate governance characteristics, including financial expertise of the board, number of independent members, frequency of the audit committee meetings and the of audit and the board of directors, and board size and the quality of the audit. The second study examines the efficiency of higher quality auditors and corporate governance characteristics in earnings management in the context of the Kingdom of Bahrain and provides more data about the effects of the audit committee and board of directors' characteristics on earnings management. The research used three proxies of quality of audit; the proxies are auditors' industry specialists, audit and non-audit fees. This study designed a conceptual framework that could be used to help explain the relationship between the effectiveness of the characteristics of the audit committee, boards of directors, and audit quality in respect of constraining Earnings Management. Based on data obtained from the listed companies in Bahrain between 2010 and 2013, the current findings recommend that the independent directors on the board should demand that the auditors do additional audits in the firm for the ratification of the function of supervision, which will lead to an increase in the quality of the audit and an increase in audit fees. The findings also suggest the positive association between the fees of non-audit services and independent boards, indicating that independent boards view joint provision of non-audit services and audit as not necessarily compromising audit independence, but perhaps improving the judgments of the auditors and expanding their knowledge.

The results of the second empirical study indicate that a higher quality of audit (which means either charging a higher auditor industry specialist fee or audit fees) are expected to reduce manipulation of earnings. However, no evidence of an association between the management of earnings and non- audit services fees been found. In addition, this study found inconsistent results linking the opportunistic earnings and the characteristics of corporate governance. Generally, both results are consistent with agency theory, which indicates that a high quality of audit and an independent board of directors are linked with effective supervision, which leads to improved financial reporting quality. The results of the issues of the practices of corporate governance, audit quality and management of earnings continue to be important to academics, professionals, policymakers and regulators.

"In the name of Allah, Most Gracious, Most Merciful. Praise be to Allah, the Cherisher and Sustainer of the worlds; Most Gracious, Most Merciful; Master of the Day of Judgment. Thee do we worship, and Thine aid we seek. Show us the straightway, the way of those on whom Thou hast bestowed Thy Grace, those whose [portion] is not wrath, and who go not astray"

(Holy Quran, Sura1:1-6).

Dedication

This thesis is dedicated to my grandfather and grandmother, both of whom passed away during the writing of this thesis, and to my beloved parents, who are and have always been my inspiration, my wife, my children, my sisters , my brothers, and everyone who shared this dream with me.

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List of abbreviations

AC:	Audit Committee
ACCA:	The Association of Chartered Certified Accountants
ACEXP:	AC expertise
ACIND:	AC independence
ACMEET:	AC meeting
ACSIZE:	AC size
AF:	Audit Fee
AQ:	Audit Quality
BDRNED:	Board of directors composition
BLOCK:	Institutional ownership
BoD:	Board of Directors
BRDEXP:	Board expertise
BRDMEET:	Board meeting
BRDSIZE:	Board size
CFO:	Cash flow from operation divided by lagged total asset
CG:	Corporate Governance
DACC_JM:	Jones discretionary accrual models
DACC_MJM:	Modified-Jones discretionary accrual models
DACC_ROA:	(Performance Adjusted) Discretionary Accruals models
EM:	Earnings Management
FEERATIO 1:	Fee ratio of non-audit services fees to total fees
FEERATIO 2:	Fee ratio of non-audit services fees to AFs
FORGN:	Proportion of foreign subsidiaries to total subsidiaries
FRQ:	Financial Reporting Quality
GAAP:	General Accepted Accounting Principles
GLS:	Generalize least square
GROWTH:	Sales growth rate
ICB:	Industry Classification Benchmark
INOWN:	Directors' ownership
LEVERG:	Total liabilities divided by total assets;
LIQ:	Current assets over current liabilities;
LNAFEE:	Natural logarithm of AFs
LNASSET:	Natural log of total assets
LNNAF:	Natural logarithm of NASFs
LNTOTALFEES:	Natural logarithm of the sum of NASFs and AFs
MTBV:	Market to book value ratio
N:	Number of observations
NAS:	Non-audit services
NASF:	Non-audit services fees
NED:	Non-Executive Directors
NEWDIR:	New appointment of external director
OLS:	Ordinary least square
RETURN:	The financial year total stock return;

ROA:	Return on assets
SOX:	Sarbanes-Oxley Act of 2002
SPECLST _M_S:	Auditors specialist in the industry - market share
SPECLST_M_S_LEADER:	Auditors specialist in the industry - leader
SPECLST _MS_30:	Auditors specialist in the industry - cut off 30%
SPECLST _P_S:	Auditors specialist in the industry - portfolio share
SPECLST _WEIGHTED:	Auditors specialist in the industry - weighted average
t:	Period t or year-end of period t

Chapter I

1.0 Introduction

The issues of earnings management (EM), corporate governance (CG) and quality of audit (AQ) have received significant attention from the regulator and the public in the Kingdom of Bahrain, especially after the unexpected business failures and high profile corporate scandals, which occurred in the early 1990s (such as Polly Peck and Maxwell Communications). EM, as a phenomenon of the prior scandals, which received considerable attention, is one of the most important challenges facing the CG mechanisms that attempt to resolve the negative impact of the EM on financial reporting (Goncharov, 2005; Jaggi and Tsui, 2007). Academic research has concluded that managers participate in EM to achieve certain objectives such as avoiding violations of debt covenants, meeting market expectations, and avoiding a loss. Whatever the motivation, it is documented that EM has mislead users of financial reporting and harms the quality of earnings (Jaggi and Tsui, 2007). Even in developed countries, adopting the practice of auditing standards and international accounting has failed to provide adequate assurances that financial reports are free from EM (Pornupatham, 2006).

The confidence of investors depends mainly on the strength of the financial reports associated with various monitoring mechanisms such as CG, which has recently received considerable attention in many developing countries. The primary objective of CG is not to improve the performance of companies directly, but to resolve the problems of agency by aligning the interests of shareholders with interests of management (Demsetz and Lehn, 1985). The Corporate Governance Code of the Kingdom of Bahrain (2010) supports the effectiveness of CG as a system monitor. Klein (2002) and Xie et al. (2001) show that CG reduces the ability of management to manage earnings.

DeFond and Francis (2005) argue that business failures and the results of corporate scandals have renewed the significance of the independent external audit and its relationship to the role of the CG in monitoring.

The independent external auditor is shown as another significant monitoring factor that may assist in reducing agency problems between the shareholders and managers and assist in reducing the possibility of opportunistic behavior of managers by providing financial statements free from mistakes (Wallace, 1980 and Lin and Hwang, 2010).

The auditors can be considered as part of the structure of CG because they monitor the financial report quality (FRQ) process (Beasley and Salterio, 2001). The auditor can improve the FRQ through their experience and skill to detect any mistakes in the financial statement (DeAngelo, 1981).

In general, the shareholders rely on the ability of the audit committee (AC) and board of directors (BOD)s to monitor the management and the independent auditors. Therefore, the FRQ is laid on the effectiveness of ACs and BODs. Prior studies focussed on the AC role as the main factor for ensuring financial information and monitoring of the external audit (Bedard and Gendron 2010; Chen et al. 2005; Abbott and Parker 2000). Specifically, this study will examine the relationship between the characteristics of the CG including the number of meetings of ACs and BoDs, number of independent members, size, and financial expertise of the BoDs and the AQ with respect to constraining EM. It has been claimed that companies that have effective ACs and BoDs always request auditors of a higher quality, because by hiring auditors with higher-quality, they increase the value of the company and reduce the conflict of interest (Carcello et al., 2002).

When participants in the market lack the ability to directly monitor the earnings reported, they may expect managers of the companies to have strong control and engage less in manipulation of earnings. Therefore, the study also showed that companies that have monitoring mechanisms, which consist of a higher AQ and effective characteristics of AC and BoDs have a higher ability to constrain opportunistic EM, and therefore reduce reported earnings.

1.1 Background of the Kingdom of Bahrain

In order to study the business environment in the Kingdom of Bahrain it is necessary to give a general background about Bahrain politics and economics. This section provides a brief background of the Kingdom of Bahrain by presenting the most important aspects of the Bahraini environment.

Bahrain is an island in Arabian Gulf between Saudi Arabia and Qatar, having an area of 741 square kilometers (See Figure 1.1). In 2011, the population of Bahrain was 1,195,020, of which 51 percent were non-Bahraini citizens (WTO, 2014). The local currency is the Bahraini Dinar (BD), and the (BD) has been pegged to the U.S. dollar (1 BD = US$2.659) since 2001. Arabic is the official language of Kingdom, while English is used in most business activities.

Figure 1.1: Map of the Kingdom of Bahrain

Source: BBC News (2015)

In 2002, Bahrain became a constitutional monarchy, and established a democratically elected parliament. The government's system is based on the separation of legislative, judicial and executive authorities. Executive authority is vested in the King together with the Council of Ministers, while Legislative authority is vested in the Parliament and the King. The King exercises his powers directly and through the ministers: they are responsible for the general policy of the government. Each minister is responsible for the work of his ministry.

The King also appoints and dismisses the Prime Minister by Royal Order, and appoints and dismisses Ministers by Royal Decree as suggested by the Prime Minister. The King is also the supreme commander of the armed forces and has the right to propose amendments to the constitution, propose laws, and vest authority.

Although Bahrain was the first Gulf state to discover oil, in 1932, in the past 40 years the country has seen relatively modest hydrocarbon resources compared with its neighbors. Subsequently, as first Gulf state to move away from dependence on oil, the country became the most diversified economy in the region.

Bahrain's economy continues to be dominated by the oil sector and related industries, although Bahrain's oil and natural gas reserves are limited, in comparison to its neighbors. According to the US Energy Information Administration (EIA), Bahrain's oil reserves were estimated at 125 million barrels in 2012, lasting for about 10-15 years (WTO, 2014). The economy of Bahrain is based primarily on oil exports as a main source of national income, accounting for approximately 24.6% of GDP in 2012 and 75% of government income. In general, the business environment has seen growth in the Kingdom, which has contributed to strengthening the Bahraini economy, including regulations, the Bahrain Bourse (formerly the Bahrain Stock Exchange) and the accounting and auditing professions.

1.2 The Bahraini Legal System

The legal system of the country plays a significant role in the creation of systems and practices. The Kingdom of Bahrain is based on the rulings of the Qur'an and Prophet Muhammad's Sunnah . Therefore, Bahrain is a Muslim country in terms of its legal system and, in general, is committed to Islamic law (WTO, 2014). Religion influences all aspects of life in Bahrain; including the constitution, the routine of daily lives and social behavior. In other words, Islam affects business life, with a strong emphasis on faith, human equality and high ethical standards.

Therefore, when the Kingdom adopts practices, such as CG, or auditing and accounting standards, there is generally an attempt to change these practices or standards to comply with Islamic law and local customs.

As Bahrain has good historical relationship ties with the U.K and the United States of America, the business environment has been affected by the legislation in those countries in terms of standards of auditor independence, auditing and accounting standards, and company regulations (Hussain, 2011). Although these systems are the national standards, they were originally borrowed from the U.K and United States of America.

All companies (including listed companies on the Bahrain Bourse) and banks in Bahrain are required to comply with the international financial reporting standards (IFRs), while accounting companies must comply with International Accounting Standards (IAS). There are also financial institutions that are required to comply with the financial accounting standards issued by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).

However, according to the requirements of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), for matters on which AAOIFI standards do not exist, the relevant institutions are required to comply with the relevant International Accounting Standards (IAS) and international financial reporting standards (IFRs). Bahrain University, the only public and the biggest university, has played a significant role in the development of accounting and finance standards by using American textbooks in their programs, including textbooks on accounting. Moreover, analysts and auditors are expected to seek professional qualifications from the United Kingdom and United States, in both the private sector and government.

In general, the perspective of the legal system in Bahrain in relation to the business environment is a combination of rules of the United Kingdom, the United States and other countries, controlled and influenced by Islamic law. In other words, the borrowed or derived laws must be in accordance with the nature of the Bahraini environment and Islam.

1.3 Monitoring Authorities

1.3.1 The Ministry of Industry and Commerce (MOIC):

The Ministry of Industry and Commerce (MOIC) is considered the main regulator for monitoring Bahraini firms. Registration, licensing, and supervision are the most important responsibilities of the (MOIC), to ensure that Bahraini companies comply with local regulations. Additionally, the MOIC indirectly acts in a supervisory role for monitoring from the Central Bank of Bahrain (CBB) and Bahrain Bourse. The practice of CG is one of the most significant regulations that was issued by the MOIC (effective January 1st, 2011). All companies to which this code applied were fully compliant by the end of 2011.

1.3.2 The Central Bank of Bahrain (CBB)

The CBB is an entity of public companies established by the CBB and Financial Institutions Law 2006, created on September 6, 2006. The CBB is responsible for financial stability in the Bahraini market and was the successo to the Bahrain Monetary Agency, which previously carried out the regulatory functions and was the central bank since its inception in 1973. Since the CBB has both financial and legal roles, it is supervised by a board of directors formed of seven members, including a representative of the Ministry of Finance appointed by Royal Decree for a renewable term of four years. Moreover, these members are not allowed to have a “personal interest” in a transaction or engage in any commercial activities.

The CBB is responsible for supervision of financial institutions, licensing and ensuring the implementation of regulations. To fulfill these objectives, the following summarize the CBB's duties:

- To improve all activities that are carried out by the exchange in accordance to the international standards to ensure a fair, transparent, diversified and efficient market.

- To monitor all transactions and activities in the Bahraini market.
- To develop and organize the Bahrain Stock Exchange (now Bahrain Bourse) and enhance appropriate transactions and standards.
- Act as the government's fiscal agent.

1.3.3 Bahrain Bourse

The Bahrain Bourse is mandated to achieve significant growth in Bahrain's economy, and plays a key role in enhancing economic and investment relations. In 2002, the regulatory and legislative authority and supervision of the Bahrain Bourse was transferred from the (MOIC) to the Central Bank of Bahrain (CBB), so that the CBB supervises and regulates all the activities of the bourse.

Moreover, the Board is supervised by an independent board of directors, chaired by the governor of the CBB. The Bahrain Stock Exchange goes back to 1957, when the first Bahraini Public Shareholding Company was established. Since then, more local public shareholding companies appeared, reaching their peak in the beginning of the 1980s. During this period, public companies were being traded in an unofficial market known as "Al Jowhara Market". This market soon collapsed with the collapse the Souk Al-Manakh stock market crash in Kuwait at the beginning of the 80s of the last century. Following the crash, the Bahraini government has prepared with the International Finance Corporation (IFC) a feasibility study for highlighting the importance of the establishment of an official stock market in Bahrain. As a result of the recommendation of the study, the Amiri Decree No. 4 was issued to establish the Bahrain Stock Exchange in 1987.
The Bahrain Stock Exchange officially began operations in June 1989 with 29 Bahraini shareholding listed companies. The only instruments traded in that time were common shares.

Today, there are 48 firms spread over various industries in the Kingdom of Bahrain market with different percentages of ownership. However, 5 firms were excluded because they were suspended from operating, leaving 43 remaining companies. Consequently, the Bahrain Bourse has the following objectives:

- To ensure that the markets conduct fair, efficient, diversified and transparent activities.
- Providing unique services for customers including investors, brokers, vendors, etc.

1.4 Research Problem

The practice of opportunistic EM provides less earnings accounting reliability, which does not reflect the reality of the company's business performance. EM is useful for making decisions regarding investment and investor confidence in the financial reports but is likely to reduce the financial reporting quality. However, accounting earnings are improved when the opportunistic behavior of management is reduced through the use of monitoring systems (Wild, 1996; Dechow et al., 1996).

Therefore, policy makers, regulators, and investors are concerned about EM, especially after the financial failures (with several of the big companies) in recent decades, and they have responded through enhancing the CG systems and independent auditors. CG is one of the important monitoring systems. Its primary objective is not to improve the performance of companies directly, but to resolve the problems of agency by aligning the interests of shareholders with interests of management (Demsetz and Lehn, 1985).

The Corporate Governance Code of the Kingdom of Bahrain (2010) supports the effectiveness of CG as a system monitor. Klein (2002) and Xie et al. (2001), show that CG reduces the ability of the management to manage earnings.

The independent auditor is another significant monitoring factor that may assist in reducing the agency problems between the shareholders and managers and reducing the possibility of opportunistic behavior of managers. Cohen et al. (2007) notice that the auditor carries a large responsibility of the reliability of financial reporting and the preparation of financial statements, as the role of the AC is primarily ceremonial, although significant efforts of the committee can lead to effective questioning of management. Krishnan (2003) and Frankel et al. (2002) notice that the monitoring that been offered through independent auditors and high quality of audits reduce the management's capability to manage earnings.

Particularly, the characteristics of CG and the independent auditor are recommended through the previous literature to be effective in balancing the interests of management and shareholders, reducing opportunistic behavior of management, thereby enhancing reliability of financial reporting and the process of preparation of financial statements (United Kingdom CG Code, 2010; CG Code of Bahrain, 2010; Watts and Zimmerman, 1986).

1.5 Aim and Research Objectives

The aim of this research is to empirically examine the relationship between the characteristics of Corporate Governance (Audit Committee and board of directors), and Audit Quality (by the external audit) in constraining Earnings Management in the Bahraini listed companies on the Bahrain Stock Exchange (now Bahrain Bourse), to aid such companies in improving their financial report quality (FRQ).

To achieve this aim, the specific objectives of this research are determined:

1. To identify and study the AC and BoDs' characteristics, AQ and EM.

The aims of this objective are to identify and compare previous studies relating to characteristics of CG, AQ and EM that have been conducted in the United States and United Kingdom. This comparison helps to understand the different institutional settings of the market in the United Kingdom and Kingdom of Bahrain and therefore limits the generality of their findings to contexts beyond the United States.

2. To identify the relationship between the effectiveness of the characteristics of the AC, BoDs, AQ and EM by reviewing the existing literature.

This objective helps to identify the gaps and inconsistencies in the existing literature, and provide an opportunity for future research to investigate this relationship.

3. To develop a model to test the association between the effectiveness and characteristics of the AC, BoDs, and AQ in respect of constraining EM.

This objective helps to construct causal models and hypotheses that can be used for this study. The current study used four-equations (models) for analyses. The hypotheses are examined with four models. The first study used three models of AQ proxies: AFs, non audit services, and auditor industry specialists, while the second study used only the EM model.

4. To design an appropriate conceptual framework and a set of associated hypotheses.

This objective attempts to contribute theoretically by proposing a conceptual framework that could be used to help explain the relationship between the effectiveness of the characteristics of the AC, BoDs, and AQ in respect of constraining EM.

5. To develop a comprehensive framework and measurement of the relationship between the effectiveness of the characteristics of the AC, BoDs, and AQ in respect of constraining EM.

This objective focusses on the theoretical framework, specifically the use of agency theory; as the theoretical base to develop the two empirical studies, research hypotheses and conceptual framework.

6. To test the models and examine the findings.

The present thesis is testing four models and examines the findings in the context of the Kingdom of Bahrain, based on the Bahraini companies listed on the Bahrain Stock Exchange (now Bahrain Bourse) between the financial years 2010 and 2013.

1.6 The rationale for the study:

This thesis has four main rationales to be considered. Firstly, the studies of CG, AQ and EM remain important to the policymakers and the regulators. Levitt (1998) argues that the evaluation of the EM and AQ is critical to the investor confidence in financial reports and their influence on resources allocation.

Lack of confidence of an investor in AQ could pose a serious threat to the financial market, because investors are the largest group of users that support the capital of an economic system. Notwithstanding, the significance of BoDs, committees and AQ are recognized as a monitoring function that may affect the FRQ (Lin and Hwang, 2009; Abbott et al., 2004; Carcello et al., 2002). Therefore how the monitoring of the role of the ACs and BoDs affects the perception of the market of reported earnings remains significant to the regulator.

Secondly, the code of CG is one of the most significant regulations that been issued by the MOIC, on January 1st, 2011. All companies to which this code applies had to be fully compliant by the end of 2011. However, recent amendments and recommendations remain empirically untested. This study examines the effectiveness of the characteristics of the Corporate Governance Code (2010).

Thirdly, due to the absence of research conducted in the Kingdom of Bahrain relating to the characteristics of CG, AQ and EM, the current study compares studies relating to characteristics of CG, AQ and EM that have been conducted in United States and United Kingdom to Bahrain. This comparison provides different institutional settings of the market of the United Kingdom and the Kingdom of Bahrain and therefore extends the results to contexts beyond the United States. Although the two countries share some common features, the systems of CG are different (Hussain and Mallin, 2002; Toms and Wright, 2005).

In the United Kingdom and the Kingdom of Bahrain, the nature of investors' activities are different, ownership is less dispersed than in the United States and consists of various rights of shareholders (Kirchmaier et al., 2005: The Corporate Governance Code of the Kingdom of Bahrain, 2010; Amico, 2014).

Aguilera et al. (2006) and Hussain and Mallin (2002) noticed that investors from British and Bahrain institutions, such as insurance companies and pension funds, tend to be more dominant than their colleagues in the United States (particularly mutual funds).

Also, significant differences exist with respect to the disclosure system of the United States and the preparation of financial statements is more demanding. American companies are required to disclose more information regarding the auditors and ACs than the Kingdom of Bahrain (e.g. whether AC approves audit firm dismissals) (Hussain and Mallin, 2002). Another area of difference is the constraints to exercising leadership in the BoD (Aguilera et al. 2006).

Most of the listed companies in the Bahraini bourse separating the role of the CEO and the Chairman, while most Americans' CEOs are also Chairman of the BoD demanded (Hussain and Mallin, 2002; Higgs Report, 2003).

The Kingdom of Bahrain adopts the international system of CG with 'comply or explain' model, which is followed in the UK and a number of European countries. The requirement of CG system is stated that the listed companies have to declare in their annual reports whether they comply with the provisions of the code, to identify any areas of non-compliance, and explain the reasons in light of the particular circumstances.

This differs from the CG system adopted in the United States under SOX. In fact, the international system of CG in the Kingdom of Bahrain has become one of the most commonly used, because the system provides more guidelines on the structure of the AC and BoD (The Corporate Governance Code of the Kingdom of Bahrain, 2010). Moreover, the environmental litigation in United Kingdom and (Kingdom of Bahrain) are different from those in the United States and other countries, and therefore it has a different impact on the auditors' performance and their reputation (Hussain and Mallin, 2002; Khurana and Raman, 2004; Francis, 2006). When the reputations of the auditors are less probably to be influenced by the litigation or by the regulator, there is also less incentive for them to supply high AQ (Al-Ajmi, 2009; Francis, 2006; Khurana and Raman, 2004).

Therefore, in the Kingdom of Bahrain, this study is expected to find it highly recommendable that the responsibilities of the supervision of the AC and BoDs are to ensure that the work of the AQ is not threatened by the lower environmental liability.

Fourthly, non audit services still arguable and are viewed with skepticism because they has potential that may impair the independent audit (Beattie and Fearnley, 2002; SEC, 2000; Panel on Audit Effectiveness, 2000). In this study, non audit services will be one of the AQ's proxies. Previous evidence continues indicates that the policy makers, regulators, and investors may perceive that the services of non audit impaired the audit independence (Wines, 1994; Sharma and Sidhu, 2001; Firth, 2002; Frankel et al. 2002; Raghunandan, 2003; Larcker and Richardson, 2004).

For example, in the United States, the Sarbanes-Oxley Act (SOX) banned most of the auditors to provide a variety of services related to non audit services. In line with the legislation of SOX, the regulator of the United Kingdom also responds to the non audit services by issuing for auditors the Ethical Standard.

For example, Ethical Standard (5) requires the independent external auditors to evaluate the possibility of getting threats that may impact the independence and objectivity, and to identify good protection system to minimize these threats. In addition, Ethical Standard (5) has also banned most of variety of services related to non audit services that were thought to be the impact of the independence of auditors and objectivity. In brief, both regulatory are arguing that the high of non audit services provisions can compromise auditor independence. In spite of the negative impact of non audit services on the independence of the auditor, many of the studies claim that the joint provision of non audit services and audit may expanding the knowledge of the auditors and improve their judgments, which led to increase the FRQ (Goldman and Barlev, 1974; Simunic, 1984; Beck et al., 1988a; Wallman, 1996; Arrunada, 1999a; 1999b; 2000). These arguments are motivating this research to examine the levels of the fees of non audit services and their linkage to EM and CG.

Moreover, a recent research made by DeFond and Francis (2005) on the studies of non audit services, the finding of their studies was to merge the fees dependency as a substitute measure of independent audit. They argue that during writing the Sarbanes-Oxley Act legislation, the study carried out by Frankel et al. (2002) was used general cases of the highest impact on the audit service fee levels, and that the subsequent studies in on audit services fees has indicated that Frankel's study was sensitive to the selection of the sample, specification of the model, and research design. They also claim that the (Securities Exchange - SEC) did not raise any problems of fees dependency when recommended to ban the all non audit services in 2000. Consequently, the calls by DeFond and Francis (2005) for research of non audit services studies are consider that the total service fees (the total amount of the audit and non audit services fees) as a measure of alternative financial dependencies that believed to impact the objectivity of the auditor. With regard to the current study, no studies in the Kingdom of Bahrain have been used the total amount of the audit services (AFs) in examining the correlation between non audit services and CG, and between non audit services and CG in respect of constraining EM.

Therefore, the total amount of the audit services will be one of the non audit services measures that been observe to fill the gap in the literature. In fact, there are 3 other measures that will be used in this study, will include (the ratio of non audit services fees to AFs, the level of fees of the non audit services compared to the total amount of services of non audit fees and AFs, and the ratio of services of non audit fees to total fees) for the purpose of ensuring that the findings are robust to different measures of independent external audit.

In brief, given that the market of United States provides different environmental litigation, institutional settings, and governance structures from those in the United Kingdom and in the Kingdom of Bahrain, in general findings of U.S is limited. For these purposes, this study examines the relationship between the AQ and practices of the CG and EM in the Kingdom of Bahrain.

1.7 Methodology

In addressing the concerns mentioned in the objectives of the research, the researcher adopted a quantitative methodology, relying on secondary data. In particular, companies' annual reports, on line versions and phone calls were used, as well as information from the Thomson One Banker database. The study focused on Bahraini companies listed on the Bahrain Stock Exchange from which a sample was selected for this study. The objectives used a conceptual framework to help explain the relationship. The research analyzed the testable hypotheses. In all, thirty five main hypotheses were tested, twenty four for the first study, and eleven for second study. The study covers a four-year financial period from 2010 to 2013.

The data collected was analysed using various estimations including:

1. Standard errors of least square regression and Robust Standard Errors.
2. Ordinary least-squares (OLS) regression.
3. Robust regression estimator with heteroscedasticity.
4. Probit and quantile regression.
5. Heteroskedastic ordinal regression

The purposes of using the various estimators was to ensure the efficiency of the data and analyses, because (OLS) regression may not be effective when certain assumptions are not fulfilled. Furthermore, the current research uses aggregate accruals models. The models include a cross sectional Jones (1991) model, a modified cross sectional Jones model and the model of performance adjusted discretionary accruals. The popularity of the aggregate accruals models and other alternative approaches (various estimations), is suggested for examining earnings management (McNichols 2000). One of these methodologies is to capture managerial discretion through modeling the behavior of a set of accruals or a specific accrual.

Studies which adopt this approach mostly focuses on a particular industry, such as banking (Ahn and Choi 2009; Cornett et al. 2009; Whelen 1994) or property-casualty insurance (Gaver and Paterson 2004; Beaver et al. 2003; Petroni et al. 2000; Petroni 1992). Other studies examine the statistical properties of earnings to recognize the behavior that might affect the earnings (Beaver et al. 2007; Kerstein and Rai 2007; Burgstahler and Eames 2006; Degeorge et al. 1999; Burgstahler and Dichev 1997).

Furthermore, previous research on the AQ and CG argues that none of the research uses heteroskedastic ordinal regression which indicates increasing the efficiency of both the regression of the probit and logit if heteroskedastic is present. Moreover, this analysis takes into consideration the endogeneity problems that have been neglected in some prior studies.

1.8 The structure of the thesis

This study is composed of seven chapters. This chapter provides a discussion of the background to this research and its motivation.

Chapter 2 reviews previous studies on three groups of subjects: EM, CG and AQ. Under the AQ reviews, this research defines AQ and its possible measures. The effect of AQ and the BoDs characteristics, including the frequency of the BoD and AC meeting, (financial expertise) background of the BoD and AC members, BoD and AC independence, and BoD and AC size are also discussed, using documented evidence and on the theory of agency theory. The reviews on EM look at the definition of EM, the motivation of the earnings measurement and opportunistic earnings. Furthermore, it discusses prior studies relating to the relationship between CG and AQ and between AQ and the effects of CG on constraining EM. A the end of this chapter, a hypotheses has been developed.

Chapter 3 concentrates on the theoretical framework underlying the research. It focusses on the primary theory (agency theory), which indicates that the current roles of the supervision of the AC and BoDs, and the requirement for independence of the external auditor assist to reduce the conflict of agency. The significance of the various levels of AQ and independence of the external auditor for participants in the market and companies is described through various hypotheses such as : 1) Hypothesis of the insurance, 2) signaling or reputation hypothesis, 3) Information hypothesis ,4) Monitoring hypothesis.

The chapter also explains the role of the AC, BoDs and the independence of the external auditor in demanding different levels of AQ and limiting opportunistic EM. Furthermore, the chapter provides the conceptual framework and a number of hypotheses to help explain the relationship and to provide solutions to the research problems identified in Chapter 1.

Chapter 4 presents the methodology of the research. It explains the research paradigms, methods of data collection, including secondary data, summarizes the measurements and the definitions of the variable hypothesis (including the characteristics of the audit and board committee, proxies of AQ and EM). Furthermore, it discusses the description of the data source, procedures of data collection and analysis.

In Chapters 5 and 6, the results are presented of the empirical findings of the relationship between CG and AQ, AQ and CG and the relationship between EM, respectively.

Finally, Chapter 7 concludes the research and discusses the implications and limitations of the research. Recommendations for future research are also considered.

Chapter II

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2. Introduction

This chapter introduces existing literature on three subjects: the first is the AQ, the second is the characteristics of the CG (the Boards and audit committees), and the third is about EM. In the first part will be reviews and defines the AQ and how to measure it. Then it discusses the characteristics of the ACs and boards. All of these reviews will provide comprehensive knowledge and understanding of the area being investigated in this research.

At the end of this chapter, the discussion will concentrate on the relationship between CG and the AQ and between CG and AQ with respect to constraining EM. These discussions assist in identifying similar studies which provide evidence of research gaps. For each relationship, the development of the tested hypotheses is also provided in this chapter. Finally, a summary and a conclusion are provided.

2.1 Definition of Audit Quality

DeAngelo (1981) defines AQ as the combination of two characteristics associated with the auditor specifically: the technical capacity to identify errors and independence required to correct the errors.

This definition illustrates the expertise and ability of the auditor in reporting and detecting material misstatements and then expressing them in an appropriate manner. Watts and Zimmerman (1986) explain DeAngelo's definition by suggesting the first part of the definition refers to the quality of the audit, the competence of the auditor and the audit’s feedback (amount of input), while the second part refers to the independence of the external auditor.

Conversely, Watts and Zimmerman mention that any lack of competence or independence of the auditor has the potential to impair the AQ. Beattie et al. (1999) state that there are two types of factors that can influence the audit quality (by independent auditor)s. The factors are regulatory and economic factors. The economic factors include the provision of non-audit services, the level of laxity of the regulatory framework, independence of the auditor during the audit, and competition with independent external auditors (audit market). The regulatory factors are those factors which enhance the independence of auditors. These factors are linked with auditing and accounting standards. The Cadbury Report (1992) suggested that the existence of the AC facilitates strong enforcement of standards and controls and encourages independent auditors to have high AQ.

Palmrose (1988) describes the AQ as a degree of assurances (i.e. the probability that financial reports include a few errors or misstatements). The foundations of this definition refers to the failure of audits (when auditors fail to provide a clean audit report on financial statements). The failures of audits can be categorized as very low AQ, which can lead to different results such as auditor business risks (i.e., regulatory sanctions, level of litigation, earnings restatement, and, impaired reputation) (Francis, 2004).

The Institute of Chartered Accountants of England and Wales (ICAEW) (2002) recommend a definition of AQ that describes AQ as the auditor's performance that delivers appropriate professional opinions, objectively, and evidence, enabling financial statements to have high AQ. As long as the auditors act to support the opinion of the independent audit through sufficient evidence, the regulator expects that they provide high AQ services.

The ability of the auditor (known as technical qualities) to detect and report any material errors during the audit process is often included in definitions of AQ. Duff (2004) recommends that AQ is composed of two items; the first item is technical quality and the second item is technical service, as both of them measure the level of the customer's expectations and the customer's satisfaction. Technical service is composed of non-audit services, responsiveness, empathy and client service, while technical quality comprises experience, reputation, capability, independence, and expertise.

DeAngelo (1981) and Watt and Zimmerman (1986) defined AQ as the auditors' competence to prevent or detect errors and objectivity (in fact mind and appearance) of auditors in reporting such errors. The terms "auditor quality" and "AQ" are supposed to be synonymous, and this is in line with Clarkson and Simunic's (1994) recommendation that "the audit of the firm is supposed to supply a single level of AQ at a moment in time".

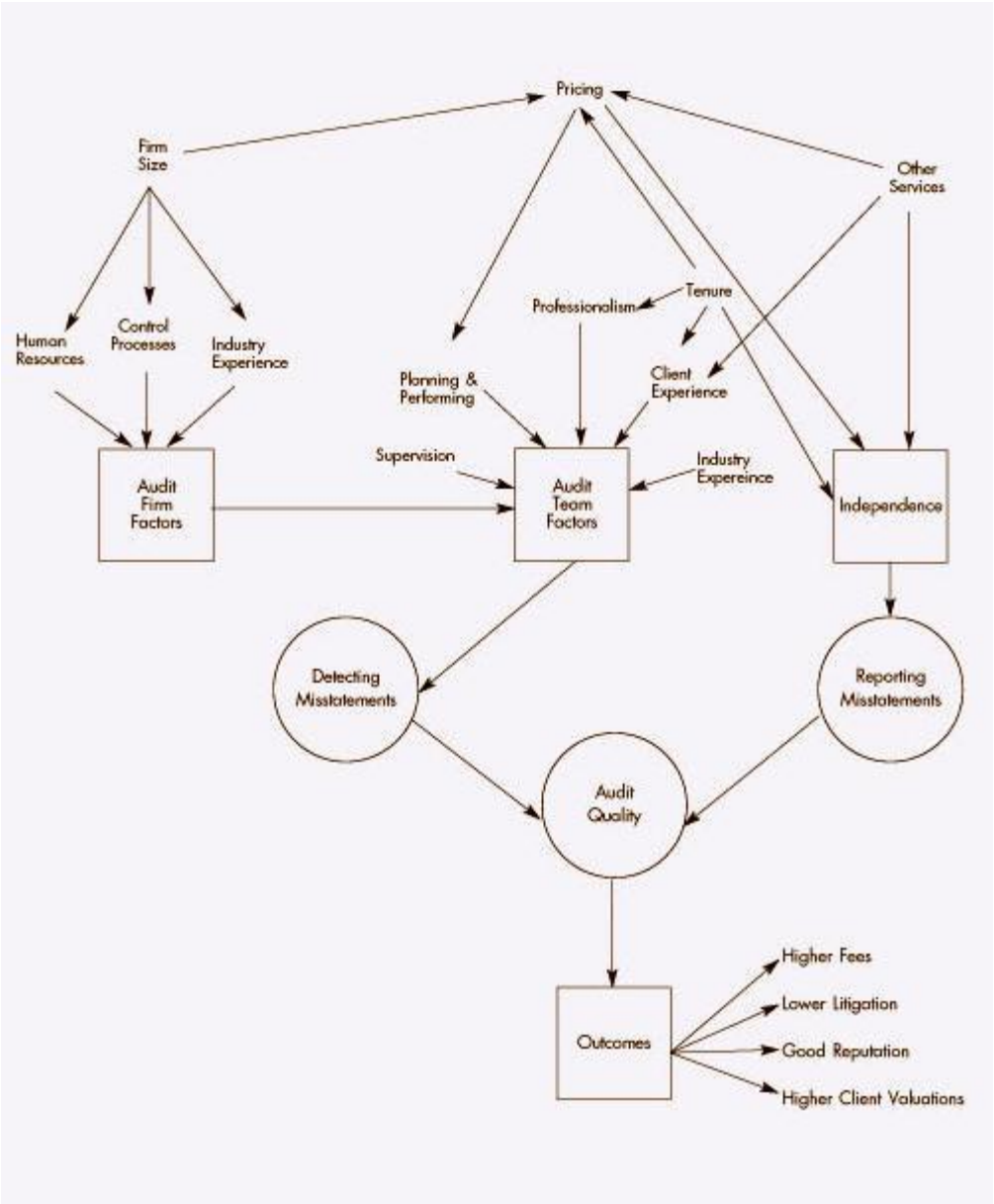

Figure 2.1: (Source: Wooten 2003) - Model of Audit Quality

To summarize, AQ can be defined as the ability of the auditor to support appropriate opinions of the audit which result in a financial report free from error or any material misstatement. Since AQ is affected by three main parties (regulators, clients, and audit firms), the factors or attributes of each party can be used as measurements for AQ.

Wooten (2003) explained the factors available in (Figure 2.1) at Table No. 2.1 (Audit quality model) as the following:

Table 2.1 Audit quality model (Factors)	
Factors	**Indicating**
Factors related to detection misstatements:	Detecting material misstatements affects the efficiency of the audit team to perform the audit, which in turn affects the resource management and quality control systems of the audit firm. Many studies have used firm size as an alternative to these audit team and audit firm factors, and their results are arguable.
Firm size:	The most commonly studied factor was the size of the audit firm. Researchers identified large firms as the Big 4 or (their precursors). The results showed that large firms receive larger AFs than smaller firms. Even after controlling risk of audit, the size of the client, and the complexity of the audit, there is an additional premium on the basis of auditor identity. Attempts to determine whether this premium is attributable to higher AQ have been mostly not successful. DeAngelo (1981) theorized that the audit in a large company is performed better because they have a high reputation at stake. In addition, because large companies have more resources at their disposal, they can attract more highly-skilled employees. Others have theorized that large auditors attract premium fees due to their greater wealth, which reduces the exposure of clients in litigation (Lennox, 1999). Others have theorized that there is no real difference to the AQ, but the perception is that large companies are well known, and gain a reputation for high quality. Interestingly, the AICPA had maintained that AQ is an independent audit of the size of the firm. On the whole, the evidence is mixed, but it appears that there is some relationship between quality and size. What is not clear is whether this difference is perceived or actual (Wooten, 2003).
Audit firm factors:	Researchers have turned to expert panels to recognize the characteristics at the level of the firms. Firms that are able to allocate sufficient resources to training and hiring the best staff and then give them a methodology for a sophisticated audit are likely to excel in the detection of mistakes and fraud in the financial statements.
Human resources:	Experts link higher quality with company a capable to find staff who are up to date professionally and technically. This dimension is linked with the training and hiring of people. If companies can attract the best employees, they have the ability to become more efficient auditors. Similarly, companies that provide training enable their employees to learn the necessary knowledge and skills to do the audit functions well.

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Control processes:	Experts also link high quality with a company that has strong controls in place during the audit process. GAAS requires the company to require auditors to plan for their own audits adequately and maintain a quality control system. There is a lot of leeway, however, in determining how prescriptive and formal systems need to be. Companies that have a quality control system that is more rigorous and systematic audit processes are less likely to have any material errors discovered during their audit procedures. Various studies have supported the concept that a strong methodology of audit is linked to higher quality. Carcello et al. (1995) found that the audit approach is more organized. GAAS requires auditors to have operations in place for continuation and acceptance of customers. Research indicates that the Big 6 (now big 4) were less likely to accept risky customers (Raghunandan and Rama, 1999). Research indicates that companies participating in a peer review process are likely to report financial disclosures correctly (Krishnan and Schauer, 2000). Companies which closely monitor the results of the process of audit are linked with higher levels of quality. Malone and Roberts (1996) found that the stronger quality control systems practiced by auditors, the less likely they engaged in poor AQ behaviors, such as improper signing off on the audit. steps. Thus, a strong system of quality control produces a higher level of quality.

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Audit Team Characteristics	When auditing and accounting experts were surveyed, they suggested that the factors of the audit team were more important than company-wide factors in determining AQ. The company which employs well qualified people, implements strong control processes and has experience in the industry will likely field a higher level of quality audit team.
Partner and manager attention:	Experts reported that the director and partner attention to engagement is linked with AQ. GAAS requires that the audit be supervised properly. The availability during fieldwork of an experienced auditor provides reliable responses to the questions of the team.
Planning and conduct of the audit work:	GAAS reports that the audit must be implemented and planned to have reasonable assurances of detecting errors properly. Companies that have the processes and staff in place to ensure proper performance and planning perform better.
Professionalism, persistence, and skepticism:	Expert panels also identify the integrity of the assignment of individuals as a factor in detecting errors. Employees that show a high level of professionalism are likely to carry out auditing functions properly and would not sign off on uncompleted steps of the audit. Similarly, such staff are less likely to accept a lack of evidence.
Experience with the client:	Experts informed that experience with a particular customer leads to a higher level of quality audit. Employees on repeat audits are likely to get a better understanding of how the particular weaknesses and strengths in the systems of customer's accounting and processes of customer's business work. They have the ability to identify areas where most of the errors and risks of the prior years have occurred and then allocate more time to these areas.
Experience in the industry:	Work on several customers within the same industry allows employees to become an expert in the processes and procedures of that industry. By understanding common issues, risks, and weaknesses faced by a particular industry, the auditor can be more confident and consistent when assessing the evidence presented by the customer.

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Factors Related to Reporting:	The ability to properly report material errors depends on independence. If the auditor becomes a victim of emotional, financial or personal pressure, then the auditor's independence has been compromised and there is a greater chance that the AQ result will be poor. Tenure and audit pricing factors, and providing other services, are theorized to influence not only independence, but also the ability of the audit team to detect financial statement errors.
Pricing:	In order to avoid the loss of AFs in the future (and hence profitability for a particular customer), auditors may face pressure to overlook deficiencies of certain accounting reports. It is easier for the customer to change the auditors than for the auditor to get new business; so, there are some incentives for the auditor to comply to keep the customer. Researchers also tested whether the pricing pressure (low-balling) affects AQ. Clearly, if the company is receiving lower fees, then it can only restore profitability by reducing the amount of audit work, thus reducing the ability of the auditor to detect errors. If the auditor expects the customer to be their primary income stream in the future, questions arise about the financial independence of the auditor. Thus, the issue becomes a combination of pricing and tenure where the auditor should hold on to the customer in order to ultimately reach profitability and recover costs.
Tenure:	Tenure is related to both independence and factors of the audit team. Audit failure seems to be more common with both long and short tenures. After the auditors accept a new customer, some time is required to obtain an understanding of the customer and this leaves the auditor liable for the loss of any material errors. As tenure increases, the auditors obtain a more comprehensive understanding of the customers' risks and the auditor can adjust the process for the detection of errors and procedures of audit. Conversely, customers with long tenure have been linked with low AQ. Long associations have too much dependence on management representations, less rigorous audit procedures, and potential to breed complacency (Shockley, 1982; Deis and Giroux, 1992). The auditor can become very comfortable and not adjust the procedures of audit and customer to reflect associated risks and changing business. The auditor becomes less diligent and less skeptical in collecting evidence.

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Additional Services:	Researchers suggest that additional services provided to audit customers may affect the pricing. It is very likely that when the company provides both consulting and auditing services, some type of fee savings is given to the customer. The company may lose its independence if it becomes economically enslaved to the customer through receiving high fees unrelated to the audit. In addition, the client can be placed in a position of auditing their own work if the additional services relate to maintaining or installing the function of accounting. Until the SEC began requiring the disclosure of fees in February 2001, researchers were not able to collect very mch data on the amount of AFs in respect to non AFs. One initial study of 4,200 firms gives a preliminary indication that high consulting fees negatively reduce AQ and influence auditor independence (Elstein, 2001). It seems that companies that provide non audit services are more likely to give the customer flexibility in adjusting and recording the discretionary reserves that could be used to manipulate earnings in the future. Lastly, some auditors have claimed that there is already a positive relationship between AQ and providing extra services. They claim that providing extra services allows them to obtain a better understanding of the client's business processes.
In Brief:	Wooten (2003) states that the independence of the audit, the judgment of the audit, audit of the teams and the firms are the main contributors to AQ. An audit team and the audit firm factors (such as professionalism, audit planning, supervision, industry expertise, audit processes, and human resources) directly contribute to the auditors' competence and auditors' skill for finding errors and misstatements. The factors of the provision of NAS, AFs, and audit tenure not only impair the independent audit, but they also assist the effectiveness of the auditor.

In addition, the Financial Reporting Council (FRC) (2008) identified 5 key drivers of AQ: (1) A culture of audit firms, (2) Skills and personal AQ staff and partners, (3) factors beyond the control of the auditors which affect AQ, (4) reliability and usefulness of the audit reports, (5) the effectiveness of the process of the audit, (Table No.2.2 provides more details about the key drivers). The FRC (2008) provided recommendations which may help to improve AQ; the recommendations are the mechanisms of governance roles such as ACs and regulatory demands. An effective AC is able to enhance AQ through the communications with the auditors and through participation during the time of audit.

Table 2.2 : Detailed outline of the key drivers	
Driver	Indicators
1- The culture within an audit firm	The culture of an audit firm is likely to provide a positive contribution to AQ where the leadership of an audit firm: a. Creates an environment where achieving high quality is valued, invested in and rewarded. b. Emphasizes the importance of 'doing the right thing' in the public interest and the effect of doing so on the reputation of both the firm and individual auditors. c. Ensures partners and staff have sufficient time and resources to deal with difficult issues as they arise. d. Ensures financial considerations do not drive actions and decisions having a negative effect on AQ. e. Promotes the merits of consultation on difficult issues and supporting partners in the exercise of their personal judgment. f. Ensures robust systems for client acceptance and continuation. g. Fosters appraisal and reward systems for partners and staff that promote the personal characteristics essential to quality auditing. h. Ensures AQ is monitored within firms and across international networks and appropriate consequential action is taken.

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2- The skills and personal qualities of audit partners and staff	The skills and personal qualities of audit partners and staff are likely to make a positive contribution to AQ where: a. Partners and staff understand their clients' business and adhere to the principles underlying auditing and ethical standards. b. Partners and staff exhibit professional skepticism in their work and are robust in dealing with issues identified during the audit. c. Staff performing detailed 'on-site' audit work have sufficient experience and are appropriately supervised by partners and managers. d. Partners and managers provide junior staff with appropriate 'mentoring' and 'on the job' training. e. Sufficient training is given to audit personnel in audit, accounting and industry specialist issues.
3- The effectiveness of the audit process	An audit process is likely to provide a positive contribution to AQ where: a. The audit methodology and tools applied to the audit are well structured. o Encourage partners and managers to be actively involved in audit planning. o Provide a framework and procedures to obtain sufficient appropriate audit evidence effectively and efficiently. o Require appropriate audit documentation. o Provide for compliance with auditing standards without inhibiting the exercise of judgment. o Ensure there is effective review of audit work. o AQ control procedures are effective, understood and applied. b. High quality technical support is available when the audit team requires it or encounters a situation it is not familiar with. c. The objectives of ethical standards are achieved, providing confidence in the integrity, objectivity and independence of the auditor. d. The collection of sufficient audit evidence is not inappropriately constrained by financial pressures.

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4- The reliability and usefulness of audit reporting	Audit reporting is likely to provide a positive contribution to AQ where: a. Audit reports are written in a manner that conveys clearly and unambiguously the auditor's opinion on the financial statements and that addresses the needs of users of financial statements in the context of applicable law and regulations. b. Auditors properly conclude as to the truth and fairness of the financial statements. c. Communications with the AC include discussions about: o The scope of the audit. o The threats to auditor objectivity. o The key risks identified and judgments made in reaching the audit opinion. o The qualitative aspects of the entity's accounting and reporting and potential ways of improving financial reporting.
5- Factors outside the control of auditors	Factors outside the control of auditors which are likely to make a positive contribution to AQ include: a. An approach to CG within the reporting entity that attaches importance to corporate and financial reporting and to the audit process. b. ACs that are active, professional and robust in dealing with issues identified during the audit. c. Shareholders that support auditors, where appropriate, thereby increasing the likelihood that directors and management will comply with their obligations in relation to the preparation of reliable financial statements. d. Reporting deadlines that allow the opportunity to carry out an audit without undue reliance on work performed before the end of the reporting period. e. Appropriate agreed arrangements for any limitation of liability. f. An audit regulatory environment that focuses on the drivers of AQ.

Table No.2.2: (Source: FRC, 2008) - The key drivers of audit quality

2.2 A proper approach for measuring AQ

According to Wooten (2003), Niemi (2004), and Jensen and Payne (2005), the measurement of AQ is problematic and complex. In other words, the problematic and complex occur when the results of AQ is not immediately or directly observable. AQ control procedures attempt to maintain high levels of control over the process of audit, but the failure of the audit usually becomes known in the business failure context. When large companys have experiences with the failure of the audit, the business industry will know. It is impossible to know the number of poor AQ that simply go unpublicized and undetected. The company may conduct a poor AQ, but without the knowledge of the field work and planning, there can be no evidence if financial statements are not materially misstated. Similarly, if the implementation of poor AQ material misstatement is ignored, they may have no negative repercussions.

Since AQ is not observed, researchers look at AQ indicators or surrogates, such as expert opinions, to determine the outputs and inputs of the AQ. Other researchers use a more objective source of outputs to determine the AQ. If the firm gets very good ratings on the peer reviews, rarely has it to re-issue audit opinions, and has a low rate of litigation, then one can conclude that it performs high AQ. However, Francis (2004), Bailey and Grambling (2005), and PCAOB (2008) has recognized many possible measurements to measure the AQ in the academic research literature and in academic practice. These measurements have an indirect and a direct link with AQ, they are seen as perceptions, factors, behaviors as positive or negative (attitude), and indicators as specified in the section (2.1).

The possible measurements to measure the AQ is dependent upon the auditor during the process of the audit, which accept to complete the engagement of the auditing (Bailey and Grambling, 2005; PCAOB, 2008). These measures are linked with the compliance to procedures and auditing standards, and documentation or evidence of auditing (copies of all documents the auditor has sighted during the audit). The measurements are classified as input and output based measures.

Billy and Grambling (2005) recommend that the policies, processes and procedures of the audit (inputs) are related to the system of quality control of the firm of the audit.

These contain (1) how the firms of the audit assist and emphasize the desirable qualities (such as Auditor independence and objectivity, and professional's ethics of the auditor), (2) audit methodologies (such as audit procedures and policies), (3) Internal control (such as the audit firm's internal review), and (4) Human resources (such as independence and competence of the staff). Moreover, with regard to human resources, Bailey and Grambling (2005) recommend that the ability of auditors, auditors' skills and their competencies must be seen in a broader context, which exceeds the technical accounting and auditing skills. They dispute that the degree of professional skepticism of auditors might impact their professionalism when performing the audit. Therefore, the independence feature is desirable for each of the members of the team of the audit and the auditor when it comes to achieve the highest AQ.

In short, Bailey and Grambling (2005) argue that "If the AQ is defined in term of inputs, so inputs can be identified as the "right" people, the "right" will be applying the '"right" procedures and "right" tools in the "right" organizational culture that includes the proper internal control". The measurement of the output is related to the professional opinions (independent audit), and whether that opinion of the independent audit reflects the **"**management's assertions**"** and that involve the issuance of the financial statements through the opinion of the independent audit process and the restatements (Bailey and Grambling, 2005).

Another recommendation made by Bailey and Grambling (2005), PCAOB (2008) defined the measurements of the input as process and procedures that been taken into account to reach a given opinion of audit (for example, the experience levels of audit staff and audit partners, annual staff retention, and audit procedures used in the detection of fraud). The measurement of output refers to the process of auditing as results or evidences produced from the auditor. These results, for example, can be measured by the numbers of misstatements or errors detected and number of frauds discovered.

Generally, the possibility measurements to measure the outputs and inputs which are made by Bailey and Grambling (2005), PCAOB (2008) are limited to the factors in relation to the auditor during the process of the audit, which was accepted to complete the engagement of the auditing.

Those factors of AQ are behind the process of auditing itself. The users (audit clients) idea about the AQ is to demand one of an alternative measurement for measuring the AQ (such as, industry-specialist auditor, non-audit services fees, and AFs). Specifically, users reckon AQ on the basis of the reputation of the auditors. Khurana and Raman (2006) state that the users (audit clients) idea about the AQ is significant because it enhances the companies' confidence with the information provided in the financial report and it reflects the public's trust. Recognizing the importance of these, in the current research the measurements to measure the AQ will be on users (audit clients) idea.

Although many of the measurements to measure the AQ were used in existing studies, this research acknowledges the limitations of these measurements. For example, in respect to the measurements to measure the input, how can we make sure the consistency of the input has not decreased during the auditing (audit process)?, Perhaps, information about the key drivers of AQ, such as auditors' independence, experience, capability, reputation and education are difficult to find and obtain to the public. By using the measurements to measure the output, the results of the audit are not necessarily noticeable only after it has been conducting work because the information of AQ usually appears during a certain period of time during which it identifies material misstatements in the financial statement or restatement or business failure (PCAOB, 2008). The measures, for example the size of the company of audit which the AQ measures may not accurately reflect the reputation of the auditor. While some of the existing factors are believed to compromise the independent auditor, for instance audit tenure and non-audit services, it was also a dispute that these same factors can enhance the ability of the auditors and their knowledge. Most of the studies identify that, to some extent, some measures (such as specialist auditors of the industry) have proved the existence of a strong relationship with the highest AQ.

From the existing studies, no empirical literature has been found to assist some measures as the best indicators of AQ, this does not necessarily mean that these measures are insignificant; they might be complemented by qualitative research on the AQ.

In this thesis, three measures of AQ will be employed based on auditor independence opinion and auditor reputation, namely, non-audit services fees, AFs, and specialist auditors of the industry. These measures have been widely used in the previous studies in the field of auditing study, and each of measures is now reviewed.

2.2.1 NAS fees

The central arguments about non-audit services is concerned generally with the independent auditor and whether the combined services that are provided by auditing (such as services of non-audit services and auditing) are enhancing or reducing the independent auditor. On the other hand, it is a question of whether the combined services of non-audit services and audit are able to decrease or increase in the AQ. Beattie and Fearnley (2002) argue that there is no formal literature of independent auditor currently existing, and point out that most of the definitions of independent auditor mainly highlight the significance of integrity and objectivity of the auditor. Various researchers recommend that the combined services (such as services of non-audit services and auditing) may create potential benefits (Goldman and Barlev, 1974; Simunic, 1984; Wallman, 1996; Beck et al., 1988a; Arrunada, 1999a; 1999b; 2000).

These studies state that the joint provision of non-audit services and audit enhances the auditor's independence through the auditor's economic power and economies of scale. Economies of scale can be defined as reducing the costs (savings) that occur when the services such as (services of non-audit services and auditing) are combined and made by the same auditors. They can be classified into two main types of economies of scale, namely contractual economies of scale and knowledge spillover (Arrunada, 1999a; 1999b).

The Knowledge spillovers are obtained from the process of the transformation that has happened when both services use similar professional qualifications and / or information (Arrunada, 1999a; 1999b). For instance, when the auditor is planning for conducting the audit service, relevant information on the competency in information technology and the client's system of internal controls are both necessary to do the work. The qualifications and information are necessary for the auditor's job when the auditors are conducting auditing and giving advice on clients' financial information system. As referred to in Wallman (1996), the valuable information is obtained in both ways, when the auditors conduct auditing they will know more about the business of the client and this kind of information is important for the auditors when they do non-audit services.

The "contractual economies" is the second type of economies of scale, which occur from maintaining the reputation of the auditor and /or from better use of assets (for example, size), which have already developed when assurance and contracting quality in auditing or non-audit services. In addition, these contractual advantages are known as the label "one-stop shopping", which provides the supplier of / and the client for such services (Arrunada, 1999a). On the other hand, auditors and clients can help to lower the fees of the marketing for those services. Also, clients are assured that AQ is maintained to the highest level. Furthermore, the identification of the cost saving is beneficial to non-audit services, Goldman and Barlev (1974) and Nichols and Price (1976) produce a more complex view of auditor and client interactions.

They recommend that models of the economic power supply the independent auditor with a potential power to resist the conflicts between client and auditor. Goldman and Barlev (1974) recommend that the provision of non-routine services of audit (such as non audit services) can lead to a more independent auditor because the value of the auditor to and the power over the client will be increased.

In spite of the positive impact of the non-audit services, their joint supply continues to be disputable and they are viewed with doubt because of the potential to compromise the independent auditor (Panel on Audit Effectiveness, 2000; SEC, 2000; Beattie and Fearnley, 2002) and the auditor's economic dependence on clients will be occur (Beck et al. 1988a, 1988b; Simunic, 1984). The previous consistent evidence indicates that the investor and user may believe that non audit services impair independent auditors, Wines, 1994; Sharma and Sidhu, 2001; Firth, 2002; Frankel et al. 2002; Raghunandan, 2003; Larcker and Richardson, 2004) and this goes beyond the positive impact of non-audit services and reflects the decline in AQ.

The first debate against the joint supply provided from the audit (such as non-audit service fees) is a possibility that they will make the auditors financially dependent on their clients, and therefore they are less willing to stand up to client's pressure for fear of losing their business. As indicated by Simunic (1984) and Beck et al. (1988a), the joint supply of non-audit services and audit produce indirect effects to the existence of knowledge spillovers that create cost savings which lead to reduced marginal audit fees. For the purpose of keeping their clients, auditors will continue to have strong incentives to keep their clients happy, and therefore they lose their objectivity. The second dispute relates to the provision of non-audit services and maintains that they may reduce the independent auditor because of conflicts of interest with the parties, which arise during auditing. For instance, they may make auditing to their work, taking management decisions or representing the client's management in the event of litigation, and thus become very close to the client's management (Panel on Audit Effectiveness, 2000; SEC, 2000; Beattie and Fearnley, 2002).

Generally, empirical studies provide conflicting results about the relationship between the independent auditors and non-audit services. Hartley and Ross (1972) argue that the non-audit services are small issue to an independent auditor. Some researches indicate that the non-audit services have a small effect on the independent auditor (Craswell, 1999; Ryan, 2001) and a small number of researches recommend that the non-audit services provide significant advantages (Lai and Krishnan, 2009).

Several empirical researches find no significant association between and non-audit and independent auditor services (Barkess and Simnett, 1994; Craswell, 1999; DeFond et al., 2002; Chung and Kallapur, 2003; Ashbaugh et al., 2003), while other researches give evidence that the joint supply of non-audit services impair independent auditors (Wines, 1994; Sharma and Sidhu, 2001; Frankel et al. 2002; Firth, 2002; Raghunandan, 2003; Larcker and Richadson, 2004). In the present study, the regulatory concern that non-audit services may impair the independent auditor, indicating the highest supply of non-audit services is indicated as a decline in AQ.

2.2.2 Audit fees

The connection between AQ and AFs is recommended by the signaling hypothesis or reputation hypothesis (Lindberg, 2001). Capital models of reputation recommend that sellers use their resources for the purpose of building a reputation because buyers choose the sellers on the basis of their reputation (Klein and Leffler, 1981; Rogerson, 1983; Shapiro, 1983; Allen, 1984).

There are various discussions for the AFs theory as proxy for AQ. Various researchers recommend that the highest AFs are linked with the highest AQ, and this led to reimbursement for high prices of the capital's reputation (Big Size), specialist auditors for the industry, as well as increased efforts of auditors (Simunic, 1980; Palmrose, 1986a; Craswell et al., 1995; Ferguson and Stokes, 2002).

Craswell et al. (1995) state that the development of the reputation of the industry specialization consumes a higher cost and auditors' brand name therefore leading to higher AFs. The evidence recommends that the clients are willing to pay more (premium fee) for the auditors, who have good reputations in order to produce better AQ service, The auditors show the brand name to influence the Big 8/6/4 premium fee that is justified for high reputation capital, and thus move the differentiation of high quality compared with non-brand name auditors (Simunic, 1980; Palmrose 1986a).

Palmrose (1986a) argued that the auditors of Big 8 charge more fees (high AFs) for two purposes: they show (1) monopoly pricing (only those audit firms in an industry producing the services) or (2) higher AQ. After replacing the variable of the AFs for hours of auditing (working hours), the result supports that the Big 8 auditors are consistent with the providers of higher AQ. She suggest that "the big 8 appointment is a quality alternative, in that increased hours by big 8 auditors (hours of auditing) will reflect the main productive activities (acquisition of evidence) to provide higher levels of assurance (high level of quality) to the audits' customers". Together with the brand name of the auditors, previous research supports more evidence on the association between specialist auditors in the industry and AFs (fee premiums). Craswell et al. (1995) and Ferguson and Stokes (2002) state that the specialist auditors in the industry get more audit charges (fee premiums) over the brand name of non-specialist auditors in the industry, which shows a high AQ differentiation between them.

In another study, Wolinsky (1983) demonstrates that the price may be an indication of the differences in the levels of quality. Although sellers are potentially able to produce different and high levels of quality, the products of high quality are more costly. DeAngelo (1981) states that the large audit firms supply higher quality audits or auditors that get more audit fees have more resources for investment compared with the smaller audit firms. Thus, they contribute more to enhance the quality of their work

Elitzur and Falk (1996) indicate that the planned level of the AQ have positive association with AFs. They examine the AFs and planned AQ in a multi-period model. Usually, higher AFs might make auditors raise the AQ. Hoitash et al. (2007) also agreed that higher AFs will increase the effort of the auditor, and leads to higher AQs.

In recent researches concerning CG, the evidence indicates that less AFs can also be linked with a perceived higher AQ. This is due to the independent auditor taking into consideration that companies tied up by a strong internal control environment are expected to reduce the risk of audit and hence reduce the effort of the auditing and AFs through the effective internal CG mechanism (Tsui et al., 2001; Griffin et al., 2008; Boo and Sharma, 2008;Krishnan and Visvanathan, 2009). Cohen et al., (2002) state that the effectiveness of the internal mechanism of the CG is likely to contribute to higher AQ by reducing the risk and enhances the perceived integrity of financial reports. Yeoh and Jubb (2001) recommend that if the internal mechanism of the CG and auditor share a common factor it contributes to higher AQ (Independence from management). Griffin et al. (2008) show evidence that the request of the internal mechanism of the CG and auditing services are jointly determined by two compensatory relations. In the first relationship, it could be an increase in AFs because of the demand for the effectiveness of the CG.

The second relationship is linked with the reduction of the AFs, because the benefit of the auditing (by auditors) from strong CG thereby reduces the cost of the audit and audit risk. Both of the relationships help to have higher AQ. Consistent with this, Tsui et al. (2001) and Krishnan and Visvanathan (2009) recommend that those companies that separate the double role of the AC, chief executive officer and the chairman equipped with financial knowledge (expertise), and seen by the independent auditors to have a strong internal control environment reduces the audit effort and limitation risk, leading to lower AFs.

In addition to the empirical statement on the association between the AFs and AQ discussed above, many of the reports of the regulators emphasize the significance of identifying AFs and how they might impact the work of AQ (The Cohen Commission, AICPA 1978; Treadway Commission 1987; Cadbury Report 1992; Advisory Panel on Auditor Independence, 1994).

For instance**,** Cohen Commission (AICPA, 1978) recommends that the audit companies are required to recognize, control the AFs and other problems related to the audit resources (such as time, employees, and partnerships to participate in an audit) as these factors are likely to reduce the value of the AQ because of the high competition in the market of the audit. LIKEWISE, the regulatory body in the United Kingdom also pulls attention towards the AFs factor and how it can affect the AQ. As assumed by the ICAEW (2002) "*The AQ is performed only if it is the cornerstone of the company's strategy in general. Every single strategic decision that has been made by the company will eventually affect the quality, counting the policy of the company's on the AFs"*. In short, ICAEW claims that the policy of the auditing companies on AFs is one of the components that might impact the AQ.

In opposition to the advantage of using AFs as a proxy for AQ, the current research highlighted a constraint that AFs are a defective measure of the AQ. The AF is not exactly accurate as an indicator of appropriate effort of auditing as a measure of auditing effort is the number of hours of auditing (working hours). However, Deis and Giroux (1996) give some empirical statements that the hours of auditing and AFs are linked to the AQ in their analysis of three significant components: hours of auditing, AFs and AQ. Thus, it appears reasonable that more hours of auditing will lead to a high level of AQ and high level of AFs. Furthermore, to take into account the high level of AFs as a proxy for a high level of AQ is consistent with reputation hypothesis or signaling.

2.2.3 Industry-specialist auditors

The theoretical foundation for the use of industry specialist auditors comes from the reputation capital hypothesis as it applies to the big size auditors. Economic theories of product differentiation recommend that sellers spend their resources to build the reputation (Klein and Leffler, 1981; Shapiro, 1983).

In the audit market, there are two levels of reputation development. The first level requires audit firms to invest in their brand name reputation in order to differentiate the quality of their products. The second level requires big size auditors to differentiate the quality of their products amongst them. Due to the unique and complex features of certain industries, buyers demand industry-specialist auditors in order to deal with reporting requirements and specific accounting rules (Craswell et al., 1995). Such demands encourage the big size auditors to invest resources in a specific industry in order to obtain industry specific competency and knowledge.

Evidence suggests that specific training; knowledge and task specific experience can increase the auditor's competence (Ashton, 1991; Bonner and Lewis, 1990) and results in auditors seizing increasing numbers of audit clients established in specific industries. The auditor market share rises as the number of their audit clients increases. The largest share of the auditor's market is more likely clients imagining that the auditor will provide a higher AQ. This idea is consistent with studies showing that the firm's market shares indicate the quality of their own product (Smallwood and Conlisk, 1979; Shockley and Holt, 1983; Caminal and Vives, 1996).

The competency and industry specific knowledge that is possessed by the auditor represents the main element of their AQ. Taylor (2000) and Low (2004) argue that the auditor's knowledge of a clients' specific industry affects the audit-planning decisions and level of audit risk assessment. When the auditors have a better understanding and a higher knowledge of the clients' industries they are able to assess appropriate levels of audit risk and plan their own audit strategies, and this can help them to anticipate the possibility of misstatements.

The evidence also suggested that possession of industry specialist knowledge improves the performance of the auditor. Owhoso et al. (2002) examine the effectiveness of industry-specialist auditors in the detection of errors during the audit review process for two specific industries, health care and banking.

Their findings recommend that the experience of the auditors in a specific industry enables them to detect error more effectively than the non-specialist auditors. Auditors without specific industry experience perform below the nominal benchmark for detection of error. Similarly, Bedard and Biggs (1991) show that the auditors who have greater experience in manufacturing are the best in detecting errors than the auditors who have less experience in manufacturing.

Dunn and Mayhew (2004) found a positive relationship between disclosure quality and industry-specialist auditors. Their findings recommend that the auditors with industry specific knowledge are more able to help their clients in the development of industry specific disclosure strategies. O'Keefe at al. (1994) found that industry-specialist auditors are linked with the highest compliance with Generally Accepted Auditing Standards (GAAS) than non-specialist auditors. Carcello and Nagy (2004) report a negative relationship between the incidences of fraudulent financial reporting and industry-specialist auditors and this shows that industry-specialist auditors are less likely to be linked with financial fraud.

Various studies have linked the industry-specialist auditors with EM (Balsam et al., 2003; Krishnan, 2003a).These studies suggest that customers of industry-specialist auditors have lower discretionary accruals than the customers of non-specialist auditors. The findings recommend that the industry-specialist auditors are more likely to constrain EM and opportunistic behavior of management.

In other studies, regarding the market reaction, Knechel et al. (2007) state that when firms switch from a Big 4 non-specialist to a Big 4 specialist auditor, those firms face a significant positive abnormal return. Subsequently, the markets react negatively when firms switch from a Big 4 specialist to a Big 4 non-specialist. These results indicate that the market is aware of the differences of AQ on the basis of industrial specialization.

Beside the empirical evidence and theoretical justification for the connection between AQ and industry-specialist auditors, regulators and authoritative guidance have also emphasized the importance of the auditor being able to understand the client's industry setting before starting the auditing work (Knechel et al., 2007). For example, the UK Auditing Standard, ISA 300: Planning an audit of financial statement (APB, 2004), claims that the auditor needs to establish an understanding of the setting of the customer's industry before planning their audit strategies.

In brief, most of the previous studies indicate that the auditor's industry knowledge is a crucial element in the effectiveness and efficiency of audits processes, and that it increases the AQ services. The use of the industry-specialist auditor not only improves the auditing quality work, but is also seen to be of value to market participants.

2.3 Effectiveness of boards of directors

Fama and Jensen (1983) indicate that the BoDs is a high-level control system in the organization because of the power to make decisions taken by senior management. Evidence suggests that many of the characteristics of the board may affect their effectiveness in their supervisory role. These characteristics are: size, meeting frequency, financial expertise, and composition of independent non-executive directors.

2.3.1 Board of directors size

Board size is believed to be an essential aspect of effective decision making (UK CG, 2010). Vafeas (2005) indicates that the size of the committee and the performance of the directors have a nonlinear relationship. Both too large and too small a size of board is likely to make it ineffective. Lipton and Lorsch (1992) recommend that the size of the board must not be more than 8 or 9 directors. Jensen (1993) argue that when the board has more than 7 or 8 members, it is less effective due to the problems of coordination, and sequentially, contribute to lack supervision.

Although the average BoDs sizes are relatively big, prior studies present that smaller BoDs are more effective as directors can better communicate on them, and they are easier to manage. These factors enhance a more conversational resource. For example, studies of corporate performance and size of the board have shown that the smaller boards are linked with higher values in the market. Yermack (1996) examined 452 large U.S.A firms in the period between 1984 and 1991 and he documents a negative relationship between the firm value and board size. Eisenberg et al. (1998) also provides a similar conclusion on firm value and size of the board in a sample of mid and small-size firms.

In studies related to the formativeness of earning, Vafeas (2000) claims that the market participants viewed the information content of the earnings as higher in firms with a smaller board (with minimum of 5 members). This is probably due to the likelihood of them accepting personal responsibility as a liability and the commitment of each individual member. For comparison, the larger board, the responsibility of monitoring is divided between the members and less responsibility is carried by each member (Vafeas, 2000).

With regard to the studies of AQ, Abbott et al. (2004) indicate that firms that have an experience of a smaller size of board have a lower restatements incidence as smaller boards help to have effective communication, and there is less likelihood of the interruption of communications. This indicates that when the members of the board communicate effectively, they lessen the occurrence of misunderstanding and resulting errors, and they are more sensitive to issues that may affect the confidence of the investors or their shareholders, especially with regard to financial reporting issues.

2.3.2 Independent board of directors

NED are connected with responsibility for monitoring managers and thus reducing agency costs that arise from the separation of ownership and control in the management of the company day after day (Fama, 1980; Fama and Jensen, 1983; Brennan and McDermott, 2004). The U.K CG Code (2012) highlights that one of the main responsibilities of non-executive directors is "*satisfy themselves on the integrity of financial information and that financial controls and systems of risk management are robust and defensible*".

Therefore, higher sizes of independent NED on BoD are expected to motivate monitoring functions more effectively, which then leads to financial statements being more reliable. Also it has been found that the independent directors can develop their reputations in making the decision (Fama and Jensen, 1983) and provide an impartial management assessment of actions (Vance, 1983).

Prior studies indicate that an independent board is an effective monitoring mechanism. Beasley's (1996) study indicates that the largest rate of independent directors on the boards results in a negative impact on the financial statement re fraud. O'Sullivan (2000) and Carcello et al. (2002) document a positive relationship between the AQ and the proportion of non-executive directors on the board. This indicates that the independent board members demand more in-depth audit effort by the auditor, which leads to higher AQ. Similarly, a stream of literature on independent boards and EM indicate that firms that have a higher proportion of independent members of the Board faced a lower incidence of EM (Klein, 2002; Xie et al., 2003; Davidson et al., 2005; Peasnell et al., 2005). In brief, all of these studies recognize an independent board facilitates effective monitoring.

2.3.3 Board of directors expertise

The experience and knowledge of the BoD are important elements in confirming that the effectiveness of the supervision functions regarding the board. Carcello et al. (2002) suggests that the members of the BoD with experience of a higher number of positions are more demanding of high AQ work. Moreover, Chtourou et al. (2001) argue that directors with experience are less likely to be connected with EM. The conclusion of both studies show that the levels of highest board expertise lead to a higher incentive towards monitoring.

Furthermore, when the BoD has financial literacy they can understand the issues relating to the financial statements. Xie et al. (2003) found that the EM is less occurring in firms that are controlled by the BoD who has the background of financial and corporate. Similarly, Agrawal and Chadha (2005) argue that the likelihood of an earnings restatement is lower in the firms that BoDs are financially literate. Evidence from the independence auditor literature indicates that BoD with expertise in the financial arena tends to reduce the purchase of non-audit services from auditors because they believe that the provision of non-audit services compromises the independence of the audit (Lee, 2008).

In brief, all of these studies acknowledge that the BoDs who have specific experience and knowledge are useful in supervising the management. Since this thesis examines the EM and AQ, the financial knowledge and accounting are beneficial to the BoDs for a better understanding of the issues and financial statements related to financial reporting.

2.3.4 Board of directors meetings

One of the director duties is to attend the meeting so that they can vote on major decisions (Ronen and Yaari, 2008). Conger et al. (1998) indicate that more frequent BoD meetings improve the BoD's effectiveness. The board meetings are the main dimension of the BoD operations (Vafeas, 1999) and an indication of the efforts made by the directors (Ronen and Yaari, 2008).

Active BoDs that meet more often are more likely to perform their duties properly in accordance with the interests of shareholders (Vafeas, 1999), because more time in the meeting can be devoted to controlling issues such as conflicts of interest, monitoring management and EM (Habbash, 2010), and to put more effort into monitoring the integrity of financial reporting and to improve the AQ. A study was conducted by Xie et al. (2003), employing a sample of 282 observations, point out that the board that meets frequently may have time to look at issues such as EM. Their results conclude that the EM is significantly negatively associated with the number of the meetings of the board. Moreover, Vafeas (1999) found a positive relationship between the performance and board meetings.

However, most of the studies found an insignificant relationship between EM and board meetings. For instance, Ebrahim (2007) and Habbash (2010), who used a different period and sample found that the number of meetings may not restrict EM practices. Habbash (2010) gives his finding by indicating that the frequent meetings may not always be a characteristic of the active BoDs.

Carcello et al. (2002) and Krishnan and Visvanathan, (2009) indicate that the frequent BoD meetings lead to higher AFs, and this is consistent with the proposition that when the directors meet more often, they suggest a wider audit effort from the auditor, which improves the process of the audit.

In addition, Chen et al., (2006) examine 169 firms under Chinese Securities Regulatory Commission (CSRC) enforcement actions between periods of (1999-2003). They indicate that the higher frequency of BoD meetings reduce the likelihood of fraud because the frequent meetings allow the directors to recognize and resolve the problems, especially those that are related to the FRQ.

2.4 Effectiveness of audit committees

AC is one of the committees that will have been set by the BoDs, of which the main responsibility is with financial reporting. Aside from the benefit that is obtained from the establishment of the AC, previous studies indicate that meeting frequency of ACs, size, composition and expertise may affect tier effectiveness of monitoring (DeZoort et al., 2002; Walker, 2004).

2.4.1 Size of audit committee

The size of the AC varies and it depends on the needs of the company and the extent of the responsibilities delegated to the committee. According to the Bahrain CG Code: *"The board must establish an AC of at least 3 members a majority of which should be independent including the chairman"*. It seems that the size of the AC is also one of the important characteristics that relate to the effectiveness of the AC.

Consistent with the argument for an effective committee size , too small a committee size may mean that the insufficient number of directors are unable to perform their work in the committee, and therefore the effectiveness of monitoring is reduced (Vafeas, 2005). This is probably due to the individual director being unable to perform their duties as efficiently as the committee's functions are spread across a small number of directors. In addition to this, when the committee is too big, the performance of the directors may decline due to coordination problems and the process, and therefore this is defined as another reason for the weaker monitoring (Jensen, 1993; Vafeas, 2005).

Average ideal size of the AC is between three and four members (Vafeas, 2005; Xie et al., 2003; Abbott et al., 2004). Evidence of committee audit size indicates that firms that have larger ACs are more effective in monitoring management. Yang and Krishnan (2005) examined the relationship between quarterly management of earnings and size of the AC in 896 U.S.A firms in the years (1996-2000). They found that the management of quarterly earnings is lower for firms that have a high number of AC.

This may indicate that the presence of inadequate numbers of members of AC increases the ability function of the AC in terms of monitoring the integrity of financial reports. . In another study, Chen and Zhou (2007) found that firms with larger AC are more worried about the reputations of auditors and tend to assign the Big 4 auditors. In brief, the larger size of AC, the more effective they are in the monitoring of financial reporting.

2.4.2 Independent audit committee

The agency theory indicates that the independence (director) has fundamental qualities that contribute to the function of an effective monitoring committee (Fama and Jensen, 1983) and that the empirical evidence of the independence of the AC is consistent with this proposal. Various studies suggest that the independent AC are probably to be linked with avoidance of the fraudulent financial reporting (Abbott et al., 2000; Abbott et al., 2004) and more probably to be linked with lower EM (Klein, 2002; Xie et al., 2003; Bedard et al., 2004; Davidson et al., 2005), and lower earnings restatement occurrence (Agrawal and Chadha, 2005). Independent AC is expected to provide judgment, equitable assessment and to be able to effectively monitor the management.

In addition, Carcello and Neal (2000) provide evidence of the relationship between the disclosure choices of firms in financial distress and independent AC. They suggest that firms that have a higher number of independent ACs are less likely to receive initial going concern opinion of audit from the auditors. Moreover, Carcello and Neal (2003) indicate that the independent ACs are more effective in protecting the auditors from dismissal following the issuance of the audit report.

In a study regarding the AQ, Abbott and Parker (2000) and Chen et al. (2005) indicate that the presence of a higher number of independent NED on ACs increases the tendency to assign auditors with industry specialism. In brief, all of these suggest that independent ACs are connected with the higher FRQ and that it can be considered as an effective monitor.

2.4.3 Audit committee expertise

According to the U.K CG Code (2012), "*The board should satisfy itself that at least 1 of the AC members has financial experience"* (C.3.1). DeZoort (1998) argues that the experience of AC members in the auditing and accounting is necessary to obtain a sufficient understanding of the oversight tasks. He proposes the following:

> *"Audit and evaluation of internal control experience makes the difference in the members of the ACs' performance on the internal control oversight task. It is important, the members of the AC with the experience made internal control provisions more like those of experts (such as practicing auditors) without experience".*

In other words, the experimental evidence and regulatory concern indicates that the presence of knowledge and appropriate experience, particularly in the auditing and accounting, is likely to improve the ACs' judgment and performance. The experimental evidence of archival studies also indicates that the financial expertise of the AC improves the ability of monitoring and results in an increase in the FRQ of firms. Krishnan and Visvanathan (2008) examine the interdependence between the financial expertise of ACs and the FRQ, measured by the level of accounting conservatism, in a sample of 929 U.S.A firms from (2000-2002). They argue that, with experience in financial accounting, ACs can assess the efficiency of the appropriateness and nature of the accounting, constrain the aggressive policies of accounting, and provide incentives to avoid the risk of litigation. Their findings indicate that the ACs with accounting financial expertise increased the overall supervision function of the AC, and thus they were more likely to promote the preservation of accounting for ACs with non-financial or non-accounting expertise, especially in an environment where the BoDs was strong.

Similarly, DeFond et al. (2005) found that participants of the market react positively to the appointment of the expertise in financial accounting AC, but observed no reaction to the non-accounting financial expertise ACs. This is due to the fact that the appointment of the members of the committee with financial accounting expertise improves the function of supervision of the committees and thus provides a reliable signal to investors that firms are looking to the highest FRQ.

In addition, DeFond et al. (2005) suggest that the positive reaction of the market is focused on the firms that are relatively strong in the CG. Previous studies conclude that the financial expertise with AC complements the strong environment for CG by improving the ability of the BoD to increase the value of their firms and protect the interests of shareholders.

It has been indicated that the financial expertise of the AC is linked with the higher FRQ (Carcello et al., 2002; Abbott et al., 2003a) and less the likelihood of opportunistic earnings (Xie et al., 2003; Bedard et al., 2004). The reason for this is experience and the knowledge of finance that improves the ability and the function of the supervision of the AC to facilitate the effectiveness of the process of the financial reporting. Overall, the empirical evidence supports the assumption that the AC with financial expertise has improved the function of their effective monitoring.

2.4.4 Audit committee meeting

Various studies indicated that firms that have the larger number of meetings of the AC has less financial re-statement (Abbott et al., 2004), are less probably to be authorized for accounting aggressively and fraud (Abbott et al., 2000; Beasley et al., 2001) and are connected with a lower incidence of management of earnings (Xie et al.,2003). These studies indicated that ACs who meet often during the fiscal year related to effective monitoring. The more they meet the more efficiently they discharge their supervision duties. Therefore, the high number of meetings of the AC, the more their monitoring function is improved.

In another study, Krishnan and Visvanathan, (2009) found the existence of a positive relationship between the AFs and meetings of the AC, suggesting that firms that have the higher number of AC meetings demanded more collateral and a higher AQ from their auditors. In order to provide more safeguards and higher AQ, the auditors may need to carry out additional work of audit in terms of increased levels of audit testing and expanding the scope of the audit, which results in both a higher AQ and higher AFs. Therefore, the high number of meetings of the AC, the more their function of supervision is improved.

2.5 Earnings management

According to Fields et al. (2001) and Watt and Zimmerman (1990), EM can derive from the flexibility of accounting choices that are made by GAAP. The GAAP allows managers to provide assumptions and estimates according to their own business environment and to select the appropriate reporting procedures. Furthermore, with the alternative on offer, the manager may select the reporting procedures that can benefit and increase the wealth of all contracting parties (Watt and Zimmerman, 1990). As a result, accounting choices may create the EM problem. Such a problem, for instance, investors, cause shareholders and debt holders to be unable to distinguish the true economic value of the firm because the reports do not accurately reflect the actual performance of the firm.

Schipper (1989) defined the EM "*management disclosure in the sense of purposeful intervention in the external reporting process, in order to get some private gains to managers or shareholders".* Healy and Wahlen (1999) argue that EM occurs when managers use their judgment in the preparation of financial statements with the intention of non-reporting on actual economic performance of the firm or in order to obtain the benefit of the (adjusted figure). Consistent with this description and definition of the benefit of a study of EM views management's opportunistic behavior.

Managers of the firms engage in opportunistic earnings for several reasons, such as to obtain bonus-based compensation (Healy, 1985; Holthausen et al., 1995; Gaver at al., 1995), the avoidance of debt contract violation (DeFond and Jiambalvo, 1994; Sweeney, 1994), prevention of decreases of the earnings and losses (Burgstahler and Dichev, 1997; Barth et al., 1999), and compensation for political or regulatory costs (Jones, 1991; Cahan, 1992; Han and Wang, 1998).

Agency theory suggests that one way to control the behavior of the agent is through their compensation contracts, enabling the interests between the agent and the principal to be perfectly aligned (Jensen and Meckling, 1976). Such contracts, for instance, can be formed between managers and shareholders or as debt covenants between lenders and managers. Since compensation debt covenants and contracts usually connect to a number of accounts, such contracts create incentives for managers to manipulating earnings (Watt and Zimmerman, 1978).

Healy (1985) assumes that managers are more likely to select income increase accruals when their bonus plans are not binding and income decreasing accruals when their bonus plans in the minimum or maximum levels are binding. She argues that when the earnings cannot achieve the target of earnings and are very low within the procedures of the accounting, the incentives for managers to accelerate write offs, this approach is known as (taking a bath) or further reduce current earnings in terms of the deferring revenue. These actions, however, do not necessarily affect the current bonus awards, but may help to achieve the goal of future earnings. In contrast, Gaver et al. (1995) found the managers choose income increase accruals when earnings before discretionary accruals fall below the lower bound (the bonus plans), and vice versa. They argue that their results are more compatible with the hypothesis of smoothing of income that states that managers manipulate earnings in order to ensure current earnings reach expected or normal earnings target and reduce the difference of reported earnings.

Holthausen et al. (1995) found similar results to Healy (1985), and he argues that the results of Healy may be sensitive to the particular model used to estimate the accruals of discretion and found no evidence that connected the income decreasing accruals with lower boundary. In brief, these studies concluded that the scheme of plans of bonus incentives for managers to manipulate earnings in order to maximize their bonus award.

Sweeney (1994) examined a sample of firms before violation of accounting based restrictions in debt agreements. She finds that when managers of firms in technical default are approaching a violation of the covenant they are more likely to report increasing accounting changes in order to compensate for the debt constraints. DeFond and Jiambalvo (1994) provide similar results and conclude that the debt covenants affected the decisions of the manager's accounting during the year of the violation and in the previous year.

In general, the stakeholders and participants of the market seem to reward the firms that have higher incomes or are positive more than firms with less incomes or are negative, and therefore the managers who manipulate firm earnings need to meet these expectations. Burgstahler and Dichev (1997) give evidence for the managers who manipulate firm earnings to avoid losses and decreases of incomes. Specifically, the results on the distributions frequency in incomes showed that there are unusually higher frequencies of small increases in incomes and small positive and low frequencies of small decreases in incomes and small loss incomes are unusual. Barth et al. (1999) suggests that firms with increasing earnings patterns are likely to have high income multiples (higher earnings coefficient).

Studies related to the political cost or regulatory, Cahan (1992) found that the company's managers under antitrust violations reported income decreasing accruals during the years of investigation. Similarly, Jones (1991) indicates that managers are liable to report on income decreasing accruals during the year of application for import relief in order to get relief benefits, such as a reduction in quotas or increases in tariff.

Han and Wang (1998) examine the opportunistic earnings in 2 separate groups of firms: firms of petroleum refining, gas and oil industry, during the Persian Gulf crisis in 1990. Their finding indicates that the firms of petroleum refining used the income decreasing accruals to reduce the possibility of adverse political actions.

In brief, the above motivations have been reviewed and may reflect the opportunistic behavior on the management's part. This evidence indicates that the managers of the firms use their discretion to manipulate reported earnings, and therefore monitor the roles of the BoDs, the external auditors and the AC in order to restrict behavior to manipulate earnings.

2.6 Accruals based earnings management

There are many potential instruments used by managers to manipulate EM. This includes flexibility in the method of accounting, accrual accounting and income smoothing. Among other things, the management are more in favor toward the accounting of accrual, due to the low cost and difficulty to monitor (Young, 1999).

Accruals can be divided into two elements: the non-discretionary accruals and discretionary accruals. Discretionary accruals are also known as managed accruals or abnormal accrual, which always relate to manipulated earnings. While the non-discretionary accruals refer to normal accruals or non-managed accruals. These terms are used interchangeably in studies of EM (Kang and Sivaramakrishnan, 1995).

McNichols (2000) identified three key measures of discretionary accruals in the previous literature. These include the specific accruals model, frequency distribution approach and the aggregate accruals model. Various models are introduced with respect to the aggregate accruals such as DeAngelo's (1986) model, Healy's (1985) model, Jones's (1991) model, the modified Jones's model from Dechow et al. (1995), and the performance adjusted discretionary accruals model by Kothari et al. (2005).

The main differences between the models are how the researcher divides the non-discretionary accruals component from the total accruals and their ability to accommodate changes in the economic conditions of the firm. The DeAngelo (1986) and Healy (1985) model supposed that non-discretionary accruals are constant, and considers these restrictions to be unrealistic because the accounting accruals change in response to economic conditions (Kaplan, 1985). As an alternative, Jones' (1991) model, Dechow et al. (1995) modified Jones' model and the performance adjusted discretionary accrual by Kothari et al. (2005) controls the various forms of non-discretionary accruals by taking into account the changes in total revenue, receivables and assets as well as performance of the firm (such as return on assets). In fact, Jones (1991) and his modified models are identified in the literature as the most effective models for detecting EM (Dechow et al., 1995; Young, 1999).

Regarding specific accruals, discretionary accruals are an estimate based on single accruals. Examples of specific accruals models include the provision of residual for bad debts (McNichols and Wilson, 1988), casualty insurers and loss reserve property (Petroni, 1992), tax expenses (Philips et al., 2003) and provisions for loan losses (Wahlen, 1994; Collins et al., 1995; Beaver and Angel, 1996). McNichols and Wilson (1988) argue that when specific accruals are a small part of the discretionary component, they may fail to reflect the EM in cases where there is manipulation of other discretionary components. Therefore, stated differently, the aggregate accruals models lead to a more comprehensive research design to grab the discretionary components.

The frequency distribution approach focuses on the earnings behavior where there is a specific intent (for example, avoid earning decreases or losses) or certain thresholds (for example, to support the recent performance, report positive profits, and meet the expectations of analysts).

This approach has been developed by Burgstahler and Dichev (1997) and Degeorge et al. (1999), respectively. McNichols (2002) argues that the distribution approach provides specific forecasts and related to which firms will manage earnings rather than simply measuring the size of managers' opportunistic earnings. In other words, the approach of frequency distribution cannot conclude EM activities, which are the main concern of this thesis.

In brief, the research designs of EM are different and the advantage of each approach relatively depends on the research question. According to McNichols (2000), if the aim of the research is to examine the magnitude of EM, the aggregate approach is more suitable because specified accruals are relevant to tests for associations between hypothesized factors and specific accruals require a researcher to model every accrual component according to the hypothesized factors. In addition, the results of the specific accruals are difficult to generalize when specific accruals are not sensitive enough. On the other hand, the frequency distribution approach can't be used to determine the magnitude or level of opportunistic earnings. The aim of this thesis is to study the relationship between ACs, effective boards, and AQ in constraining EM. Thus, the magnitude of earnings or activity levels of management towards opportunistic earnings are critical component of the investigation. Thus, for the purposes of this thesis, the aggregate approach is more convenient when compared with the frequency distribution approach and the specific accruals approach. There are three models of aggregate accruals that will be used: a cross sectional Jones (1991) model, a modified cross sectional Jones model and the model of performance adjusted discretionary accruals. These models will be explained in Chapter four (Methodology**)**.

2.7 The relationship between the AC, BoDs, and AQ

The following section reviews previous studies that examined the relationship between effective boards and AC to different proxies of AQ (Example. engagement with litigation against auditors, auditor tenure, AFs, non-audit service fees, restatements, industry-specialist auditors, big size auditors, fraud, and the appropriateness of continuity audit opinion). These studies indicate that many of the characteristics of boards and ACs, reviewed in Section 2.3 and 2.4, are associated with effective monitoring which enhances the overall FRQ, especially the AQ services. Various studies indicate that the ACs and boards of directors may influence the choice of an external auditor (Knapp, 1991; Beasley and Petroni, 2001; Abbott and Parker, 2000; Chen et al., 2005). The selection criteria that are used are based on the auditors' abilities and skills in enhancing the process of audit. Knapp (1991) examines the conduct of members of the AC and their choice of external auditors. He argues that ACs seem more likely to choose Big 8 auditors than non Big 8 auditors because Big 8 auditors tend to report any misstatements of material that they discover during their audit work. Moreover, he points out that the members of the AC believe that during the early years of the audit engagement there is a gradual improvement in the AQ due to the impact of a learning curve. However, members of AC also tend to recognize that during the subsequent years of the client and auditor relationship the AQ may gradually decrease because that relationship could weaken the independence of the auditors.

Abbott and Parker (2000), Beasley and Petroni (2001) and Chen et al. (2005) examine more specific characteristics of ACs and boards regarding the choice of industry-specialist auditors. As far as the current study is concerned, these are the only studies in this area that are based on samples of the United States and Australia. Industry-specialist auditors are more requested because they are more reliable than the auditors of non-specialists to detect errors (Bedard and Biggs, 1991; Wright and Aright, 1997), and frauds (Johnson et al., 1991; Carcello and Nagy, 2004). Abbott and Parker (2000) examined the proportion of independent non-executive directors on ACs and boards as well as the meetings of the AC.

They point out that the ACs with only independent non-executive directors which meet at least twice a year are more likely to hire industry-specialist auditors. They also report insignificant relationships between the proportion of independent non-executive directors on the boards and recruitment of industry-specialist auditors. Using a more specific sample, Beasley and Petroni (2001) argue that the property liability insurers which have a higher proportion of non-executive directors on their boards tend to use industry-specialist auditors. Chen et al. (2005) examine the characteristics of the ACs and boards of the top 500 Australian companies. They indicate that the AC with a higher percentage of NED is more likely to hire industry-specialist auditors. However, they do not find a statistically significant relationship between the meetings and the experience of the AC and hiring industry-specialist auditors.

Abbott et al. (2004) argue that the financial restatement may indicate inefficiency of financial reports because it indicates that the auditors have failed to identify errors in previous financial statements. Such inefficiency can be considered as being indicative of a lower quality of both financial reporting and auditing (Kinney et al., 2004). Abbott et al. (2004) indicate that AC with independent members that are active and have financial experiences are more efficient in monitoring the financial reporting process and this leads to fewer incidents of financial restatement. Consistent with this evidence, Agrawal and Chadha (2005) found that the ACs or boards with independent directors who have financial expertise are also linked with a lower incidence of restated earnings.

With regard to fraud, Beasley (1996) suggests that a higher proportion and smaller size of boards of non-executive directors improved the function of the boards in monitoring the behavior of the top managements, especially in the prevention of financial statement fraud. However, her finding on the establishment of the AC is not significantly related with the fraud incident, this contradicts McMullen's finding. McMullen (1996) mentions that the establishment of the AC encourages the higher FRQ for fewer lawsuits for fraud, less quarterly earnings restatement, less illegal action and less Securities Exchange (SEC) enforcement.

With a similar area of study under the SEC samples enforcement, Dechow et al. (1996) argue that where the BoD is dominated by management, exercising the functions of its dual role, the CEO is also the founder of the firm; they are more likely to engage in less earnings manipulation representative of outside block holders and no AC.

Using more of the variables of the AC, Abbott et al. (2000) suggest that ACs composed of solely independent non-executive directors that meet at least twice a year encounter fewer fraudulent financial statements. This result supports the effective role of the independent non-executive directors as a key to monitoring auditing process and financial reporting. Chen et al. (2006) examine the relationship between the characteristics of the BoDs and financial fraud in China. They found that firms with BoDs which consist of a higher proportion of independent non-executive directors, and that have a higher frequency of meetings, are less likely to commit fraud. However their result to the size of the board is insignificant related with the incidence of fraud.

Carcello and Neal (2000) examined the association between the likelihood of going concern opinion of audit and AC composition in 223 United States companies that experienced financial distress during 1994. They indicate that the higher number of directors of affiliated (Grey directors) of the AC, the lower probability of auditors in the issuance of going concern audit reports. This means that the predomination of affiliated directors in ACs are able to influence the decision of auditors to issue an audit opinion (i.e. instead of issuing a report amendment, the auditor issues an unmodified report) and the exclusion of auditors in the event of their refusal to issue a clean reports. They also suggest that ACs with greater independence, equipped with lower stockholding and financial expertise are more effective in maintaining the auditor against dismissal after the issuance of new going concern audit reports (Carcello and Neal, 2003).

Previous studies on the relationship between ACs and boards of directors to AFs can be viewed from different perspectives. The demand based perspective suggests that the AC and effective BoDs demand greater assurance and higher quality audit from the external auditors in order to protect their own interests (Carcello et al., 2000). Specifically, Carcello et al. (2002) argue that the BoDs may seek to buy the differential higher AQ to obtain enhanced assurances in order to protect their "Capital of reputation, promote the interests of shareholders and avoid legal liability". From this perspective, it is shown the higher AQ is indicated by higher AFs, which are consistent with the time of audit and extensive audit effort that are set by the auditors during the performance of their services.

In line with the agency theory in respect to the vigilance oversight function of non-executive directors, O'Sullivan (2000) argues that the firms which have a higher percentage of non-executive directors on the boards are more likely to carry higher AFs. In a similar vein, Carcello et al. (2002) examine the relationship between the meetings and composition of the board, and directorship, and the level of AFs. Their findings indicate that firms that have a higher percentage of independent non-executive directors, board meetings more frequent and higher number of multiple directorships tend to demand higher levels of assurance and a higher AQ.

They inferred the demand for different levels of AQ through the selection of auditors sized because the size of auditors refers to different levels of quality (DeAngelo, 1981). Carcello et al., (2002) claim that the higher level of assurance can be measured by the audit effort; "works of additional audit" that are beyond the auditors' cost minimizing level may result in a higher level of assurance.

In their analysis of additional, Carcello et al. (2002) replace characteristics of the board with the characteristics of AC (i.e. meetings, expertise and composition). Their results show that the independence of the AC and the AC expertise are positively associated with AFs. However, the result of the meetings of the AC is insignificantly associated with AFs.

They examined further by integrating all the characteristics of the AC and the board found that the results of the BoDs has not changed, but that none of the characteristics of AC are significantly associated to AFs. This may suggest that, when the board is present, the function of the AC may reduce as there is an increase in monitoring by the board. One of the limitations specified in Carcello et al. is that they did not consider a problem of endogeneity of their analysis.

They also report that the total number of independent non-executive directors on the board and the total number of meetings of the board are positively associated with AFs. In another study, Krishnan and Visvanathan (2009) examine the boards' characteristics and ACs and their relation to AFs for 801 firms in the Standard & Poor's 500 Index (S&P 500) between years (2000-2002). They found that the firms that have more regular board meetings and a larger size of the board are associated with higher AFs. They also suggest a positive relationship between the meetings of AC and AFs.

As an alternative to a demand based perspective, a supply based perspective is based on the auditor's opinion. If auditors believe that their client is surrounded by strong CG, this may indicate that the firm has effective internal control and this may reduce AFs and reduce the auditor's risk assessment.

In order to understand how the auditor's assess the overall audit risk, the current study will first explain the audit risk model. SAS 300: Audit Risk Assessments and Accounting and Internal Control Systems (APB 1995)**,** defined audit risk as "the risk that the auditors give an inappropriate audit opinion of the financial statements". Similarly, the International Standard of Auditing (ISA) - (UK and Ireland) 200: *Overall Objective of the Independent Auditor and the Conduct of an Audit in Accordance International Standards on Auditing (UK and Ireland),* (APB, 2009) describes the audit risk as *"the risk that the auditor expresses an inappropriate opinion when the financial statements are materially misstated".*

Audit risk models contain elements of inherent risks and control risks and the risk of detection. The inherent risk is the risk that is associated with the misstatement and error that occur in the entity, class of transaction level and account balance. Control risk is the risk that the internal control system and accounting of the entity is unable to detect or prevent errors in a timely manner. Detection risk is the risk of substantive procedures the auditor fails to detect, errors and misstatements. Both the control risk and the inherent risk will determine the detection risk. If the auditor assesses the control risk and inherent risk to be low, then the level of detection risk may be higher, leading to lower level of substantive procedures. In brief, the assessment of control and inherent risks are central in determining overall audit procedures.

In respect to the internal control system of the client, control environment and auditors assess the control procedures. The control environment is determined by the overall "Awareness, attitude and actions" of a BODs and management regarding internal control and its importance for their organization, while the control procedures relate to the procedures and policies that have been established (APB 1995).

By holding strong control procedures and the inherent risk constant, it is possible for the positive control environment (strong AC and BoDs) to reduce both the audit risk and the control risk. Cohen et al., (2002) point out:

> *In the case where a client's governance structure has effectively implemented a strong monitoring as well as a strong strategic perspective, there is the potential for both a more efficient (e.g., less extent of tests of details) and a more effective (greater assurance of the integrity of the financial statements)*

This may suggest that strong CG promotes an effective internal control environment. Effective internal control then, leads to a less objective test by external audit and results in lower AFs.

Various studies have indicated a negative relationship between the AC and the boards' characteristics with AFs (Tsui et al., 2001; Boo and Sharma, 2008; Krishnan and Visvanathan, 2009). Tsui et al. (2001) examine the roles of CEO duality and AFs by using 650 observations of Hong Kong firms. Their findings indicate that firms separating the roles of CEO and chairman tend to be lower AFs, pointing out that effective monitoring mechanisms are in place and that reduce the risk control and audit efforts. Drawing on the Tsui et al. (2001) framework, Krishnan and Visvanathan (2009) also indicate similar findings on the AC expertise and roles of CEO duality. As well as suggesting that the supervisory role is served more effectively by separately functioning chairmen and CEOs, they also claim that the auditors value the AC and financial expertise. The financial expertise of the AC reduces the risk of control of the firm, which in turn is reflected in lower AFs and less audit testing. Their findings on the experiences of the AC are incompatible with the study carried out by Abbott et al. (2003b), which indicate the existence of a positive relationship between AC expertise and AFs. They argue that Abbott et al. (2003b) use a broad definition of the expertise of the AC, which includes both the non-accounting and accounting financial expertise. They defined the financial accounting expertise on each of the directors as experience as certified public accountants, chief financial officers, financial controllers or auditors. The trend of this changing was sensitive to such differences in the definitions of financial expertise.

Previous discussions assumed that supply based and demand based perspectives are mutually exclusive. However, there is also the possibility that both perspectives can coexist and they are not mutually exclusive (Krishnan and Visvanathan, 2009). For instance, when the demands of the AC result in a higher AQ, it increases both audit efforts and the scope of the audit.

Simultaneously, the increase of the effectiveness may also correspond to a strong internal control which is reflected in the assessment of auditor to audit risk (Krishnan and Visvanathan, 2009). Boo and Sharma (2008) claim that, from the demand based perspective, the link between the AFs in regulated companies and CG (i.e. utilities companies and financial) is weaker because regulators share their monitoring and supervision the roles with the external auditor. Thus, they demand less extensive audit work in the presence of regulatory oversight. From the supply based perspective, auditors believe that when regulators have additional supervisory roles, their presence may reduce audit risk, therefore there is less need for audit testing, resulting in lower AFs. They also found that the presence of boards of multiple directorships or ACs relates positively to the AFs by encouraging more effort to audit, in order to protect the capital reputation, and tends to result in higher AFs (in the presence of the regulators). Moreover, they claim that the auditors believe higher audit risk due to time constraints of directors who serve on multiple boards and this also enhances the need for additional audit work. Goddard and Masters (2000) investigated two sets of UK data from 1994-1995. Their results show that in 1994, firms with ACs have higher AFs, but data from 1995 reveals that there is no significant difference in the level of AFs between companies, with or without ACs. This contradictory result may be due to improvements in internal controls and accounting systems that have been introduced by the regulators. Similarly, O'Sullivan (1999) also considers that there is no evidence that the AC and BOD's attributes affect the level of AFs. He explains that these findings may be of importance due to the effect of monitoring functions offset by increased audit efforts.

With regard to non-audit services fees, a very limited number of studies have investigated the relationship between the BoDs and the non-audit services or AC effectiveness. Even now there are only four studies that investigated these issues, namely: Abbott et al. (2003b), Lee and Mande (2005), Lee (2008), Adelopo (2010) and Zaman et al. (2011).

All of these are based largely on U.S.A firms. Abbott et al. (2003a) examined 538 firms that filed with the SEC between 5 February 2001 and 15 March 2001. Using the ratio of non-audit services fees to the total AFs, they indicate that firms that have ACs that are solely independent, which meets at least 4 times a year is likely to limit the amount of non-audit services that are purchased and, from their point of view, higher levels of non-audit services could potentially impair the AQ. In their further analysis, they found that the AC expertise is important with the ratio of non-audit services fees. Lee and Mande (2005) extend the Abbott et al. (2003b) study by modeling the non-audit services functions simultaneously and audit. They indicate that firms with solely independent members of the committee who meet at least 4 times a year to have a lower rate of non-audit services purchase. However, when they model the fees of non-audit services simultaneously, none of the characteristics of AC are significant. Lee (2008) in conjunction investigates the characteristics of AC and BoD along with the changes in the ratios of non-audit services fees (changes in the total non-audit services fees to total AFs). He claims that the effective AC (composed of solely independent members whom at least one third have financial expertise) and BoDs (at least half of whom are independent and more than the sample average of whom are financial experts) are likely to reduce the non-audit services purchased in order to strengthen the independence of auditors.

However, these three studies do not consider the characteristics of the size of the financial expertise or committees of the members of the board. Adelopo (2010) examines a more comprehensive range of board and AC characteristics (with the exception of financial expertise to the boards of directors) using the simultaneous equation of the non-audit services fees and audit from the FTSE 350 in the periods of two years 2005-2006. He found that the frequency of meetings of the AC and the levels of independence on the board are positively associated with both non-audit services fees and AFs. In addition, the results indicate that firms with larger sizes of the board are likely to have higher non-audit services fees but paying lower AFs.

Recently, Zaman et al. (2011) examined the relationship between the CG quality, non-audit services fees and AFs. The non-audit services fees and AFs are measured by a natural log of non-audit services fees and AFs, respectively. They found that large firms with effective AC are likely to purchase more non-audit services because of the complexity of its operations. Their study, however, does not control the size of the board and the financial literacy of the members of the board.

Overall, the studies of the effects of the different characteristics of ACs and boards do show a significant impact on the AQ. Most of these studies, however, are conducted by United States based researchers and the results cannot be generalized because there are different institutional settings, auditor incentives and legal environments in other countries. By taking advantage of three measurements of AQ (non-audit services fees AFs and the engagement of industry-specialist auditors), which is part of this thesis, it deals with the relationship between the characteristics of ACs and boards (such as the size, composition, meeting frequency and financial expertise) to the AQ. As far as the current study is concerned, there is no previous study that examines the relationship between industry-specialist auditors and CG in the Kingdom of Bahrain. Previous studies that relate to non-audit services fees and AFs to CG levels in the United Kingdom are limited to the study of several characteristics of AC and board (Collier and Gregory, 1996; O'Sullivan, 1999, 2000; O'Sullivan and Diacon, 2002; Adelopo, 2010; Zaman et al., 2011). None of these studies examine the financial expertise of the members of the board, which has been suggested by the United States studies to improve the FRQ (Xie et al., 2003; Agrawal and Chadha, 2005). These potential gaps demand further investigation since United Kingdom firms are unique in terms of the voluntary system of governance.

Consistent with the theoretical and evidence bases for measuring audit that are provided under section 2.2.2 to 2.2.3, this study considers higher AFs (O'Sullivan, 2000; Carcello et al., 2002; Abbott et al., 2003b), lower non audit services fees (Wines, 1994; Sharma and Sidhu, 2001; Frankel et al. 2002; Firth, 2002; Raghunandan, 2003; Larcker and Richardson, 2004), and the engagement of industry-specialist auditors (Bedard and Biggs, 1991; O'Keefe at al., 1994; Owhoso et al., 2002; Carcello and Nagy, 2004) to be associated with a higher AQ.

Based on the proposals of the agency theory, regarding the monitoring roles, and evidence of the previous literature, the current study assumes that the board of directors with smaller size, more regular meetings, more financial experience and more independent are defined as an effective board. Similarly, the AC with more members, which is solely independent, which owns financial expertise and that meets frequently, is also described as being effective. It is claimed that the ACs and BoDs with these characteristics require a higher AQ in order to maintain their capital reputation, to avoid legal exposure and promotion of the interests of shareholders.

The following show the constructing causal models and summaries of the hypotheses stated in a form that uses the non-audit services fees, AFs, and the engagement of industry-specialist auditors as proxies for AQ:

H1: There is a positive relationship between the size of the board and non-audit services fees (See Figure 2.2).

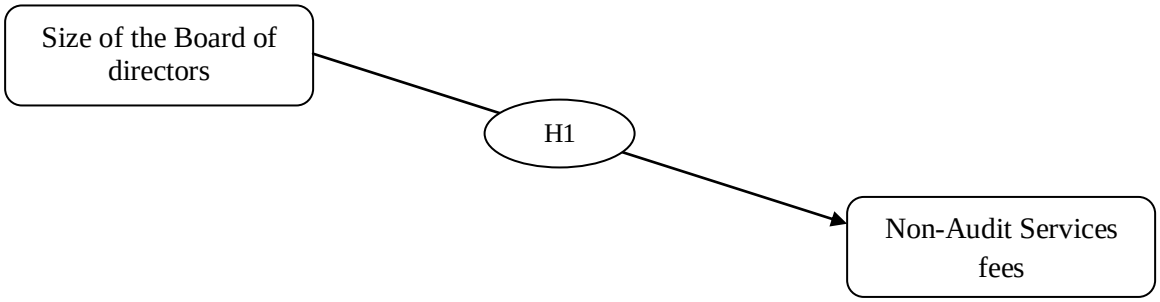


Figure 2.2: The relationship between the size of the board Non-Audit Services fees.

H2: There is a negative relationship between the size of the board and AFs (See Figure 2.3).

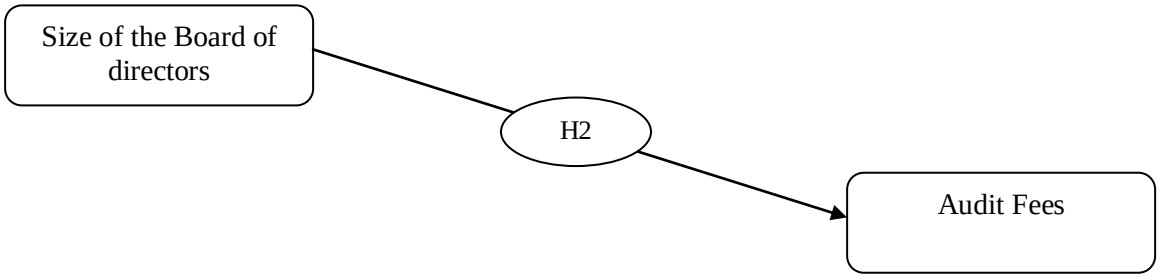


Figure 2.3: The relationship between the size of the board and AFs.

H3: There is a positive relationship between the independent board and AFs (See Figure 2.4).

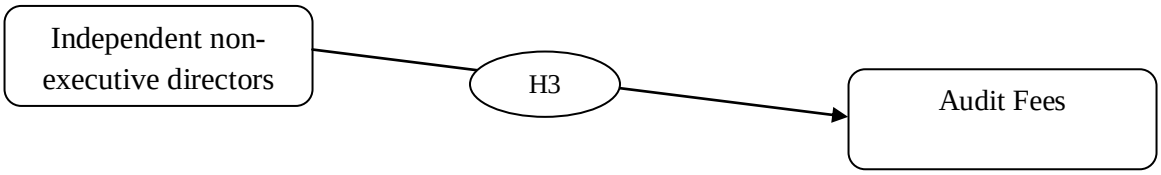


Figure 2.4: The relationship between the independent board and AFs.

H4: There is a negative relationship between the size of the board and the engagement of industry-specialist auditor (See Figure 2.5).

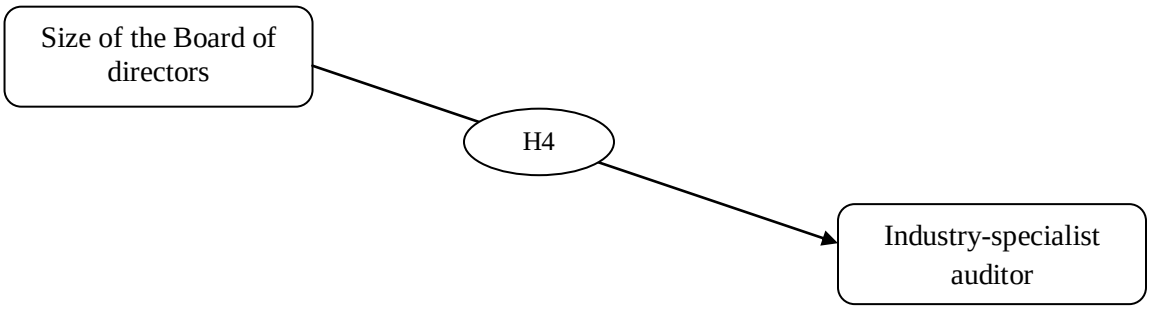


Figure 2.5: The relationship between the size of the board and the engagement of industry-specialist auditor.

H5: There is a positive relationship between the independent board and engagement of industry-specialist auditor (See Figure 2.6).

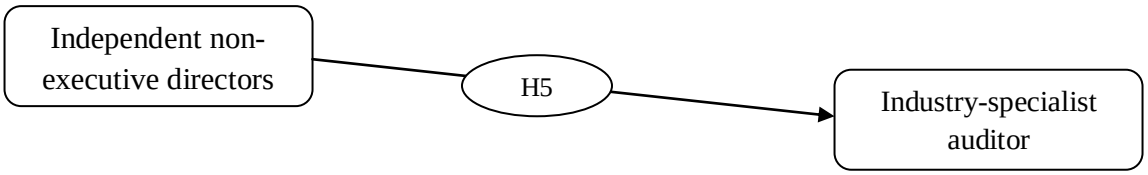


Figure 2.6: The relationship between the independent board and engagement of industry-specialist auditor.

H6: There is a negative relationship between the independent board and non-audit services fees (See Figure 2.7).

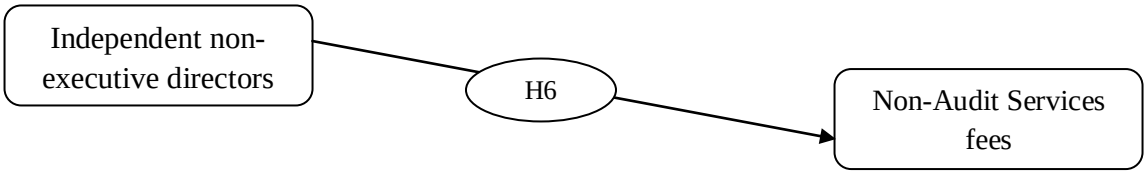


Figure 2.7: The relationship between the independent board and non-audit service fees.

H7: There is a negative relationship between the financial expertise of the board and non-audit services fees (See Figure 2.8).

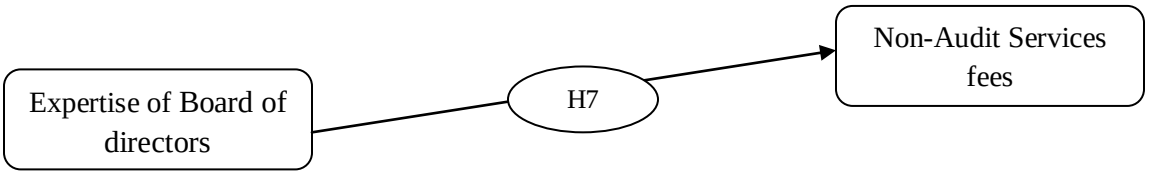


Figure 2.8: The relationship between the financial expertise of the board and non-audit services fees.

H8: There is a positive relationship between the financial expertise of the board and AFs (See Figure 2.9).

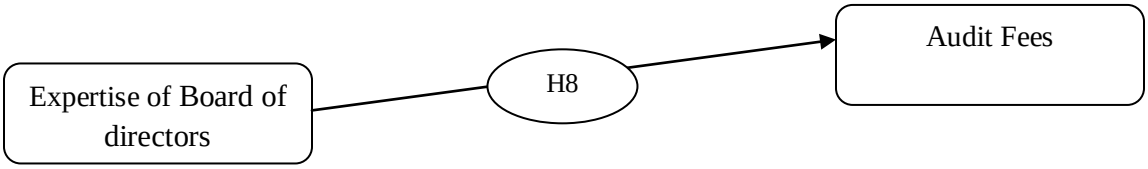


Figure 2.9: The relationship between the financial expertise of the board and AFs.

H9: There is a positive relationship between the frequency of the meeting of the board and AFs (See Figure 2.10).

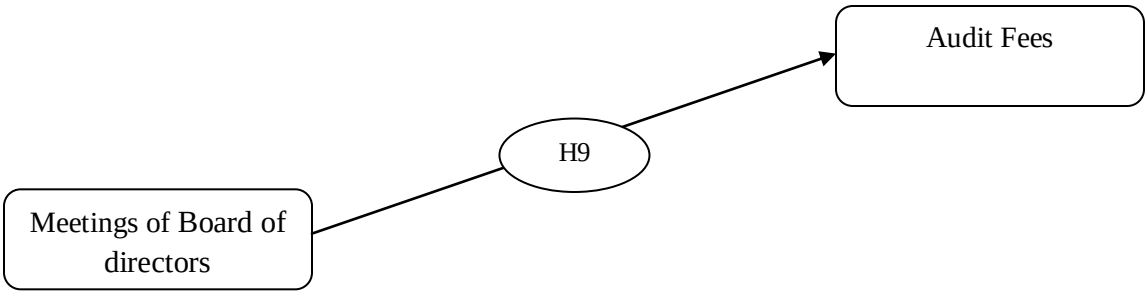


Figure 2.10: The relationship between the frequency of the meeting of the board and AFs.

H10: There is a positive relationship between the financial expertise of the board and the engagement of industry-specialist auditor (See Figure 2.11).

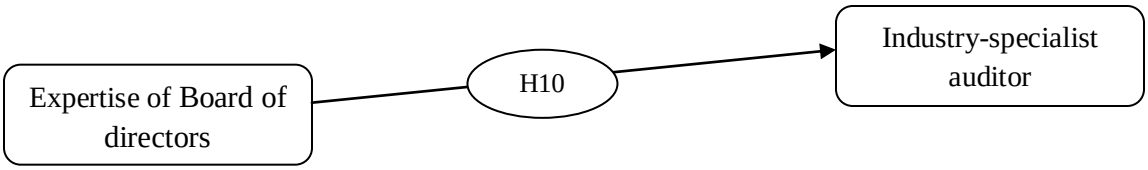


Figure 2.11: The relationship between the financial expertise of the board and the engagement of industry-specialist auditor.

H11: There is a negative relationship between the meeting frequency of the board and non-audit services fees (See Figure 2.12).

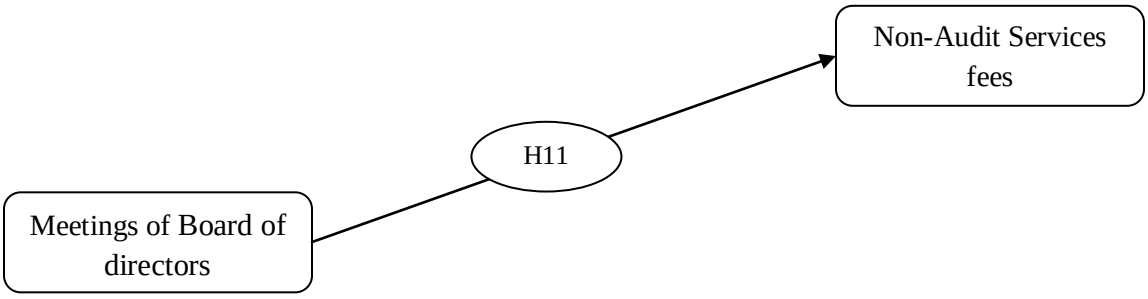


Figure 2.12: The relationship between the meeting frequency of the board and non-audit services fees.

H12: There is a positive relationship between the size of the AC and AFs (See Figure 2.13).

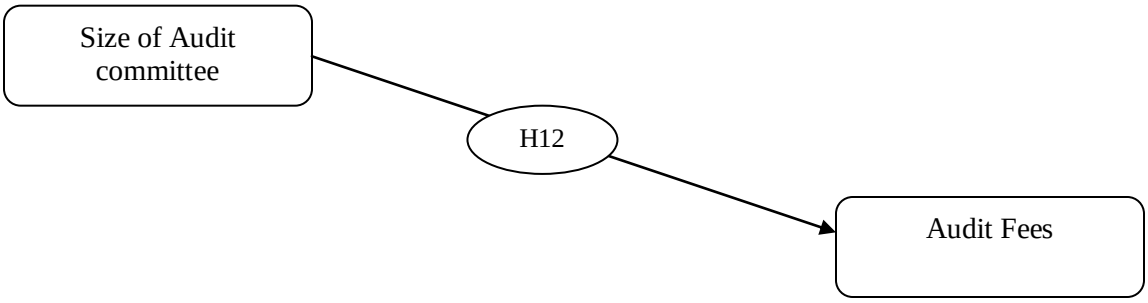


Figure 2.13: The relationship between the size of the AC and AFs.

H13: There is a positive relationship between the meeting frequency of the board and the engagements of industry-specialist auditor (See Figure 2.14).

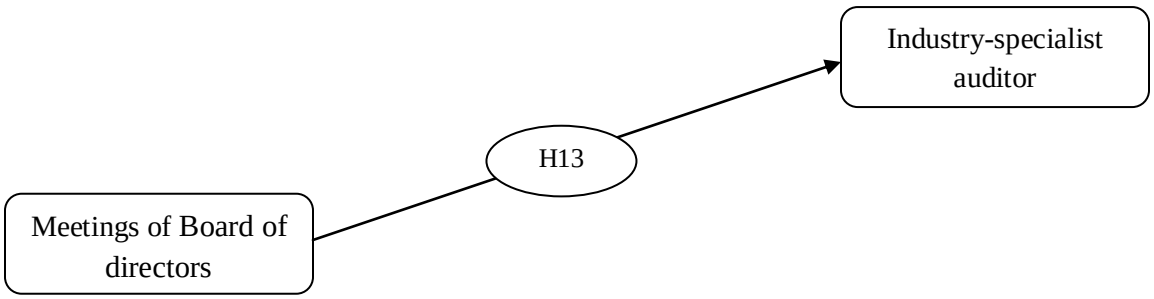


Figure 2.14: The relationship between the meeting frequency of the board and the engagements of industry-specialist auditor.

H14: There is a positive relationship between the size of the AC and the engagement of industry-specialist auditor (See Figure 2.15).

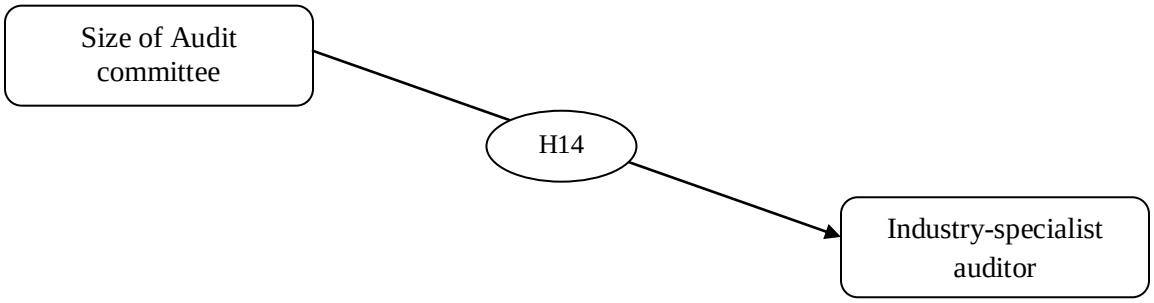


Figure 2.15: The relationship between the size of the AC and the engagement of industry-specialist auditor.

H15: There is a negative relationship between the size of the AC and non-audit services fees (See Figure 2.16).

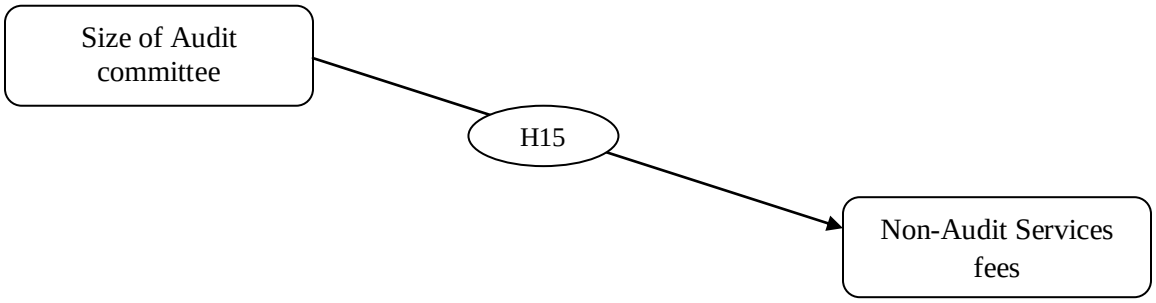


Figure 2.16: The relationship between the size of the AC and non-audit services fees.

H16: There is a negative relationship between the solely independent AC and non-audit services fees (See Figure 2.17).

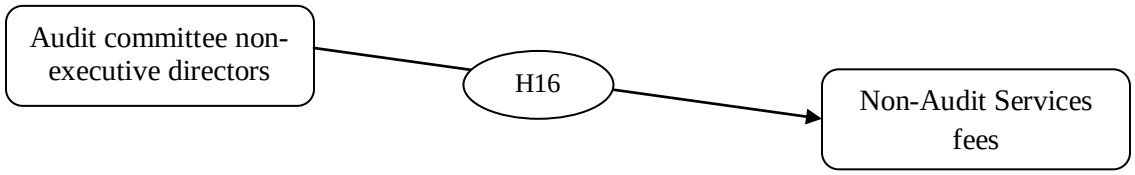


Figure 2.17: The relationship between the solely independent AC and non-audit services fees.

H17: There is a positive relationship between the solely independent AC and AFs (See Figure 2.18).

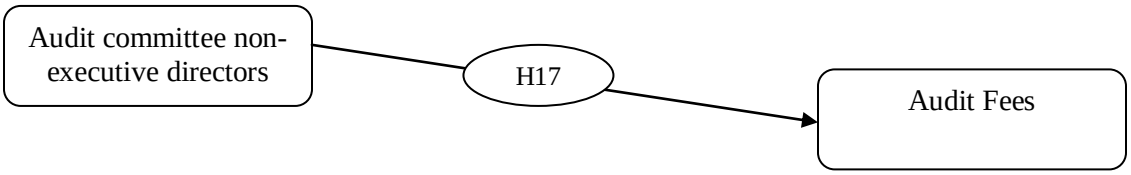


Figure 2.18: The relationship between the solely independent AC and AFs.

H18: There is a positive relationship between the financial expertise of the AC and AFs (See Figure 2.19).

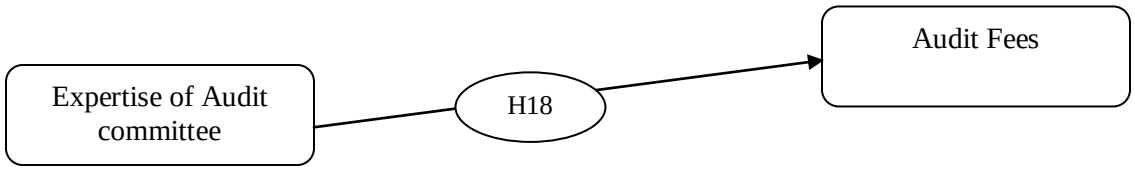


Figure 2.19: The relationship between the financial expertise of the AC and AFs.

H19: There is a positive relationship between the solely independent AC and the engagement of industry-specialist auditor (See Figure 2.20).

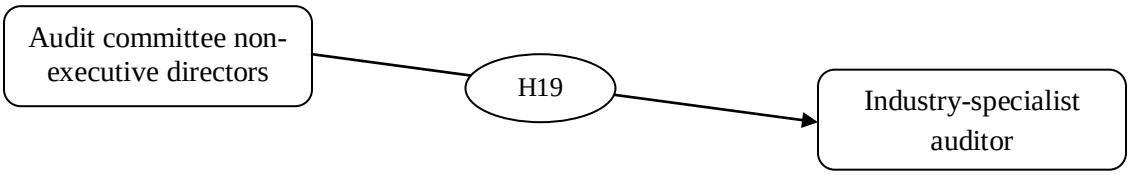


Figure 2.20: The relationship between the solely independent AC and the engagement of industry-specialist auditor.

H20: There is a positive relationship between the financial expertise of the AC and the engagement of industry-specialist auditor (See Figure 2.21).

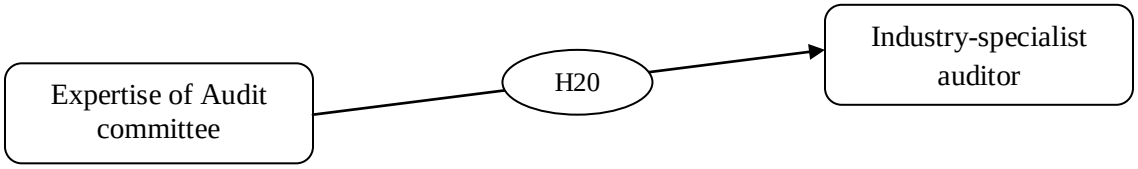


Figure 2.21: The relationship between the financial expertise of the AC and the engagement of industry-specialist auditor.

H21: There is a negative relationship between the financial expertise of the AC and non-audit services fees (See Figure 2.22).

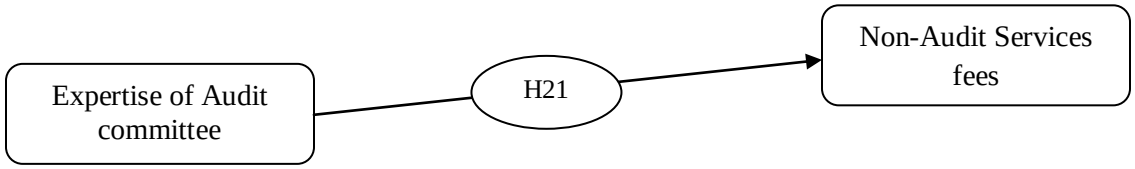


Figure 2.22: The relationship between the financial expertise of the AC and non-audit services fees.

H22: There is a negative relationship between the frequency of the meeting of the AC and non-audit services fees (See Figure 2.23).

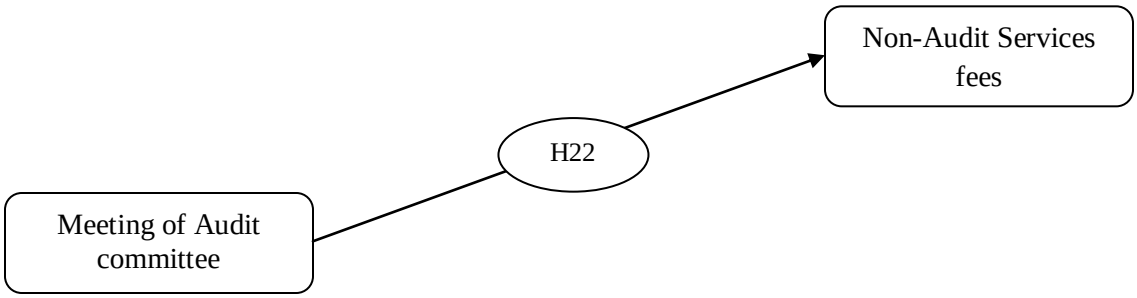


Figure 2.23: The relationship between frequency of the meeting of the AC and non-audit services fees.

H23: There is a positive relationship between the frequency of a meeting of the AC and AFs (See Figure 2.24).

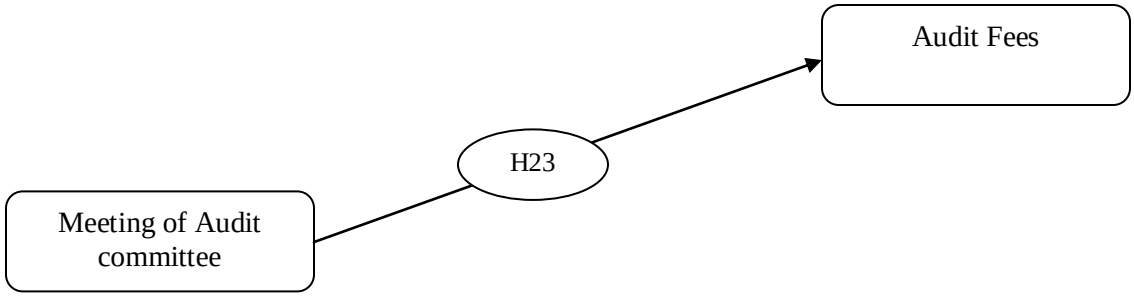


Figure 2.24: The relationship between the frequency of a meeting of the AC and AFs.

H24: There is a positive relationship between frequency of the meeting of the AC and the engagement of industry-specialist auditor (See Figure 2.25).

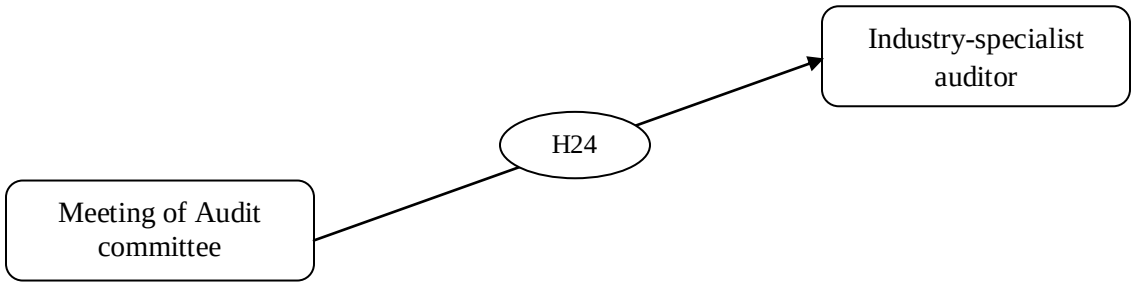


Figure 2.25: The relationship between the frequency of the meeting of the AC and the engagement of industry-specialist auditor.

2.8 The relationship between the AC, BoDs, and AQ in constraining EM

An abundance of studies has examined the monitoring roles of the BoD, AQ and AC and their effectiveness in constraining opportunistic earnings. These studies indicate that the effect of board, higher quality auditor and AC extend their monitoring functions to limit the behavior of EM. The following are some key papers in this area.

As far as the current study is concerned, there are only six relevant studies that have been done in the United Kingdom. These studies are Ferguson et al. (2004), Peasnell et al. (2000; 2005), Antle et al. (2006), Kwon et al. (2007), Sun et al. (2010), Habbash (2010), and Habbash et al. (2010). Peasnell et al. (2000) examine the relationship between the board size and the proportion of non-executive directors on the board with the incidence of EM in United Kingdom firms in pre and post-Cadbury periods.

They found no significant relationship between the number of non-executive directors in the board and EM in periods of pre-Cadbury, but the results for the periods post-Cadbury indicate that there are fewer incidences of income accruals due in order to avoid earnings decline or earnings losses when the firms' board is comprised of a higher proportion of non-executive directors. The size of the board is insignificantly associated with EM in pre and post-Cadbury periods.

Peasnell et al. (2005) examine the effect of the proportion of non-executive directors on the boards, the establishment of ACs and CEO duality on the likelihood of EM occurring. Their examinations are conducted using data from the United Kingdom of the periods 1993-1996 and they use discretionary accruals as a proxy for EM. They found that the firms that have higher percentages of non-executive directors on the board are associated with a lower incidence of income increasing discretionary accruals, especially when pre-managed earnings are under zero or are less than prior reported earnings. However, there is no evidence to suggest that size of board, CEO duality or the presence of an AC have any effect on the incidence of earnings manipulation. Both studies of Peasnell et al.'s, do not consider endogeneity issues in their models.

Ferguson et al. (2004) provide evidence of the United Kingdom data for the periods from 1996-1998. They examine the firms' likelihood of being associated with the activities of EM (firms being criticized by financial analysts or investors or investigated by the opportunistic accounting treatment, and Financial Reporting Review Panel because of alleged accounting irregularities and the firms that restate their previous financial statements or make modifications under Financial Reporting Council (FRC) No. 12) and the absolute value of the entitlements of their discretionary accruals (using the modified Jones' model) and their relationship to non-audit services. Non-audit services is measured by the ratio of non-audit services fees to total fees, natural log of percentile rank of non-audit services fees and non-audit services fees by the office of the practice. They found that the non-audit services fees linked positively to EM.

This suggests that the growing economic interdependence between the auditor-client may make auditors less likely to restrict the opportunistic behavior of EM, and thus reduce the FRQ. In addition, they also found that none of the characteristics of CG (i.e. the percentage of non-executive directors on boards and roles of CEO duality) are significantly related to EM.

Kwon et al. (2007) provide evidence of an international framework using data from 28 countries, including the United Kingdom from 1993-2003. Specifically, they examine how it affects the legal system in the countries industry specialist-auditors to constrain EM. They indicate that the use of industry-specialist auditors is negatively associated with the discretionary accruals and positively associated to the earnings response coefficient and that the benefit from the use of industry-specialist auditors increases as industry becomes stronger than the legal system of a country.

Antle et al. (2006) provide evidence from the United Kingdom and the U.S.A. They examine the non-audit services fees and AFs data from the United Kingdom from 1994-2004, while U.S.A data is from year 2000.

They found that the highest non-audit services fee decreased discretionary accruals, which indicates that there is an effect with the knowledge resulting from the joint provision of non-audit services and audit. Specifically, they are working in the natural log of non-audit services fees as measured auditor independence and the Jones' (1991) model to detect EM. With respect to EM and AFs, they found a positive relationship between EM and AFs. They argue that the higher AFs could lead to a bias in the auditor-client relationship, thus lead the auditor to allow opportunistic earnings behavior. However, this study did not include the characteristics of the AC and the board, which are also believed to affect the quality of reported earnings. Habbash et al. (2010) examine the commitment of non-executive directors (i.e. meetings, composition, and directors fees) and chairman independence, using a sample of 227 United Kingdom FTSE 350 firms for the financial year 2005 and 2006. In addition, they also control the number of meeting of the board in their EM model. They found that the chairmans' independence and non-executive directors' commitment are important to constrain the opportunistic earnings. Sun et al. (2010) examine the relationship between the effects of the interaction between CG mechanisms, corporate environmental disclosure, and EM (i.e. meetings of AC and board size) on the relationship between corporate environmental disclosure and earnings.

They found no important evidence of the corporate environmental disclosure to be associated with lower earnings manipulation, but indicate that the AC diligence affects the relationship between corporate environmental disclosure and earnings.

Both studies, however, do not fully incorporate other characteristics of effective AC and board in their model specification.

Habbash (2010) examined more comprehensive characteristics of CG and the AQ or, including the non-audit services fees, AFs, number of meetings, levels of financial expertise, size, proportion of independent members, and the industry-specialist auditors in the data from FTSE 350 between years 2003-2006.

AFs are measured using the natural log of AFs and AFs ratio to the total fees, while a non-audit services fee is defined as the natural log of non-audit services fees and AFs ratio to the total fees. The measurement on the use of industry-specialist auditors is based on the market share of AFs and the number of audit clients in a particular industry. The analyses are conducted using two separate models of EM. In the first model, he examines the impact of the characteristics of the BoD on EM. The results indicate a negative relationship to the size and independence of boards of EM. In the second model, he examines the impact of the external auditor variables on opportunistic earnings and the characteristics of AC. He found that the ACs consisting of a higher proportion of independent members and equipped with financial expertise are more likely to constrain EM. Moreover, the results indicate that firms that pay lower non-audit services fees and higher AFs that have employed industry-specialist auditors are more likely to limit earnings manipulation behavior.

Although Habbash (2010) examines a relatively similar AC, auditor quality variables, and Board characteristics that are being investigated in this thesis, he does not include both the characteristics of audit committee and board in a single model. Previous studies indicate that the effectiveness of the AC is associated with the composition of the entire board. Thus the joint monitoring roles of ACs and boards are likely to strengthen the firm's CG overall (Menon and William, 1994; Collier and Gregory, 1999; Cohen et al., 2002; Boo and Sharma, 2008). In addition, the separation of tests on the characteristics of the AC from those of BoD characteristics may result in incomplete analysis of EM.

In a similar vein, Klein (2002) examines the influence of ACs and independent boards on EM using data from 692 U.S.A firms in the period between years 1992-1993. She indicates that the independent ACs and independent boards are effective in constraining opportunistic earnings. Xie et al. (2003) examine more characteristics of AC and board including the frequency of board meeting, the size of the board, AC size, CEO duality level, the independence of board members, level of expertise, AC expertise, AC meeting frequency and independence in 282 U.S.A firms.

They employ Jones' model and Teoh et al.'s (1998) model for detecting EM. They found that the firms with ACs and boards with more independent members, who are equipped with financial expertise or corporate, and who have experience have lower discretionary accruals levels and frequent meetings.

Bedard et al. (2004) examine the relationship between the characteristics of the AC (for example, independence, size and expertise and number of meetings) and EM in a sample of 300 U.S.A firms, which consists of two subsamples: 200 firms with EM aggression (100 firms with the largest positive and 100 firms with the largest negative discretionary accruals) and firms that have lower discretionary accruals levels around zero (50 negative and 50 positive). They found that the financial expertise and the existence of solely independent ACs are negatively associated to the likelihood of aggressive EM. This is consistent with the arguments that these characteristics improve their supervision function in monitoring EM. The size and the ACs' meeting frequency are not significantly linked to aggressive EM.

Vafeas (2005) analyzed data from 252 U.S.A firms in between years 1994-2000 to examine many of the BoDs and characteristics of AC on the quality of reported earnings. The poor earnings quality is surrogated by the negative earnings avoidance and small earning increases. The evidence suggests that small earnings increases linked to the AC with the insiders' directors. While the results from the negative earnings avoidance model indicate no significant relationship between the possibility of avoiding the negative earnings audit committee and board characteristics.

Chtourou et al. (2001) examine the impact of the board and AC characteristics (such as the AC meeting frequency, AC expertise, size of the board, the independence of the board, board expertise, CEO duality, the presence of independent nomination committees or solely independent ACs, and the presence of multiple directorships and director's tenure) and the Big 6 auditors on the extent of earning management in U.S.A firms.

Their results indicate that ACs that contain a higher percentage of independent members, solely independent and meets at least twice a year indicate the lower incidence of income-increasing accruals, while ACs with financial expertise reduce the incidence of income decreasing accruals. In addition, the results also indicate the possibility of income-increasing accruals when a higher proportion of independent members and the less possibility of income decreasing accruals when the board members are equipped with board experience. However, no evidence indicates that the employment of a Big 6 auditor constrains EM activities.

In contrast to Chtourou et al.'s study, a Big 6 impact auditors on EM, Becker et al. (1998) indicate that the firms with Big 6 auditors are more likely to report lower discretionary accruals of the firms with non Big 6 auditors, and this is consistent with the claim that Big 6 auditors provide higher AQ and thus are more likely to constrain opportunistic earnings. Francis et al. (1999) suggests that firms that have a greater tendency to accruals are more likely to hire Big 6 auditors as a credible signal to outsiders that they are less likely to manipulate earnings. They also say that although the results suggest that firms with Big 6 auditors have relatively higher levels of total accruals, they are less likely to be connected with higher discretionary accruals.

Krishnan (2003b) examines the pricing of discretionary accruals of firms audited by Big 6 versus non Big 6 auditors. He suggests that the relationship between discretionary accruals and stock returns are stronger for firms that are audited by Big 6 auditors compared with those who use non Big 6 auditors. This supports the argument that Big 6 auditors improve the credibility of the reported accruals. He also suggests that the link between future profitability and discretionary accruals is greater for firms with Big 6 auditors which indicates that the Big 6 auditors enhance the capacity of discretionary accruals to predict future profitability. Kim et al. (2003) investigate the selection of Big 6 auditors and the direction of discretionary accruals. They indicate that Big 6 auditors are more effective in constraining income-increasing accruals, but less effective in constraining income-decreasing accruals.

With respect to EM and specialist auditors, Krishnan (2003a) examines 4,422 U.S.A firms, audited by Big 6 auditors, in the period between years 1989-1998. The use of industry-specialist auditors is measured using the portfolio shares approache and market share. The cross sectional Jones model is worked for detecting EM. He indicates that firms with industry-specialist auditors are more efficient in reducing opportunistic earnings than the firms with non-pecialist auditors. Balsam et al. (2003) investigate 19,091 U.S.A firms in the fiscal year ends for 1991-1999. They indicate that the discretionary accruals levels are lower and that earnings response coefficients are higher for the firms with industry-specialist auditors and vice-versa.

Frankel et al. (2002) examined data from 3,074 proxy statements files with the SEC between 5 of June, 2001 till 15 of June, 2001. They employ three measures of auditor independence: the ratio of non-audit services fees to total fees, and percentile rank for non-audit services fees and AFs disaggregated by auditor; percentile rank of the total by auditor and audit. The EM level is estimated using a tendency to just meet or beat earnings benchmarks, and the cross sectional modified Jones model is used to estimate the discretionary accruals levels. They found that firms with a higher percentile rank of non-audit services fees and a higher ratio of non-audit services fees report higher discretionary accruals and are more likely to meet or beat earnings benchmarks and report higher discretionary accruals. These results are a strong alternative EM measure such as performance matched discretionary accruals, discretionary working capital accruals, discretionary total accruals, and also being applicable to the samples of income increasing and income decreasing discretionary accruals.

In addition to their fundamental analysis of non-audit services fees, Frankel et al. (2002) also found that firms that have the higher AFs (measured by the rank AF percentile) are likely to have lower EM. This result supports the claim that the higher AFs may possibly increase the number of audit hours. (Deis and Giroux, 1996).

It seems that the efforts of the higher auditor may compensate for the illegal behavior, including the manipulation of earnings, because the management is more concerned that such action may be discovered by the auditors. In agreement with this proposition, Caramanis and Lennox (2007) found that audit hours were negatively linked to income increasing discretionary accruals to meet earnings benchmarks. They conclude that the effort of low audit increases the likelihood of a manager manipulating reported earnings.

Ashbaugh et al. (2003) replicated Frankel et al.'s (2002) study using similar tests and databases. Specifically, they measured the auditor independence by using (1) the natural log of the sum of audit and non-audit services fees, (2) the natural log of non-audit services fees, (3) the ratio of non-audit services fees to total fee, and (4) the natural log of AFs. EM is measured using models of performance adjusted discretionary accruals (using a technique of portfolio and adding Return on Assets (ROA) variable in the discretionary accrual regression) and the earnings benchmark. Their findings are relatively similar to those reported in the study of Frankel et al.'s, but they found no evidence that associated income increasing discretionary accruals with the ratio of non-audit services fees when performance adjusted measures are employed.

In other studies, Chung and Kallapur (2003) examined a sample of 1,871 U.S.A firms audited by Big 5 auditors. They measured auditor independence as a ratio of the total fees (non-audit services fees and audit) to the U.S firm's revenues audit. The discretionary accruals are using Jones model. Their results fail to find any significant relationship between discretionary accruals and non-audit services fees. In a similar vein, Ruddock et al. (2006) investigated the relationship between the earnings conservatism. They also found no evidence that non-audit services higher levels are associated with reduced conservatism.

Larcker and Richardson (2004) provided conflicting results on the relationship between EM and non-audit services fees. In line with Frankel et al. (2002) found a positive relationship between EM and the ratio of non-audit services fees to total fees.

Using other non-audit services fees measurements; they found that firms that have higher levels of non-audit services fees and audit are likely to have lower EM. In their study, the auditor independence is measured using the non-audit services ratio to total fees, the non-audit services fees, the sum of audit and non-audit services fees and the abnormal fees measurement. The cross sectional Jones and modified Jones models are used for detecting EM. They conclude that the monitoring auditor's roles rely on the firm's CG structures.

Based on a test of the 434 listed Australian firms, Davidson et al. (2005) claim that the strength of internal governance mechanisms (such as the AC, BoDs, the external auditor and internal audit) forms the practice of EM. They found that the presence of an independent board, an independent AC and CEO duality are negatively and significantly related to reduced EM levels. However, there is no evidence that the AC meeting frequency, AC size, internal audit, and use of a Big 5 auditor are associated with the EM level.

Osma and Noguer (2007) document evidence from Spain on the effectiveness of monitoring in the board and its committees in relation to EM. Specifically, they investigate the existence of institutional directors, independent boards, and boards of independent with independent ACs and financial expertise and independent nomination committees. Their findings indicate that the institutional directors are negatively associated to EM and that there is no evidence to support that boards and committees are associated with manipulation of earnings. This contrasts with the previous evidence documented in the Australia, United Kingdom and United States. These results indicate that institutional directors are more effective in constraining EM practices than boards and its committees.

Park and Shin (2004) examine the practice of EM and the monitoring board's roles in Canada. As with Osma and Noguer (2007), the results indicate that financial intermediaries and institutional directors play a significant role in constraining earnings manipulation and that there is no significant evidence that external directors and their tenures are linked with the incidence of EM.

Overall, the results on the relationships auditor variables to constraining EM and of the characteristics of CG suggest mixed findings. Failure to control the auditor variables or variables of CG in a single model to explain conflicting results in previous studies as a result of the analysis is incomplete, earnings quality determinants and the monitoring role of auditors, which vary depending on the strength of the client's CG (Larcker and Richardson (2004). Therefore, in this thesis, the investigation of the EM and characteristics of CG will incorporate auditor variables in order to avoid this misspecification. The evidence suggests that that the effective board, higher auditor quality and AC associated with a greater extent of monitoring functions, and are therefore susceptible to constrain opportunistic earnings.

In conjunction with the evidence from the previous arguments and literature developed under section 2.3 and 2.4 regarding the effectiveness of ACs and boards, the existing study hypothesis that the boards of directors that are smaller in size, have more frequent board meetings, possess financial expertise and have more independent members, as well as ACs which are larger in size, solely independent, equipped to meet frequently and with financial expertise, all lead to more effective monitoring.

These characteristics of AC and board are expected to constrain opportunistic earnings. In other words, this study tested the following causal hypotheses:

H24: There is a positive relationship between frequency of the meeting of the AC and the engagement of industry-specialist auditor (See Figure 2.26).

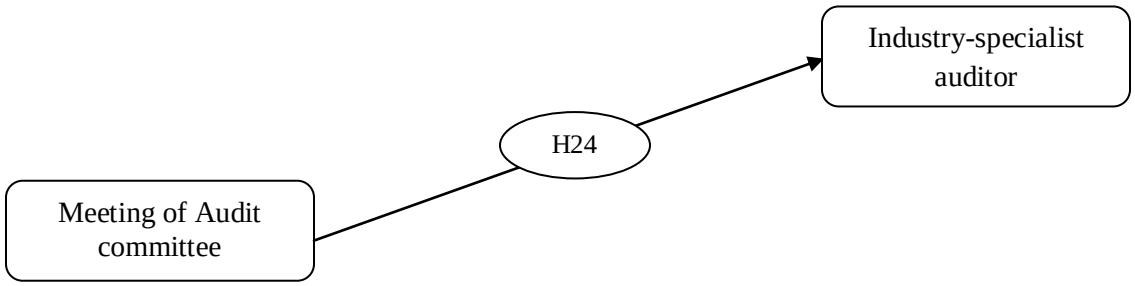


Figure 2.26: The relationship between the frequency of the meeting of the AC and the engagement of industry-specialist auditor.

H25: There is a negative relationship between the independent board and EM (See Figure 2.27).

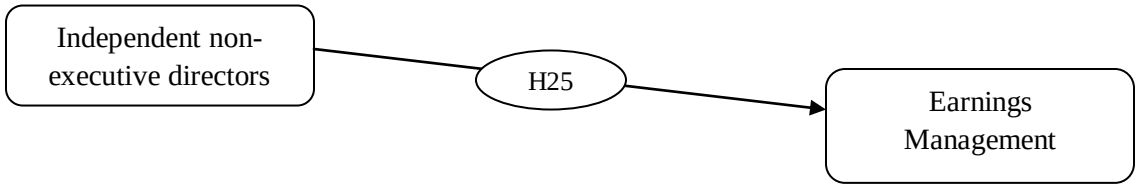


Figure 2.27: The relationship between the independent board and EM.

H26: There is a positive relationship between the board's size and EM (See Figure 2.28).

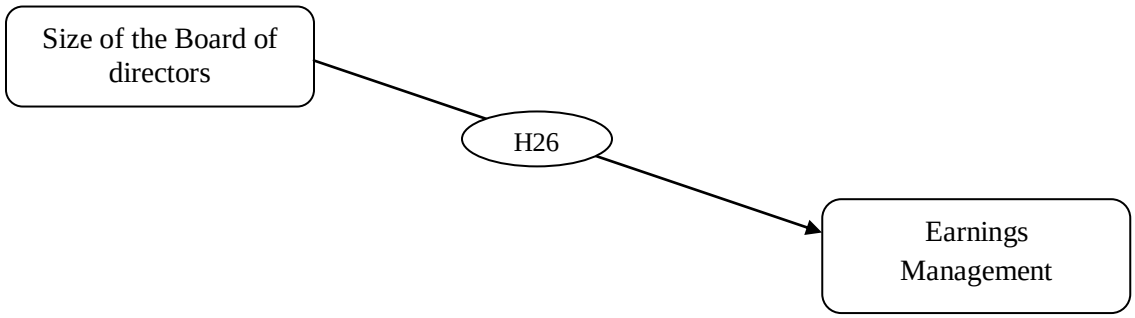


Figure 2.28: The relationship between the board's size and EM.

H27: There is a negative relationship between the board's meeting frequency and EM (See Figure 2.29).

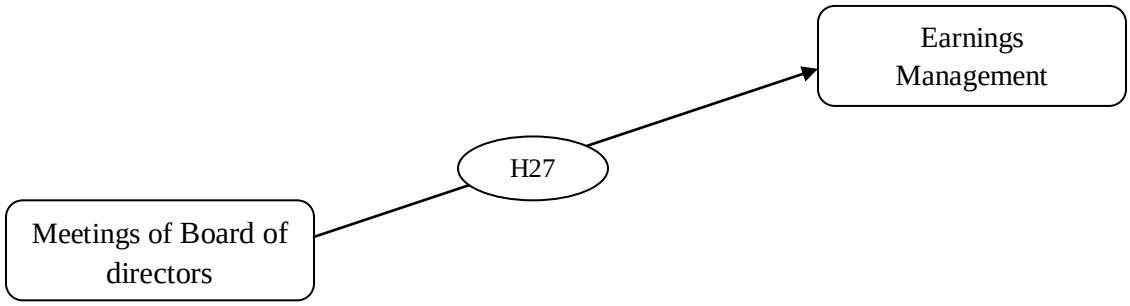


Figure 2.29: The relationship between the boards' meeting frequency and EM.

H28: There is a negative relationship between the board's financial expertise and EM (See Figure 2.30).

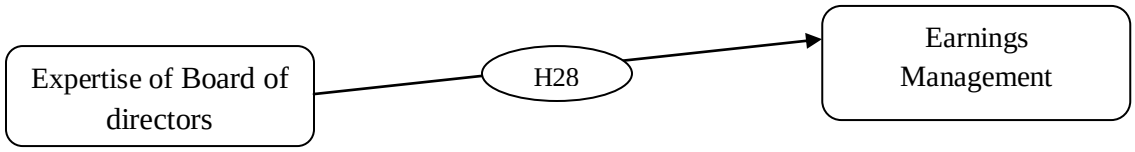


Figure 2.30: The relationship between the board's financial expertise and EM.

H29: There is a negative relationship between the solely independent AC and EM (See Figure 2.31).

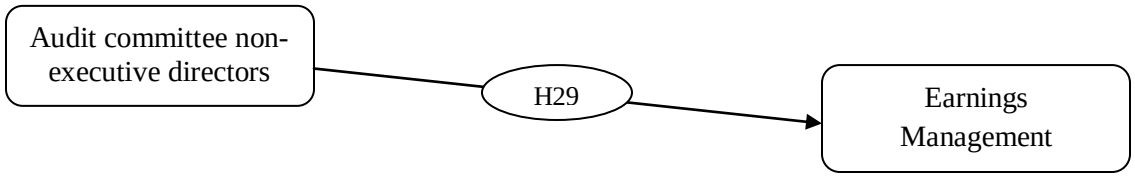


Figure 2.31: The relationship between the solely independent AC and EM.

H30: There is a negative relationship between the AC's size and EM (See Figure 2.32).

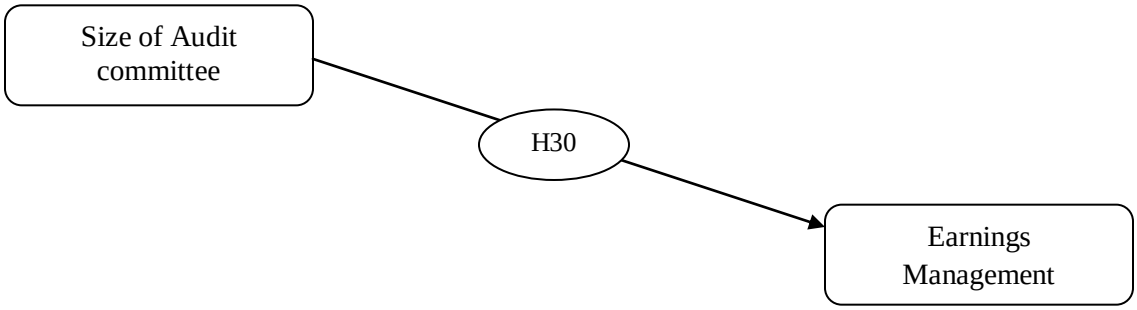


Figure 2.32: The relationship between the AC's size and EM.

H31: There is a negative relationship between the AC's meeting frequency and EM (See Figure 2.33).

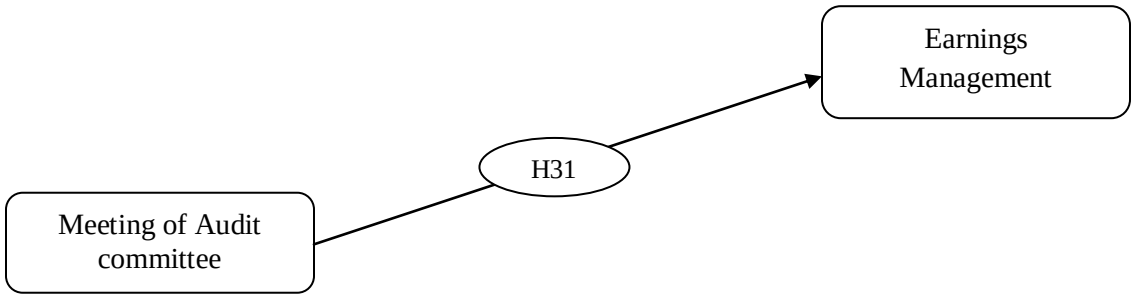


Figure 2.33: The relationship between the AC's meeting frequency and EM.

H32: There is a negative relationship between the AC's financial expertise and EM (See Figure 2.34).

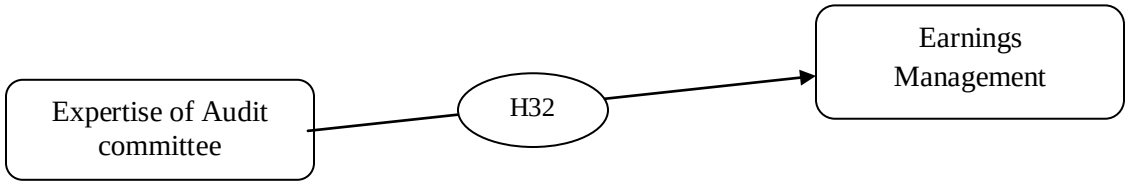


Figure 2.34: The relationship between the AC's financial expertise and EM.

Similarly, in line with the theoretical proposition and the review of evidence of differentiation of auditors' quality, this study showed that the effectiveness of audit services varies among auditors. In this thesis, the higher auditor's quality is associated with the engagement of industry-specialist auditors, lower non-audit services fees, and higher AFs. These expectations lead to the following causal hypotheses:

H33: There is a positive relationship between the non-audit services fees and EM (See Figure 2.35).

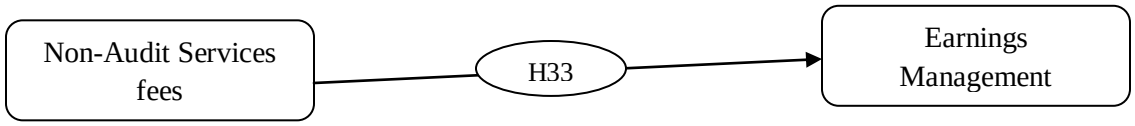


Figure 2.35: The relationship between the non-audit services fees and EM.

H34: There is a negative relationship between the industry-specialist auditor and EM (See Figure 2.36).

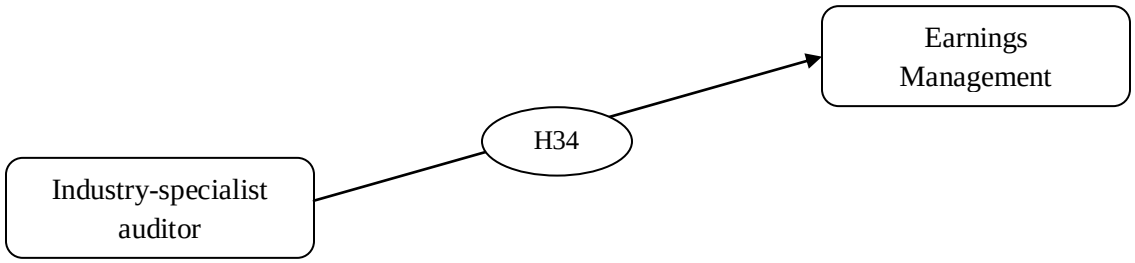


Figure 2.36: The relationship between the industry-specialist auditor and EM.

H35: There is a negative relationship between AFs and EM (See Figure 2.37).

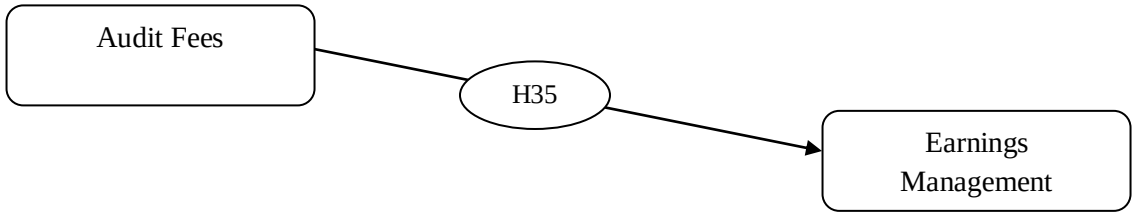


Figure 2.37: The relationship between AFs and EM.

2.9 The Summary

In this thesis AQ is defined as technical capacity to detect errors and objectivity in the coverage of errors detected. Previous literature recognizes several proxies to measure the AQ including the use of industry-specialist auditors, non-audit services fees, and AFs. In line with the reputation hypothesis or signaling, the engagement of industry-specialist auditors and higher AFs are associated with higher AQ. While, the lower non-audit services was considered as lower AQ due to the skepticism from the investors and regulators that higher non-audit services can compromise the independence of the auditor. Evidence from previous studies suggests that BoDs, which are smaller in size, have more independent directors, equipped with financial expertise and meeting more often are effective in their supervisory role. Similarly, sole independents, with more financial expertise ACs with more members and whom are more active are suggested to have a higher oversight function. Therefore, in line with the previous empirical evidence and agency theory proposition the hypothesis of this study shows that these characteristics of ACs and boards are associated with a higher AQ. With regard to the EM, this thesis views EM as opportunistic earnings. This study showed that the firms with effective characteristics of AC, board and higher quality auditors are less likely to allow EM, due to opportunistic earnings, cause uncertainty about the firm's economic value. Table No.2.3 provides a brief of the key literature covered in this chapter.

Table 2.3: provides a brief of the key literature relating to AQ, AC, BoDs, and EM studies					
Author(s)	Sample	Country	Audit quality related proxy (s) and earnings management/ Dependent variable	Audit committee and board of director's characteristics/ Independent variable (s)	Results
Collier and Gregory (1996)	315 firms for year 1991 FTSE (Financial Times All Share Index)	U.K	Audit fees	Audit committee – establishment	The firms with the AC are likely to have higher AFs.
O'Sullivan (1999)	146 large firms in year 1995	U.K	Audit fees	Board of director – composition, duality roles, and tenure Audit committee – composition, and size	There is no evidence that the AC or BoD attributes affect the level of AFs.
O'Sullivan (2000)	402 large firms in year 1992	U.K	Audit fees	Board of director – composition and ownership	Firms with a higher percentage of non-executive directors on board are more likely to incur higher AFs, indicating a high quality audit. He also argues that there is a negative relationship between the AFs and executive ownership.
Tsui et al. (2001)	650 firms between years1994 -1996	Hong Kong	Audit fees	Board of director – duality roles	Firms that separate the functions of chairman and CEO roles are more likely to have lower AFs, pointing out the effective monitoring mechanisms in place, thus reducing the risk of control and audit efforts.

Table No.2.3: (Continued)					
O'Sullivan and Diacon (2002)	117 insurance firms in year 1992	U.K	Audit fees	Board of director – composition, ownership, and duality Audit committee – composition and establishment	The presence of the AC has a positive relationship with AFs but the composition of AC as well as the characteristics of board has no significant relationship with AFs.
Carcello et al. (2002)	258 firms from Fortune 1000 for financial year ended in the period between April 1992 and	U.S.A	Audit fees	Board of director – composition, expertise, and meeting Audit committee – composition, expertise, and meeting	Firms with the higher percentage of independent non-executive directors on BoDs, higher board meeting frequencies and more expertise (multiple directorships) are likely to have higher AFs. When they replace the attributes of the board with the attributes of the AC (i.e. meeting frequency, expertise and composition), the results show a positive relationship of AC expertise and AC independence to AFs. The AC meeting frequency was not significantly related with AFs. However, once they analyze AC and board attributes together, the results for the BoDs remain has not changed but none of the AC attributes are significantly related to AFs.
Boo and Sharma, (2008)	469 firms with total assets exceeding US $ 1bilion in the financial year 2001	U.S.A	Audit fees	Board of director/ Audit committee – composition, expertise, meeting, and size	Associations of the AC independence/ board and AC size/ board to AFs are weaker for regulated firms than for non-regulated firms except in the case of AC directorships/ board.

Table No.2.3: (Continued)					
Abbott et al. (2003b)	492 non regulated firms and audited by Big-5 auditors that filed proxy statement with (SEC) in the period between 5 February 2001 and 30 June 2001.	U.S.A	Audit fees	Board of director – composition, multiple directorships Audit committee – composition, expertise, and meeting	Higher AFs associated with: 1. Higher board meeting frequency 2. Higher percentage of independent non-executive directors on board 3. At least one member of AC equipped with accounting or financial expertise 4. Solely independent non-executive directors in AC The board's expertise and AC meeting frequency are not significantly correlated with AFs.
Boo and Sharma, (2008)	469 firms with total assets exceeding US $ 1bilion in the financial year 2001	U.S.A	Audit fees	Board of director/ Audit committee – composition, expertise, meeting, and size	Associations of the AC independence/ board and AC size/ board to AFs are weaker for regulated firms than for non-regulated firms except in the case of AC directorships/ board.
Krishnan and Visvanathan, (2009)	801 listed on the (S&P 500) between years 2000 -2002, audited by Big 5 auditors.	U.S.A	Audit fees	Board of director – size, composition, meeting, duality roles, voting control, and ownership Audit committee – composition, expertise, and meetings	Firms with AC and separated dual roles functions equipped with financial expertise are perceived by auditors to have a strong environment of internal control, which reduces the risk control and audit efforts and lead to lower AFs. AC meetings and board have a positive relationship with AFs.
Abbott et al. (2003a)	538 firms that filed with SEC between 5 February 2001 and 15 March 2001	U.S.A	Non audit fees (ratio non audit fees to total fees)	Board of director – ownership structure Audit committee – composition, meeting	Firms that have ACs composed of solely independent non-executive directors and meet at least four times a year are likely to have a lower ratio of NAS fees.

Table No.2.3: (Continued)					
Lee and Mande (2005)	780 firms for financial year 2000, S&P Super 1500	U.S.A	Non audit fees	Audit committee – composition, expertise, and meeting	ACs composed of solely independent non-executive directors and that meet at least four times a year are likely to limit the purchase of NAS. However, once they a model of the NAS endogenously, such relationships are insignificant.
Lee (2008)	631 firms for financial year 2000 - 2001, S&P Super 1500	U.S.A	Changes in non-audit fees ratio	Board of director – expertise Audit committee – composition, and expertise	Expertise and independence of BoDs and ACs are likely to limit the level of NAS purchased.
Abbott and Parker (2000)	500 firms listed on the AMEX, NYSE or NASDAQ exchanges in year1994	U.S.A	Industry-specialist auditor	Board of director – composition, and ownership Audit committee – composition, and meetings	Firms with ACs that are meet twice a year and solely comprised of independent non-executive directors are more likely to employ industry-specialist auditors. The percentage of non-executive directors on boards is not significantly related to the engagement of industry-specialist auditor across all measurements.
Beasley and Petroni (2001)	681 property liability insurers during years 1991 - 1992	U.S.A	Industry-specialist auditor	Board of director – composition	The higher percentages of non-executive directors with the insurers are more likely to employ an industry-specialist auditor.

Table No.2.3: (Continued)					
Chen et al. (2005)	500 top firms listed on the ASX in year 2000	Australia	Industry-specialist auditor	Board of director –multiple directorships Audit committee – composition, expertise, and meetings	Firms that have a higher percentage of non-executives on their ACs are more likely to employ industry specialist auditors. The AC expertise and a number of meetings are not significantly associated to the engagement of industry-specialist auditors. The results for board directorships are mixed.
Dechow et al. (1996)	92 firms that subject to the SEC enforcement action between years 1982-1992.	U.S.A	Earnings management: discretionary accruals	Board of director – composition, ownership, and duality roles Audit committee – establishment	Where a firm's BoDs is dominated by the members practice dual role functions, management, the CEO is also the founder of the firm, there are fewer representatives of outside block holders and there is no formation of AC there is more likelihood of earnings manipulation.
Klein (2002)	692 firms-years listed on the S&P 500 between years 1992 - 1993	U.S.A	Earnings management: absolute value of discretionary accruals	Board of director – composition, and ownership Audit committee – composition	Higher percentages of independent non-executive directors on board and on AC are associated with lower EM. However, there is no significant relationship between EM and solely independent non-executive directors.
Xie at al (2003)	282 firms-years listed on the S&P 500 for 3 years 1992, 1994 and 1996	U.S.A	Earnings management: current discretionary accruals	Board of director – composition, duality roles, meetings, expertise and size Audit committee-composition, expertise, meeting, and size	EM is less likely to occur in firms whose AC and board are equipped with a financial and corporate background and have a higher percentage of independent non-executive directors as well as higher number of meetings.

Table No.2.3: (Continued)					
Klein (2002)	692 firms-years listed on the S&P 500 between years 1992 - 1993	U.S.A	Earnings management: absolute value of discretionary accruals	Board of director – composition, and ownership Audit committee – composition	Higher percentages of independent non-executive directors on board and on AC are associated with lower EM. However, there is no significant relationship between EM and solely independent non-executive directors.
Xie at al (2003)	282 firms-years listed on the S&P 500 for 3 years 1992, 1994 and 1996	U.S.A	Earnings management: current discretionary accruals	Board of director – composition, duality roles, meetings, expertise and size Audit committee- composition, expertise, meeting, and size	EM is less likely to occur in firms whose AC and board are equipped with a financial and corporate background and have a higher percentage of independent non-executive directors as well as higher number of meetings.
Bedard et al.(2004)	200 firms (lowest income decreasing/ increasing and aggressive earnings management highest), Compustat in year 1996	U.S.A	Earnings management: discretionary accruals	Board of director – composition, multiple directorships, ownership Audit committee – composition, expertise, meeting, and size	Firms with solely independent AC that which also equipped with financial expertise are less likely to have aggressive EM. There is no significant relationship of the number of meeting and AC size to EM.
Park and Shin (2004)	539 firm-years from 1991 to 1997	Canada	Earnings management: discretionary accruals	Board of director – composition, and ownership	There is no significant relationship between the EM and the number of non-executive directors on board. However, the representatives of active institutional shareholders reduce EM.

Table No.2.3: (Continued)					
Peasnell et al. (2005)	1,271 firms for financial year between 1993-1995	U.K	Earnings management: discretionary accruals	Board of director – composition, ownership, duality roles, and size Audit committee – establishment	Firms with a higher percentage of non-executive directors on board are associated with lower income increasing EM. However, there is no evidence that the existence of an AC affects the extent of income increasing EM.
Davidson et al. (2005)	434 listed Australian firms for financial year ending 2000	Australia	Earnings management: absolute value of discretionary accruals	Board of director – composition, duality roles Audit committee – composition, meeting, and size	Firms with a majority of independent non-executive directors on solely independent AC and with boards are associated with lower EM.
Carcello and Neal (2000)	223 financial distressed firms during year 1994	U.S.A	Modified audit report	Audit committee – composition, and size	The higher the percentage of independent non-executive directors on AC is the lower the likelihood of the firms to receive a going concern audit opinion. The AC size is not correlated with the likelihood of a going concern audit report.
Agrawal and Chadha (2005)	159 matched pair of public firms that restated earnings in years 2000 and 2001	U.S.A	Restatement of earnings	Board of director – composition, expertise, ownership, and duality roles Audit committee – composition, and expertise	The likelihood of earnings restatement is lower in the companies whose AC or board has financial expertise with independent non-executive directors, but it is higher in companies in which the CEO belongs to the founding family.

Table No.2.3: (Continued)					
McMullen (1996)	219 of firms consist of firms that associates to the earnings restatement, litigation, illegal acts, SEC actions and auditor turnover with disagreement	U.S.A	Financial reporting consequences- earnings restatement, SEC actions, Litigation, Auditor turnover, and Illegal Acts	Audit committee – establishment	The existence of an AC is associated with fewer quarterly earnings restatements, fewer SEC enforcement actions, fewer lawsuits for fraud, fewer auditor turnovers and fewer illegal acts that are related to disagreements.
Beasley (1996)	150 firms: Matched pair of 75 non fraud and 75 frauds firms (SEC and Wall Street Journal Index)	U.S.A	Non fraud and fraud firms: coded 1 if the firm is alleged to have fraudulent financial statement, 0 otherwise	Board of director – composition, ownership, and duality roles	Non fraud firms are likely to experience lower fraudulent financial reporting levels when the board has higher percentage of independent non-executive directors as compared with fraud firms. The composition of board rather than the presence of AC are more important in reducing fraudulent financial reporting.
Abbott et al. (2004)	1. 44 fraud firms under the SEC sanctions 2. match-paired of 88 restatement sample firms for 2 years between 1991 - 1999	U.S.A	1. Non fraud and Fraud firms 2. Restatement	Board of director – composition, ownership, duality roles, and size Audit committee – size, composition, expertise, and meeting	Firms with ACs that are meeting frequently, solely independent, and that possess at least one member with financial expertise are less likely to experience restatement. A larger board size is associated to a higher likelihood of restatements. Independence and AC expertise are negatively related to the incidence of fraud.
Chen et al. (2006)	169 firms under the Chinese Securities Regulatory Commission (CSRC) enforcement actions during 2 years 1999 - 2003	China	non fraud firms and Fraud: coded 1 if the firm is subject to an enforcement action statement, 0 otherwise	Board of director – composition, duality roles, chairman tenure, meetings, ownership and, size	Firms with the lower percentage of non-executive directors on board, shorter chairman tenures, and lower board meeting frequencies are associated with a higher likelihood of the incidence of fraud.

Table No.2.3: (Continued)					
Abbott et al.(2000)	156 firms: 78 firms subject to SEC sanction matched with 78 no sanctioned firms	U.S.A	Sanctioned and no sanctioned firms: coded 1 if the firm is alleged to have SEC sanction, 0 otherwise	Board of director – composition, ownership, and duality roles Audit committee – composition, and meeting	The firms with ACs that are comprised of solely independent members and that meet twice a year are less likely to be sanctioned for aggressive accounting and fraud. Having a CEO who also chairs the board is associated with a higher likelihood of sanction.

Chapter III

THEORETICAL FRAMEWORK

3.0 Introduction

This chapter produces the theoretical framework for this study. The main discussion is of the agency theory that focuses on the relationship between principals and agents and the conflict that arises between them due to the different goals. In part to reduce the conflict of agencies, the monitoring role of AC, BoDs and the external audits are demanded. Various hypotheses related to the demand for different levels of AQ and audits are also discussed in this chapter. The association between the ACs, BoDs, financial reporting, and external auditors are highlighted. Finally, the summary is presented in the last section.

3.1 Corporate Governance

So far, the existing studies have indicated that there is no single definition for corporate governance (CG) (Waring and Pierce 2005; Tierney 2006; Solomon, 2007). However, it has been discussed in various definitions of CG in previous studies (Cadbury Report, 1992; Donaldson and Preston, 1995; Turnbull, 1997; Shleifer and Vishny, 1997). For example, Cadbury Report (1992) defined the CG as:

> *"A system by which companies are directed and controlled"*

The previous definition emphasizes the roles of the major players in the organization, which is composed of BoDs, shareholders and the auditor. As stated in the Cadbury Report (1992):

> *"The shareholders' role in governance is to appoint the directors and the auditors and to satisfy themselves that an appropriate governance system is in place".*

The function of the directors is associated with how the firm is governed, while the main role of the auditors is to provide the shareholders service and supervision as a check and balance on financial statements.

Shleifer and Vishny (1997) define the CG as the process that:

> *"Deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment".*

They indicate that the legal protection of the rights of the investor and the concentrated ownership helps control the management discretion so that financiers are able to get returns on their investments. Consistent with the recommendations of the Cadbury Report (1992), which emphasizes how the firms are controlled and directed, Denis (2001) and Denis and McConnell (2003) expand on this definition:

> *"CG encompasses the set of institutional and market mechanisms that induce self-interested managers (and controllers) to maximize the value of the residual cash flows of the firm on behalf of its shareholders (the owners)".*
>
> (Denis 2001)

> *"CG encompasses the set of mechanisms – both institutional and market-based – that induce the self-interested controllers of a company (those that made the decisions on how the company will be operated) to make decisions that maximize the value of the company to its owners (the suppliers of capital)".*
>
> (Denis and McConnell 2003)

Alternatively, Solomon (2007) considered the concerns of stakeholders in the definition of CG which is seen as:

> *"a system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all their stakeholders and act in a socially responsible way in all areas of their business activity".*

These different explanations and definitions of CG existed due to different theoretical frameworks and through the views of the authors of CG from different points of view For instance, the CG's definitions, that are outlined through Denis (2001) Shleifer and Vishny (1997) and Cadbury (1992) appeared to agree that CG is associated with the control and ownership, which aims to maximize wealth of the shareholder. On the other hand, the definition of Solomon (2007) is in line with the theory of stakeholder, which believes in addition in shareholder-wealth-maximizing**,** the issues of the environment and social are importance to the company. The theory of stakeholder is recognizes that individuals, both outside and inside a firm (customers, suppliers, employees, governments, publics or other groups or individuals) may influence or be influenced by the firm's actions. The other groups or individuals are indicated to stakeholders (Freeman, 1984). The firms are responsible for implementing actions that not only benefit them, but that benefit society as a whole.

Given that the present study examines the impact of the roles of the AC and BoDs on reporting quality (the AQ and EM), for the purpose of the study, CG is considered as a system of balance and check mechanisms to ensure that the interests of the shareholders are protected. This view can be expressed appropriately in the agency theory. In addition, this study is focused on the relation to the FRQ rather than on the impact of the firm on the factors of the environmental and social; therefore, theory of the stakeholder seems to deviate from the aim of this study.

3.2 Agency Theory

The idea of the agency theory has been addressed by Jensen and Meckling (1976) through the introduction of the concept of agency cost. They apply the agency cost concept to explain issues associated with the control in a large corporation and separation of ownership, consistent with Berle and Means' (1932) ideas.

The ultimate element in the theory of the agency is the conflict of interests between the principals-agents. The principal (shareholder) assigns the power of the decision-maker to the agent (manager) who, as an agent, carries out their duties on behalf of the principal (Jensen and Meckling, 1976). Divergent and conflicting interests lead to information asymmetries between the two parties. The presence of information asymmetry leads to two major agency problems, namely, the problems of the adverse selection and moral hazard.

Moral hazard problems are associated with the problem of hidden actions when an agents incentive is to follow self-interested behavior. They arise when the principals are not able to observe the actions that are carried out by the agents. Formally, an agent is expected to maximize the wealth of the principal through their decisions and actions. However, the agents tend to follow their own interests. By contrast, adverse selection problems associated with hidden information, where the agent has more information from the principal. Both problems may create, for instance, the EM phenomenon, which, in turn, may cause investors, shareholders and debt holders to be unable to distinguish the true economic value of a firm.

According to the agency theory, since managers (agents) are inspired by external motivations (Sundaramurthy and Lewis, 2003), the principals have to identify ways to motivate the agents and to ensure that they act in the best interest of the principals. Jensen and Meckling (1976) indicate that the cost of the agency can be an alternative way to reduce the conflict of agency and they define the cost of the agency as consisting of the cost of bonding, cost of monitoring, and the residual loss. Costs of monitoring are the costs that are linked with the appointment of the appropriate agents, such as external auditors, and with the mechanisms that control the behavior of agents, such as the roles played by the BoDs. The cost of bonding is the cost associated with contracting in order to ensure that agents always make decisions that support the wealth of the principal.

These costs include those related to the agent's compensation system. The residual loss is the loss of the agency that is associated with an imbalance between monitoring and the costs of bonding or, in other words, the decline in the principals' welfare that arises from an imperfect alignment of interests between principals and agents (Jensen and Meckling, 1976).

In this thesis, the monitoring roles of the auditor and board are studied as mechanisms that reduce conflicts of agency, a board of directors acting on behalf of shareholders and representing the interests of shareholders through overseeing the managerial functions. Zahra and Pearce (1989) argue that the agency theory is the most comprehensive theory that explains the BoDs' functions which highlights the importance of their role controlling. Consistent with this idea, Hung (1998) also states that the agency theory is a convincing theory to explain the supervisory role of the boards.

Besides the monitoring role of the BoDs, Solomon (2007) argue that the external audit represents another crucial element of the internal control system of the firm, and that it provides a check and balance system that helps shareholders to control and monitor the activities of the managements. As the Cadbury Report (1992) indicated:

> *"The annual audit is one of the cornerstones of CG. Given the separation of ownership from management, the directors are required to report on their stewardship by means of the annual report and financial statements sent to the shareholders. The audit provides an external and objective check on the way in which the financial statements have been prepared and presented, and it is an essential part of the checks and balances required".*

Therefore, it can be argued that agency theory is essential for this study because it recognizes the monitoring roles of the external audit and BoD as mechanisms to control the behavior of management. The following sections explain the characteristics of the AC and board that contribute to the effectiveness of their monitoring function and the role of external audit.

3.2.1 Monitoring role of the AC and BoDs

Fama and Jensen (1983) indicate that BoDs are the process of decision making in any organization, and that they have the legal authority to control entire compensation decisions that are made through the top management. Fama and Jensen also indicate that, in the process of decision making, the implementation and initiation must be separated from the monitoring and ratification of decisions to ensure that monitoring functions are more efficient. In other words, the agency theory indicates that, in order to ensure that functions of effective monitoring are in place, the members of the BoD must include external members such as (NEDs), who represent the BoD as independent from management.

Vance (1983) adds that the independent NEDs provide non-biased evaluation that is "stockholder oriented" which identifies best practice "balance and check" on actions of the management. The NEDs are also important because they have a significant knowledge such as (technology, corporate law, and capital market) which will enable them to complete the information from the inside, and play the role of arbitrator in any dispute that may arise between insiders (Fama and Jensen, 1983). In brief, the independent NEDs are best in management control, because of the "complimentary knowledge" and "independent" characteristics.

The proposition of independent NED in the agency theory is contradictory to the principle of stewardship theory. Stewardship theory proposes that the manager is playing the role as a steward and that their efforts assist the interest of their principals (Davis et al., 1997; Donaldson & Davis, 1991). The managers are enthused through the intrinsic gratification and non-financial motivations resulting from the challenge of working in different environments (Donaldson & Davis, 1991). Donaldson and Davis (1991) argued that the executive manager far "*from being an opportunistic shirker essentially wants to do a good job, to be a good steward of the assets of the corporate"*. With the aim to maximizing the potential of executive managers, the suitable approach is to establish an empowering structure (Donaldson & Davis, 1991).

Managers must be given clear instructions and a higher position in the hierarchy of the organization where they will have the authority and autonomy in decision-making, and they will be able to use their full capabilities in achieving the objectives of the organization. From the point of the shareholders' view, the executive directors (known as dominant insiders) on boards are preferred more than NED. This is because they have the best existing processes of awareness and knowledge, they presume a more responsible attitude for the organization, and they have more technical expertise (Muth & Donaldson, 1998). Therefore, shareholders can expect more in return from them than from NED who are supposed to have an attitude of self-serving and to be less familiar about the organization.

Although the theory of the stewardship identifies that executive directors are more beneficial than NED, this study believes that the theory of the agency is supporting the monitoring role of the BoDs, as more appropriate for explaining the AQ and EM variations. Agency theory identifies the independence of NED as a monitoring system, which is necessary to the promotion of high quality of audit and financial reporting. Hung (1998) proposed that the task of the executive is concentrated on the "role of strategic" instead of the "role of monitoring". In real systems, the stewards or agents are determined to pursue their own interests rather than the others.

In addition to having an independent NED on the AC and in the board, empirical evidence also proposed that the committee size, specific experience, high frequency of meetings and knowledge may strengthen both the AC and BoD's monitoring functions (Abbott et al. 2003b, Abbott et al. 2004; Carcello et al. 2002; Chen and Zhou, 2007; Dezoort, 1998; Krishnan and Lee 2009; Lipton and Lorsch, 1992; Menon and Williams, 1994; Monks and Minow, 2008; Ronen and Yaari, 2008; Vafeas, 1999; Yermack, 1996).

Zahra and Pearce (1989) claimed that the efficiency of a BoD function is dependent on the (1) BoDs meeting, (2) type of membership and the board size, (3) the directors' attributes (4) the establishment of the appropriate committees such as their skills and competence, (such as communication between firm's directors, documentation and agenda). Moreover, Walker (2004,) reported that:

> *"The performance of ACs necessarily depends on the people involved, their knowledge, skills, critical capacities, skepticism and determination*

The empirical evidence for each of these characteristics was discussed in Chapter 2.

3.2.2 The role of external audit

Watts and Zimmerman (1983) describe that since the 13th century, the functions of the audit have been observed to provide some form of assurance that the financial information provided by the management accurately represents the financial position of the firms. Consistent with the agency theory, the audit function is seen as a mechanism to mitigate uncertainty about the levels of information asymmetry between shareholders, investors and management. As investors and shareholders have limited access to internal information from within the firm, the independent audit reports on the fairness and truth of the financial statements that are produced by management.

As outlined in the International Standard on Auditing (ISA) (UK and Ireland) 200: The overall objective of the Independent Auditor and the Conduct of an Audit in the International Standards on Auditing compatibility (UK and Ireland): (ABP, 2009):

> *"The purpose of an audit is to enhance the degree of confidence of intended users in the financial statements. This is achieved by the expression of an opinion by the auditor on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework……..As the basis for the auditor's opinion, ISAs require the auditor to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error. Reasonable assurance is a high level of assurance".*

Differences in the level of the information asymmetry and conflict are assumed to differ from firm to firm and perhaps demand different levels of AQ and of auditing (DeAngelo, 1981; Watt and Zimmerman, 1986). The higher agency cost, the larger the information asymmetries gap and therefore the higher levels of AQ demanded. Section (3.3) will explain the relevant hypotheses in order to clarify why the management of the firm, including the shareholders and investors, AC, BoDs; demands audit services and different levels of AQ.

3.3 Demand for the audit quality and external audit

Many hypotheses have been used in the previous literature to explain the demand for audit services and various levels of AQ. Each of these hypotheses is now reviewed. It is important to emphasize that these hypotheses may appear to be related to one and another (Wallace, 1980; Willenborg, 1999; Menon and William; 1994).

3.3.1 The monitoring hypothesis

This hypothesis is based on the relationship of the agency. The agency theory indicates that the cost of the agency is a potential solution to the principal-agent conflicts and that it provides one of the answers to this problem through an independent audit (Jensen and Meckling, 1976). According to Wilson (1983), the monitoring role of audit reduces the adverse selection problems and moral hazard that arise from the problem of information asymmetries. As stated in Wilson (1983), in case of the problem of moral hazard, the managers responsible for protecting the assets of the firms may misuse the assets or fail to maintain them, in which case such actions are not directly observable by the potential investors and owner. In case of an adverse selection problem, such assets have their own values fixed. The managers have more information about these values and they are able to deal with the information to achieve their own personal gains. Therefore, the owners need to adopt an effective way to monitor the behavior of opportunistic managers and credibility of the information provided by the managers as well as consider how to improve investors' opportunities to observe those assets.

One possibility to achieve this is by the independent audits. Auditors provide potential investors and managers with information and reliable verification on the value of assets. In other words, the independent audit provides guarantees for the potential investors and owners that the information provided by the managers is reliable.

The independent audit can be generated through the agent (bonding cost) or the principal (monitoring cost). Humphrey (1997) claims that the agents can demand the independent audit because the principals normally tend to neglect monitoring activity as they are able to protect themselves from the risk of loss through paying lower wages to the agent (subject to the cost of the independent audit being less than the loss of wages that an agent could suffer without independent audit).

The assumption is that the principals will pay more to the agents for the work that has been verified by the independent audit than those that have not been verified. As pointed out by Wallace (1980):

> "*The stewardship (monitoring) hypothesis states that wherein one party (the agent) has delegated decision making power, the agent has an incentive to be checked if the benefits from such monitoring activities exceed the related costs".*

According to Wallace (1980), an independent audit provides assurance that the financial reports that are provided through the management have been carefully prepared and they are free of material misstatement. Therefore, the market participants including potential investors can use the audited financial statements without any hesitation. Moreover, the independent audit also reduces financial statement fraud and illegal reports and improves the internal controls and operational efficiency of the firm (Wallace, 1980; Chow 1982). For example, when managers know that their financial reports will be checked by the auditors, fraud and illegal behavior can be minimized indirectly because they are concerned that these actions will be discovered by the auditors. In addition, when the auditors carry out the audit review or audit testing on the system of internal control of the firm, they will discover if some internal control procedures are missing or have not been implemented properly.

Therefore, auditors typically provide recommendations to improve the existing systems of internal control. Such recommendations and restrictions are able to improve the efficiency and effectiveness of the operation of the firm. In brief, these observations indicate that audit services not only provide a monitoring tool for the potential investors, owners and managers, but also for the organization as a whole, including its employees and creditors.

3.3.2 The information hypothesis

As mentioned previously, the higher the agency conflicts, the larger the information asymmetries and therefore the higher the AQ services that will be demanded. Wallace (1980) indicates that investors demand audited financial statements, because the quality of the financial information is improved by the independent audit. He further proposes that audited financial information is able to (1) improve decision making, (2) provide access to new information for investors and (3) reduce market-related (systematic) and firm-specific (unsystematic) risks. As stated in Wallace (1980), the risk-averse investor requires a higher rate of return to higher levels of risk or pays a higher risk premium to reduce levels of uncertainty or risk investment. It is assumed that the risk premium associated with the individual investor's assessment of the audit service; through the audit, uncertainty about the accuracy of financial information provided through the management can be reduced (Shakun, 1978). If the total of risk premium for each investor is mutually adjacent and exceeds the cost of audit, the financial information of audit is beneficial to all parties where all parties enjoy less uncertain information.

According to Wallace (1980), some investors may also reduce the risk of their investment through the development of the portfolio of both unaudited investment opportunities and audited. Any reduction in the risk premium that is linked to the audited information will be compensated through audit cost of the specific firm. However, it may cause the unaudited investment portfolio to increase in market variability, and hence audit costs can be balanced against the demand for unverifiable market risk premium.

Furthermore, the barriers relating to the portfolio diversification can create a larger risk premium to offset the firm specific risk of unaudited financial information. In brief, it is through audits that investors reduce the firm specific risk and market related risk (Shakun, 1978; Wallace 1980).

According to Wallace (1980), the monitoring hypothesis seems to overlap with the information hypothesis from the audited part of the audited information and this is valuable to the principals and agents, and is also applicable to the investors for their investment decisions. However, he also points out that the monitoring hypothesis provides support for the practice of furnishing principals with the audited financial statements only within the period of the agreement of the contract (within a period of the relationship between the agent and principal). According to the hypothesis of the information, financial information determines market value. Investors require financial information in order to make the rational investment decision although they are on the outside of a contract of principal and agent relationships. In other words, in order to make decisions of the investment, investors need financial information from firms on an ongoing basis and without time limits.

3.3.3 The Signalling or reputation hypothesis

Wallace (1980) suggests that "signalling is a kind of implicit guarantee". In the agency relationship in which information asymmetry problems arise, it is supposed suppliers of the financial statements to be dishonest in reporting financial information. As such, users of financial statements are not able to distinguish between dishonest and honest information. In this case, the need for independent audits can be seen to result in the financial statement users receiving honest reports (Wallace, 1980). Therefore, audit services inform the market that the financial statements that are provided through the management are also free of material misstatement. Such assurance provides the investors' confidence and other users of financial statement that the reported accounting numbers are reliable.

Wallace (1980) pointed that "Specifically, the audit could indicate less error or noise in the financial report, greater fineness in the methods of reporting (including with GAAP), and unbiased performance measures".

Moreover, the signalling hypothesis provides an explanation for those who demand different levels of AQ. According to Moizer (1992), in a market where sellers are not able to build a good reputation, two major agency problems (adverse selection problems and moral hazard) collaborate in order to reduce the quality of the product. If buyers fail to distinguish between the different levels of AQ, they may see all audit services as being of average quality and will only be willing to pay for them at the same price.

Audit providers do not, therefore, have any way to influence the buyer for their services in preference to any others. As a result, the problem of moral hazard arises because providers are likely to sell low-cost services and low quality in order to maximize their profits, and the profits that come, regardless of the quality of the provider of individual and quality services (Moizer, 1992).

Simultaneously, the adverse selection problem could also arise because the market will probably be driven by low quality providers and good quality providers will be forced to desist from the market (Moizer, 1992). As a result of these impact trades of average quality services is that the market becomes smaller, and this leads to the possibility of the collapse of the market (Akerlof, 1970). The signalling framework provides a cure for the collapse of the market because it explains the ability of sellers to provide a signal to uninformed buyers about the quality of their services or products where there is a presumption that the seller knows the quality of their products and the buyer does not (Bar-Yosef and Livnat, 1984).

Since the buyers are not able to determine the quality of the product early, several models of the (reputation) capital suggests that the seller needs to expend resources in order to establish a reputation (Klein and Leffler, 1981; Shapiro, 1983; Rogerson, 1983; Allen, 1984).

For example, Klein and Leffler (1981) argues that higher quality sellers invest in non-salvageable firm specific assets (such as advertising or marketing Investment) in order to prevent competitors from entering the market, and thus they provide direct value to buyers. Shapiro (1983) indicates that sellers can establish their reputation by charging at the beginning for a higher quality product at a minimum quality price that is equivalent to the cost of production because they are new members to the market. In the early period the sellers may suffer economic losses, but later they recover the premium of price, provided that they keep on producing the higher quality products. As pointed out by Shapiro (1983):

> *"…. The premium for a high quality product represents only a fair rate of return on the investment in reputation. The typical time pattern of profits to a seller is given by an initial period of losses, i.e., investment in reputation, followed by a stream of profits…… The higher the quality produced, the larger are the initial losses (investment in reputation) and the subsequent profits (premiums for high quality items)".*

Allen (1984) disagrees with the models suggested by Klein and Leffler (1981) and Shapiro (1983) by saying that investments in non-salvageable firm specific assets are not practical in some industries and sellers must probably not charge for a higher quality product at a minimum quality price and thus suffer losses in the initial period of investment. Allen (1984) claims that the sellers that produce a higher quality product should price it at a higher price, which can be above marginal cost.

He argues that the:

> "*Buyers reassure themselves about high quality of each firm's output by verifying that the price charged and quantity produced are consistent with high quality's being more profitable than low quality"*.

When the seller charges for high-quality products at a lower cost, it is perceived by the buyer that the seller has transferred the higher quality products to a lower quality product, and this leads to the buyer's resistance to purchase any of the seller's outputs.

Once the reputations of the sellers have been established, they are able then to indicate to the buyers that their products are endorsed with higher quality marks. Klein and Leffler (1981) indicates that firms that have established reputations are less likely to produce low quality products because once buyers realize that they have purchased such a product, this information will quickly be disseminated to other buyers. Once their reputation is damaged, the sellers may fail to secure an adequate return on their quality product (Klein and Leffler, 1981; Shapiro, 1982; 1983; Rogerson, 1983).

With respect to the audit market, Moizer (1997) argues that the signalling hypothesis does not necessarily entail higher quality audit because it simply leads the users of the market to believe that the more expensive auditing firms offer a higher service quality. Consistent with this is (1981) DeAngelo assertion that since the AQ is unobservable and costly to measure, the market tends to use a good reputation, derived from the large auditors, as a sign of higher quality audit.

As pointed out by Shapiro (1983):

> *"The idea of reputation makes sense only in an imperfect information world. A firm has a good reputation if consumers believe its products to be of high quality. If product attributes were perfectly observable prior to purchase, then previous production of high quality items would not enter into consumers' evaluations of a firm's product quality. Instead, quality beliefs could be derived solely from inspection".*

3.3.4 Insurance hypothesis

The insurance hypothesis differs from the agency relationship hypothesis and applies when auditors are involved in litigation. It shows that auditors provide investors with protection in the event of an audit failure (Wallace, 1980; Stice, 1991; Menon and William, 1994). In other words, the legal system allows investors to recover their investment losses from the auditor if the audited financial statements are of a low quality or if there is misrepresentation. The possibility of recovery of such claims increases if the auditors are among the larger audit firms (Schwartz and Menon, 1985).

Wallace (1980) gives four explanations as to why managers choose auditors as insurance in preference to insurance companies. First of all, it is assumed that managers who are not guaranteed to be completely independent of their actions, without ratification by the auditor, can be involved in negligence or are committing fraud. Secondly, improvements in accounting and auditing firms that employ legal staff, legal services and in-house counsels, indicate that they are more efficient compared with insurance companies. Thirdly, insurance companies use a cost benefit approach when deciding whether to enter into a legal defense or to take a decision on an out-of-court settlement. However, both the firms and the auditors that are involved in litigation consider the impact on their reputations and thus, they make sure that they protect their reputation. Fourthly, if investors suffer losses because of the audited financial statements, the courts are likely to hold the auditors responsible and to require them to bear the losses. The contributions of auditors for the investor's losses are viewed by the court as a socializing risk. As mentioned by Wallace (1980):

> *"...auditors responsible for business failures, he spread the cost to the clients through higher fees and then to society through higher prices and lower returns on investment".*

Many studies have empirically tested the insurance hypothesis. For example, Menon and Williams (1994) use the case study of Laventhol and Horwath (L&H: is one of the seventh largest public accounting firms in the U.S. They were declared bankrupt in November, 1990), and Menon and Williams (1994) examine the effect of L&H's clients' stock price (1) when L&H filed their bankruptcy and (2) on the announcement that they replaced the auditor. They assume that when L&H filed for bankruptcy, they ceased their operations and their investors would no longer have access to recover their investment losses. Therefore, their clients' stock prices were expected to decline. When L&H's clients reappointed a new auditor, they assumed that the investment losses of L&H were not transferable to the new auditor, since investors can claim only from them if they used the audited financial statements (prepared by the new auditor) for their investment decision.

If the insurance hypothesis is put to the L&H bankruptcy case, a new appointment would provide a significant reaction in stock prices. However, if the market realizes that the appointment of the new auditors can clarify the uncertainty of future monitoring, it may lead to a positive return. Their findings are consistent with the hypothesis of insurance. Price reaction to all the events supports the argument for the lack of expected insurance coverage. Thus the disclosure of the L&H bankruptcy had a negative impact on the price of their stock, and the announcement of a replacement auditor did not provide any significant reaction.

In addition to this, Baber et al (1995) indicates that such price reactions were driven by the monitoring function of L&H, and that the monitoring and insurance hypotheses are difficult to differentiate. They indicate that financially distressed auditors are more likely to conduct low audits quality because they are more concerned with having their independence and competence judged. For example, in order to keep their clients and reduce their audit cost, financially distressed auditors are less likely to report a misstatement or an error that they discover during audit work, or they may reduce audit testing in order to reduce the cost of auditing. They claim that if investors are aware and if they saw that L&H was independent and incompetent then such a perception has led to a fall in the stock prices. However, Lai and Gul (2008) provide contradictory evidence to Baber et al. (1995). Using the probability of issuing a modification to the auditor's opinion, the provision of discretionary accruals and predictability of discretionary accruals for the earnings in the future as proxies for AQ, they indicate that the AQ of L & H was not substandard.

In another study, O'Reilly et al. (2006) examine the interaction between the insurance and signalling hypotheses by studying audit opinion in an experimental setting. They argue that the audit opinion as a going concern (1) provides signals to the market that the firm is no longer feasible, thus affecting the stock price, (2) provides the auditor legal protection, although there is still a possibility that investors are able to recover part of the losses, and (3) increases the value of investors due to the increased need for insurance coverage.

Their findings indicate that the going-concern audit opinion reduces analysts' estimation of stock price because market participants consider the role of the auditors as a protector. In brief, the insurance hypothesis supports the view that the auditors, seen by investors as guarantors of investment and investors "appear to be willing to pay a premium for the right to recover the loss of investment potential of auditors through litigation" (Menon and William, 1994).

As well as increasing the direct costs that the auditor needs to charge for investors to cover losses, such lawsuits also have an indirect impact on their reputation and perceived quality of the audit (Palmrose, 1991). The results of Chaney and Philipich (2002) are consistent with those of Menon and Williams (1994) and Baber et al. (1995). They investigate the impact of the failure of the Enron audit on Arthur Andersen's (A&A) reputation as one of the big five auditors. They examine A&A's clients' stock prices in the three days after A&A admit they shredded a significant number of audit documents related to the engagement of Enron. Such an unexpected event resulted in a negative market reaction on A&A's clients' stock prices, indicating that investors acted on the perceived low quality of the audit carried out by A&A.

Similarly Hillison et al. (2004) examine clients' stock price reactions to Ernst & Young's (EY) rumors of bankruptcy in late November and early December 1990. The findings indicate that the hypothesis of insurance and the AQ explain the negative stock price reaction. Although the Big 4 auditors may provide a high quality audit, market participants still react according to published information. When market participants lose confidence in the credibility of audited financial statements, the effect is a reduction in the client's stock price.

Lennox (1999) has tested the reputation exposure and insurance hypothesis (under the signalling hypothesis) using United Kingdom data between the periods of 1987-1994. According to the hypothesis of a reputation, the big size auditors signal their AQ by assuming that they are more likely to lose their client specific rent when they offer low quality audit.

In order to avoid such a loss, they have an incentive to provide the highest quality audit (DeAngelo, 1981). The alternative to this argument is that big auditors or wealth auditors are associated with higher risks of litigation (Dye, 1993). Similarly, in order to prevent such claims of litigation (for example, because of low quality audit) from investors, the big auditors offer a higher AQ and are more credible. Lennox (1999) posits that the lower the quality of the audit conducted by the auditors, the higher the potential for such auditors to be sued (because they fail to report and detect misstatement or negligence). He claims that in the case of the big auditors that gain their quality from the capital of reputation, the litigation history of auditors provides an accurate indicator.

However, the insurance hypothesis considers the litigation of the auditor to be a poor indicator because the auditors are likely to be sued if they are sufficiently conservative (Type 1 error), but they will not be sued if they are too conservative (Type 2 error). Therefore, although the big auditors provide a higher AQ than a smaller size auditor, there is a high likelihood that they will be sued when a type 1 error arises. Lennox's results indicate that the large auditors are more likely to be sued because they are more afraid of potential litigation claims than of losing their client specific rent or capital of reputation.

3.4 The association between AC, external auditor, BoDs, and FRQ

There are two research questions that need to be discussed in this thesis. The first question is concerned with the relationship between the effective AC, BoDs, and auditor quality in constraining EM. Previous explanations gave reasons why these parties demand the highest quality audit, and why they are more likely to constrain EM, by reviewing the roles of ACs and boards of directors and their connection to the external audit. The second question relates to the relationship between the effective AC and board, and AQ.

The main goal of the BoDs is to obtain the success of the firm. They are responsible for reviewing or preparing the strategy, values, goals and mission of the firm, in order to align their interests with interests of the shareholders (United Kingdom CG Code, 2010; CG Code of Bahrain, 2010). They are also responsible for the fairness and transparency of the financial statements, as clearly stated in the Bahrain Commercial Companies Law 2001. The Companies Law (2001) - article (195), requires the directors to assume responsibility for the individual administration and accounts of the firm.

The Companies Law (2001) - article (361) (d)- states that the directors of a company must not approve the company accounts unless they are satisfied themselves that the company accounts provide a true and fair view and have been prepared according to the financial reporting framework. These company accounts are issued and approved by the directors of the firm, and are required to be externally audited as they are to be used by the public. As the highest point in the firm structure hierarchy, the BoDs are responsible for the activities of the firm, financial performance and strategies, including the actions of sub-committees.

Under the main BoD, there may be several sub-committees, one of which is the AC. The AC has a direct link with the services of the external audit and the firm's financial performance. Wolnizer (1995) discusses in detail the tasks that the AC members are expected to do, from three perspectives:

1. Auditing and auditors – The AC gives suggestions to external auditors, reviews the scale of non AFs and AFs, ensures auditor independence, reviews the audit plan, writes a letter of engagement, and allocates resources on the internal audit. With respect to AFs, Collier and Gregory (1996) argue that the AC is responsible for ensuring that the scope of the process of the audit is sufficient and that the AC is able to ensure that the reduction of AFs does not reach a level which would potentially jeopardize the work of the AQ.

2. CG – The AC facilitates the relationship between the BoDs and the auditors, as well as reviews and complies with codes of conduct, corporate and ethical policies.

3. Financial reporting and accounting – the AC reviews the policies of accounting, financial statements, and prevents or detects errors or fraud that could lead to a material misstatement in the financial statements.

Through the implementation of these tasks (1-3), companies are expected to strengthen their credibility, increase the efficiency and effectiveness of internal control, improve the accountability of management personnel, and reduce any opportunistic behavior of management, increase objectivity and reliability of financial statements, as well as that of external and internal audits and enhance the BoDs' function while helping them to meet their legal obligation (Wolnizer, 1995). The overall suggestion is that the activities of an AC can improve the system of CG and the FRQ of the firm.

Similarly, Menon and Williams (1994) indicate 2 potential benefits that can be obtained through establishing the AC. Firstly, an independent AC may act as an independent party between the external and internal audit. The independent members of the AC help to provide an unbiased assessment between the external audit services and internal audit function, which in turn improves the FRQ of the firm (Imhoff, 2003). Secondly, the AC may enhance the efficiency and function of the BoD, particularly when the BoD has a large number of directors.

Moreover, the Blue Ribbon Committee (BRC, 1999) also agrees that the formation of the AC can enhance confidence of investors about the current reported financial statements. They stated the following:

> *"....the Committee believes ACs will be more effective in helping to ensure the transparency and integrity of financial reporting and, thereby, maintain the investor confidence that makes our securities markets the deepest and most liquid in the world".*

In addition to the important role of the AC and BoDs, Bailey and Grambling (2005) indicate that external audits work as a key determinant of FEQ. Power (1996) argues that the external audit adds credibility to the financial report. DeAngelo (1981) claims that auditors improve the quality of financial reports through their competency and independence. Moreover, Ruddock et al. (2006) argue that the quality of financial reports is improved when auditors are responding to aggressive earnings conservatism.

Anderson et al. (2001) assumes that when a manager has a higher incentive to manage earnings, the auditor realizes that the manager is more aggressive, having a greater desire to look good in their financial statements and auditors also expect to agree with their financial statements. Therefore, auditors will limit EM when they see that managers manipulate financial statements. Furthermore, according to Krishnan (2003b), through constraining EM, the auditors are able to improve the information value of earnings. If the market realizes that the auditors are not able to limit opportunistic earnings, then the earnings' information value would be diminished simultaneously. According to Sankar and Subramanyam (2001), the restriction imposed by GAAP, and by auditors, on the reporting earnings discretion may improve the content of earnings' information.

There are indirect and direct links between the role of the AC, the board and the external auditor. Under the direct relationship, the principal roles of an AC are to make a recommendation to the board in relation to the appointment of external auditor to review the AFs, audit engagement to monitor the external auditor independence and objectivity, as well as the effectiveness of the process of audit (United Kingdom CG, 2010). As previously mentioned, with respect to the proposed AFs and the audit engagement, the AC is responsible for ensuring sure that the scope of the audit is sufficient and that the proposed AFs do not jeopardize the AQ work (Collier and Gregory, 1996). The reason for this is that auditors try to reduce the total cost of the audit and seek to achieve a balance between the expected future losses and costs of audit resources as a result of legal liability (Carcello et al., 2002).

It is reasonable to expect that an effective BoDs first reviews the overall scope of an audit and the proposed AFs before agreeing to the proposal of the AC, since the BoDs is responsible for all their sub-committees' actions. In respect to auditor independence, specifically the provision of NAS, official guidance requires an AC to review the engagement NAS and make sure that the relevant procedures are in place to ensure that the independence and objectivity of the auditors are not affected by the NAS. The AC is responsible for making the recommendations and reporting to the BoDs on any actions taken to ensure that the auditor's independence has been safeguarded (United Kingdom CG, 2010; CG Code of Bahrain, 2010).

Indirectly, an effective AC and board may signal to the auditor and management that they exercise a higher and more vigilant oversight function. For exampole, when management believe that the ACs and board are monitoring well, they may consider limiting voluntarily the purchase of NAS (Abbott et al., 2003a) and will limit their own opportunistic earning behavior through employing higher quality auditors. Similarly, auditors may see that an effective AC and board are associated with having a function of higher monitoring and they are therefore likely to be more demanding about having a higher quality audit (Carcello et al., 2002).

Why do the ACs and boards of directors demand different levels of AQ? Why do they constrain EM? Similarly, why do external auditors limit opportunistic EM? The answers to these questions lie in the effects on the shareholder interests, legal exposure, and reputation capital (Carcello et al., 2002).

The reputation hypothesis assumes that vigilant directors make costly investments to establish their reputation as effective monitors and, in return for being good monitors, they could be rewarded with an additional directorship in another firm (Fama, 1980; Fama and Jensen, 1983). Evidence indicates that when directors suffer a damaged reputation, they are less likely to get a chance to serve on another board.

For instance, Gilson (1990) argues that the extyernal directors of firms in financial distress hold significantly fewer seats on other boards following their departure, possibly due to the legal exposure and influence of reputation. In another study, Fich and Shivdasani (2007) examine the impact of reputation for external directors of firms that are involved in financial fraud. They found that the outside directors lose about 50 percent of their directorships in other firms when one of the firms in which they serve is involved in financial fraud lawsuits. This finding suggests that sued directors on a board are seen as weak monitors, which may increase the likelihood of financial misconduct that occurs. Moreover, they also found that the reduction in directorships may be driven by an external directors' desire to reduce their future legal exposure.

The hypothesis of reputation is also applicable to auditors. A highly reputable auditor has an incentive not to produce low quality audits because, once their clients discover they provide low quality audits, their reputation will be damaged and they will be not be able to secure their clients and they will lose quasi rents (DeAngelo, 1981).

Wilson and Grimlund (1990) provide evidence of the consequences that auditors may suffer in case of damage to their reputations. They examine the impact of Securities Exchange (SEC) disciplinary actions on audit firms and their findings indicate that auditors tend to lose market share, and they have difficulty retaining clients. In general, auditors are likely to constrain EM due to the possibility of being sued or subjected to regulatory actions. These may be due to negligence in determining misleading information in audited financial statements. Evidence indicates that auditor litigation has a positive relationship with EM (Lys and Watts, 1994; Heninger, 2001) and failure to perform their role effectively or neglect their duties may increase the potential of the auditors for future legal exposure (Lennox, 1999).

As well as considering the capital of reputation and legal exposure, the AC and BoDs demand a higher quality audit in order to promote the interests of shareholders (Carcello et al., 2002).

Various studies have indicated that investors believe that the provision of NAS negatively affects auditor independence and undermines the audited financial statement. Lavin (1976; 1977) and Firth (1980) examine financial analysts, perception of accountants and loan officers in the United Kingdom and United States, respectively.

Their findings indicate that when auditor independence is considered to be impaired, borrowing decisions and investment will also be affected. These studies may indicate that investors avoid a firm if they realized that the audit of the financial statements has been impaired through the purchase of NAS. Therefore, the AC and BoDs monitor auditor independence (for example in terms of the levels of NAS) in order to gain the confidence of the investors and promote the interests of the shareholders.

A higher quality auditor may be perceived by investors to be associated with a higher credibility of information, which in turn increases the value of the firm (Titman and Trueman, 1986; Datar et al., 1991). In fact investors assume that higher quality auditors are more sensitive to earnings surprises. For instance, existing studies show that the firms that engage or switch to big auditors have a higher earnings respond coefficient compared to smaller size auditors, and lower EM, consistent with the view that big auditors provide more credible information to investors (Teoh and Wong, 1993; Becker et al., 1998). In another study, Khurana and Raman (2006) indicate that higher NAS fees and total fees received through auditors are viewed negatively through investors as higher fees could possibly compromise the AQ and auditors' independence. These views express investor perception as a lower ex-ante cost of equity capital.

Overall, the higher quality of reported earnings and higher quality audits are useful not only for investors and the users of financial statements, but they are also useful for auditors, ACs and boards of directors because they are able to reduce the risk of damaged reputation and legal exposure while also raising the support of shareholders.

3.5 The Conceptual Framework and Hypotheses Models

In Chapter 2 (the literature review) two empirical studies with causal hypotheses were discussed.. This Chapter provides the conceptual framework and a number of hypotheses (See Figure 3.1). These hypotheses can be divided into two groups. The first group of hypotheses (H1-H24) relates to the effects of characteristics of Corporate Governance (board of directors and audit committee) to different proxies of Audit Quality (audit fees, non audit fees and auditors' industry specialist), illustrated in Figures 3.2 and 3.3. The second group of hypotheses (H24-H35) relates to the efficiency of higher-quality auditors and Corporate Governance characteristics in constraining Earnings Management, illustrated in Figure (3.4). In the first group, the characteristics of Corporate Governance and the proxies of Audit Quality are represented as independent and dependent variables respectively, while in the second group; the proxies of Audit Quality and Earnings Management are independent and dependent variables respectively. All the measurements and descriptions are explained in Chapter 4. Agency theory also displays the relationship between principals and agent. To reduce the conflict of agency, the monitoring role of external audits, BoDs, and AC, are demanded. Various hypotheses relating to the demand for different levels of AQ and audits are discussed in Chapter 3. The current study thus attempts to bridge the gap by providing a basis for discerning the impact of the characteristics of CG on AQ and between characteristics of CG and AQ on EM.

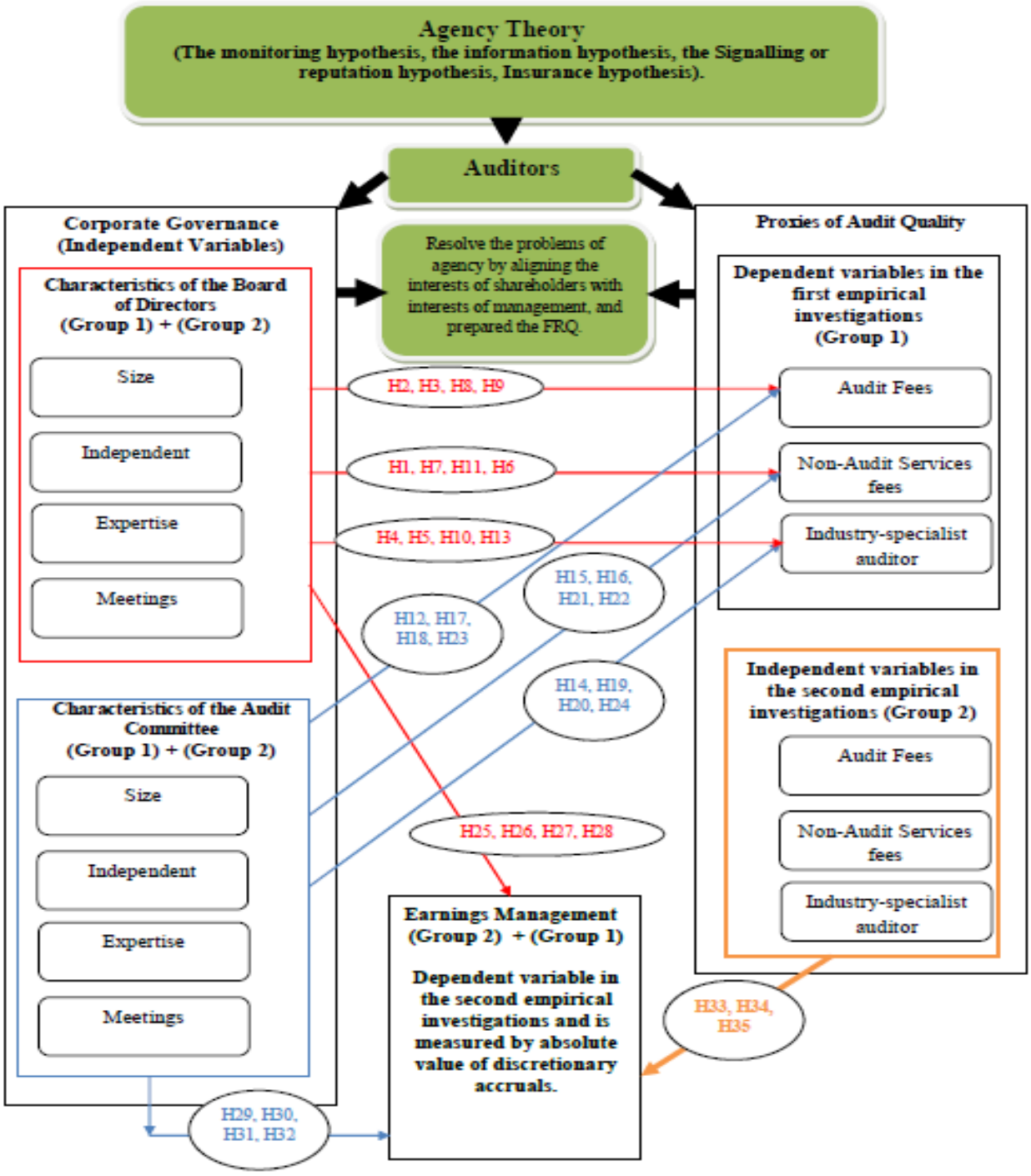


Figure 3.1: Conceptual framework describing the expected relationship between the Corporate Governance, the Audit Quality, and between Corporate Governance and Audit Quality in respect of constraining Earnings Management.

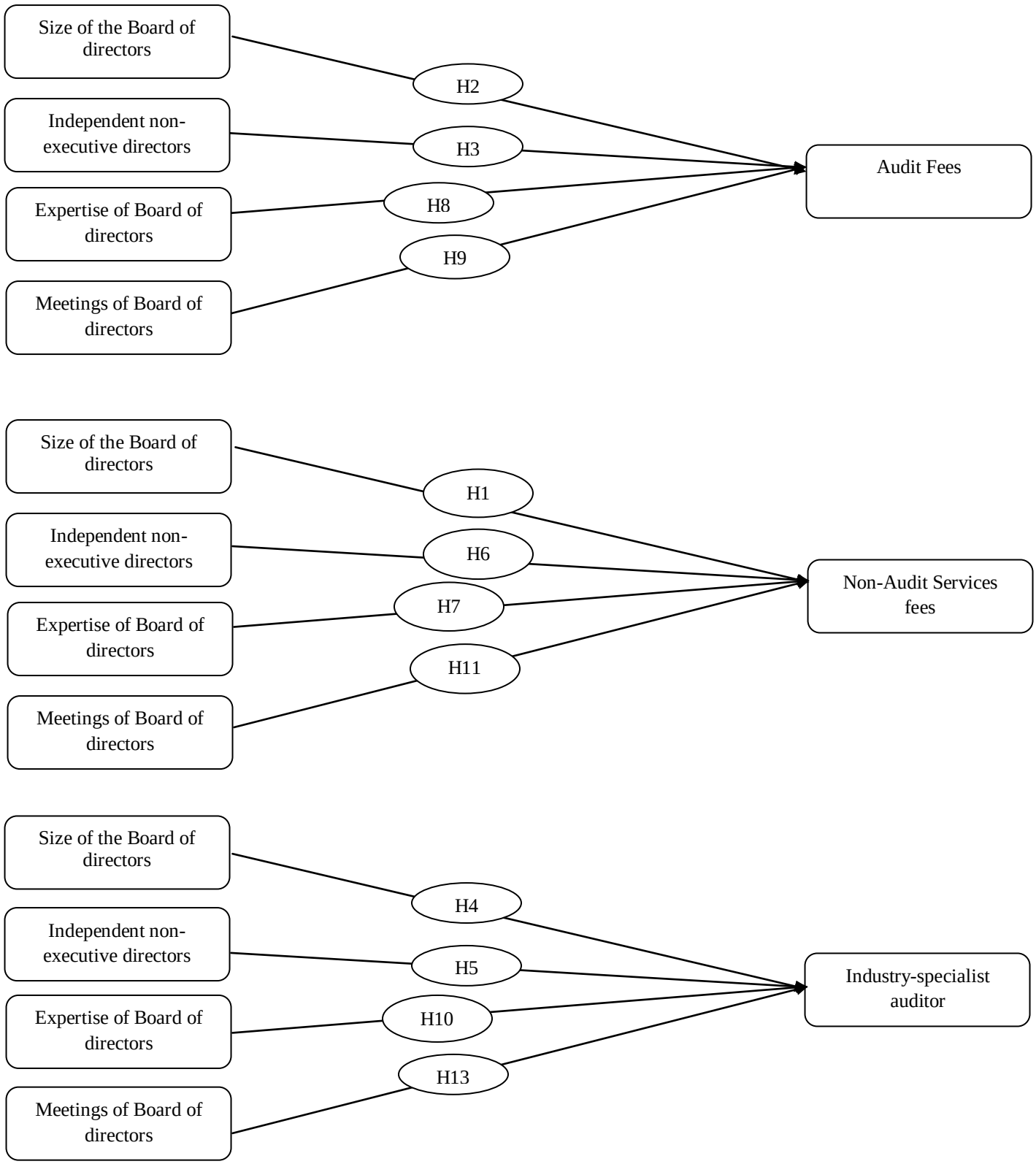


Figure 3.2: Characteristics of the Board and proxies of the AQ conceptual framework (Group 1)

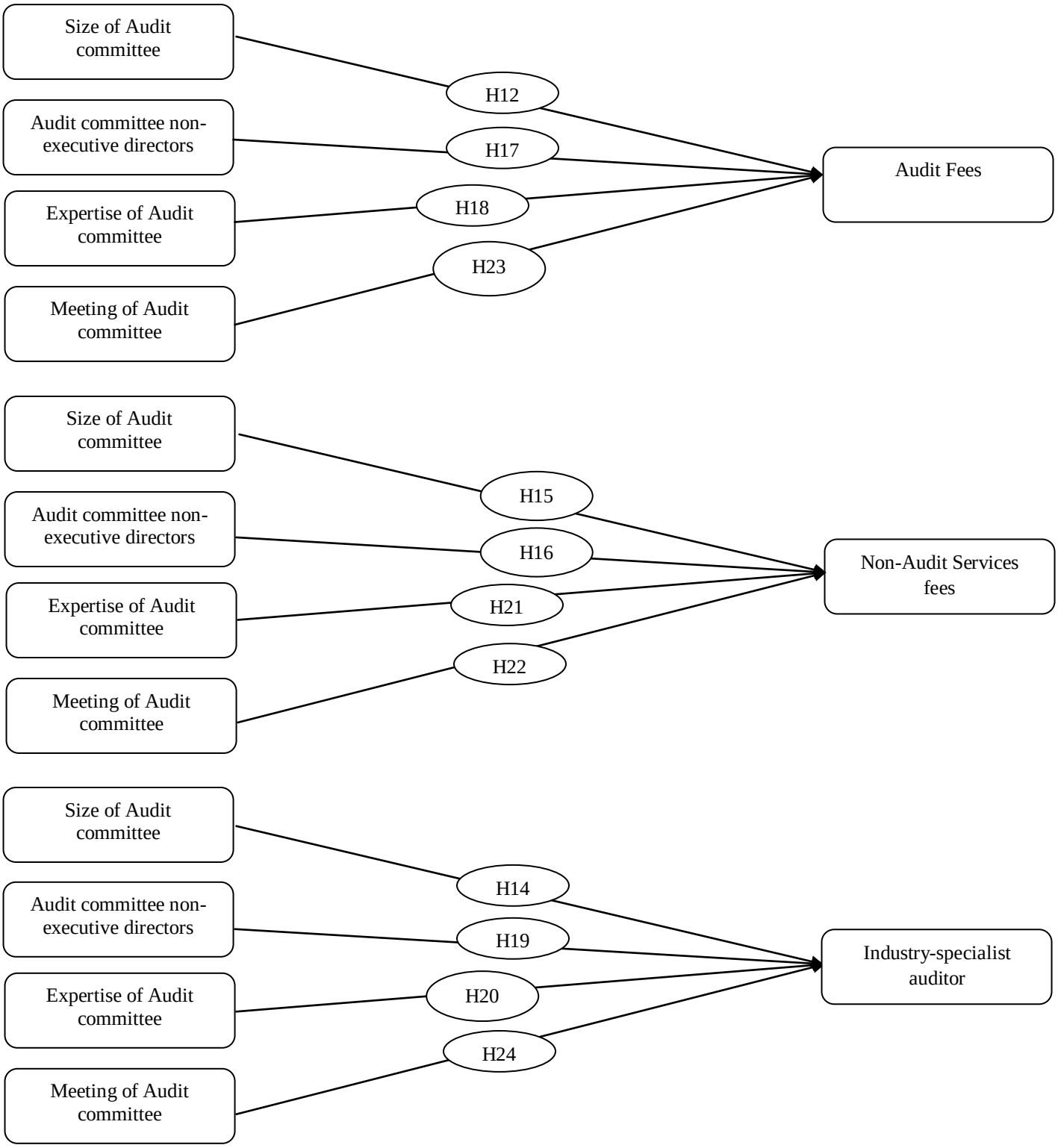


Figure 3.3: Characteristics of the Audit Committees and proxies of the AQ conceptual framework (Group 1)

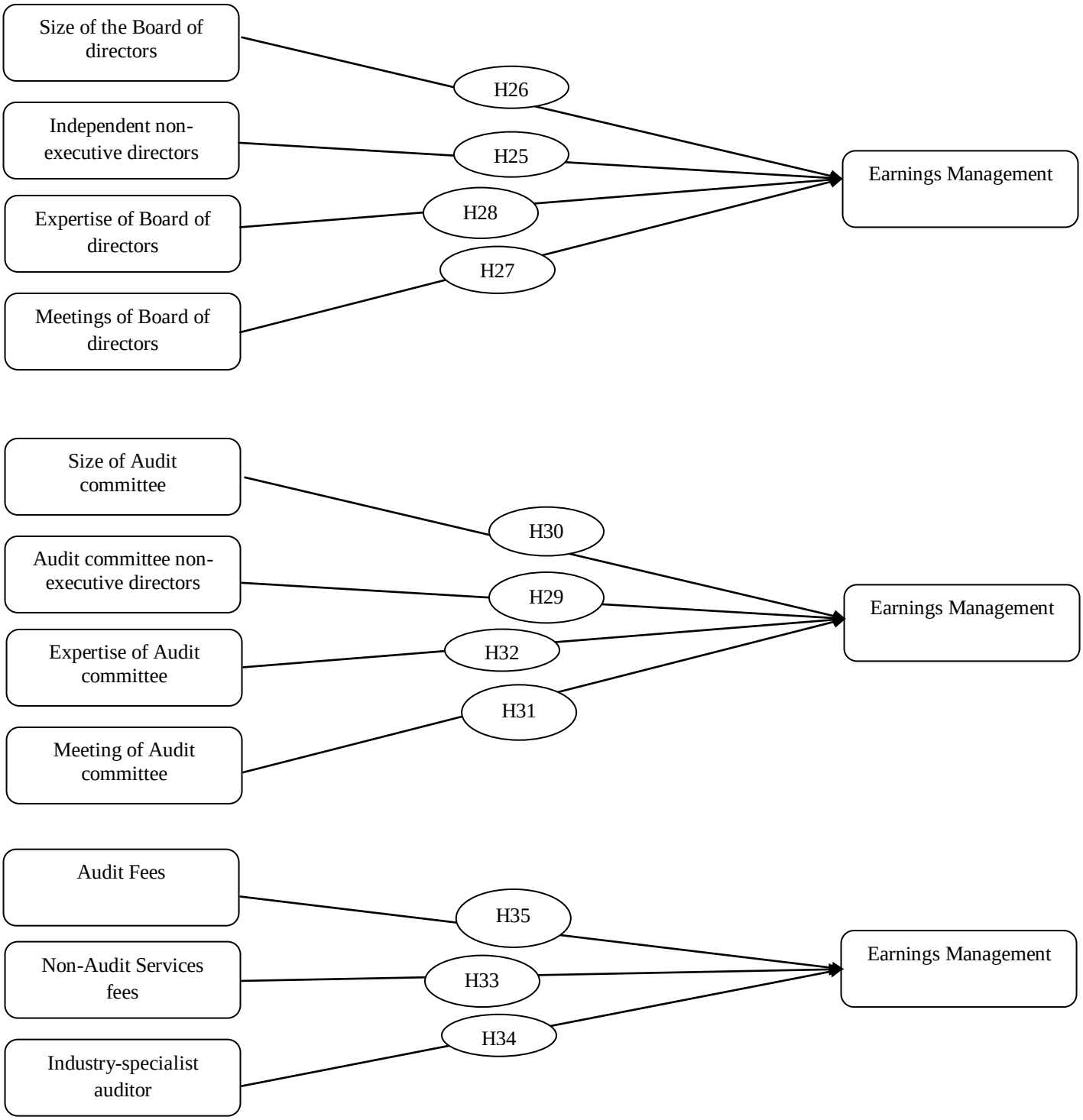


Figure 3.4: Characteristics of the Board, characteristics of the Audit Committees and proxies of the AQ conceptual framework (Group 2+1)

3.6 The summary

Agency theory assumes that agents and principals have conflicting interests, and thus are likely to contribute to the conflict of agency, which includes the phenomenon of EM. To align these interests, the theory of agency recognizes the monitoring roles of the AC, BoDs, and external auditing as playing a role in the mitigation of the principal-agent conflict. From the agency view there are various characteristics of ACs and boards (such as the composition, expertise, size and the activity levels) that contribute to the effective monitoring function. An independent audit is also acknowledged through agency theory as a control mechanism to reduce information asymmetry between investors, shareholders and the management by encouraging fairness and honesty in financial statements. Various hypotheses have shown why shareholders or management demand different levels of AQ and auditing services. These hypotheses include the monitoring hypothesis, the hypothesis of information, signalling/reputation hypothesis and insurance hypothesis. By employing constraining earnings manipulation and higher quality auditors, the AC and BoDs assume they are adding credibility to the financial statement and increasing the value of firms. At the same time, the AC and board are able to promote shareholders' interests, avoid legal exposure and secure their reputation capital. Similarly, higher quality auditors are less flexible towards opportunistic earnings because of the risk that wrongly reported earnings may incur damage to reputation, increase future legal exposure, decrease the value of the firm and disappoint shareholders. Furthermore, this chapter provides the conceptual framework and a number of hypotheses that are used in this study to provide solutions to the research problems identified in Chapter 1.

Chapter IV:
RESEARCH METHODOLOGY

4.0 Introduction

After highlighting the theoretical framework in the previous chapter, this chapter provides an overview of the methodology adopted in this thesis and the secondary data collection methods employed. As previously mentioned, the aim of the present study is to examine the relationship between the AC, BoD, and AQ in constraining EM. This thesis is organized as follows: Section 4.1 presents the methodology of the research related to the assumptions concerning the nature of the social sciences, and assumptions about the nature of society. Section 4.2 explains the research paradigms, while Section 4.3 presents methods of data collection, including the questionnaire survey and secondary data, and then summarizes the measurements and the definitions of the variable hypothesis (including the characteristics of the effect of the BoD and AC, proxies of the AQ and EM). Section 4.5 explains how the conceptual frameworkhas been designed. Section 4.5 provides a brief summary of the chapter.

4.1 Research Methodology

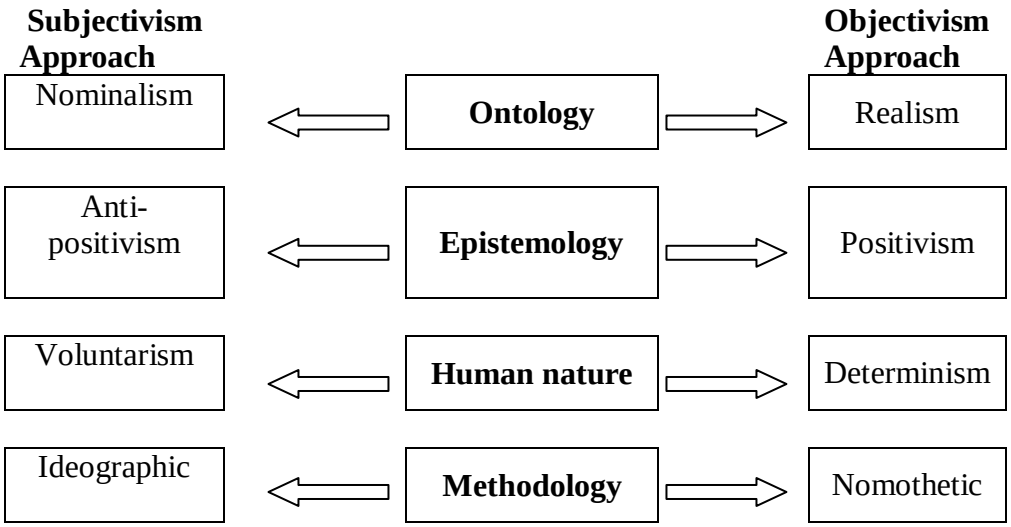
It should be noted that the philosophy of research adopted by the researcher is an important stage which reflects the researcher's ability to understand the phenomena and that he is capable of selecting the appropriate research tools. It is important that anyone who conducts research should be capable of engaging with the most important issues in her / his pursuit of knowledge and with "essential issues in social science". That is: "how do we know what we know", and following on from that, how do we get knowledge" (Goles and Hirschheim, 2000).

Burrell and Morgan (1979) provide the classification of organizational research, producing their various philosophical stances and assumptions about the nature of the social sciences. Similarly, Hopper and Powell (1985) present more explanations about several aspects of social sciences, which are composed of distinct elements about human nature, epistemology, ontology, and methodology.

4.1.1 Assumptions about the Nature of Social Science

Burrell and Morgan (1979) identified 4 assumptions about the nature of the social sciences: methodology, human nature, epistemology and ontology. These 4 assumptions have philosophical positions regarding the subjective-objective dimension. The subjective dimension consists of: nominalism, anti-positivism, voluntarism and the ideographic approach (qualitative), while realism, positivism, determinism and the nomothetic approach (quantitative) are subsumed in objectivist (See figure 4.1).

The selection of appropriate research methodology cannot be considered in isolation from the previous assumptions that encourage the research in question (Ryan et al., 2007). Therefore, these dimensions will help the researcher to recognize the stance of the current research of these assumptions.



Source: Burrell and Morgan (1979).

Figure 4.1: Assumptions Regarding the Nature of Social Science

4.1.2 Objectivism Vs Subjectivism

Objectivism is an ontological position that claims that social phenomena and their meanings depend on an existence independent of social actors, and categories that are often used in discourse have presences which are separate or independent from actors (Bryman, 2004). However, Bryman (2004) states that the social phenomena, subjectivism approach and their meanings are not independent, but are achieved by their social actors, which are not provided through social interaction but are in a constant state of revision. In other words, social phenomena are created through perceptions and consequent actions by social actors (Saunders et al. 2009). Social entities are considered as social constructions that build up from actions and perceptions of social actors in accordance with the subjectivism approach, while the objective approach views social entities as objective entities that have external reality to social actors (Bryman, 2004).

Figure 4.1 displays the term ontology and defines ontology as the nature of reality. The world must either be considered external and objective to the researcher or socially constructed, understood only by looking at the perceptions of the human actors. Epistemology is concerned with the study of knowledge and what is being researched and what we accept as the researcher (Hussey and Hussey, 1997). Clearly, the main difference between the epistemology and ontology lies in the fact that the ontology focuses on understanding of 'what is' , while epistemology is the science of knowledge, is concerned with 'what it means to know' as well as help in the process of deciding 'what kinds of knowledge are adequate and legitimate' (Gray, 2004).

Epistemology branches into two perspectives: anti-positivism and positivism (interpretivism). Positivism refers to the philosophical position of natural scientists coping with the observation of social reality, and that the end product of research using this approach can be law like generalizations similar to those produced through the scientists of the natural and physical (Saunders et al., 2009). The aim of the theory is to generate hypotheses that can be tested (Bryman, 2012). Hussey and Hussey (1997) describe positivism as follows: "*The researcher is independent from that which is being researched and research must be unbiased and value-free".*

In terms of the view of the anti-positivist, the researcher usually adopts specific methods such as face-to-face interviews and participant-observation and does not seek for laws or underlying regularities in the field of social affairs as in science. In general, this view reflects reality and argues that generalization is not the fundamental issue (Saunders et al., 2009).

The third assumption is human nature, regarding the nature of the social sciences, and is about the relationship between the environment and human beings. In other words, it should be understood if human activities produce assumptions of human nature and if human life is essentially the object or subject of inquiry (Burrell and Morgan, 1979). In general, there are two views of the role of human beings in social life. The first view is look at human beings and their experience as related to products of the environment, while voluntarism looks at man as free-willed and independent to create his own environment (Burrell and Morgan, 1979).

The fourth assumption is methodological; it is about the research process that determines the appropriate research paradigm and implications of the chosen methodology (Hussey and Hussey, 1997). The nomothetic approach is from the methodological assumption and is concerned with associations or causality, with the researcher investigating the topic and generally using a large sample, which includes the concept of intelligence and wanting to find a way to measure the intelligence of a specific aspect. Therefore, the researcher focuses on what he formulates and observes (Hussey and Hussey, 1997). Concerning the ideographic approach, the researcher examines a small sample, and uses different research methods in order to get different perceptions of analysis and phenomena, and looks to understand "what is happening" (Hussey and Hussey, 1997; Saunders et al., 2009).

In this research, objectivism in terms of the nature of the data that has been collected and analyzed is used, as in this research the secondary data will be via annual reports. Objectivism comes from using statistical analysis based on the analysis of data from annual reports.

4.1.3 ‘Positivist’ vs. ‘Interpretivist’ epistemological positions

The difference between quantitative and qualitative research is often linked to certain epistemological positions. Qualitative methodology is usually coupled with the ‘interpretative’ epistemology; while quantitative research is largely connected to the ‘positivist’ epistemology.

The epistemological stance of positivism values an empiricist, objective approach to science, which is based on knowledge of the systematic observation and experimentation (Walliman, 2006). In essence, the rigid perspective comes mainly from natural science research- despite the fact that positivist orientation can also occur in the social sciences, when the reality is supposed to be measurable, stable, and observed.

‘Interpretivism’, on the other hand, challenges the adequacy of traditional science methods for investigating the nature of cultural and social phenomena. An interpretative viewpoint on science presumes that no single, observable reality exists; instead, reality is socially and relatively constructed. Since multiple interpretations may take place for the same event, research from this epistemological position is typically aimed at understanding and interpreting reasons, meanings, motives, and other subjective perceptions which are context bound and time bound (Carson et al., 2001). From the standpoint of interpretivist, therefore, social reality is not some "thing" that can be interpreted in various ways; “it is those interpretations” (Blaikie, 1991).

Interpretivism is closely linked to the philosophical tradition of ‘phenomenology’, which is based on the idea that the social world is created by individuals in their interactions, actions, and the meanings they attach to these activities. The reality is thus a complex set of social meanings – " experiences of the people and ways of seeing the world" (Backer et al., 2002) - which are assessed systematically.

Usually, the phenomenological approach involves an in-depth interview of individuals, who have experience from the phenomenon of interest, the 'essence' of which is something individuals usually share with others who are living the same experience. Distinguishing the 'essence' is, thus, the main focus of phenomenological studies. By using qualitative interpretative analysis, it is possible to:

> *"Describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world" (Maanen, 1979).*

Examples of interpretative qualitative research methods include: ethnography (Becker, 1970), Soft Systems Methodology (Checkland, 1981), empirical phenomenology (Wertz, 1983; Giorgi, 1985), discourse analysis (Potter and Wetherell, 1987), hermeneutic-interpretative research (Packer and Addison, 1989), consensual qualitative research (Hill et al., 1997), grounded theory (Strauss and Corbin, 1998), and interpretative phenomenological analysis (Smith et al., 1999).

4.1.3 Assumptions about the Nature of Society

Two different types of sociological approaches have been described by Lockwood (1956) and Dahrendorf (1959) who argue that one concentrates on the nature of the social equilibrium and order, while the other is interested in the problems of coercion, change, and dispute in social structure. The differences between the two approaches are noted in Table 4.1 as presented by Burrell and Morgan (1979).

Table No.4.1 : Two theories of society: 'Order' and 'Conflict'

The 'Order' or 'Integrationist' View of Social Emphasis	**The 'Conflict' and 'Coercion' View of Society Emphasis**
Stability	Change
Integration	Conflict
Functional co-ordination	Disintegration
Consensus	Coercion

Source: Burrell and Morgan (1979).

Cohen (1968) considers dealing with conflict and order as entirely separate to be a mistake and he believes that theories must include the elements of conflict and order in their models. Furthermore, as the subjectivist movements were more significant, the debate concerning conflict and order has settled down to include only the effect of matters related to the methods of philosophy and the social sciences (Burrell and Morgan, 1979).

One of the pioneering studies that focused upon the order and conflict debate was Burrell and Morgan (1979) who claimed that this issue is problematic in that radical change and regulation are replacement notions that have 2 dimensions. Firstly, the sociology of radical change is interested with interpretation of structural contradiction, radical change, modes of domination, and deep-seated structural conflict. Second,regulation is interested in the interpretation of society in terms that emphasize the underlying unity and cohesiveness.

4.2 Research Paradigm

The paradigm is a useful way to explain and understand the social phenomena on the basis of the ontological and epistemology positions (Saunders et al., 2009). Furthermore, Corbetta and Patrick (2003) indicate how this paradigm is significant, and argues that any scientific research that has been performed without paradigm lacks selection criteria and orientation, so that all the techniques, problems and methods are equally legitimate. Similarly, Bryman (2004) verify that the paradigm means how the results of the study should be clarified and how it should be conducted.

The study of Burrell and Morgan (1979) is considered a pioneering study in research methodology that made a great contribution through presenting its 4 paradigm models that helps researchers to clarify the assumptions for designing their research and provides a useful understanding of their work (Falgi, 2009; Jackson and Carter, 1991).

Burrell and Morgan (1979) provide their 4 paradigm model (See figure 4.2) subjective–objective (horizontal axis) radical change–regulation (vertical axis).

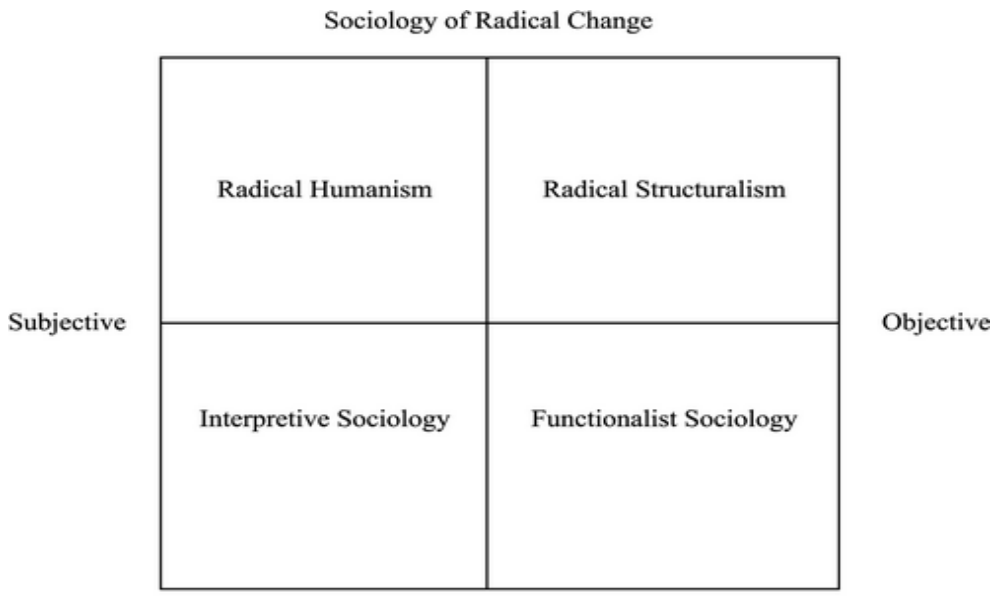


Figure 4.2: Sociology of Radical change

Source: Burrell and Morgan (1979)

The paradigms of the objectivist and subjectivist have been discussed in the research methodology section, where they produce the ontological stances. Radical change is concerned with providing a theme regarding the actions that should be taken in the affairs of the organization and gives suggestions for significant changes to their usual position. The aims of the regulation position are to portray current practice and how affairs of the organization are regulated and then make suggestions to improve in line with the current situation (Falgi, 2009).

The radical humanist paradigm that represents the dimensions of radical change and subjectivist " seeks to change, emancipate the status quo and potentiate and to overcome all barriers facing this emancipation (such as social constraints, compulsions, psychological, power, and ideology" (Falgi, 2009). Although, the radical structuralist paradigm, that takes a different ontological position, the aim is to focuses on the structure of the organization and seek for the fundamental change and then analyse organizational phenomena such as patterns of conflict and power relationships (Saunders et al, 2009).

Burrell and Morgan (1994) reported that the interpretive paradigm refers to *"everyday life is accorded the status of miraculous achievement"*.

This would not require the researcher to achieve change, but it will allow him to explain and understand what is going on (Iskander, 2008). Finally, the other objectivist dimension (functionalism) that has a view of regulation explains why notable organizational problems occur and provides recommendations contained in the current structure of the organizational situation (Saunders et al., 2009).

4.2.1 Research Theoretical Approach

This study will adopt the positivism approach because of its relevance to this type of research. Clarke (2004) gives a brief of the main methodologies for research on CG, namely data questionnaire surveys, interview, surveys and observation. Each method has its advantages and disadvantages. The main method that is suitable to the positivism approach is data base surveys based on analysis of published sources (Clark 1998) which will be used in the current study.

The deductive approach tends to be favored more by the positivist researchers than interpretivist (Ticehurst and Veal 1999). The process of the deductive research involves the development of a hypothesis or theory to test the hypothesis. The inductive approach is used when the data is collected first, and developed the theory as a result of the data analysis.

Positivism is linked with quantitative, experimental, scientific, and deductive frameworks where researchers seek particular quantifiable observations and therefore regular use experiments and statistics to test their hypotheses (Neuman, 1997). Therefore, the current study uses a deductive approach. It is an explanatory study. A prior study has been mostly conclusive in the role of external audit and CG in reducing EM which helps in developing a research propositions and testable hypotheses.

Quantitative methods are often used, such as financial data analysis to determine the effectiveness of CG in empirical studies. In CG research, measures of the board composition such as AC independence and board independence- measured by the ratio of non-executive directors to total number of directors- is used in interpreting the effect of board composition on the extent of a company EM level.

There is a dearth of research on CG, which uses a qualitative approach. This may be due to the limited information available on how BoDs really work due to the confidential nature of the process and the meetings of the BoDs, which in turns makes it difficult for researchers to capture information on how a corporate board may contribute to enhancing the quality of earnings.

However, because of the difficulty of obtaining access to this information, the realist and interpretivist approaches have only been used in limited case studies and thus research tends to be on material that can be easily obtained from external sources such as media releases and published reports (Leblanc and Gillies 2005).

The aim of this research is to empirically examine the relationship between the characteristics of Corporate Governance and Audit Quality in constraining Earnings Management in Bahraini listed companies. Therefore the research uses a quantitative approach where relationships between discretionary accruals and a set of independent non-financial and financial variables on listed companies were tested using analysis of data.

The main purpose of this method is to identify the relationship between earnings management and the characteristics of Corporate Governance and Audit Quality variables. This approach enables the researcher to test the sample observations that make the findings more generalized to the population as a whole.

4.3 The conceptual framework of the research

Based on a generic literature review, this research has designed an appropriate conceptual framework, developed a causal model and a number of hypotheses to test, in order to explain the relationship between the effectiveness of the characteristics of the AC, BoDs, and AQ in respect of constraining EM. In all, thirty five main hypotheses were tested, twenty four for the first study, and eleven for second study. The study covers the financial period between 2010 and 2013 from the listed companies in the Bahrain Bourse.

4.4 Regression Analyses

4.4.1 GLS regression analysis

The regression diagnostic points out heteroscedastisty in this study. There are several reasons for this situation of unequal variance, for example: skewness and outliers. In such a case of heteroscedasticity, it is preferable to give less weight to the observations coming from the population with the greatest variability than the weight given for observations of the populations with smaller variability. However, Ordinary least-squares do not make use of the information contained in the unequal variability of the dependent variable, because it assigns equal weight to each observation. Generalized least-squares is Ordinary least-squares on the transformed variables that meet the standard least-squares assumptions. As such, Generalized least-squares reduces the weighted sum of residual squares not minimizing an equally weighted or un-weighted as Ordinary least-squares (Gujarati, 2003).

To take advantage of the benefits of data analysis for the panel in the present study, we employed the pooled generalized least squares (unbalanced).

4.4.2 Quantile Regression

Koenker and Bassett (1978) identify the introduction of Quantile regression methods which provide a mechanism for estimating models for the function of the conditional median, and the full range of functions of conditional quantile. The methods of the Quantile regression seek to minimize the sum of the absolute residuals, not the sum of squared residuals as in classical linear regression. Unlike the M estimators and classical regression techniques that deal with variable means, Quantile regression concentrates on the median. Koenker and Hallock (2001) explain the following:

> *"Just as lee can define the sample mean as the solution to the problem of minimizing a sum of squared residuals, we can define the median as the solution to the problem of minimizing a sum of absolute residuals. The symmetry of the piecewise linear absolute value function implies that the minimization of the sum of absolute residuals must equate the number of positive and negative residuals, thus ensuring that there are the same number of observations above and below the median".*

The methods of the regression quantile offer, by supplementing the conditional mean with an entire collection of conditional quantiles, a much more complete statistical analysis of the stochastic relationships between the variables. Furthermore, they are more robust against possible outliers; heteroscedasticity; and skewed tails; and can be computed through traditional methods of linear programming. In addition, these methods provide a broader explanation of the influence of the independent variables on the dependent variable than traditional regression (Ordinary least-squares), which focuses on the mean (Koenker and Hallock, 2001; Buchinsky and Hahn, 1998):

> *"The quantile regression results offer a much richer, more focused view of the applications than could be achieved by looking exclusively at conditional mean models. In particular, it provides a way to explore sources of heterogeneity in the response that are associated with the covariates." (Koenker, 2005).*

As such, this feature of the Quantile regression is likely to be particularly useful in the context of corporate governance and audit quality in the current study. Therefore, it was decided to use the Quantile regression in order to verify the results of Ordinary least-squares, and Generalized least-squares. STATA provides the Quantile regression as one of the non-parametric analysis.

4.5 Endogeneity and the 2SLS model

As two-stage least-squares (2SLS) regression is not as common as the more often used Ordinary least-squares method, the methods and the concept relating to the 2SLS method are explained in more detail. Recent studies (Jokipii et al., 2008 and Hay et al., 2008) have used the 2SLS regression model in order to reduce endogeneity of the variables (variable associated with the term error or another variable). As Larcker & Rusticus (2009) explain, the methods of the instrumental variable (IV) are commonly employed in accounting research (for example disclosure research, executive compensation, EM and CG) when the regressor variables are endogenous. In this study the characteristics of the AC, BoD and proxies of the AQ are likely to be associated with endogeneity, which is used as a dependent variable and as an independent variable in the regressions. There are also some additional tests was carried out, where the discretionary accruals and the AFs are seen as endogenous to further study the joint effect of the hypothesis variables.

Hay et al. (2008) clarify the endogeneity problem related to the GC studies and compare different research directions: "Variables in order to control or governance, which is endogenous, namely BoD and audit committee". It is expected that there is a two-way relationship between control and external auditing. It has been argued in many 'substitution view' papers (Simunic 1980, 1984) that the organization can choose to swap more or less the internal audit against external audit; and it has also been disputed that external auditing may have an influence on voluntarily forming an AC (Pincus et al., 1989 and Eichenseher & Shields, 1985). In this thesis, the existence of BoD and AC are presumed endogenous in all of the two-stage least-squares (2SLS) models as Hay et al. (2008) suggest.

If there is a two-way relationship between the controls and auditors, the Ordinary least-squares regression could lead to inconsistent and biased results and therefore two-stage least-squares (2SLS) method is used to mitigate the possible endogeneity problems.

Chenhall & Moers (2007) describe the differences of the variables of endogenous in their paper:

In general use, the distinction between the endogenous and exogenous variables may be that related to the origins of the variables to be either 'outside' or 'inside' the structural equation. A variable is endogenous if it is decided in the context of the model, while an exogenous variable is a variable that affects the values of the variables of endogenous, but whose values are determined outside the model. They further clarify this with an example of econometric (Chenhall & Moers, 2007):

$$Y = \beta_0 + \beta_1 X_1 + u \qquad \text{Equation.1}$$

Assume that the following equation applies:

$$X_1 = \alpha_0 + \alpha_1 Z_1 + v \qquad \text{Equation.2}$$

Equation (2) suggests that the X_1 variable is endogenous, as it is the explained variable. The main question, however, is whether it is endogenous in equation (1). The variable X_1 is endogenous in equation (1) if it is associated with the structural error term, that is, $Cov(X_1, u) = 0$. If X_1 is associated with the structural error term, then X_1 is determined inside the model (equation (1)), because the existence of such a relationship is either because to $Cov(v, u) = 0$ or because to $Cov(Z_1, u) = 0$. That is, (some) of the factors that affect X_1also affect Y and as result equations (2) and (1) are parts of the same model. If X_1 is not associated with the structural error term of equation (1), then it must hold that both $Cov(v, u) \neq 0$ and $Cov(Z_1, u) \neq 0$, and X_1 is thus determined outside the model and not endogenous. In brief, the explained variable is, by definition, endogenous because it is always associated with the structural error term (Chenhall & Moers, 2007).

Larcker and Rusticus (2009) explain the usual method for using the two-stage least-squares (2SLS) in their very insightful working paper on the subject: "In the typical application of two-stage least-squares (2SLS), the researcher selects a set of variables that are supposed to be exogenous and then used the two-stage least-squares (2SLS) or similar estimation methods to estimate the coefficients in the regression model. This solution of the standard textbook to endogeneity is suitable if the researcher can find instrumental variables that are associated with the endogenous regressor but uncorrelated with the error in the structural equation (Larcker & Rusticus, 2009).

To address the issue of the endogeneity in this research, the two-stage least-squares (2SLS) method is used with appropriate instrumental variables in the first phase. In the first phase the variables of the endogenous are regressed as the dependent variable with the variables included in the second phase and instrumental variables as independent variables employing the Ordinary least-squares method. In the second phase, the values expected of the endogenous variables from the first phase models enter as independent variables, with the other controlled variables, in the both the proxies of audit quality and EM models.

As the variables of the endogenous are dichotomous in this research, one might claim, that the method used in the regression of the first phase should be a probit of logit method rather than of the proposed Ordinary least-squares. Estimating the first phase by employing the probit or logit is unnecessary, because in two-stage least-squares (2SLS) the consistency of the estimates in the second phase does not dependent on determining the correct functional form in the first phase (Kelejian, 1971). Also, Heckman (1978) shows that the use of methods of logit or probit for the dummy variables in the first phase are not needed, but can be used, if the only purpose is to interpret the results of the second phase. "It is not necessary to obtain estimators consistent of parameters of reduced model equations in order to constantly estimate structural equations. Since the linear probability procedure is the simplest one to use, it is suggested.

However, it is possible to use the results of the probit instrument in more efficient estimators although no proof of this assertion is offered (Heckman, 1978). Similarly, Angrist (2001) concludes in the same spirit, that *"it is generally safer to use a linear first phase"*.

Larcker & Rusticus (2009) remind users of other instrumental variable methods and two-stage least-squares (2SLS) to study and report the various statistics on the validity of the used instrumental variables to justify that the used method is solid statistically. They especially warned about the effect of using weak instruments, which are weakly linked with the regressor. This is common in these types of studies, where it is very difficult to find strong instrumental variables to reduce the endogeneity problem. However, if the instrument is only weakly associated with the regressor, instrumental variables methods can produce biased estimates when the instrumental variable is even slightly endogenous. In those cases, it is likely that estimates of the IV are more biased and more likely to provide the wrong statistical inference than simple Ordinary least-squares estimates that make no correcting for endogeneity (Larcker and Rusticus, 2009).

In order to verify the appropriateness of the instrumental variables, a number of tests are used in the two-stage least-squares (2SLS) models as Larcker and Rusticus recommended. The interpretation and the calculation of this test (Durbin-Wu-Hausman endogeneity test) is presented in the next chapters as this test may not be as familiar as the Ordinary least-squares method. If these tests fail to support the use of the two-stage least-squares (2SLS) method, the Ordinary least-squares method is then used to study effects of the hypotheses.

Furthermore, the common way to justify the use of two-stage least-squares (2SLS) instead of the results of the Ordinary least-squares is to perform the standard Durbin-Wu-Hausman test of endogeneity.

As Baum (2006) points out, the test is perhaps the best interpretation not as a test for the exogeneity or the endogeneity of regressors per se but rather as a test of the consequences of using different methods of estimating the same equation (Baum, 2006). The test statistic is distributed as chi-square where the degrees of freedom are the number of regressors being tested for endogeneity. The strong rejection of the null favor using the two-stage least-squares (2SLS) instead of Ordinary least-squares models is estimated.

4.6 The Methods of Data Collection

Existing studies have provided a limited insight into the mechanisms of CG, the role of external audit and constraining EM. Therefore, based on the objectives of the current research, this study adopts quantitative methodology to increase confidence in the findings that have been obtained. In other words, quantitative methods will be adopted in order to improve the quality of data and in an attempt to fill the gap in the literature. Particularly, quantitative methodology has allowed the current study to examine the theory with a sample size. To achieve this, the research will collect secondary data relating to the phenomenon of constraining EM and the role of external audit and the mechanisms of CG in the Kingdom of Bahrain. With regard to the quantitative approach, the aim of the data collection is to produce a better understanding of the different aspects of constraining EM in the Kingdom of Bahrain.

4.6.1 Quantitative Methodology

Quantitative methodology, based on the philosophy of positivism, is interested in measuring and counting views of the social world and its processes and structure; with a theoretical background establishing standards of the social sciences approach over extended periods of time. (Sarantakos, 1994). This approach generally has a logical structure in theory that defines the problems to allow the researcher to manage sets of hypotheses derived from general theories (Bryman, 2004).

One type of method is a quantitative survey that is usually associated with the deductive approach and gives information on what people report or perceive (Neuman, 2000). The following section shows more details on the questionnaire survey and analysis of secondary data.

4.6.1.1 Questionnaire survey

Generally, questionnaires are used for descriptive or explanatory studies conducted using questionnaires on organizational practices and questionnaires on the opinion and attitude of people (Saunders et al., 2009). In other words, the questionnaire allows the study to define and identify variation in the different phenomena.

The questionnaire technique is best when used in conjunction with other methods, such as in depth face-to-face interviews, to determine certain attitudes (Jankowicz, 2004; Saunders et al., 2009). There are 2 types of questionnaire (See figure 4.3): the two types include the interviewer-administrated and self-administrated (Saunders et al., 2009). The interviewer administrated questionnaire is divided into 2 types, including: structured interview and telephone questionnaire while a self-administrated questionnaire is divided into 3 types including: postal questionnaire, collection and delivery questionnaire, internet and intranet-mediated questionnaires.

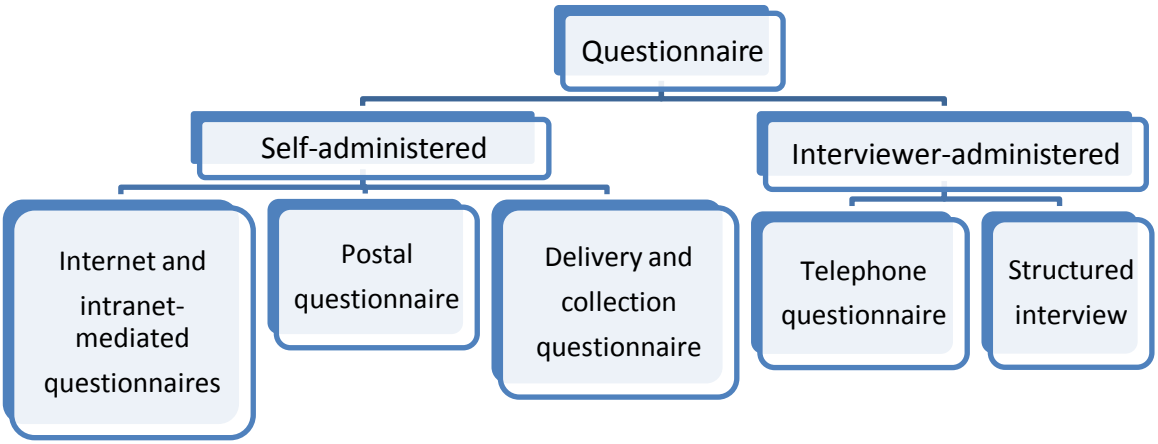


Figure 4.3: Types of questionnaire

Source: Saunders et al (2009)

Despite the advantages mentioned before, the use of the self-administrated questionnaire has been criticized by some researchers, such as Sekamn (1992) and Neuman (2000) who say that it is not suitable to cover a wide geographical area, and cannot guarantee anonymity in some cases. Furthermore, this type of questionnaire survey gives little opportunity for the researcher to get more information when the respondents give uncompleted answers. Finally, pre-existing coded questions can bias results for the researcher.

4.6.1.1.1 Secondary data analysis

Secondary data are helpful not only to obtain information required for research, but also to provide a better explanation and understanding of the research issues (Ghauri and Gronhaug, 2010). There are several advantages to using secondary data such as saving time and money, although it is significant that the secondary data should be consistent with the objectives of the research (Bryman and Bell, 2004).

Secondary data can be gathered from financial or government reports, annual reports, and from a number of different sources. In terms of the quality of the data, a number of scholars, Ghauri and Gronhaug (2010) indicate that secondary data is a significant method and if they are able to answer the questions of the research, there is no need to gather the primary data.

4.6.2 Sample of the firms and period of study

The initial sample consists of the Bahrain Stock Exchange (now Bahrain Bourse) 192 firm-year observations for the period 2010-2013. However, this study excluded 5 firms (20 firm-year observations) because they were suspended from operating which may affect the study's results. Another 5 firms (20 firm-year observations) which were not audited by auditors of the Big 4 were also excluded (Chung and Kallapur, 2003; Craswell et al., 1995). After eliminations, the remaining sample is 152 firm year observations. The procedure of sample selection is summarized in Table 4.2.

Table 4.2: The procedure of sample selection

Description Process	2010	2011	2012	2013	Pooled
The sample (Bahrain Bourse)	48	48	48	48	192
Excluded:					
Suspended firms	5	5	5	5	20
Unavailable annual report	-	-	-	-	-
Audited by Non-Big 4	5	5	5	5	20
Missing data from Bahrain bourse, and Thomson One Banker	-	-	-	-	-
Final Samples:	38	38	38	38	152

However, the sample of the current study is subject to the following criteria:

1. The current study covers the period between fiscal years 2010 and 2013. The reasoning for using this as the study period is summarized in the following points: (a) the improvement of the Kingdom of Bahrain's environment commenced at the beginning of 2010. (b) The implementation of the CG mechanisms was embarked upon in 2011.

2. The main purpose of the present study is to examine the effectiveness of the AC and BoD in terms of CG best practice, as outlined in the Kingdom of Bahrain CG Code (2010).

3. These firms are been chosen because they provides activities of industrial, commercial broad range and account for a significant portion of the Kingdom of Bahrain economic output.

4. The main sources of secondary data were collected from the Bahrain Stock Exchange (now Bahrain Bourse) website and Thomson one Banker.

2 empirical investigations were conducted, each of which use different samples. First investigation examines the association between the AC, BoD, and AQ. The total sample analyzed via the 3 proxies of AQ is 152 firm year observations. The second empirical investigation examines the association between the AC, BoD, and AQ in constraining EM. In line with the arguments developed by Subramanyam (1996), and DeFond and Jiambalvo (1994), the second investigation's sample was reduced from 152 to 148 because of the performance of the firms and to provide an unbiased estimate of discretionary accruals. Table 4.3 and Table 4.4, Panel A and B, report the distribution of firms sample by industry and year for the first and second empirical models respectively.

Table 4.3 : Industry description and size of the sample for the first empirical analysis of the relationships between the AC, BoD, and AQ

Panel A: The sample firms by industry

ICB Code	Level of the Super sector	N	%
1700	Basic Resources	8/1.52	5.26
2300	Construction and Materials	4	2.63
2700	Industrial Goods and Services	4	2.63
3500	Food and Beverage	8	5.26
5300	Retail	12	7.9
5700	Travel and Leisure	16	10.52
6500	Telecommunications	4	2.63
8300	Banks	60	39.49
8500	Insurance	12	7.9
8600	Real Estate	8	5.26
8700	Financial Services	16	10.52
Total		152	100

The sample observations for this study are from Bahrain Stock Exchange (now Bahrain Bourse), all the firms were audited by Big 4 auditors.

Panel B: Distribution of sample firms by year

Year	2010		2011		2012		2013		Pooled	
Sample size	N	%	N	%	N	%	N	%	N	%
	38	25	38	25	38	25	38	25	152	100

Table 4.4 : Industry description and size of the sample for the second empirical analysis- the relationship between AC, external auditor, BoD and EM			
Panel A: The sample firms by industry			
ICB Code	Level of the Super sector	N	%
1700	Basic Resources	8/1.48	5.41
2300	Construction and Materials	4	2.70
2700	Industrial Goods and Services	4	2.70
3500	Food and Beverage	8	5.41
5300	Retail	12	8.11
5700	Travel and Leisure	16	10.81
6500	Telecommunications	4	2.70
8300	Banks	60-4=56	37.84
8500	Insurance	12	8.10
8600	Real Estate	8	5.41
8700	Financial Services	16	10.81
Total		148	100
The total sample of 152 has been reduced to 148 firm year observations.			

Panel B: Distribution of sample firms by year										
Year	2010		2011		2012		2013		Pooled	
Sample size	N	%	N	%	N	%	N	%	N	%
	37	25	37	25	37	25	37	25	148	100

4.6.3 Sources of data collection

There are 3 main sources of data related to the current study, namely annual reports for the firms, Thomson One Banker web site and the last one by telephone. The other variables for which data were not available from these sources were collected from the annual reports for each firm; this refers especially to the variables related to the ACs and BoDs.

4.6.3.1 The measurement of the hypothesis variables

The variables in the current research will be described in this section. There are 3 important variables that need to be considered: (1) the characteristics of the AC and the BoDs; (2) the proxies of AQ, and (3) EM.

4.6.3.2 The BoD and AC variables

The variables of the AC and BoD are linked to their effective monitoring characteristics (for example expertise, size, composition and meeting). In the first and second empirical investigations, the variables of the AC and BoD are independent variables. These variables are gathered from the financial or government reports and annual reports of the firms, and each variable is included in the following sub-sections.

4.6.3.2.1 Composition of the BoD (BRDNED)

The composition of the BoD is described in terms of the total of the independent NEDs to the total size of the BoD. The NEDs can either be affiliated (or gray) NEDs or independent NEDs. However, the independent NEDs are believed to have better supervision compared to the affiliated (or gray) NEDs, because they have no relationship that would weaken their decision making judgment (Vance, 1983; Lawrence and Stapledon, 1999). This is consistent with the Principle-agent theory of agency (Jensen and Meckling, 1976).

The word "independent" is defined in the United Kingdom CG Code (2012), paragraph A.3.1 as: "The NEDs are not considered to be independent if the director":

1. Has close family ties with any of the firm's senior employees directors or advisers;
2. Has receives/received an additional payments or remuneration from the firm apart from the fee of director, performance related pay scheme of the company or she/he is a member of the company's pension scheme or participates in a share option;
3. Has, or has had during the past 3 years, a business relationship with the company either directly, or as a senior employee or director, partner, shareholder of the body that has such a relationship with the firm.
4. He has served on the BoD for more than 9 years from the date of the first election.
5. Is or has been an employee of the firm or the group within the past 5 years;
6. Represents an important shareholder;

7. She/he has significant links or holds cross directorships with other directors through involvement in other firms or bodies;

The independent NEDs exclude the board's chairman.

4.6.3.2.2 The size of the BoDs' (BRDSIZE)

Lipton and Lorsch (1992) recommend that the size of the board must not be more than 8 or 9 directors. Jensen (1993) argues that when the BoD has more than 7 or 8 members, it is less effective due to the problems of coordination, which subsequently contribute to weak supervision. However, the size of BoDs is decided by the total number of members on the BoDs, as contained in the firms' annual report at the end of each financial year (Peasnell et al., 2000, 2005; Abbott et al., 2004).

4.6.3.2.3 BoDs meeting (BRDMEET)

Directors are responsible for attending meetings and responsible for making any decisions required in the meetings (Ronen and Yaari, 2008). Conger et al. (1998) indicate that more regular meetings in boards can improve the effectiveness of the board. The meetings are the main operations of the board (Vafeas, 1999) and a sign of the efforts that been made by the directors (Ronen and Yaari, 2008). Busy boards who meet more often probably manage their responsibilities in better way in accordance with the interests of the shareholders (Vafeas, 1999), because more of the meeting time can be allocated to controlling issues such as EM (Habbash, 2010), and more effort can be made in monitoring the integrity of financial reporting and improving the AQ. The meetings of the BoDs are measured by the total number of the meetings of the BoDs as contained in the firms' annual report at the end of each financial year (Vafeas, 1999). A study was conducted by Xie et al. (2003), employing a sample of 282 firm year observations, in which they point out that the board that meets frequently may have time to look at issues such as EM. Their results indicate that EM is negatively and significantly associated with the total number of the meetings of the BoD.

4.6.3.2.4 BoDs expertise (BRDEXP)

The expertise of the BoDs is measured by the total number of directors with the experience, knowledge, financial and accounting qualifications in relation to the total size of the BoD. Expert members with financial and accounting qualifications provide the other members of the board with the knowledge to understand financial statements, allowing them to assess accounting policies and the effectiveness of the management. Experience and financial and accounting qualifications including all kinds of formal education (for example a Bachelor's degree in accounting) and professional qualifications such as CIMA, CFA and ACCA), as well as work experience (as an auditor, chief financial officer, financial controller, and finance director). This variable definition is comparatively similar to Xie et al. (2003).

4.6.3.2.5 Composition of the AC (ACIND)

In the current study, the composition of AC is measured using dummy variables, taking the code as one if the AC is composed solely of independent directors and coded as zero if otherwise; it is in line with the recommendations contained in the United Kingdom CG Code (2012). The reason for having solely independent NEDs in the AC is to ensure higher objectivity and impartiality in the decision making process. The term "independence" is relatively similar as to that specified in Section 4.5.1.1.

4.6.3.2.6 Size AC (ACSIZE)

The size of AC is measured by the number of members of the AC at the end of the financial year, consistent with the definition of Yang and Krishnan (2005).

4.6.3.2.7 Meetings of AC (ACMEET)

According to Krishnan and Visvanathan (2009), the meetings of the AC are measured by the number of meetings per year. When the number of AC meetings is increased, the activity level of the AC will increase.

4.6.3.2.8 Expertise of AC (ACEXP)

As with the expertise of BoDs, expertise of the AC is measured by the total number of directors with the experience, knowledge, financial and accounting qualifications, in relation to the total number of AC members. Financial and accounting expertise is extremely important to the members of the AC since they play a critical role in ensuring the integrity of the financial statements. The knowledge of financial and accounting may improve their ability to monitor and results in an increase in their understanding of the issues of the FRQ of firms, allowing them to assess the effectiveness of the accounting policies as per GAAP practices. Experience, knowledge, financial and accounting qualifications include all forms of formal education, work experience and professional education related to finance and accounting.

4.6.3.3 Variables of AQ

There are three AQ proxies that will be examined in the current study. In the first empirical investigation, the proxies of AQ are represented as dependent variables, while in the second; they are independent variables. The measurement and description of each proxy of AQ are explained below.

4.6.3.3.1 Auditor's independence

The current study used four measures of auditor independence, the four measures are described as: (1) (FEERATIO 1) = the fee ratio of non-audit services fees to total fees; (2) (FEERATIO 2) = the fee ratio of non-audit services fees to AFs; (3) LN(NAF) = natural logarithm of the magnitude of non-audit services fees; and (4) LN(TOTALFEES) = natural logarithm of the sum of non-audit services and audit fees. The LN(TOTALFEES) and LN(NAF) are transformed to the natural logarithm for achieving a normal distribution of data. The companies that reported zero NASFs are set to 1 Bahraini Dinar to allow the transmission of the logarithm. The data of the AFs were taken from the firms' annual report and by telephone calls.

The variables LN(TOTALFEES) and LN(NAF) are related to the auditor's fee dependence on the client. In addition to the AFs received by the auditor, the level of NASFs will raise the auditor's economic reliance on the client (Simunic, 1984; Beck et al., 1988a). Similar to the Ashbaugh et al. (2003) study, this research shows that the sum of audit and NASFs, and level of NASFs are more appropriate measures to capture the economic importance of the client to the audit firm than the ratio of NAS.

Although the two fee ratio such as (FEERATIO 2) and (FEERATIO 1) do not necessarily capture the importance of the client, they explain the financial relationship between the client and the auditor, and have an impact on the perception of independence held by regulators (Ashbaugh et al., 2003).

4.6.3.3.2 Audit fees LN (AFEE)

This study will use the AF to measure the AQ. The AF variable (AFEE) is transformed to prefixed and natural logarithm through LN for achieving normal distribution of data, in order to save the big companies from unduly or inappropriately influencing the results. The data collection for this variable LN (AFEE) is collected from the firms' annual report.

4.6.3.3.3 Auditor specialist in the industry (SPEC _AUD)

The existing literature indicates that the auditors' industry specialization can be measured using various approaches, such as auditors' portfolio of clients (portfolio approach) (Krishnan, 2003a), and the complementary approach (Neal and Riley, 2004), as well as industry market share approach developed by Dunn et al., 2000; Balsam et al., 2003; Velury et al., 2003; Krishnan, 2003a; Chen et al., 2005. In spite of the restrictions of each approach, they are identified as the most important measures for the industry specialization of auditors.

The industry market share approach describes the auditor's industry specialism as an auditor that can make a distinction between their opponents in the specific industry in terms of market shares (Neal and Riley, 2004). Market shares can be estimated for certain industries using the number of clients audited by the firm, clients' sales, the total audit fees and the AFs that are allocated to a certain auditor. The auditor(s) with the largest share(s) in the market in a specific industry (within the industry) are supposed to have the largest specific industry experience as well as reflecting important audit firms investment in developing the industry in particular audit technologies with the expected improvement of the economies of scale and AQ. Neal and Riley (2004) argue that there are two disadvantages of using the market shares approach in identifying auditors industry specialism 1) it is not possible for auditors to designate a specialist in industries that are too small to generate significant revenue for audit firms; and (2) highly competitive auditors do not necessarily devote significant resources to develop industry audit expertise and technologies.

An alternative to the market share approach, the portfolio approach considers each auditor individually and takes into consideration the distribution of the client's sales, AFs and the number of audit clients across the various industries for each audit firm considered individually. The auditors with the largest portfolio share are considered as a specialist in a certain industry if they generate the most revenues from their clients' sales. This may reflect their investments in their industry specific knowledge and the audit technologies, even if they do not maintain a leading market share leaders in that certain industry (Neal and Riley, 2004).

However, although the portfolio approach recommends that the auditors specialists are driven by industry size, the auditors' investment or efforts may not reflect that. This may result in the larger auditors being identified as auditors' specialists in many industries and none to be identified as auditors' specialists in smallest industries (Neal and Riley, 2004).

Neal and Riley (2004) propose the market-share weighted approach, which is the complementary approach capturing the relationship between the portfolio share and the market share attributes of audit specialists. The market-share weighted approach is the most important measure that provides a solution for the contradiction between these two main approaches. However, Neal and Riley point out that, similar to the other two approaches, this approach does not consider the impact of the period lead-lag. Therefore, to ensure the robustness and consistency of the results of this study, this research considers all 3 of these approaches in determining the auditors' industry specialist based on AFs.

In each of the empirical analyses, the auditor industry specialist is defined in five ways. The first 3 measures are identified as the continuous variables that are equal to the complement between the auditors' portfolio share and market share (SPECLST _ WEIGHTED), auditors' market share (SPECLST _M_ S), and the auditors' portfolio share (SPECLST _ P_ S). The final 2 measures are known as dichotomous variables that depend on the market shares of the industry of the auditors; first is the market share of the auditor, (SPECLST _MS_30), coded as 1 if the auditor has a market share larger than 30 % in each certain industry and 0 if otherwise, and lastly industry leader, (SPECLST _ M_S_LEADER), coded as 1 if the auditor has a larger market share in each certain industry and 0 if otherwise.

All of these measures are calculated as follows:

1- SPECLST _P_S: is recognized as the total amount of AFs earned by the individual auditor in each industry divided by the total amount AFs of all industry earned by the certain auditor. The auditor portfolio share is calculated as follows:

$$SPECLS\ T\_P\_\ S_{i\,k} = \frac{\sum_{j=1}^{J_{ikt}} AFFE_{ijkt}}{\sum_{k=1}^{k} \sum_{j=1}^{J_{ikt}} AFFE_{ijkt}} \qquad (1)$$

Where:

i = (i =1, 2, 3, 4) = district indicator of the auditors

k = industries indicator

j = represents the clients;

$Jikt$ = the number of clients served by audit firm *(i)*, in industry *(k)*, in year *(t)*;

I_k = the number of audit firms in industry *(k)*, in year *(t)*;

$AFEE_{ijkt}$ = the AFs for auditor's *(i)* client *(j)*, in year *(t)*;

(AFEE) indicates the total AFs of the client and is collected from the annual report. As with the market share approach the numerator is the sum of the AFs of all (J_{ik}) clients of audit firm (i) in industry (k), where the sector level of the industry is recognized as the Industry Classification Benchmark (ICB). The denominator is the sum of the AFs of all (J_{ikt}) clients of the audit firm in year (t) and industry (k).

2- SPECLST _M_S: is recognized as the total amount of AFs earned by the individual auditor relative to the total amount of AFs earned by all the auditors in that certain industry (Velury et al., 2003).

$$SPECLS\ T\_M\_S_{ik} = \frac{\sum_{j=1}^{J_{ikt}} AFFE_{ijkt}}{\sum_{i=1}^{I_k} \sum_{j=1}^{J_{ikt}} AFFE_{ijkt}} \qquad (2)$$

Where:

i = (i =1, 2, 3, 4) = district indicator of the auditors

k = industries indicator

j = represents the clients;

Jikt = the number of clients served by audit firm (i), in industry (k), in year (t);

I_k = the number of audit firms in industry (k), in year (t);

$AFEE_{ijkt}$ = the AFs for auditor's (i) client (j), in year (t);

The variable (AFEE) indicates the total AFs of the client and is collected from the annual report. The numerator is the sum of the AFs of all (J_{ik}) clients of audit firm (i) in industry (k), where the sector level of the industry is recognized as the Industry Classification Benchmark (ICB). The denominator in equation (1) is the numerator of the sum of the AFs of all (J_{ikt}) clients of audit firm in year (t) and industry (k), summed over all (I_k) audit firms (all Big 4 auditors) providing audits to that certain industry and year.

3- SPECLST _ WEIGHTED: The final measure is recognized as a combination of a portfolio measure and a market share measure. This is a continuous variable and was recommended by Neal and Riley (2004). SPECLST _ WEIGHTED and is calculated as a variable (SPECLST _ P _ S) multiplied by (SPECLST _ M _ S).

4- SPECLST _MS_30: is a dichotomous variable, coded as ‘one’ if the auditor has a market share larger than 30% in each certain industry and ‘zero’ if otherwise. The market share cut off for specialization is recognized as at 30% without specialization, with each company having a market share of about 0.25 % (1 firm/4 firms = 0.25). The 0.25 % is multiplied by 1.20 to yield 30 % (Neal and Riley, 2004). This measure is calculated in the same way as Equation (1).

5- SPECLST _ M_S_LEADER: This measure defines the auditor as the industry market leader.

This is a dichotomous variable, is coded as ‘one’ if the incumbent auditor receives the largest market share in a certain industry, ‘zero’ if otherwise. This measure is calculated the same as Equation (1).

Based on the calculation of the market share and the share of the portfolio approach, tables 4.5 and 4.6 give summary details about Big 4 auditor specialists by year and pooled samples respectively. By reviewing the years and pooled tables, as per the SPECLST _MS_30 definition, it can be considered that KPMG is the specialist in most industries, while EY is considered to specialise only in Food and Beverage, Basic Resources, Insurance, Real Estate, and Banks. DL has no clients in any industries, and PWC has only two industries - Banks and Financial Services, and they are less than 30 percent. In the period 2010 to 2013 (pooled), EY is a specialist in five industries: Food and Beverage, Basic, Resources, Banks, Insurance, and Real Estate, and KPMG is a specialist in most industries.

Table 4.5: The auditor industry specialists (Big 4) (by year)								
Panel A: Industry Market Share (in percent)								
ICB Code	2010				2011			
	DL	PWC	EY	KPMG	DL	PWC	EY	KPMG
1700	-	-	**60**	**40**	-	-	**76.92**	23.08
2700	-	-	-	**100**	-	-	-	**100**
2300	-	-	-	**100**	-	-	-	**100**
3500	-	-	**50**	**50**	-	-	**53.33**	**46.67**
5300	-	-	**50**	**50**	-	-	20	**80**
5700	-	-	**31.91**	**68.09**	-	-	**30.30**	**69.70**
6500	-	-	-	0	-	-	-	**100**
8300	-	5.99	**59.28**	**34.73**	-	8.51	**56.38**	**35.11**
8500	-	-	**45.45**	**54.55**	-	-	**20.83**	**79.17**
8600	-	-	**52.57**	**46.43**	-	-	0	**100**
8700	-	23.81	-	**76.19**	-	20	-	**80**
ICB Code	2012				2013			
	DL	PWC	EY	KPMG	DL	PWC	EY	KPMG
1700	-	-	**34.78**	**65.22**	-	-	**71.43**	28.57
2700	-	-	-	**100**	-	-	-	**100**
2300	-	-	-	**100**	-	-	-	**100**
3500	-	-	**66.67**	**33.33**	-	-	**63.64**	**36.36**
5300	-	-	16.13	**83.87**	-	-	22.28	**77.72**
5700	-	-	25	**75**	-	-	25	**75**
6500	-	-	-	**0**	-	-	-	**100**
8300	-	6.52	**67.39**	26.09	-	7.61	**63.04**	29.35
8500	-	-	**36.84**	**63.16**	-	-	**52.94**	**47.06**
8600	-	-	**52.63**	**47.37**	-	-	**46.67**	**53.33**
8700	-	22.86	-	**77.14**	-	28	-	**72**

Table 4.5: Continued

Panel B: Industry Portfolio Share (in percent)

ICB Code	2010				2011			
	DL	PWC	EY	KPMG	DL	PWC	EY	KPMG
1700	-	-	8.38	4.81	-	-	10.75	1.45
2700	-	-	-	7.21	-	-	-	4.83
2300	-	-	-	4.81	-	-	-	2.41
3500	-	-	3.91	4.80	-	-	8.60	3.38
5300	-	-	5.59	4.80	-	-	8.60	3.38
5700	-	-	8.38	15.38	-	-	10.75	11.10
6500	-	-	-	0	-	-	-	23.28
8300	-	50	55.30	27.88	-	57.14	56.99	15.92
8500	-	-	8.38	8.65	-	-	5.38	9.17
8600	-	-	8.30	6.25	-	-	0	3.38
8700	-	50	-	15.38	-	42.86	-	11.58

ICB Code	2012				2013			
	DL	PWC	EY	KPMG	DL	PWC	EY	KPMG
1700	-	-	5.71	9.04	-	-	5.05	1.04
2700	-	-	-	3.01	-	-	-	2.60
2300	-	-	-	6.02	-	-	-	3.63
3500	-	-	7.14	3.01	-	-	7.07	2.07
5300	-	-	3.57	15.66	-	-	8.08	14.47
5700	-	-	5	12.65	-	-	5.05	7.78
6500	-	-	-	-	-	-	-	36.79
8300	-	47.06	66.43	21.69	-	58.33	58.58	14.0
8500	-	-	5	7.23	-	-	9.09	4.15
8600	-	-	7.14	5.42	-	-	7.07	4.15
8700	-	47.06	-	16.27	-	50.33	-	9.33

ICB Code (levels of supersector): 1700- Basic Resources; 2700- Industrial Goods and Services; 3500- Food and Beverage; 5300- Retail, 5700- Travel and Leisure, 6500- Telecommunications; 8300-Banks; 8500- Insurance; 8600- Real Estate; 8700; Financial Services. KPMG Fakhro; EY: Ernst & Young; PWC: Price Waterhouse Coopers; DL: Deloitte. The AFs are used as a basis to calculate the auditor's industry expertise. The following examples explain how the auditor industry expertise has been calculated. For the period 2010, the total AFs earned by EY in the Basic Resources industry amounted= 15,000 and the total amount of the AFs of EY for all industries amounted= 179,000. During the same period, the combined AFs of all auditors (KPMG Fakhro, EY, PWC, and DL) in the Basic Resources industry amounted=25,000.The EY market share in the Basic Resources industry, 2010= BHD 15,000/ BHD 25,000 * 100= 60 percent. The EY portfolio share in the Basic Resources industry, 2010= BHD 15,000/ BHD179, 000 * 100=8.38 percent. The industry expertise for other auditors and the subsequence years have also been calculated in a similar method. The auditor expertise mark in **bold** is where market shares are larger than 30 percent. Dash (-) means that there are no clients served by an auditor in that industry.

Table 4.6: The Big 4 auditor industry specialist (by pool)								
ICB Code	Expertise of the auditor Industry for 2010-2013 (in percentage)							
	DL		PWC		EY		KPMG	
	MS	PS	MS	PS	MS	PS	MS	PS
1700	-	-	-	-	**55.88**	7.44	**44.12**	3.90
2700	-	-	-	-	-	-	**100**	4.52
2300	-	-	-	-	-	-	**100**	4.13
3500	-	-	-	-	**57.38**	6.85	**42.62**	3.36
5300	-	-	-	-	24.61	5.87	**75.38**	11.87
5700	-	-	-	-	28.90	7.24	**71.10**	11.75
6500	-	-	-	-	-	-	**100**	15.39
8300	-	-	6.54	50.80	**61.96**	59.30	**31.50**	19.90
8500	-	-	-	-	**38.71**	7.04	**61.29**	7.35
8600	-	-	-	-	**46.38**	6.26	**53.62**	4.78
8700	-	-	23.48	49.21	-	-	**76.52**	13.05

ICB Code (levels of supersector): 1700- Basic Resources; 2700- Industrial Goods and Services; 3500- Food and Beverage; 5300- Retail, 5700- Travel and Leisure, 6500- Telecommunications; 8300-Banks; 8500- Insurance; 8600- Real Estate; 8700; Financial Services. KPMG Fakhro; EY: Ernst & Young; PWC: Price Waterhouse Coopers; DL: Deloitte; MKS: market share, PFS: Portfolio share. The AFs are used as a basis to calculate the auditor's industry expertise. The following examples illustrate how the auditor industry expertise has been calculated. For the period 2010 to 2013, the total AFs received by EY in the Basic Resources industry amounted= BHD 38,000 and the total AFs of EY for all industries amounted= 511,000. During the same period, the combined AFs of all auditors (KPMG Fakhro, EY, PWC, and DL) in the Basic Resources industry amounted= BHD 68,000. The EY market share in the Basic Resources industry, 2010 to 2013= BHD 38,000/ BHD 68, 000 * 100= 55.88 percent. The EY portfolio share in the Basic Resources industry, 2010 to 2013= BHD 38,000/ BHD 511,000 * 100=7.44 percent. The EY weighted market share Basic Resources industry 2010 to 2013= 55.88 * 7.44/100 = 4.16. The industry expertise for other auditors has been calculated in a similar way. The auditor expertise mark in **bold** is consider to be a specialist according to the (SPECLST_MS_30) definitions (the auditors are considered to be a specialist when they have the market share larger than 30 %).

4.6.3.4 EM variables

The current research uses the absolute value of discretionary accruals to measure the EM. The EM is the dependent variable in the second empirical investigation. According to Becker et al. (1998) the absolute value of discretionary accruals measures the activities of managers in opportunistic EM and reporting decisions by the managers. The total accruals are identified in order to measure discretionary accruals. There are 2 ways to calculate the total accrual accruals; it uses either the cash flow approach (Subramanyam, 1996; Becker et al., 1998; Xie et al., 2003) or the traditional balance sheet approach (Healy, 1985; Dechow et al., 1995). Both methods are used widely in previous studies. However, Hribar and Collins (2002) indicate that the cash flow statement is a more accurate measure than the balance sheet approach when measuring the accruals for EM. They claim that when using the balance sheet approach to test for EM, there is potentially an error of measurement in the accruals estimates, which is likely to erroneously conclude that the EM exists when no such EM was detected. The Hribar and Collins (2002) study used the cash flow approach to compute the total accruals. The discretionary accruals are calculated using a version of the cross section of the Jones Model (1991), the modified Jones Model (1991) by Dechow et al. (1995) and the performance adjusted model as suggested by Kothari et al (2005). DeFond and Jiambalvo (1994) indicate that the version of the cross section works as it is more appropriate than the time version model because of the small sample observations (Subramanyam, 1996). The source of data will be from the firms' annual reports.

4.6.3.4.1 Jones discretionary accrual models (DACC _JM)

The discretionary accruals use two steps for measures. The first step is measuring the term of error in the model that denotes the discretionary component of accrual. This term of error is the difference between the accruals of non discretionary and the total accruals.

The second step is to measure the accruals of non discretionary, using the model below. It measures the coefficients $\acute{\alpha}_1$, $\acute{\alpha}_2$, and $\acute{\alpha}_3$ using the Ordinary Least Squares regression for each year-industry (at least 6 companies in each industry).

$$\frac{TACC_{ijt}}{TA_{ijt-1}} = \acute{\alpha}_1 \frac{1}{TA_{ijt-1}} + \acute{\alpha}_2 \frac{\Delta REV_{ijt}}{TA_{ijt-1}} + \acute{\alpha}_3 \frac{PPE_{ijt}}{TA_{ijt-1}} + e_{ijt} \qquad (3)$$

Where:

t = year, t-1 refers to the prior year;
TACCijt = total accruals for firm *(i)* , in year (*t*) and industry (*j*),
TAijt -1 = total assets for firm *(i)* , in year (*t-1*) and industry *(j)*;
DACC ij = discretionary accruals of the firm *(i)* , in year (*t*) and industry (*j*);
ΔRECijt = change in receivable for firm *(i)* , in year (*t*) and industry (*j*);
PPEijt = year-end property, plant and equipment for firm *(i)* , in year (*t*) and industry (*j*);
eijt = error term for sample firm *(i)* , in year (*t*) and industry (*j*);

The total accruals are calculated as net income before extraordinary items and earnings discontinued operations, minus the cash flows from operating activities. The industry is classified using the Industry Classification Benchmark (ICB).

4.6.3.4.2 Modified-Jones discretionary accrual models (DACC_MJM)

The measurement of discretionary accruals under the modified Jones Model (1991) by Dechow et al. (1995) is comparatively similar to the original Jones model (1991), but it takes into consideration the changes in accounts receivable.

The accruals of non discretionary are measured using the following model; the steps are comparatively similar to Jones (1991), the original model.

$$\frac{TACC_{ijt}}{TA_{ijt-1}} = \acute{\alpha}_1 \frac{1}{TA_{ijt-1}} + \acute{\alpha}_2 \frac{\Delta REV_{ijt} - \Delta REC_{ijt}}{TA_{ijt-1}} + \acute{\alpha}_3 \frac{PPE_{ijt}}{TA_{ijt-1}} + e_{ijt} \qquad (4)$$

Where:

t = year, t-1 refers to the prior year;

TACCijt = total accruals for firm *(i)* , in year (*t*) and industry (*j*),

TAijt -1 = total assets for firm *(i)* , in year (*t-1*) and industry *(j)*;

DACC ij = discretionary accruals of the firm *(i)* , in year (*t*) and industry (*j*);

ΔREVijt = change in revenues from the preceding year for firm *(i)* in year (*t*) and industry (*j*);

ΔRECijt = change in receivable for firm *(i)* , in year (*t*) and industry (*j*);

PPEijt = year-end property, plant and equipment for firm *(i)* , in year (*t*) and industry (*j*);

eijt = error term for sample firm *(i)* , in year (*t*) and industry (*j*);

4.6.3.4.3 Performance Adjusted Discretionary Accruals models (DACC_ROA)

Kothari et al. (2005) indicate that there are two approaches to control the performance of firms for measuring the accruals. The first method is matching the observations per firm-year with another from the same industry and year with the closest return on assets (ROA) in the current. On the other hand, the performance of the firm, including ROA, can be contained in the regression of discretionary accruals as an additional variable. Due to the small sample size, the second method will be used in the current study.

Similar steps are included in the second study. It starts with measuring of coefficients $\acute{\alpha}_1$, $\acute{\alpha}_2$, $\acute{\alpha}_3$ and $\acute{\alpha}_4$ using the Ordinary Least Squares regression for each year-industry to extract the non discretionary accruals. Then, the terms of error are measured as the difference between the accruals of non discretionary and the total accruals, which represents the discretionary component of accruals. This measure uses the following model;

$$\frac{TACC_{ijt}}{TA_{ijt-1}} = \acute{\alpha}_1 \frac{1}{TA_{ijt-1}} + \acute{\alpha}_2 \frac{\Delta REV_{ijt} - \Delta REC_{ijt}}{TA_{ijt-1}} + \acute{\alpha}_3 \frac{PPE_{ijt}}{TA_{ijt-1}} + \acute{\alpha}_4 ROA_{ijt-1} + e_{ijt} \quad (5)$$

Where:

t = year, t-1 refers to the prior year;

TACCijt = total accruals for firm *(i)* , in year (*t*) and industry (*j*),

TAijt -1 = total assets for firm *(i)* , in year (*t-1*) and industry *(j)*;

DACC ij = discretionary accruals of the firm *(i)* , in year (*t*) and industry (*j*);

ΔREVijt = change in revenues from the preceding year for firm *(i)* in year (*t*) and industry (*j*);

ΔRECijt = change in receivable for firm *(i)* , in year (*t*) and industry (*j*);

PPEijt = year-end property, plant and equipment for firm *(i)* , in year (*t*) and industry (*j*);

eijt = error term for sample firm *(i)* , in year (*t*) and industry (*j*);

ROAijt -1 = return on asset of the firm *(i)* , in year (*t-1*) and industry *(j)*;

4.6.4 Model specifications and related control variables

There are 3 models of AQ that have been used to test the relationship between the characteristics of the AC and the effectiveness of the BoD on AQ. The models are included as follows: the auditor industry specialist model, AFs and the NASFs models.

Also, the model of EM is used for examining the association between the AC, the BoDs, and AQ in constraining opportunistic earnings management.

In addition to the independent variables discussed in this chapter, a number of control variables are included in this study to control the characteristics of the company which could affect the extent of EM. The inclusion of the variables of non GC to control other characteristics of the firm that can influence the EM is essential to ensure that the tests focus more specifically on the differences created by the variations in GC. As this study aims to examine the relationship between the characteristics of Corporate Governance (Audit Committee and board of directors), and Audit Quality (by the external audit) in constraining Earnings Management, it is essential that other factors that influence EM are also controlled.

It is difficult to control some of the factors in EM behavior, such as integrity, corporate culture and style of the management because they are problematic to measure (Archambeault, 2002). A review of previous research determines that, among the various incentives, ten variables are of particular relevance to this study. These twelve control variables are BLOCK, CFO, FORGN, INOWN, LEVERG, LNASSET, MTBV, NEWDIR, RETURN, GROWTH, LIQ and ROA. The related control variables and each of these models are described below.

4.6.4.1 Model of AFs

Simunic (1980) recommends that the AFs are a function of two main elements: (1) the expected future loss elements and (2) the quantity of resources. The first element refers to the possibility of expected future losses that the auditor may suffer, such as sanctions by litigation and regulatory agencies and the second element refers to the cost of the resources of audit related with audit hours or auditor effort. These 2 elements can be classified into 3 set of variables, recognized as risk-sharing, size, and the last is complexity (Simunic, 1980). DeFond et al. (2000) recommend that the model of AFs that contain these variables is more robust across samples, higher explanatory power, time periods and countries.

Thus, the following models are used to examine the relationship between the AC and characteristics BoD, and AFs:

$$LNAFEE = \alpha_0 + \beta_1 ACIND + \beta_2 ACMEET + \beta_3 ACSIZE + \beta_4 ACEXP + \beta_5 BRDEXP + \beta_6 BRDMEET + \beta_7 BRDNED + \beta_8 BRDSIZE + \beta_9 FORGN + \beta_{10} LEVERG + \beta_{11} LNASSET + \varepsilon \quad (6)$$

Where

Dependent variable:

LNAFEE = the natural log of AFs;

Hypothesis variables:

ACIND = coded as one if AC had solely NEDs; zero otherwise;

ACMEET = the number of AC meetings for the year;

ACSIZE = the total number of AC members;

ACEXP = the proportion of AC members with accounting experience and financial qualification to AC size;

BRDEXP = the proportion of directors on the AC with accounting or finance qualifications to board size;

BRDMEET = the number of board meetings during the year;

BDRNED = the composition/numbers of NEDs on BOD size;

BRDSIZE = the total numbers number of members existed in board during the year;

Control variables:

FORGN = proportion of foreign subsidiaries to total subsidiaries;

LEVERG = Total liabilities divided by total assets;

LNASSET = the natural log of total assets;

The selection of control variables captures the complexity, size, and sharing of risk factors (Simunic, 1980). These variables are comparatively similar to those adopted by Abbott and Parker's (2003) study, which also examines the AC and board characteristics and AFs. Menon and Williams (2001) indicate that the variable of the opinion of the audit is a proxy for sharing of risk; the current study replaces it with LEVERG. This study believes that the LEVERG variable is sufficient to represent the risk-sharing factor. The variable FORGN is proxy for the complexity of firm operation. FORGN is measured in terms of the number of foreign subsidiaries to total subsidiaries.

Previous studies indicate that with the increasing complexities of companies' business, the auditors may need to put more audit hours and efforts in dealing with complex business processes, which in turn lead to a rise of AFs (Simunic, 1980; Craswell and Francis, 1999; Carcello et al., 2002; Abbott et al., 2003b). These studies claim that the audit effort level increases with the number of transactions in subsidiaries and transactions within geographical coverage. This research expects these variables to be positively related to AFs.

LNASSETS is defined as the natural logarithm of total assets and is a measure of the size of the firm (Simunic, 1980; Carcello et al., 2002; Abbott et al., 2003b). As the size of the company increases, the scope of the audit through the auditors will increase. Such extensive efforts increase AFs and hours of audit, and therefore the current research expects a positive association between AFs and total assets.

The LEVERG variable is a proxy for sharing of risk factors, where LEVERGN is described as the proportion of debts to total assets and measures the financial condition of the clients. According to Pratt and Stice (1994), clients in poor financial situations may cause more failure of audits because companies suffering from weak financial situations may carry a higher risk of material misstatement, and is probably difficult for auditors to detect.

Previous studies treated leverage as perceived auditor litigation risk (Pratt and Stice, 1994; Simunic and Stein, 1996; Menon and Williams, 2001). The higher the risk of litigation, the higher the perception of auditors being included in the litigation. It has been claimed that auditors can increase the AFs and audit effort in companies facing a high level of leverage, in order that the auditors have a trade off litigation risk. Thus, the LEVERGN is predicted as positively related to the AFs.

4.6.4.2 Model of NASFs

Parkash and Venable (1993) and Firth (1997) indicate that NASFs are the function of the audit's complexity and risk, agency cost, and demand for advisory services.

In line with these, this research uses the following model:

$$FEE = \beta_0 + \beta_1 ACEXP + \beta_2 ACIND + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 BRDEXP + \beta_6 BRDMEET + \beta_7 BRDNED + \beta_8 BRDSIZE + \beta_9 BLOCK + \beta_{10} INOWN + \beta_{11} LEVERG + \beta_{12} LNASSET + \beta_{13} NEWDIR + \beta_{14} RETURN + \varepsilon \quad (7)$$

Where

Dependent variable:

FEE = (*LN NAF*), (*LN TOTALFEES*), (*FEERATIO 1*) and (*FEERATIO 2*).

Hypothesis variables:

ACIND = coded as one if AC had solely NEDs; zero otherwise;

ACMEET = the number of AC meetings for the year;

ACSIZE = the total number of AC members;

ACEXP = the proportion of AC members with accounting experience and financial qualification to AC size;

BRDEXP = the proportion of directors on the AC with accounting or finance qualifications to board size;
BRDMEET = the number of board meetings during the year;
BDRNED = the composition/numbers of NEDs on BOD size;
BRDSIZE = the total numbers number of members existed in board during the year;

Control variables:

BLOCK = the cumulative percentage of outstanding common stock shares held by block holders holding at least 5 percent of such shares and who are unaffiliated with management;
INOWN = the cumulative percentage of total shares owned by the directors of a firm;
LEVERG = Total liabilities divided by total assets;
LNASSET = the natural log of total assets;
NEWDIR = coded as one if the new external director appointed to the firm during the year, zero otherwise;
RETURN = the financial year total stock return;

The selection of control is consistent with the Abbott et al. (2003a) study which examines the association between the characteristics of the BoD and AC, and non audit services. The previous studies found these variables to be significant in explaining the magnitude of purchase of non audit services, which include LNASSET, NEWDIR, RETURN, LEVERG, BLOCK and INOWN (Parkash and Venable, 1993; Firth, 1997).

The variables LEVERG, BLOCK and INOWN control costs of agency. The INOWN variable is measured by the percentage of total shares owned by the company's directors at the beginning of the financial year.

Jensen and Meckling (1976) indicate that the lower the costs of the agency, the higher the levels of insider ownership, since the external directors owned firms will apparently realign their interests with the outside owners. Such alignment is probably to start more monitoring because the directors believe themselves to be more accountable for their actions, and therefore require a higher AQ. In line with this argument, this research predicts a negative association between FEE and INOWN.

BLOCK is defined as the cumulative percentage of outstanding common stock shares held by block holders holding at least 5 percent of such shares and who are unaffiliated with management. Parkash and Venable (1993) argue that when outside ownership is higher, the cost of agency declines because high investments by the ownership provide incentives for direct monitoring. More monitoring appears to reduce the purchase of non audit services, as it appears that higher non audit services obtained from the auditor's independence, lead to low AQ.

Furthermore, Abbott et al. (2003a) argue that, because of the asymmetry of information between the outside block owners and management, the latter may have limited-access to insider information and therefore more probably rely on information provided by the management to facilitate the function of their own monitoring. As there are two adverse claims with regards to the BLOCK variable, this research does not make any specific expectation about the association between FEE and BLOCK.

RETURN is described as the total stock return for the financial year and it is a measure of the performance of the firm. According to Houghton and Ikin (2001), a poor performance of firms is related to obsolescence of technology, inappropriate management strategies, lack of competitiveness, and inefficient and ineffective processing. These concerns may increase the motivation for companies to employ external consultants to get advice from the experts. In fact, Firth (1997) claims that companies with weak stock market return are more likely to ask for external advice on how to improve their performance. Therefore, this research predicts a positive association between the FEE and RETURN variables.

The new appointment of external NEDs (NEWDIR) is the variable related to non audit services (Firths, 1997). The current study predicts positive association between FEE and NEWDIR.

LNASSET is known as the size of the company. The requirement for non-audit services increases as the company size expands (Houghton and Ikin, 2001; Firths, 1997). When the size of the company is growing, the company becomes more complex, and therefore may require more non audit services. FEE is predicted to be positively related to LNASSET.

LEVERG acts as a measure for the cost of agency. Jensen and Meckling (1976) argue that the theory of agency indicates that managers have the motivation to transfer wealth from debt holders to shareholders using various procedures. Moreover, when the debt amount is increased, the incentive for wealth will be transferred from the debt holders to shareholders, and the result will be an increased demand for independent auditora (DeFond, 1992; Francis and Wilson, 1988; Simunic and Stein, 1987; Palmrose, 1986a). In other words, companies that suffer from high leverage are more likely to demand more independence from their auditor or a higher AQ. Since previous studies indicate that the independence of auditors decreases as the amount of the purchase of non audit services increases, this research expects a negative association between FEE and LEVERG.

4.6.4.3 Model industry specialist

Previous studies model the auditor specialist as a function of the cost of agency, firm business risk and audit complexities (DeFond, 1992 Firth and Smith, 1992; Francis and Wilson, 1988). In line with these, this research measures the following model:

$$SPEC\_AUD = \beta_0 + \beta_1 ACEXP + \beta_2 ACIND + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 BRDEXP + \beta_6 BRDMEET + \beta_7 BRDNED + \beta_8 BRDSIZE + \beta_9 INOWN + \beta_{10} LEVERG + \beta_{11} LNASSET + \beta_{12} ROA + \varepsilon \quad (8)$$

Where

Dependent variable:

SPEC _AUD = (*SPECLST _M_S_LEADER), (SPECLST _MS_30), (SPECLIST _M_S), (SPECLIST _P_S)* and (*SPECLST _WEIGHTED).*

Hypothesis variables:

ACIND = coded as one if AC had solely NEDs; zero otherwise;
ACMEET = the number of AC meetings for the year;
ACSIZE = the total number of AC members;
ACEXP = the proportion of AC members with accounting experience and financial qualification to AC size;
BRDEXP = the proportion of directors on the AC with accounting or finance qualifications to board size;
BRDMEET = the number of board meetings during the year;
BDRNED = the composition/numbers of NEDs on BOD size;
BRDSIZE = the total numbers number of members existed in board during the year;

Control variables:

INOWN = the cumulative percentage of total shares owned by the directors of a firm;
LEVERG = Total liabilities divided by total assets;
LNASSET = the natural log of total assets;
ROA = return on assets;

The selection of control variables are comparatively similar to those adopted by Chen et al. (2005) and Abbott and Parker (2000), and include *ROA*, *LEVERG*, *LNASSET* and *INOWN*. The theoretical foundation for these variables comes from prior studies on big e auditors (Firth and Smith, 1992; DeFond, 1992; Francis and Wilson, 1988).

LEVERG, LN (ASSETS), and INOWN act as proxies of the agency variables. INOWN is acts as a measure for insider ownership, and there are two basic types of claims to describe the association between SPEC _AUD and INOWN. The first claim indicates that, as insider ownership increases, the directors get more detailed internal information about companies (Firth, 1997), and therefore have less need for higher AQ. This claim leads to a negative correlation between SPEC _AUD and INOWN. The second claim indicates that as the insider ownership increases, the interests of external stakeholders align with the interests of directors; this leads to the monitoring of management procedures (Jensen and Meckling, 1976). As they see themselves as part of the structure of the company, they require a higher AQ, such as hiring specialist auditors.

This research expects a positive association between INOWN and SPEC_AUD (Abbott and Parker, 2000). As there are two possible claims, there are no expectations made for this variable.

LEVERG measures the total liabilities divided by total assets. When leverage increases, the costs of agency also increase due to the possibility of raising the wealth of transferrable debt holders to shareholders. Such conditions create demand for higher AQ to verify the accounting figures in debt held by reducing the information asymmetry between managers and holders of the debt. In addition to Chen et al. (2005) and Abbott and Parker (2000), this research controls LEVERG to measure the costs of agency in the auditor specialist model. This research predicts that LEVERG will be positively correlated with the engagement of auditors' specialists.

LNASSET acts as a proxy for the size of the company. Chen et al. (2005) claim that the large companies are more likely to engage with higher AQ, since the costs of agency increase with the growth of the size of the company (Firth and Smith, 1992; Francis and Wilson, 1988). The higher the costs of the agency, the higher requirement there will be for auditors' specialists. This research expects a positive correlation between SPEC _AUD and LNASSET.

ROA acts as a measure of risk and client profitability. Referring to Abbott and Parker (2000), profitable companies are more likely to engage in specialist auditors because they are ready to pay a premium fee. In additional, ROA also acts as a proxy for sharing of risk. Previous studies indicate that companies that have a high level of risk are more likely to engage in high AQ in order to signal their credibility to outsiders (Copley and Douthett, 2002; Hogan, 1997; Datar et al., 1991). These studies claim that the demand for higher quality auditors increases with the firm risk. Since there are two possible arguments, there are no predictions made for this variable. These studies claim that the request for higher AQ increases with the higher level of the risk of the companies.

4.6.4.4 Model of EM

The EM model conducted by Bédard et al. (2004) and Klein (2002) examines the effectiveness of the characteristics of AC and the board and the AQ on opportunistic earnings. In line with these, this research will use the following model:

$$DACC = \beta_0 + \beta_1 ACEXP + \beta_2 ACIND + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 AQ + \beta_6 BRDEXP + \beta_7 BRDMEET + \beta_8 BRDNED + \beta_9 BRDSIZE + \beta_{10} BLOCK + \beta_{11} CFO + \beta_{12} INOWN + \beta_{13} LEVERGN + \beta_{14} LNASSET + \beta_{15} MTBV + \varepsilon \quad (9)$$

Where

Dependent variable:

DACC = *(DACC _JM), (DACC _MJM)* and *(DACC _ROA)*

Hypothesis variables:

ACIND = coded as one if AC had solely NEDs; zero otherwise;
ACMEET = the number of AC meetings for the year;
ACSIZE = the total number of AC members;
ACEXP = the proportion of AC members with accounting experience and financial qualification to AC size;
Audit Quality proxies = LN (*AFEE), LN (NAF), LN (TOTALFEES), (FEERATIO 1), (FEERATIO 2), (SPECLST _M_S_LEADER), (SPECLST _MS_30), (SPECLST _M_S), (SPECLST _P_S)* and (*SPECLST _WEIGHTED)*
BRDEXP = the proportion of directors on the AC with accounting or finance qualifications to board size;
BRDMEET = the number of board meetings during the year;
BDRNED = the composition/numbers of NEDs on BOD size;
BRDSIZE = the total numbers number of members existed in board during the year;

Control variables:

BLOCK = the cumulative percentage of outstanding common stock shares held by block holders holding at least 5 percent of such shares and who are unaffiliated with management;
INOWN = the cumulative percentage of total shares owned by the directors of a firm;
LEVERG = Total liabilities divided by total assets;
LNASSET = the natural log of total assets;
CFO = cash flow from operating activities scaled by lagged total assets;
MTBV = the market to book value ratio;

The selection of control variables are comparatively similar to those adopted by Bédard et al. (2004) and Klein (2002), and involve (CFO), (MTBV), (BLOCK), (INOWN), (LNASSET) and (LEVERG). The majority of previous studies on manipulation of earnings found these variables to be significantly associated with the level of discretionary accruals (Park and Shin, 2004; Ferguson et al., 2004).

In a similar way to the models of auditor specialist and non-audit services fees, the variables (BLOCK) and (INOWN) are grounded in agency theory. When the level of managerial or insider ownership increases, they are more aligned with external shareholder's interests and therefore, less likely to pursue opportunistic behavior at the expense of the shareholders (Jensen and Meckling, 1976). Evidence indicates that managers of firms with the highest level of ownership are more likely to report reliable earnings (Warfield et al., 1995). This condition appears since they consider themselves as part of the company, and thus, they have more responsibility for their actions. In line with Klein (2002), this research predicts negative correlation between EM and (INOWN).

LN(ASSET) is described as a proxy for the size of the company. The larger the size of the company, the more likely that the manager will manipulate the earnings of the company. Watt and Zimmerman (1990) indicate that the higher costs of politics are associated with the large companies and therefore there is more incentive to manipulate the reported earnings to prevent political actions. Evidence from other literature also indicates a positive correlation between EM and size (DeFond and Park, 1997; Becker et al., 1998). However, Park and Shin (2004) give a different claim. They argue that large companies are followed by the external capital market, and are therefore less able to hide the manipulation of earnings because they are monitored closely by analysts and the press. This indicates a negative correlation between (DACC) and LN(ASSET). The mixed claims indicate the absence of a clear direction on the relationship between (DACC) and LN(ASSET).

(LEVERG) is described as a proxy for the violation of debt covenants. Duke and Hunt (1990) and Press and Weintrop (1990) argue that a company with high leverage is more likely to be involved with the violation of debt covenants. This is because as the level of debt rises, the company could face more severe accounting constraints and this in turn increases the likelihood of violation of debt covenants. Various studies indicate that when avoiding the violation of restrictive debt covenants, higher leveraged companies are more likely to select accounting procedures that support increasing income (Bowen et al., 1981; Dhaliwal et al., 1982). Furthermore, DeFond and Jiambalvo (1994) and Jiang et al. (2008) indicate that high-leveraged companies have more incentive to make income by increasing discretionary accruals; the reason of this is to avoid the violation of debt covenants. This claim may indicate a positive correlation between EM and leverage. DeAngelo et al. (1994) argue that when companies are in or nearing financial distress, they may engage in contractual re-negotiations with lenders that intentionally reduce the reported earnings. This situation may indicate negative correlation between EM and leverage. Park and Shin (2004) and Yang et al. (2008) found a negative correlation between EM and leverage for various reasons.

They claim that high-leveraged companies could be less able to practice their EM because they are under close scrutiny of the lenders. As a result of these various arguments, the direction of this variable is not predicted for this research.

(MTBV) acts as a proxy for growth opportunities and is known as the 'market to book' value ratio. Matsumoto (2002) and Skinner and Sloan (2002) indicate that managers of the companies with the highest growth opportunities face the greatest pressure to achieve the earnings targets. Therefore, the higher 'the market to book' values of equity ratio, the higher levels of incentive for managers to manipulate earnings. In line with Collin and Kothari (1989), Gaver and Gaver (1993), and Klein (2002), this research predicts positive correlation between (MTBV) and EM.

From the theory of agency, (BLOCK) or institutional investors could be an alternative monitoring incentive. Monks and Minow (1995) indicate that institutional investors have the ability to monitor the actions and decisions of management and influence resources, discipline, and opportunity. When outside ownership is concentrated, such as gathering information, this encourages management to achieving better results, and collective shareholdings provide institutional investors with more incentive to monitor operations (Chung et al., 2002). In other words, when the shareholdings of institutional investors increases, this is more likely to constrain management opportunistic behavior, and this in turn reduces EM. In line with Bédard et al (2004) and Klein (2002), (BLOCK) is predicted to be negatively related with the level of opportunistic earnings.

(CFO) acts as a cash flow from operating activities of the company scaled by lagged total assets. Managers with less cash flow have a greater incentive to manipulate earnings by delaying the current costs or by reporting on future earnings in order to report that they are in a good financial situation (Leuz et al., 2003). This claim indicates negative correlation between (DACC) and (CFO), in line with the evidence documented by Becker et al. (1998). On the other hand, companies with high cash flow also manipulate earnings or do not declare strong performance through the creation of a reserve for future needs (Leuz et al., 2003).

The Han Wang study (1998) also supports this. They argue that oil refining companies that have benefited from high oil prices use income decreasing accruals to decrease the possibility of political risk. In addition, Frankel et al. (2002) claim that companies that have a high cash flow are more likely to overcome the earnings benchmark. This indicates a positive correlation between EM and performance of the firm, but as the claims are mixed, no direction for this variable was concluded.

4.6.5 The procedures of data analysis

For data analysis, the statistical software SPSS and Stata13 are used. Data analysis includes multivariate regression, robustness tests correlation, and descriptive statistics. All of them will be described below.

4.6.5.1 Descriptive statistics and correlation matrix

Descriptive statistics are used to describe the sample data on a single variable in an organized form. It contains the first quartile, third quartile, standard deviation, median, mean, minimum, maximum, kurtosis and skewness. The kurtosis and skewness describe the form of the data distribution. In particular, the kurtosis provides an indication of the flatness or peakedness of the distribution relative to the normal distribution, while skewness indicates a symmetrical distribution (Hair et al., 2010). The first quartile, third quartile, standard deviation, median, and mean measure the central tendency relating to statistics. The correlation between the variables is given by the pair-wise correlation matrix. This describes the degree of linear relationship between two variables. The correlation coefficient can range from range from -1 to +1, with +1 indicating a perfect positive correlation, -1 indicating a perfect negative correlation and zero indicating no correlation at all. Nevertheless, according to Hair et al. (2010), the high level of intercorrelations among the independent variables may cause several problems of multicollinearity when the coefficient of correlation values are exceeding ± 0.90. Multicolinearity could affect the predictive power of the model of regression as well as the estimating regression coefficients.

4.6.5.2 Multivariate regression

Multivariate regression in previous studies uses ordinary least square estimators to examine the correlation between one dependent variable and several independent variables (predictors). However, there are 5 basic assumptions that have to be made for the ordinary least square estimator model to be valid (Gujarati, 2003; Chen et al., 2003; Hair et al., 2010).

These assumptions contain: (1) Homogeneity of variance (Homoscedasticity) - the error variance should be constant (2) Multicollinearity - there must be no linear relationship among the variables (3) Independent - the errors term associated with a single observation should not be associated with any other errors of observation (4) Linearity - the correlation between the outcome and predictors variables should be linear (5) Normality – the errors should be normally distributed.

In addition to these assumptions, Chen et al. (2006) indicate that the analyst consider any influential and unusual data that can make a difference in the estimation of coefficients. When the five assumptions are violated, the results of estimators of ordinary least-square may be biased and distorted (Gujarati, 2003; Chen et al., 2003; Hair et al., 2010).

Various regression estimators, such as robust estimator, quantile estimator, least square estimator with robust standard error, and weighted least square (WLS) estimator or generalized least square (GLS) provide an alternative to the ordinary least-square estimator when the assumptions are violated. For instance, when the assumption of normality has not been achieved and the outliers moderate, the robust estimator will provide a better estimation than the ordinary least-square estimator (Chen et al., 2003; Hamilton, 1999).

In the presence of serial correlation and heteroscedasticity, either the robust standard error with least square estimator or the generalized least-squares estimator are capable of reweighting the contrast error to correct autocorrelation and heteroscedasticity (Gujarati, 2003; Adkins and Hill, 2007). Furthermore, the estimator of Nonparametric, such as the Quantile estimator disregards all the ordinary least-square assumptions (Gujarati, 2003). In general, this research found that most of the assumptions of the ordinary least-square are not sufficiently carried out, even though various steps were taken to comply with these assumptions (for instance, using transformation of data).

Many statisticians agree that light violations of the ordinary least-square assumptions are unaffected and robust in many cases (Newman et al., 1989; Glass and Hopkins, 1984; Glass et al., 1972; Box, 1953). Therefore, in the main analysis of this research, most of the estimator's models will be analyzed using the ordinary least-square estimator, except the heteroscedastic models, where the use of ordinary least-square estimator might be highly questionable.

Where the models show clear heteroscedasticity, the analysis used the least square regression with robust standard error. This regression is estimated using Huber-White or sandwich (standard errors) estimator. This can be explained in the same way as the ordinary least square estimator, but it is more efficient and accurate than the ordinary least square regression and has the ability to correct the autocorrelation and heteroscedasticity (Adkins and Hill, 2007). In sensitivity analysis, the alternative estimation methods can be used as benchmarks for comparison.

Ordinary least-square estimator applies when the dependent variable acts as a continuous variable. However, when the dependent variable acts as a dichotomous variable , the estimator of ordinary least square may not be able to meet the assumptions of the ordinary least square, and this can lead to ineffective estimates (Menard, 2002; Pampel, 2000). When response data are dichotomous, transforming the dichotomous variables into a probit model or logistic regression may overcome the inefficiency.

As indicated by Menard (2002):

> *"*In particular *with a dichotomous dependent variable, assumptions of normality, linearity, and homoskedasticity are violated, and ordinary least-square estimates are inefficient at best. The maximum likelihood estimation of a logistic estimator overcomes this inefficiency, transforming Y (1, 0) into a logistic (log of the odds of falling into the "1"category)."*

Therefore, taking into consideration these conditions, when the dependent variable is dichotomous, a multivariate estimator is used to estimate the heteroskedastic ordinal estimator as a control for heteroscedasticity (Williams, 2009). When conducting the sensitivity analysis, the probit estimator is used as an alternative regression. According to Pampel (2000), probit and logistic estimator models tend to produce very similar predictions, and it is up to the researcher to select one of these estimators. Various tests will be conducted after the multivariate estimator analysis. The reason for the additional tests is to confirm the robustness of the main results to the alternative model specifications. The tests of robustness include tests for various definitions of CG characteristics, various regression estimators, tests for additional control endogeneity and variables multicollinearity and heteroscedasticity.

To test the multicollinearity, the current study applies the variance inflation factor (VIF) and correlation coefficient tests. The VIF and tolerance factor of each characteristics of the ACs and BoDs, AQ and EM variables are calculated. If variables have VIF values more than 10 or less than the tolerance values of 0.10, then they are considered to have the problem of multicollinearity (Gujarati, 2003). Hair et al. (1998) and Kennedy (2008) indicates that a VIF of more than 10 shows harmful multicollinearity.

In view of the above discussion, the tests are conducted against Ordinary Least Squares (OLS) assumptions. Non-parametric tests are adopted in this study to analyze the data. This is because the data from this study does not meet the required conditions for parametric tests, as will be described in the next chapter.

Under the violation of normality, Ordinary Least Squares estimates are ineffective (Greene, 2007). The standard errors estimated are inconsistent and biased, and therefore, test statistics are inconsistent and biased (Greene, 2007; Baltagi, 2001). Provided that coefficients are constant over time, estimates using pooled regression becomes more efficient. Also, estimating the pool is a simple way to check the sensitivity of the results to alternative specifications (Beaver, 1998). The main advantage of pooled regression over the cross-section is that it allows greater flexibility in modeling differences in samples of particular behavior (Greene, 2007).

Another reason for preferring the Generalize least square (GLS) regression over pooled Ordinary Least Squares regression is because there is no serial correlation in pooled Ordinary Least Squares - an important assumptions of homoscedasticity (Greene, 2007). For the estimator to be produced unbiased and consistent, pooled Ordinary Least Squares requires the errors in each time period to be uncorrelated with the independent variables in the same time period. A Generalized least square regression has the additional advantage that it corrects for the omitted variable bias, heteroskedasticity and the presence of autocorrelation in a pooled time-series data.

4.7 Summary

The current chapter started with a discussion about the research methodology and research paradigm. The methodology that has been adopted is justified by the objectivist (realism) ontological position. According to this methodology, this research adopts quantitative methods to increase confidence in the results. One important way of trying to understand the mechanisms of the CG and the practices of EM in the initial phase and of independent audit is to use a quantitative method, as it is applied in this study. In addition, quantitative methods are not only meaningful in order to get an accurate image of the nature of the issue, but also to provide a deeper understanding of the phenomenon (Cooper and Schindler, 2003). For instance, Filatotchev and Nakajima (2010) propose an understanding of CG relying on the variety of information published, for example the firms' annual reports. Therefore, quantitative methods will be implemented in order to enhance the quality of the data and seek to fill the gap in the literature. Furthermore, the quantitative approach gives this research the ability to examine theory with a large sample size, and enable it to get an in depth understanding of the research problems.

The initial sample consists of the Bahrain Stock Exchange of 192 firm-year observations for the period 2010-2013. After eliminating some firms, firms that are suspended from operating and firms were not audited by auditors of Big 4, the final sample consisted of 152 and 148 firm year observations for 2 empirical investigations. The data was collected from firms' annual reports, Thomson One Banker and by telephone. Furthermore, the description of 3 main groups of hypothesis variables has been also explained in this chapter: (1) the characteristics of the AC and the BoDs (include: composition, size, level of activities and expertise), (2) the AQ proxies (include: AFs, NASF and industry-specialist auditors), and (3) EM. Table No.4.7 provides a summary of the variables used in this research. Most analysis use the least square estimator with robust standard error and ordinary least-square estimator.

Table 4.7: Summary of all variables			
Label	Variable	Description	Data source
BDRNED	BoD composition	The composition/numbers of NEDs on BOD	Annual report
BRDEXP	BoDs expertise	The proportion of AC members with accounting experience and financial qualification to board size	Annual report
BRDMEET	BoDs meeting	The number of board meetings during the year	Annual report
BRDSIZE	BoDs size	The total number of members existing in the board during the year	Annual report
ACEXP	AC expertise	The proportion of AC members with accounting experience and financial qualifications to AC size	Annual report
ACIND	AC composition	Coded as one if AC had sole NEDs; zero otherwise	Annual report
ACSIZE	AC size	The total number of AC members	Annual report
LNAFEE	AFs	The natural log of AFs	Telephone/ Annual report
FEERATIO 1	NASFs	The fee ratio of non-audit services fees to total fees	Thomson One Banker
FEERATIO 2	NASFs	The fee ratio of non-audit services fees to AFs	Thomson One Banker
LNNAF	NASFs	Natural log of NASFs	Telephone /Annual report
LNTOTALFEES	NASFs	Natural logarithm of the sum of non-audit services and audit fees	Telephone /Annual report
SPECLIST_M_S	Auditors specialist in the industry	Continuous variable which equals the respective auditor market share	Thomson One Banker
SPECLST _ M_S_LEADER	Auditors specialist in the industry	Coded as one if the auditor earned the largest market share in each particular industry; zero if otherwise	Thomson One Banker / Annual report

Table 4.7 (continued)			
SPECLST _ WEIGHTED	Auditors specialist in the industry	Continuous variable which equals the compliment between portfolio share *(SPECLST _P_S)* and auditor market share (*SPECLS T_M_S*)	Thomson One Banker / Annual report
SPECLST_MS_30	Auditors specialist in the industry	Coded as one if the auditor's market share exceeds 30 percent in each particular industry; zero if otherwise	Thomson One / Annual report
SPECLST _P_S	Specialist Auditors in the industry	Continuous variable which equals the respective auditor portfolio share	Thomson One Banker
DACC_JM	EM	Discretionary accrual based on Jones Model	Annual report
DACC_MJM	EM	Discretionary accruals based on Modified Jones model	Annual report
DACC_ROA	EM	Discretionary accruals by Kothari et al. (2005), involving lagged ROA in the accrual regression to control for the performance of the company	Annual report
BLOCK	Block holder ownership	The cumulative percentage of outstanding common stock shares held by block holders holding at least 5 percent of such shares and who are unaffiliated with management	Annual report
FORGN	Foreign subsidiaries	Proportion of foreign subsidiaries to total subsidiaries	Annual report
INOWN	BoD ownership	The cumulative percentage of total shares owned by the directors of a firm	Annual report
LEVERG	Leverage	Total liabilities divided by total assets	Annual report
LNASSET	Total asset	The natural logarithm of Total liabilities divided by total assets	Annual report

Table 4.7 (continued)			
CFO	Cash flow	Cash flow from operating activities scaled by lagged total assets	Annual report
GROWTH	Sales growth	Growth rate in sales over the previous fiscal year	Annual report
LIQ	Liquidity	Ratio of current assets over current liabilities	Annual report
MTBV	Growth	The market to book value ratio	Annual report
NEWDIR	New external director	Coded as one if there was a new external director appointed to the firm during the year; zero otherwise	Annual report
RETURN	Stock return	The financial year total stock return	Annual report
ROA	Return on assets	Return on assets	Annual report

Chapter V:

THE RESULTS OF THE FINDINGS AND ANALYSIS: THE RELATIONSHIPS OF THE AC, BODs AND AQ.

5.0 Introduction

This chapter provides the results of the first empirical analysis of the ACs and BoDs characteristics and their relationship to AQ. There are 3 proxies of AQ to be examined, namely the AFs, the non audit services fees and the use of auditor's specialists in the industry (SPEC _AUD).

This chapter is structured as follows: the next section provides descriptive statistics and correlation matrix. This is followed by separate sections on multivariate test results and a sensitivity analysis for each proxy. The final section summarizes and concludes the chapter.

5.1 Descriptive Statistics

Table 5.1 provide descriptive statistics for the three measures of the AQ - auditor independence or non-audit services measures (LNTOTALFEES, LNNAF, FEERATIO 1 and FEERATIO 2), audit fees LN(AFEE), and auditor industry specialist measures (SPECLST _WEIGHTED, SPECLST_M_S, SPECLST_P_S, SPECLST_M_S_LEADER and, SPECLST _MS_30), the hypothesis variables (ACMEET, ACEXP, ACIND, ACSIZE, BRDMEET, BRDEXP, BRDNED, BRDSIZE) and the related control variables that contain the mean, median, standard deviation, skewness and kurtosis, minimum and maximum.

The following descriptive statistics are important to highlight. The mean (median) of audit and non-audit services fees for 152 firm-years were BHD 8.856 million (BHD 8.000 million) and BHD 7.467 million (BHD 5.000 million) respectively. Non-audit services fees have captured nearly 46.97 % of the total audit fees. In a United Kingdom study, O' Sullivan (2000) found that the mean (median) of audit and non-audit fees for the largest 402 firms in the financial year of 1992 were 0.638 million British pounds (0.279 million British pounds) and 0.320 million British pounds (0.144 million British pounds) respectively. In comparison with the O'Sullivan (2000) study, this study found that the AFs (BHD 8.856 million) have increased 1288 % and the non-audit services fees (BHD 7.467 million) of Bahraini firms have grown by about 2233%, which indicates the importance of non-audit services as an alternative income source for auditors. These statistics support Lee's (2008) argument that non-audit services seems to be associated with luxury income as it has a higher profit margin than audit fees.

The mean (median) ratio of non-audit services fees to total fees (FEERATIO 1) and ratio of non-audit services fees to total audit fees (FEERATIO 2) are 0.409 (0.410) and 0.798 (0.700) respectively. Under SPECLST _MS_30 and SPECLST _M_S_LEADER definitions, 80.9 % and 65.1 % of the firms, respectively, have engaged the services of an industry specialist auditor.

The mean (median) of the total cumulative percentage of block holders (BLOCK) and total shares owned by the directors of a firm (INOWN) are 78.097 % (58.200 %) and 4.285 % (0.000 %) respectively. O'Sullivan (2000) split the shares of the block shareholders into external and institutional shareholders and the directors into non-executive and executive directors. To make a comparison, the current study presents the mean (median) of the O'Sullivan (2000) study, as he reported that the mean (median) of the shares owned by external shareholders at about 31.292 % (21.640 %), while the figures for the shares owned by the directors was 5.55 % (0.291 %).

In comparison with the O'Sullivan (2000) study, the mean (median) of the BLOCK of the current study is higher and INOWN is comparatively similar to that reported by O'Sullivan. The change in the mean (median) may be due to different definitions of the variables. The O'Sullivan (2000) study defines BLOCK as the block holders holding at least 3 % of the shares and the current study defines this at 5 % of the shares. Allowing for the time difference from the earlier United Kingdom study, it shows that there is not a lot of change in the pattern of ownership of directors.

The mean (median) of the total cumulative percentage of leverage is 14.5 % (10 %), which is comparatively less than that reported in Australia. Chen et al. (2005) reported that the total percentage of the mean (median) leverage for the 458 Australian firms was 48.84 % (44.42 %). The lower leverage may indicate that the firms in the Kingdom of Bahrain have lower risk levels than firms in Australia. In terms of the performance of the firm, total of the ROA mean (median) is 3.959 (2.92).

The variables for the BoD show that the average board size is 6, which is less than the figure reported by Peasnell et al. (2005), at between 8 and 9. The total percentage of independent non-executive directors on boards is 2.73 %. The percentage of the BoDs with experience and financial or accounting qualifications is 2.74 % and the total meeting of the board is 4 times a year. This can be compared to the United States studies by Carcello et al. (2002) and Abbott et al. (2003) who report that the total percentage of the non-executive directors on boards are 75 % and 68.2 % respectively, and that on average meetings of the board are held 7 times per year. This comparison indicates that the United States firms are more likely to be controlled by non-executive directors, while in the Kingdom of Bahrain members of the board have an almost balanced representation of non-executive and executive directors. The meetings of the board are comparatively different.

With respect to the variables of the AC, the mean (median) of the size of the AC is 3.960 (4.000). 76 % of the samples report that their ACs consists solely of independent non-executive directors with a total percentage of only 2.11 % of them having financial and accounting expertise. The average frequency of the meetings of the AC is 4 times per year. In the United States, Abbott et al. (2003) report that 75 % of their samples had committees of audit consisting solely of independent non-executive directors, and 80 % had at least 1 financial expert. This indicates that the proportions of firms that have a solely independent AC percentage of members are comparatively similar in the United Kingdom and United States. However, the percentage of firms that have at least one member of the audit committee equipped with financial expertise in the Kingdom of Bahrain are comparatively lower than what is reported in the United States. One possible reason for this is because the Bahraini listed companies have a lack of experience applying the AC and board systems because the CG code has been relatively recently established.

The mean (median) of LNASSET in natural logarithm form is 5.335 (4.700). The mean (median) of the RETURN is 0.030 (0.000). In the past, Firth (1997) reported that for the 500 largest UK industrial firms in 1993 (listed companies ranked in The Times in 1000), the means of the RETURN was 0.43. Abbott et al. (2003) reported that the means of RETURN is 0.0415. In comparison with previous studies, the mean of the RETURN which is documented in this study is relatively lower. This difference may be due to differences in the sample. The listed companies in (The Times 1000) and the sample examined by Abbott et al (2003a) may include both smaller and the larger companies. This study examined both the small and the large 38 listed companies in the Bahrain Stock Exchange, therefore, on average, larger companies have a more stable return of the stock market.

The NEWDIR is dichotomous variables. The previous variable is connected with special events that require non-audit services. The means of the NEWDIR is 0.140. Specifically, there are 152 firm-years in which new directors were appointed. Abbott et al. (2003a) and Firth (1997) reported that the means of the previous variable is 0.09 for NEWDIR. The total numbers of foreign subsidiaries approximately is 26 %. The Australian and United Kingdom studies, Chen et al (2005) and O'Sullivan (2000) reported that the total numbers of subsidiaries in the samples are 27.72 and 23.686 respectively. This indicates that the levels of the complexities of the companies in Australia and the United Kingdom are relatively similar.

As shown in the columns of kurtosis and skewness in Table 5.1, most of the variables are not normally distributed. The normal distribution expecta the value 0 and above and below 0 denotes departures from normality. To get to the normal distribution, many variables are been transformed such as (LNASSET, LNAFEE) using the natural logarithm. One of the possibilities that violates the assumption of normality may cause the problem of heteroscedasticity. Diagnostics on the problem of heteroscedasticity will be provided in a later section.

5.2 The correlation matrix

This section will provide the correlation matrix for all variables that been used in the AQ models (see Table 5.2). The related control variables and the hypotheses variables are measured by 3 proxies of AQ, namely AQ- auditor independence or non-audit services measures (LNTOTALFEES, LNNAF, FEERATIO 1 and FEERATIO 2), auditor specialist in the industry measures (SPECLST_WEIGHTED, SPECLST_M_S, SPECLST_P_S, SPECLST _M_S_LEADER and, SPECLST _MS_30), and AFs LN(AFEE). It is always expected the highest correlations among the measurements of the AQ because they are highly interrelated. Only one measure of AQ in the empirical test will be used so that this higher correlation does not necessarily affect the results of the empirical data.

In general, the correlation matrix shows that all the measures of the AQ with all variables (ACMEET, ACEXP, ACIND, ACSIZE, BRDMEET, BRDEXP, BRDNED, BRDSIZE, and the related control variable) are inter correlated with one another and with the exception of variables LNTOTALFEES and LNAFEE with LNASSET (coefficients of correlation of -0.30 % for LNTOTALFEES and 4.1 % for LNAFEE). The LNTOTALFEES, FEERATIO 1 and FEERATIO 2 are insignificantly correlated with four of the AC variables and board variables, while LNNAF is significantly correlated with one board variable, and insignificantly correlated with four of the AC variables.

BRDEXP is negatively correlated with LNTOTALFEES and LNNAF with coefficients of correlation -6.8 % and -4.6 % respectively, suggesting that the firms with a higher proportion of the members of the board with financial expertise are likely to report lower total fees and non-audit services fees. BRDMEET is insignificantly and negatively correlated with LNTOTALFEES and LNNAF (correlation coefficients are -2.4 % and-11.1 % respectively). LNNAF are positively correlated with BRDSIZE and significantly and positively correlated with BRDNED. LNTOTALFEES is positively correlated with BRDSIZE and BRDNED. The positive correlation between BRDNED and LNNAF are consistent with O'Sullivan (2000). ACIND is positively correlated with LNNAF and LNTOTALFEES, and negatively with FEERATIO 2, while ACSIZE is insignificantly and positively correlated with LNTOTALFEES and positively correlated with LNNAF.

LNAFEE is insignificantly correlated with all the variables of AC and insignificantly with all the variables of the board. The correlation coefficients range is between -67 % and 15.9 %. LNAFEE is insignificantly and negatively correlated with ACMEET, and positively correlated with ACIND and ACSIZE. The values of their correlation coefficients are -67.0 % for ACMEET, 6.6 % for ACIND and 1.9 % for ACSIZE, suggesting that the firms who have more AC members (consisting solely of independent members) and who do more meetings are connected with high AFs.

However, the AC expertise (ACEXP) was found negatively correlated with LNAFE and this is consistent with Krishnan and Visvanathan (2009) study. LNAFEE is negatively correlated with BRDEXP (correlation coefficients is -5.4 %) and positively correlated with BRDSIZE and BRDNED (correlation coefficients are 9.5 % and 15.9 respectively). The positive correlation between LNAFEE and BRDNED is consistent with the finding with Carcello et al. (2002), Abbott et al. (2003b)

The coefficients of correlation of the specialist auditors in the industry with the variables of the AC and board are mixed, depending on how the data of the industry-specialist auditor has been calculated. They are either marginally insignificantly correlated or in opposite directions with variables of the AC and board. For example, BRDEXP is negatively correlated with SPECLST_M_S, SPECLST_MS_30 and SPECLST_M_S_LEADER (correlation coefficients are -35.3 %, -25.7 %, -23.7% respectively), while is also positively correlated with SPECLST_P_S (the correlation coefficient is 37.9%). BRDSIZE is found positively correlated with all the industry-specialist auditor measures except for SPECLST_M_S and SPECLST_MS_30, which were found negatively correlated with BRDSIZE. BRDNED is negatively correlated with SPECLST_M_S, SPECLST_MS_30 and SPECLST_M_S_LEADER, but positively correlated with SPECLST_P_S.

For the variables of the AC, ACIND is found to be significantly and positively correlated only with SPECLST_P_S. ACMEET is positively correlated with all the industry-specialist auditor measures, while ACEXP is significantly and positively correlated with SPECLST_P_S and negatively correlated with SPECLST_MS_30 and SPECLST_M_S_LEADER. ACSIZE is negatively correlated with SPECLST_M_S, SPECLST_M_S_LEADER and SPECLST_MS_30, but significantly and positively correlated with SPECLST_P_S.

Table 5.1 : Descriptive statistics (Number of observations =152)							
Variables	Mean	Median	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
Audit. Fees (BHD'000)	8855.970	8000.000	7185.475	5.493	41.997	0.000	70957.000
NAS. Fees (BHD'000)	7466.950	5000.000	14230.794	8.679	83.941	0.000	156008.000
Total. Fees (BHD'000)	16322.92	13000.000	20283.279	7.430	61.645	0.000	204258
ACEXP	2.110	2.000	0.855	-0.204	-1.606	1.000	3.000
ACIND	0.763	1.000	0.426	-1.250	-0.443	0.000	1.000
ACMEET	3.960	4.000	0.254	-6.872	48.451	2.000	4.000
ACSIZE	3.394	3.000	0.490	0.435	-1.835	3.000	4.000
BDRNED	2.736	3.000	1.232	-0.043	-0.592	1.000	7.000
BLOCK	78.097	58.200	143.512	5.546	30.858	0.000	928.000
BRDEXP	2.743	3.000	1.204	-0.161	-0.967	1.000	5.000
BRDMEET	3.960	4.000	0.254	-6.872	48.451	2.000	4.000
BRDSIZE	6.243	6.000	1.000	0.002	-0.838	4.000	8.000
FEERATIO 1	0.409	0.410	0.138	-0.592	1.710	0.000	0.760
FEERATIO 2	0.798	0.700	0.484	1.810	5.321	0.000	3.230
FORGN	0.260	0.000	0.874	3.668	12.372	0.000	4.000
INOWN	4.285	0.000	14.172	3.598	12.121	0.000	68.500
LEVERG	0.145	0.100	0.159	0.917	-0.035	0.000	0.600
LNAFEE	2.000	2.080	0.600	-0.604	4.011	0.000	4.260
LNASSET	5.335	4.700	2.147	0.354	-0.323	0.000	11.062
LNNAF	1.688	1.610	0.650	0.940	7.174	0.000	5.050
LNTOTALFEES	2.561	2.561	0.654	-0.950	9.131	0.000	5.320

Table 5.1: Continued							
Variables	Mean	Median	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
NEWDIR	0.552	1.000	0.498	-0.214	-1.981	0.000	1.000
RETURN	0.030	0.000	0.227	0.327	1.369	-0.710	0.724
ROA	0.039	0.029	0.053	0.031	1.861	-0.196	0.183
SPECLIST_M_S	0.552	0.592	0.238	-0.193	-0.404	0.000	1.000
SPECLST_ M_S_LEADER	0.651	1.000	0.478	-0.641	-1.610	0.000	1.000
SPECLST_ WEIGHTED	0.133	0.067	0.139	1.129	-0.281	0.000	0.448
SPECLST_MS_30	0.809	1.000	0.394	-1.590	0.534	0.000	1.000
SPECLST_P_S	0.243	0.140	0.223	0.791	-1.078	0.000	0.666

Table 5.1: Continued
ACEXP = the proportion of AC members with accounting experience and financial qualification to AC size; ACIND = coded as 1 if AC had solely NEDs; zero otherwise; ACMEET = number of AC meetings during the year; ACQ = the number of acquisitions made by the company during the year; ACSIZE = number of AC members; BLOCK = the cumulative percentage shares ownership of the block holders who hold at least 5 % or more of outstanding common shares and who are unaffiliated with management; BRDEXP = the total number of directors with financial qualification and accounting experience to the size of the board; BRDMEET = total number of the meetings of the board during the year; BRDNED = the proportion of NEDs on BoD size; BRDSIZE = numbers of board members during the year; FEERATIO 1= the fee ratio of non audit service fees to total fees; FEERATIO 2= the fee ratio of non audit service fees to AFs; FORGN=the proportion of foreign subsidiaries to total consolidated subsidiaries; FORGNSALE= The proportion of the firm foreign sales; INOWN = the cumulative percentage of total shares owned by the directors of a firm; LEVERG = the proportion of debts to total assets; LNAFEE= the natural log of AFs; LNASSET = the natural logarithm of total assets; LNNAF=natural log of non audit service fees; LNTOTALFEES= natural log of the sum of audit and non audit service fees; NEWDIR = coded as 1 if the firm appoint new external director during the year, zero otherwise; RETURN = the fiscal year total stock return; ROA= return on assets; SPECLIST_M_S: continuous variable which equals to the respective auditor market share; SPECLST_M_S_LEADER: coded as 1 if the auditor earned the largest market share in each particular industry, zero if otherwise; SPECLST_MS_30: coded as 1 if the auditor market share exceeds 30 percent in each particular industry, zero if otherwise; SPECLST_P_S: continuous variable which equals to the respective auditor portfolio share; SPECLST_WEIGHTED= continuous variable which equals to the compliment between portfolio share (SPECLST_P_S) and auditor market share (SPECLST_M_S).

Table 5.2: Correlation matrix (Pairwise) (Number of observations=152)

	Variables	LNAFEE	LNNAF	LNTOTALFEES	FEERATIO 1	FEERATIO 2	SPECLST_M_S	SPECLST_P_S	SPECLST_WEIGHTED	SPECLST_M_S_LEADER	SPECLST_MS_30	BRDSIZE
1	LNAFEE	1.000										
2	LNNAF	**0.636****	1.000									
3	LNTOTALFEES	**0.929****	**0.843****	1.000								
4	FEERATIO 1	0.097	**0.718****	**0.451****	1.000							
5	FEERATIO 2	-0.013	**0.658****	**0.350****	**0.910****	1.000						
6	SPECLST_M_S	**0.350****	**0.255****	**0.358****	0.097	0.102	1.000					
7	SPECLST_P_S	0.130	-0.010	0.092	-0.060	-0.078	-0.010	1.000				
8	SPECLST_WEIGHTED	*0.184**	0.035	0.145	-0.070	-0.050	**0.289****	**0.901****	1.000			
9	SPECLST_M_S_LEADER	*0.166**	0.052	0.122	-0.095	-0.063	**0.751****	**0.226****	**0.474****	1.000		
10	SPECLST_MS_30	**0.325****	**0.222****	**0.303****	0.030	-0.002	**0.719****	0.065	**0.326****	**0.628****	1.000	
11	BRDSIZE	0.095	0.037	0.050	-0.104	-0.089	*-0.166**	**0.386****	**0.346****	0.026	-0.032	1.000
12	BDRNED	0.159	*0.187**	0.141	0.006	-0.032	*-0.180**	*0.201**	0.119	-0.145	-0.118	**0.408****
13	BRDEXP	-0.054	-0.046	-0.068	-0.068	-0.028	**-0.353****	**0.379****	**0.285****	**-0.237****	**-0.257****	**0.438****
14	BRDMEET	0.010	-0.111	-0.024	-0.074	-0.096	*-0.184**	0.088	0.033	**-0.220****	-0.121	-0.059
15	ACSIZE	0.019	0.087	0.023	-0.019	0.046	-0.114	**0.335****	**0.305****	-0.002	-0.019	*0.179**
16	ACIND	0.066	0.077	0.059	0.005	-0.010	-0.086	**0.271****	*0.192**	-0.083	-0.074	**0.242****
17	ACEXP	0.006	-0.023	-0.017	-0.068	-0.052	-0.159	**0.358****	**0.253****	-0.136	-0.137	*0.170**
18	ACMEET	-0.670	-0.050	-0.058	0.000	0.018	*0.171**	0.113	0.123	**0.213****	0.057	-0.117
19	INOWN	0.025	-0.061	-0.003	-0.054	-0.080	**0.292****	-0.065	-0.007	*0.178**	0.125	*-0.195**

Table 5.2: Continued												
Variables		LNAFEE	LNNAF	LNTOTALFEES	FEERATIO 1	FEERATIO 2	SPECLST_M_S	SPECLST_P_S	SPECLST_WEIGHTED	SPECLST_M_S_LEADER	SPECLST_MS_30	BRDSIZE
20	BLOCK	-0.026	0.053	0.004	0.085	0.056	*-0.193**	0.009	-0.063	**-0.231****	-0.144	-0.140
21	LEVERG	0.036	-0.008	0.033	0.024	-0.029	-0.072	**0.420****	**0.317****	-0.012	-0.006	0.127
22	RETURN	0.008	-0.026	-0.016	-0.067	-0.054	0.016	-0.103	-0.096	0.058	-0.095	-0.154
24	FORGN	0.059	-0.046	0.030	-0.076	-0.045	0.075	**0.461****	**0.493****	**0.213****	0.140	**0.255****
25	LNASSET	0.041	-0.038	-0.003	-0.113	-0.100	*-0.163**	**0.532****	**0.449****	-0.026	-0.068	**0.232****
26	NEWDIR	0.009	0.002	-0.008	-0.057	-0.029	**-0.277****	**0.234****	*0.190**	-0.159	-0.100	**0.349****
27	ROA	-0.003	0.042	-0.019	-0.081	-0.001	0.052	**-0.358****	**-0.286****	0.083	0.025	-0.123

Table 5.2: Continued

Variables		BDRNED	BRDEXP	BRDMEET	ACSIZE	ACIND	ACEXP	ACMEET	INOWN	BLOCK	LEVERG	RETURN
12	BDRNED	1.000										
13	BRDEXP	**0.418****	1.000									
14	BRDMEET	0.061	-0.041	1.000								
15	ACSIZE	-0.024	0.004	0.062	1.000							
16	ACIND	**0.485****	**0.397****	*0.160**	0.007	1.000						
17	ACEXP	0.064	**0.586****	-0.083	0.058	**0.359****	1.000					
18	ACMEET	-0.166*	-0.033	0.045	-0.087	**0.280****	*0.202**	1.000				
19	INOWN	-0.006	-0.018	-0.009	-0.124	-0.054	0.016	0.047	1.000			
20	BLOCK	-0.127	**0.225****	-0.017	-0.091	0.102	**0.210****	-0.009	-0.067	1.000		
21	LEVERG	-0.034	**0.251****	0.029	-0.034	0.128	**0.333****	0.030	*0.174**	0.140	1.000	
22	RETURN	0.005	-0.077	-0.049	0.084	0.010	-0.139	0.019	0.078	-0.010	-0.049	1.000
24	FORGN	0.153	*0.205**	-0.079	**0.245****	*0.165**	**0.232****	0.047	0.144	-0.079	-0.033	-0.010
25	LNASSET	*0.162**	**0.412****	**0.321****	0.135	**0.358****	**0.473****	0.065	0.081	**0.430****	**0.290****	*-0.164**
26	NEWDIR	**0.464****	**0.579****	0.011	-0.058	**0.370****	**0.422****	-0.140	0.050	-0.124	0.059	-0.151
27	ROA	-0.110	-0.125	*-0.168**	0.044	-0.034	**-0.297****	-0.037	0.082	0.027	-0.082	**0.255****

Table 5.2: Continued					
Variables		FORGN	LNASSET	NEWDIR	ROA
24	FORGN	1.000			
25	LNASSET	**0.335****	1.000		
26	NEWDIR	*0.201**	**0.433****	1.000	
27	ROA	*-0.170**	**-0.211****	**-0.232****	1.000

**Correlation is significant at the 0.01 level (2-tailed) in bold.
* Correlation is significant at the 0.05 level (2-tailed) in italic.

5.3 Audit Fees: Analysis No.1

5.3.1 Multivariate regression for AFs model

Table 5.3 provides the regression results of the AFs model for each year for the period 2010 to 2013 and for the pooled sample for the combined period. The explanatory power for all models ranges from adjusted R2 between 6.8 % and 39.1 %. The hypotheses variables such as ACMEET, ACEXP, ACIND, ACSIZE, BRDMEET, BRDEXP, BRDNED, and BRDSIZE are either insignificant or significant with AFs in pooled samples or from year to year.

ACSIZE is significantly and negatively related to AFs in the year 2010 sample at $p < 0.10$ ($t = -1.97$). This weak relationship is also shown in other models and indicates that there is no evidence that it is associated with AFs. The other characteristics of AC such as ACEXP were found positively related to all models of the AFs, and for ACIND which was found positively and significantly related to AFs in the year 2011 sample at $p < 0.05$ ($t = 2.84$), and significantly and negatively related to AFs in the year 2010 sample at $p < 0.05$ ($t = -2.27$). ACMEET was found insignificant with all models of the AFs. The insignificant results in these variables contradict the result of Abbott et al. (2003b). The mixed results may be due to the difference in nature of the selections of the sample. Abbott et al. (2003b) investigate a comprehensive sample of companies that submitted their data to the Securities and Exchange Commission (SEC), which contains both large and small companies. On the other hand, Carcello et al. (2002) investigate on the sample of Fortune 1000 companies, which mainly contain larger companies than are found in the sample population examined through Abbott et al. (2003b). The nature of the sample examined and analyzed in this study is similar to that which has been examined and analyzed by Carcello et al (2002). Therefore, the expectation was for different results to Carcello et al. (2002).

BRDSIZE is insignificant with AFs in all models. However, from the year 2010 to the pooled sample, the result contradicts the findings of Carcello et al. (2002). BRDEXP is found negatively and significantly related to AFs in the year 2011 sample at $p < 0.05$ ($t = -2.28$), and significantly and negatively related to AFs in the pooled sample at $p < 0.05$ ($t = -2.37$), while BRDMEET is insignificant and negatively related to AFs in the year 2011, 2013 and pooled samples, which indicates that the BoDs that are equipped with financial expertise, which have a higher frequency of board meetings are associated with lower AFs. The BRDNED was found negatively and significantly related to AFs in the year 2012 sample at $p < 0.10$ ($t = -1.89$), and positively and significantly related to AFs in the year 2010, 2013 and pooled sample at $p < 0.05$ ($t = 2.69$), $p < 0.10$ ($t = 1.77$), and $p < 0.05$ ($t = 1.94$) respectively. These results are consistent with Abbot et al. (2003) and Carcello et al. (2002) who disputed that the independent NEDs on boards demand extra effort in audit for ratification of the monitoring function, therefore increasing the AFs and the perceived quality of the audit, primarily for the purpose of protecting their interests. Compared with the previous British studies by Adelopo (2010) and O'Sullivan (2000), the primary evidence suggests that in terms of the "independent", there is little to differentiate between the types of non-executive director. This result is consistent with previous studies in the United Kingdom.

LEVERG is insignificantly and negatively related to all AFs models except for year 2010 and pooled samples which were found positively related to AFs. The positive results indicate that the auditors believe that companies that have high leverage are linked with a higher risk of litigation, which may lead to more failures in audit, due to their poor financial situations. Therefore, an auditor may increase their fees and effort of audit for these companies so as to compensate their risk of litigation. These results are consistent with the results of prior study such as Menon and Williams, 2001.

The size of the company LNASSET is negatively related to all AF models except for year 2013 and pooled samples which were found positively related to AFs. The positive results may indicate that with the increase in the size of the company, auditors extend the auditing hours and expand the scope of the audit, which in turn results in higher AFs.

This finding is consistent with the findings of Carcello et al. (2002), Abbott et al. (2003b) and Simunic (1980).

FORGN is negatively related to AFs models in year 2011; year 2012 samples were found significantly and positively related to AFs and year 2010 and pooled samples were found insignificantly and positively related to AFs. As expected, the companies that have the largest number of foreign subsidiaries are likely to have higher AFs since the auditors need to put more effort and auditing hours in dealing with complex processes, thereby increasing AFs. The positive results of FORGN are consistent with Abbott et al. (2003b), Carcello et al. (2002), Craswell and Francis (1999), and Simunic (1980).

In brief, findings from the regression are consistent with agency theory, which indicates that the independent NEDs on the boards are linked with effective monitoring. They complement their function of monitoring by demanding a higher AQ from the external auditor in terms of extending the auditing hours and effort of the audit, resulting in higher perceived AQ and higher AFs. The other variables of CG seem to provide inconsistent results or insignificant relationships with AFs across the samples by pooled data and samples by year. Therefore, there is no consistent evidence that board size, the financial expertise and meeting frequency of boards, and all AC characteristics (e.g. size, composition of independent members, financial expertise and meeting frequency) are associated with increased AFs. Specifically, the impact of the supervisory role of "Independent" board outweighs the other effective characteristics of the AC and BoD. Consequently, there is no evidence that the all characteristics of BoD (such as size of the board, financial expertise, number of meeting and number of independent members) and AC (such as size of the AC, financial expertise, number of meeting and number of independent members) are linked with increased AFs.

The findings for all the control variables are insignificant in the predicted directions and consistent with the previous studies.

Table 5. 3: Regression results for AFs model

$LNAFEE = \alpha_0 + \beta_1 ACIND + \beta_2 ACMEET + \beta_3 ACSIZE + \beta_4 ACEXP + \beta_5 BRDEXP + \beta_6 BRDMEET + \beta_7 BRDNED + \beta_8 BRDSIZE + \beta_9 FORGN + \beta_{10} LEVERG + \beta_{11} LNASSET + \varepsilon$

Variable name	Coefficient (t-values)				
	2010	2011	2012	2013	Pooled (N=152)
Constant	2.936 (1.64)	4.396 (2.27)**	3.724 (1.18)	0.011 (0.00)	2.208 (2.06)**
BRDSIZE	0.006 (0.06)	-0.025 (-0.20)	0.064 (0.52)	-0.062 (-0.52)	0.049 (0.84)
BRDEXP	-0.092 (-0.79)	-0.258 (-2.28)**	0.035 (0.29)	-0.086 (-0.65)	-0.143 (-2.37)**
BRDMEET	0.134 (0.83)	-0.098 (-0.58)	0.080 (0.50)	-0.138 (-0.82)	-0.005 (-0.07)
BRDNED	0.307 (2.69)**	-0.064 (-0.61)	-0.251 (-1.89)*	0.226 (1.77)*	0.105 (1.94)**
ACSIZE	-0.400 (-1.97)*	0.193 (0.85)	-0.189 (-0.90)	0.254 (1.15)	-0.013 (-0.12)
ACEXP	0.074 (0.48)	0.036 (0.22)	0.035 (0.21)	0.029 (0.17)	0.081 (0.97)
ACMEET	-0.047 (-0.15)	-0.577 (-1.62)	-0.320 (-0.42)	0.287 (0.42)	-0.150 (-0.68)
ACIND	-0.648 (-2.27)**	0.945 (2.84)**	0.022 (0.07)	-0.012 (-0.04)	0.012 (0.08)
FORGN	0.126 (1.10)	-0.049 (-0.38)	0.290 (2.33)**	-0.110 (-0.93)	0.022 (0.36)
LEVERG	0.422 (0.71)	-0.412 (-0.52)	-0.629 (-0.84)	-0.134 (-0.18)	0.226 (0.67)
LNASSET	-0.039 (-0.62)	-0.019 (-0.28)	-0.017 (-0.27)	0.066 (1.35)	0.007 (0.24)
Adjusted. R^2	0.367	0.391	0.259	0.234	0.068

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01

5.3.2 The additional analyses:

This section provides additional data to the primary analysis. The reason for the additional analysis is to give reasonable assurance that the main results are robust with the specifications of different models.

5.3.2.1 The test of heteroscedasticity and multicollinearity (via the STATA 13)

To confirm whether heteroscedasticity exists, this study used the Breush-Pagan or Cook-Weisberg test through STATA 13 software. If the p value is significant, then the null-hypothesis, that the variance of the residuals is constant, will be rejected, which indicates the presence of heteroscedasticity. The heteroscedasticity test was carried out for the pooled sample and analyzed using the Ordinary least square regression. As can be seen from (Table No.5.4), the p value is insignificant at $p < 0.05$. Thus, the null-hypothesis should be accepted, which indicates a lack of heteroscedasticity.

Table 5. 4: Test of heteroscedasticity for AFs model
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity H0: variance of the residual term is constant Reject H0 if p value is significant
chi2(1) = 2.66 Prob > chi2 = 0.1027

The correlation matrix in section 5.2 (Table No. 5.2) presents the variables that have the largest correlations. BRDEXP has the highest correlation with ACEXP. The highest level of correlations between BRDEXP and ACEXP are expected since the expertise of the AC is part of the expertise of the BoDs. For the purpose of further investigation as to whether these higher correlations may indicate the multicollinearity problem, this study calculates the tolerance value, and the variance inflation factor (VIF). The results are displayed in Table No.5.5. If variables have VIF values of more than 10 or less than the tolerance values of 0.10, then they are considered to have a problem of multicollinearity (Gujarati, 2003). As all the variables have values of VIF that are 1.164 to 2.240 and the value of tolerance, which is higher than 0.10, this indicates that there is no problem of multicollinearity.

Table 5.5: Value of the tolerance and VIF for AFs model

Name of the Variables	Tolerance	VIF
BRDSIZE	0.653	1.531
BRDEXP	0.446	2.240
BRDMEET	0.758	1.320
BRDNED	0.532	1.879
ACSIZE	0.859	1.164
ACEXP	0.458	2.183
ACMEET	0.766	1.305
ACIND	0.533	1.877
FORGN	0.758	1.319
LEVERG	0.815	1.226
LNASSET	0.523	1.913
	Mean VIF =	1.632

5.3.2.2 Various regression estimators

This section gives different regression estimators such as quantile regressions, least square with clustered robust regression and robust regression. The least square with clustered robust regression and the robust regression give the best estimates when the sample contains mild outliers and does not sufficiently fulfill the ordinary least-squares assumptions (Adkins and Hill, 2007; Gujarati, 2003; Chen et al., 2003; Hamilton, 1999), while quantile regression is found to ignore all the ordinary least-squares assumptions (Gujarati, 2003).

The findings are displayed in Table No 5.6. As can be seen, the findings of these estimators are consistent with the main finding. There is no significant difference between the findings of other different estimators and the OLS regression. BRDMEET was found negatively and insignificantly related to AFs across the quantile regression, least square with clustered robust regression and the robust regression. BRDNED was found significantly and positively related to AFs with quantile regression, least square with clustered robust regression and the robust regression at $p < 0.05$. BRDEXP found significantly and negatively related to AFs across all regression estimators. Similarly, ACSIZE is found insignificantly and negatively related to regressions except with quantile regression, where it was found positively related to AFs models. Most of the control variables are insignificantly correlated in predicted directions. This is consistent with the findings reported in the primary results. Generally, the current results may indicate that the main findings reported in Table No.5.6 are robust to alternative estimators and to the violation of assumptions of OLS.

Table 5.6: The results of the various regression estimators for AFs model (N=152)			
Variable name	Coefficient (t-values)		
	Quantile regression	Least square regression with clustered robust	Robust regression
Constant	1.348 (1.19)	2.208 (2.07)*	2.208 (2.25)**
BRDSIZE	0.081 (1.32)	0.049 (1.02)	0.049 (1.06)
BRDEXP	-0.133 (-2.09)**	-0.143 (-1.95)*	-0.143 (-2.14)**
BRDMEET	-0.057 (-0.63)	-0.005 (-0.08)	-0.005 (-0.09)
BRDNED	0.143 (2.51)**	0.105 (2.61)**	0.105 (2.03)**
ACSIZE	0.077 (0.69)	-0.013 (-0.08)	-0.013 (-0.11)
ACEXP	0.112 (1.27)	0.081 (1.47)	0.081 (1.14)
ACMEET	-0.033 (-0.15)	-0.150 (-0.90)	-0.150 (-0.86)
ACIND	-0.074 (-0.45)	0.012 (0.07)	0.012 (0.94)
FORGN	-0.022 (-0.33)	0.022 (0.29)	0.022 (0.37)
LEVERG	0.118 (0.33)	0.226 (0.50)	0.226 (0.73)
LNASSET	0.014 (0.44)	0.007 (0.27)	0.007 (0.29)
Adjusted. R^2 / Pseudo R^2	0.065	0.068	0.068

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01

5.4.2.3 New definitions for AC and BoD variables

The primary findings indicate that most of the AC variables are significant with AFs, except the ACEXP and ACMEET. Following Abbott et al. (2003b), this study provides new definitions for the variables of AC to see whether alternative definitions influence the main findings. Details of the new definition are as follows:

1. ACMEET known as a dichotomous variable, ACMEET_1, coded as 1 if the frequency of the AC meeting is larger than the sample median, and zero if otherwise.

2. ACEXP is also known as a dichotomous variable, ACEXP_1, and coded as 1 if the AC had at least one director equipped with accounting or finance expertise, and zero if otherwise.

3. ACIND is now a continuous version, which is defined as the proportion of independent NED of the AC (ACIND_1).

In addition to the new definitions of the variables of the AC, this study also presents an alternative specification of the variables of the BoD. Instead of continuous versions, BRDSIZE is now known as a dummy variable, coded as 1 if the size of the company's board is less than sample median, and zero if otherwise. This variable is known as BRDSIZE_1. Similarly, BRDNED is also now known as a dummy variable; BRDNED_1 is coded as 1 if 60 % of the directors of the company are independent, and zero if otherwise. These specifications have been cited from DeFond et al. (2005). The descriptions of the other variables remain unchanged. The current results are displayed in Table No.5.7. Most of the AC variables were found significant except ACMEET_1, which was found insignificant to the AFs in every year and pooled samples, and this is consistent with the primary results. The result of BRDNED_1 is remains significant to all AFs models except for year 2011 samples, which was found positively related to AFs.

BRDSIZE_1 variable remains insignificant to AFs except in pooled samples, and is found significantly and positively related to AFs. The result of BRDMEET remains insignificantly related to all AF models, while BRDEXP is significantly and negatively related to AFs only in year 2012 samples. The control variable such as LEVERG is found insignificantly related to all the AF models. FORGN is found significantly and positively related to AFs only in year 2012 samples, while LNASSET was found significant and positively related to AFs only in year 2013 samples. In brief, the primary results are robust to the alternative definitions of AC and BoD variables.

Table 5.7: The results of AFs model for the different test variable definitions

Variable name	Coefficient (t-values)				
	2010	2011	2012	2013	Pooled (N=152)
Constant	4.664 (3.63)***	0.693 (0.58)	3.127 (3.03)**	-0.716 (-0.60)	1.432 (2.60)**
BRDSIZE_1	-0.011 (-0.04)	0.379 (1.44)	-0.316 (-1.53)	0.039 (0.19)	0.226 (2.11)**
BRDEXP	0.003 (0.03)	-0.157 (-1.40)	-0.177 (-1.83)*	-0.041 (-0.46)	-0.061 (-1.23)
BRDMEET	-0.114 (-0.65)	0.086 (0.43)	-0.139 (-0.86)	-0.090 (-0.56)	0.026 (0.32)
BRDNED_1	0.481 (1.87)*	0.176 (0.66)	0.566 (2.49)**	0.578 (2.56)**	0.393 (3.49)**
ACSIZE	-0.356 (-1.74)*	0.166 (0.79)	-0.105 (-0.53)	0.491 (2.20)**	0.020 (0.20)
ACEXP_1	-0.627 (-2.60)**	0.095 (0.38)	0.156 (0.83)	0.025 (0.13)	-0.195 (-1.86)*
ACMEET_1	-0.305 (-1.18)	0.036 (0.15)	-0.276 (-1.22)	0.204 (0.89)	-0.071 (-0.66)
ACIND_1	-0.140 (-1.17)	0.168 (1.07)	-0.059 (-0.45)	0.213 (2.06)**	0.103 (2.23)**
FORGN	0.069 (0.51)	0.013 (0.09)	0.150 (2.02)*	-0.184 (-1.58)	0.046 (0.76)
LEVERG	0.086 (0.15)	-0.091 (-0.11)	-0.024 (-0.04)	-0.533 (-0.79)	0.009 (-0.03)
LNASSET	-0.026 (-0.46)	-0.009 (-0.58)	0.066 (1.21)	0.078 (1.80)*	0.013 (0.46)
Adjusted. R^2	0.082	0.080	0.087	0.083	0.080

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01

5.3.2.4 The other control variables

In addition to the control variables included in the AFs model, there are other variables that affect the AFs. These variables are GROWTH= growth, ROA= return on assets and LIQ=liquidity ratio. This study tested whether the inclusion of these variables would influence the primary findings. All the variables in this study are sourced from Thomson One Banker and the firms' annual report. Following Lee and Mande (2005) and Whisenant et al. (2003), growth was deemed to be the growth in sales during the previous fiscal year, while LIQ stands for the ratio of the total current assets divided by total current liabilities. Consistent with Whisenant et al. (2003), LIQ and ROA are proxies for factors of risk sharing, therefore positive correlation was expected between the AFs and these variables. Growth is a proxy for the size of the client and the larger companies were expected to have higher AFs because of the increase in audit testing and the audits' scope (Lee and Mande, 2005; Whisenant et al., 2003). Thus, the control variable (GROWTH) is expected to be positively related to the AFs. The results are displayed in Table No.5.8. BRDSIZE is found positively and insignificantly related to the AFs only in the pooled samples, while BRDEXP is found negatively and significantly related with the AFs in year 2011 and pooled samples. BRDMEET is insignificant in all years and pooled samples, while BRDNED is found positively and significantly related to the AFs in years 2010, 2012, 2013 and pooled samples. ACSIZE is found significantly and positively related to AFs in year 2013 samples, and negatively and significantly with the AFs in year 2010 samples. ACIND is found significantly and positively related to AFs only in year 2011 samples. ACMEET is found significantly and negatively related to the AFs in pooled samples, but ACEXP found insignificantly related to AFs across all models. The results for all control variables are insignificantly related to AFs across all models except for FORGN and ROA which are significantly and positively related to AFs in year 2012 and 2013 samples respectively, also LIQ and FORGN are found significantly and negatively related to AFs in year 2012 and 2013 samples respectively. In general, the main results are displayed in Table No.5.8; even with the inclusion of the control variables.

Table 5.8: The results of the AFs model for the other control variables					
Variable name	Coefficient (t-values)				
	2010	2011	2012	2013	Pooled (N=152)
Constant	3.454 (1.66)	3.045 (1.64)	2.729 (1.88)*	1.257 (0.89)	4.391 (3.63)***
BRDSIZE	-0.014 (-0.11)	-0.145 (-0.91)	-0.155 (-1.12)	-0.050 (-0.45)	0.029 (0.51)
BRDEXP	-0.018 (-0.13)	-0.238 (-2.06)*	-0.059 (-0.52)	-0.063 (-0.49)	-0.112 (-2.00)**
BRDMEET	0.086 (0.50)	-0.145 (-0.76)	0.143 (0.86)	-0.164 (-1.02)	-0.083 (-0.93)
BRDNED	0.279 (2.24)**	0.144 (0.93)	0.302 (2.57)**	0.313 (2.17)**	0.189 (3.29)**
ACSIZE	-0.385 (-1.82)**	0.238 (0.97)	-0.131 (-0.63)	0.546 (2.30)**	-0.056 (-0.54)
ACEXP	-0.039 (-0.21)	0.036 (0.21)	0.094 (0.60)	0.066 (0.40)	0.013 (0.17)
ACMEET	-0.077 (-0.22)	-0.095 (-0.56)	-0.131 (-0.66)	-0.320 (-1.30)	-0.627 (-2.91)**
ACIND	-0.540 (-1.50)	0.705 (2.34)**	-0.107 (-0.40)	-0.071 (-0.24)	0.041 (0.29)
FORGN	0.086 (0.71)	-0.086 (-0.61)	0.198 (1.72)*	-0.236 (-1.94)*	0.036 (0.58)
LEVERG	0.347 (0.50)	-0.342 (-0.42)	-0.251 (-0.36)	-0.007 (-0.01)	-0.121 (-0.34)
LNASSET	-0.032 (-0.49)	-0.046 (-0.61)	-0.039 (-0.62)	0.052 (1.10)	0.008 (0.26)
GROWTH	0.168 (0.68)	-0.050 (-0.22)	0.462 (0.94)	-0.219 (-0.95)	-0.048 (-0.42)
LIQ	0.005 (0.21)	-0.023 (-0.89)	-0.045 (-1.88)*	0.002 (0.14)	-0.014 (-1.25)
ROA	-2.429 (-1.19)	0.177 (0.23)	-0.447 (-0.19)	5.415 (2.24)**	0.718 (0.69)
Adjusted. R^2	0.050	0.049	0.059	0.054	0.060

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01

5.3.2.5 The two-stage least-squares (2SLS) regression and endogeneity

The previous literature indicates that there is a significant correlation between non audit services and audit services when they are both provided by the same auditor (Palmrose, 1986; Simunic, 1984). There are two sets of arguments that non audit services fees may influence the AFs or vice versa. The first argument is that there is a probability that the services of auditing could be used as a "loss leader" with the purpose of making a higher profit margin on the non audit services fees (Hillson and Kennelley, 1988). In other words, the auditor discounts auditing services for the purpose of holding on to the income on non audit services fees, and this in turn indicates that there will be a negative correlation between the non audit services fees and AFs. The second argument relates to the knowledge spillovers which are believed to reduce the fixed or marginal costs of non audit services or audits. These decreases in the marginal cost of non audit services or audits may influence the level of non audit services fees or AFs, and this depends on the elasticity of demand for the function of the audit or the price of non audit services (Siminuc, 1984). This indicates that there will be a positive correlation between non audit services fees and AFs.

Evidence from previous literature also indicates that the AC characteristics and BoD may affect an auditors' audit planning and risk assessment, and this in turn influences the pricing of audit (Krishnan and Visvanathan, 2009; Boo and Sharma, 2008; Tsui et al., 2001). To address these issues, this study first determines whether the AC characteristic and BoD or non audit services fees may suffer from the problem of endogeneity by carrying out the test of Durbin-Wu-Hausman on each of these variables. Following the methodology used by Larcker and Rusticus (2010) the instrumental variables are the lagged values of the endogenous variables. The Durbin and Wu–Hausman tests the null hypothesis that the residual values of the characteristics of the BoDs include (BDRNED, BRDSIZE, BRDEXP, and BRDMEET) and the characteristics of ACs include (ACIND, ACSIZE, ACEXP, and ACMEET) and LNNAF are together equal to zero.

If the F statistic is significant, then the null hypothesis would be rejected, which indicates that endogeneity exists. Table No.5.9 displays the results of Durbin and Wu–Hausman tests. All the variables indicate insignificant F statistics except LNNAF, which indicates that there is endogeneity, since the F statistic is significant. The results are displayed in Table No.5.10. Compared with the main result; the 2SLS regression results are comparatively consistent, which found LNNAF significant and positively related to LNAFEE, indicating that companies with higher AFs are likely to have high non-audit services fees. The other variables found some changes in the 2SLS model.

Table 5.9: AFs model and the Endogeneity test

The Durbin and Wu–Hausman tests

H0 = the residual of the characteristics of the BoDs and ACs include (BDRNED, BRDSIZE, BRDEXP, and BRDMEET, ACIND, ACSIZE, ACEXP, and ACMEET) and LNNAF are exogenous

Reject H0 if F statistic significant

Variable name	Chi2 (1)
BRDSIZE	0.277 (p = 0.598)
BRDEXP	0.001 (p = 0.990)
BRDMEET	0.020 (p = 0.884)
BRDNED	0.099 (p = 0.752)
ACSIZE	0.774 (p = 0.378)
ACEXP	0.130 (p = 0.717)
ACMEET	0.021 (p = 0.884)
ACIND	0.035 (p = 0.850)
LNNAF	4.879 (p = 0.027)

Table 5.10: The results of AFs model with 2SLS regression (N=152)	
Variable name	Coefficient (t-values)
	LNNAF
Constant	1.854 (2.04)**
BRDSIZE	0.037 (0.85)
BRDEXP	-0.069 (-1.62)
BRDMEET	0.043 (0.64)
BRDNED	0.129 (2.95)**
ACSIZE	-0.109 (-1.37)
ACEXP	0.029 (0.50)
ACMEET	-0.314 (-1.88)*
ACIND	-0.019 (-0.19)
FORGN	0.069 (1.44)
LEVERG	0.094 (0.37)
LNASSET	0.003 (0.16)
LNNAF	0.568 (9.61)***
Adjusted. R^2	0.436
Note: * are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01	

5.4 Non-audit services: Analysis No.2

5.4.1 Multivariate regression non audit services fees model

Table No.5.11 provides the results of non audit services fees by both samples of year-by-year and the pooled. All models used ordinary least square regression, except the dependent variable (FEERATIO 2), which is regressed by using the least square regression with robust standard errors, the reason is that the FEERATIO 2 model is heteroscedastic. The result of the heteroscedastic test is provided in section (5.4.2) the additional analyses and robustness tests.

Both the FEERATIO 2 and FEERATIO 1 are regressed only on pooled samples since year-by-year samples have a lack of significant F statistics. The adjusted R-square (R^2) for LNTOTALFEES and LNNAF models were between 14.1 % and 42.5 % relatively. The adjusted R^2 for LNTOTALFEES in year 2010, 2011, and 2013 are relatively lower to that reported by Ashbaugh et al. (2003). Compared to LNTOTALFEES, the adjusted $R^2$for the LNNAF in pooled sample is relatively lower and the reason for this is because some firms reported that the amount of the AFs is higher than the amount of the non audit services fees. The adjusted R^2 for FEERATIO 2 is 6.4 % and FEERATIO 1 is 7.8 %, which is relatively lower than that reported in the study of Abbott et al. (2003b), which documented that the adjusted R^2 for FEERATIO 2 was in between 9.3 % and 17.4 %.

Overall, the results of the regression of the LNTOTALFEES model are consistent with the LNNAF model, while the results of FEERATIO 2 are relatively similar to FEERATIO 1. BRDSIZE has positive correlation coefficients with all the auditor independence measurements, except with LNNAF in year 2012 and pooled sample, LNTOTALFEES in the years 2011, 2012 and 2013 sample, and with both FEERATIO 1 and FEERATIO 2 were negative correlation coefficients. It is insignificant to most of the auditor independence measurements.

The positive relationship may indicate that companies that have a smaller size of BoD are more likely to reduce the purchase of non audit services fees because they believe that a higher level of non audit services may compromise auditor independence.

The positive results are relatively consistent with the prior study of AQ reported by Abbott et al (2004), which concluded that a smaller BoD is more effective in controlling the cases of restatement.

Contrary to expectations, BRDNED is found insignificant with positive correlation coefficients related to LNTOTALFEES and to LNNAF in year 2011, 2012 and 2013 sample. However, there are significant positive correlation coefficients with FEERATIO 2 and FEERATIO 1. Larcker and Richardson (2004) and Ashbaugh et al. (2003) argue that LNTOTALFEES and LNNAF are better measurements than the ratios of non audit services to capture the economic importance of the client to the auditor.

The positive relationship of LNNAF and BRDNED to LNTOTALFEES may indicate that the independent boards view joint provision of non audit services and audit as not necessarily compromising audit independence but perhaps expanding the knowledge of the auditors and improving their judgments, which increases the AQ (Goldman and Barlev, 1974; Simunic, 1984; Beck et al., 1988a; Wallman, 1996; Arrunada, 1999a; 1999b; 2000).

BRDEXP is significantly related to LNNAF and LNTOTALFEES in the pooled sample, but insignificantly with both FEERATIO 2 and FEERATIO 1 in the pooled sample. Lee (2008) reported that the BRDEXP as (a composite index) is positively related to the changes in FEERATIO 2. In particular, the composite index is measured as a dichotomous variable, coded as one if there are more than fifty percent of non-audit committee board members in financial year 2001 and at least 27.27 percent (sample median) of them are financially expert and zero if otherwise.

Nevertheless, Lee's study does not document the results for BRDEXP and BRDNED as a single variable. BRDMEET is found negatively and significantly related to LNTOTALFEES in the pooled sample, and negatively and significantly related to LNNAF in year 2012 and the pooled sample, but there is no statistical evidence to relate it with other measures.

ACEXP is insignificant across all auditor independence measures; this is consistent with the prior study of LNNAF reported by Abbott et al (2003a). Lee (2008) documents ACEXP to have significant correlation coefficients with LNNAF when it is modelled as a composite index variable. ACIND is significantly and positively related to LNTOTALFEES (in the year 2011 model), but significantly and negatively with LNTOTALFEES (in the year 2010 model). According to previous studies, ACIND has significant and negative correlation coefficients related to FEERATIO 2 variables (Abbott et al., 2003a), and as composite index variables (Lee, 2008; Abbott et al., 2003a and Lee and Mande, 2005). ACSIZE has significant and positive correlation coefficients related to LNNAF (in the year 2011 sample), and insignificant with FEERATIO 2 and FEERATIO 1 (in the pooled sample), but there is no statistical evidence found to relate it with LNTOTALFEES.

This study found the ACMEET negative correlation coefficients across all auditor independence measures in the pooled models with LNNAF and LNTOTALFEES. These results indicate that the companies that have an active AC are likely to have stable total fees, and stable non-audit services fees. It been noticed that, where higher levels of non-audit services are purchased, the knowledge of the auditor is expanded and thus improved the overall AQ. As previous studies have acknowledged, the flow of the potential benefits of the joint provision for non-audit services and audit (Goldman and Barlev, 1974; Simunic, 1984; Beck et al., 1988a; Wallman, 1996; Arrunada, 1999a; 1999b; 2000). Prior studies document ACMEET to be significantly and negatively coefficient related to LNNAF and FEERATIO 2 when it is known as the composite index (Lee and Mande, 2005; Abbott et al., 2003a), but does not provide any such evidence when it is modelled as a separate variable (Abbott et al., 2003a).

In general, the control variables are relatively stable and significant across all auditor independence measures. INOWN and LEVERG were insignificant across all auditor independence measures. BLOCK coefficient positive and significant only with LNNAF and FEERATIO 1 (in the pooled samples), and insignificant with positive correlation coefficients with FEERATIO 2 (in the pooled samples).

This result of FEERATIO 2 is consistent with the findings of Firth (1997), while the result of FEERATIO 1 is consistent with the findings of Abbott et al (2003a). RETURN coefficient is found to be insignificant across all auditor independence measures. LNASSET is found to be insignificant across all auditor independence measures except for FEERATIO 2 and FEERATIO 1, which found significant and negative correlation coefficients in the pooled samples, but there is no statistical evidence found to relate it with FEERATIO 1 and FEERATIO 2.

In general, the multivariate regression finds consistent evidence that the independent BoD is positively associated with the non-audit services purchase. Instead of holding the view that higher levels of non-audit services weakens the auditor independence, independent NED on the BoD seem to support the view that the provision of the highest non-audit services improve the AQ and the judgment of the auditor because of the impact of an extension of knowledge. The other variables (the hypothesis) provide inconsistent support for the view that they are associated with non-audit services fees. The LNASSET has positive correlation coefficients with LNNAF only in the year 2013 sample.

Table 5.11: Multivariate regression for non audit services fees model

$$FEE = \beta_0 + \beta_1 ACEXP + \beta_2 ACIND + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 BRDEXP + \beta_6 BRDMEET + \beta_7 BRDNED + \beta_8 BRDSIZE + \beta_9 BLOCK + \beta_{10} INOWN + \beta_{11} LEVERG + \beta_{12} LNASSET + \beta_{13} NEWDIR + \beta_{14} RETURN + \varepsilon$$

Coefficient
(t-statistics)

Variable name	2010		2011		2012		2013		Pooled (N=152)			
	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	FEERATIO 1	FEERATIO 2
Constant	1.238 (0.64)	2.269 (0.89)	-2.225 (-0.45)	0.664 (0.14)	3.856 (2.43)**	3.274 (2.98)**	0.197 (0.14)	1.218 (0.85)	3.506 (3.54)**	4.705 (5.19)***	0.463 (2.19)**	0.640 (0.84)
BRDSIZE	1.106 (0.83)	0.138 (0.83)	0.010 (0.07)	-0.090 (-0.54)	-0.196 (-1.24)	-0.153 (-0.82)	0.014 (0.15)	-0.012 (-0.12)	-0.018 (-0.38)	0.022 (0.46)	-0.015 (-1.13)	-0.061 (-1.19)
BRDEXP	-0.141 (-1.15)	-0.153 (-0.95)	-0.100 (-0.64)	-0.247 (-1.39)	-0.183 (-1.35)	-0.066 (-0.53)	0.019 (0.26)	-0.028 (-0.39)	-0.139 (-2.66)**	-0.102 (-1.72)*	-0.012 (-0.68)	0.007 (0.11)
BRDMEET	0.086 (0.54)	0.181 (0.86)	0.178 (0.68)	0.062 (0.26)	-0.357 (-1.79)*	-0.035 (-0.32)	-0.147 (-1.31)	-0.133 (-1.17)	-0.160 (-1.95)*	-0.111 (-1.84)*	-0.006 (-0.34)	-0.045 (-0.80)
BRDNED	0.299 (2.77)**	0.363 (2.56)**	0.009 (0.05)	0.152 (0.71)	0.008 (0.06)	0.209 (1.08)	0.191 (0.86)	0.235 (1.08)	0.157 (2.91)**	0.157 (2.12)**	0.010 (0.80)	0.016 (0.35)
ACSIZE	-0.266 (-1.25)	-0.473 (-1.68)	0.775 (1.30)	0.562 (1.01)	0.463 (1.93)*	0.017 (0.05)	0.346 (1.38)	0.427 (1.57)	0.177 (1.45)	0.021 (0.18)	0.021 (0.92)	0.123 (1.45)
ACEXP	0.046 (0.30)	0.107 (0.53)	0.053 (0.27)	0.067 (0.35)	-0.084 (-0.47)	0.036 (0.20)	-0.026 (-0.19)	0.009 (0.06)	0.027 (0.37)	-0.009 (-0.14)	-0.008 (-0.51)	-0.052 (-0.94)
ACMEET	0.085 (0.25)	0.058 (0.14)	0.225 (0.70)	0.075 (0.23)	-0.376 (-1.69)	-0.182 (-1.66)	0.163 (0.79)	-0.005 (-0.05)	-0.438 (-3.40)**	-0.587 (-4.16)***	0.011 (0.42)	0.101 (1.07)
ACIND	-0.456 (-1.57)	-0.768 (-2.02)*	0.890 (1.91)*	1.002 (1.86)*	0.627 (2.11)**	0.252 (0.61)	-0.180 (-0.71)	-0.100 (-0.39)	0.082 (0.52)	0.181 (1.16)	0.018 (0.48)	0.063 (0.51)

Table No.5.11 - continued

Variable name	Coefficient (t-statistics)											
	2010 (N=38)		2011 (N=38)		2012 (N=38)		2013 (N=38)		Pooled (N=152)			
	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	LNNAF	LNTOTAL FEES	FEERATIO 1	FEERATIO 2
BLOCK	0.001 (1.58)	0.001 (1.13)	0.001 (1.16)	0.001 (0.89)	0.000 (0.91)	-0.000 (-0.52)	-0.000 (-0.03)	0.000 (0.35)	0.000 (2.95)**	0.000 (0.86)	0.000 (2.34)**	0.000 (1.48)
INOWN	-0.000 (-0.03)	0.002 (0.28)	0.002 (0.48)	0.001 (0.25)	-0.005 (-0.67)	-0.001 (-0.24)	0.002 (0.35)	0.002 (0.46)	-0.001 (-0.44)	0.000 (0.30)	-0.000 (-0.77)	-0.002 (-1.12)
LEVERG	0.282 (0.48)	0.475 (0.62)	-0.354 (-0.42)	0.189 (0.24)	0.653 (0.83)	0.318 (0.28)	0.041 (0.05)	-0.007 (-0.01)	0.173 (0.55)	0.097 (0.30)	0.105 (1.56)	0.169 (0.70)
LNASSET	-0.083 (-1.05)	-0.082 (-0.79)	-0.216 (-1.06)	-0.191 (-0.99)	-0.017 (-0.19)	0.026 (0.48)	0.029 (0.78)	0.022 (0.64)	-0.033 (-1.24)	-0.006 (-0.25)	-0.016 (-2.08)**	-0.041 (-1.72)*
NEWDIR	0.256 (0.86)	0.124 (0.32)	0.104 (0.27)	0.185 (0.47)	0.165 (0.52)	-0.133 (-0.70)	-0.028 (-0.15)	-0.043 (-0.24)	0.047 (0.43)	0.003 (0.03)	0.033 (0.99)	0.119 (0.96)
RETURN	0.237 (0.60)	0.374 (0.72)	-1.253 (-1.57)	-0.730 (-1.02)	0.576 (0.88)	0.049 (0.06)	-0.551 (-1.00)	-0.181 (-0.35)	-0.239 (-1.29)	-0.083 (-0.47)	-0.071 (-1.67)*	-0.212 (-1.54)
Adjusted. R^2	0.406	0.393	0.299	0.310	0.425	0.144	0.302	0.284	0.103	0.139	0.078	0.064

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.
*All models are been estimated using the ordinary least square regression except for FEERATIO 2 which been regressed using the regression with robust standard error because the evidence indicate that the model of FEERATIO 2 is heterscedastic.

5.4.2 The additional analyses:

In this section, the current study investigates the primary results in the case of violation of assumptions of the OLS, and whether they are robust to the specifications of different models. The tests contain the heteroscedasticity and multicollinearity tests, various regression estimators, analysis of the size of the client, new definitions for hypotheses variables, the other control variables, the two-stage least-squares (2SLS) regression and the Endogeneity.

5.4.2.1 Heteroscedasticity and multicollinearity tests

To confirm whether the heteroscedasticity exists, table No.5.12 provide the results of the heteroscedasticity test using the Breush-Pagan or Cook-Weisberg test. The variable LNNAF is indicating an insignificant p value, which indicates that the variance of the residual is homogeneous, the other models indicating a significant p value at $p < 0.01$, which indicates the existence of heteroscedasticity

The results of tolerance tests and VIF value are displayed in table No.5.13. Because all the variables have values of VIF that are nearly 1.087 to 3.040 and the values of tolerance, which are higher than 0.10, indicates that there is no problem of multicollinearity existing.

Table 5.12: Test the non-audit services model with the Heteroscedasticity test		
Breush-Pagan or Cook-Weisberg test H0 = The variance of the residuals is constant Reject H0 if F statistic significant		
Dependent variable	Chi2 (1)	Prob > chi2
FEERATIO 1	5.67	0.017
FEERATIO 2	5.31	0.021
LNNAF	0.47	0.492
LNTOTALFEES	8.08	0.005

Table 5.13: value of the tolerance and VIF for non-audit services model		
Name of the Variables	Tolerance	VIF
BRDSIZE	0.567	1.763
BRDEXP	0.383	2.612
BRDMEET	0.647	1.546
BRDNED	0.920	1.087
ACSIZE	0.833	1.201
ACEXP	0.492	2.033
ACMEET	0.852	1.174
ACIND	0.719	1.390
BLOCK	0.472	2.118
INOWN	0.829	1.206
LEVERG	0.769	1.300
LNASSET	0.329	3.040
NEWDIR	0.401	2.493
RETURN	0.884	1.131
Mean VIF = 1.721		
Note: * are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.		

5.4.2.2 Various regression estimators

This section presents the findings of the multivariate regression by using several estimators. Previously, the variables FEERATIO 1, LNNAF and LNTOTALFEES were regressed using the ordinary least square estimator, while the variables FEERATIO 2 was regressed by using least-square regression with robust standard errors. In this section, the variables FEERATIO 1, LNTOTALFEES and LNNAF will be regressed using quantile and robust regression, while the variable FEERATIO 2 will be regressed using the Generalize least square (GLS) and ordinary least square estimator regressions. The findings are displayed in the table No.5.14. The quantile regression is one of the tests of non-parametric that do not require any assumptions (Gujarati, 2003). The robust regression is efficient when the models do not meet the normality assumption and when the models consist of mild outliers (Adkins and Hill, 2007; Chen et al., 2003; Gujarati, 2003; Hamilton, 1992). The Generalize least square regression is an alternative to the least square regression with robust standard error efficient in controlling the models of heteroscedastic.

As can be seen from Table No.5.14, the results of quantile and robust regressions are relatively consistent with the OLS estimator regressions displayed in the main findings (Table No.5.6) except for the relationship between BLOCK and FEERATIO 1 and the relationship between INOWN and LNNAF. The variables of the hypothesis remain unchanged. For the model of LNNAF, robust regression provides consistent findings with the Quantile regression, as shown in the main results (No.5.6 table).This may be due to the efficiency of both estimators to control the error so that each sample observation would have a constant variance.

Table 5.14: The results of the various regression estimators for non audit services model (N=152)								
Coefficient (t-statistics)								
Variable Name	Quantile regression			Robust regression			GLS regression	OLS regression
	LNNAF	LNTOTALFEES	FEERATIO 1	LNNAF	LNTOTALFEES	FEERATIO 1	FEERATIO 2	FEERATIO 2
Constant	4.189 (4.34)***	3.750 (5.45)***	0.262 (1.11)	3.506 (3.53)**	4.441 (4.60)***	0.463 (2.17)**	1.033 (1.46)	1.033 (1.54)
BRDSIZE	-0.026 (-0.53)	0.086 (2.40)**	-0.020 (-1.67)*	-0.018 (-0.38)	0.023 (0.51)	-0.015 (-1.13)	-0.079 (-2.01)**	-0.079 (-2.12)**
BRDEXP	-0.047 (-0.91)	-0.120 (-3.19)**	-0.001 (-0.11)	-0.139 (-2.67)**	-0.142 (-2.48)**	-0.012 (-0.68)	0.027 (0.55)	0.027 (0.58)
BRDMEET	-0.085 (-1.16)	-0.039 (-0.76)	0.007 (0.43)	-0.160 (-1.94)*	-0.081 (-1.26)	-0.006 (-0.34)	-0.023 (-0.44)	-0.023 (-0.47)
BRDNED	0.146 (3.40)**	0.100 (3.26)**	0.014 (1.37)	0.157 (2.94)**	0.118 (2.11)**	0.010 (0.80)	0.008 (0.19)	0.008 (0.20)
ACSIZE	0.010 (0.12)	0.066 (1.10)	0.036 (1.73)*	0.177 (1.48)	0.037 (0.31)	0.021 (0.93)	0.112 (1.64)	0.112 (1.72)*
ACEXP	0.012 (0.19)	0.101 (2.14)**	0.000 (0.02)	0.027 (0.37)	0.049 (0.64)	-0.008 (-0.51)	-0.058 (-1.09)	-0.058 (-1.15)
ACMEET	-0.543 (-3.11)**	-0.462 (-3.71)***	0.030 (0.72)	-0.438 (-3.32)**	-0.479 (-3.40)**	0.011 (0.42)	0.025 (0.23)	0.025 (0.25)
ACIND	-0.053 (-0.46)	-0.029 (-0.36)	0.014 (0.50)	0.082 (0.53)	0.059 (0.32)	0.018 (0.48)	0.027 (0.23)	0.027 (0.24)
BLOCK	0.000 (1.43)	0.003 (1.13)	0.000 (2.02)**	0.000 (2.95)**	0.000 (1.25)	0.000 (2.31)**	0.000 (1.13)	0.000 (1.19)
INOWN	-0.002 (-0.86)	0.001 (0.49)	-0.000 (-0.03)	-0.000 (-0.43)	0.000 (0.47)	-0.000 (-0.71)	-0.002 (-0.73)	-0.002 (-0.77)
LEVERG	0.180 (0.66)	-0.133 (-0.68)	0.013 (0.21)	0.173 (0.56)	0.187 (0.60)	0.105 (1.57)	0.309 (1.30)	0.309 (1.37)

Table 5.14 - continued

Variable Name	Coefficient (t-statistics)							
	Quantile regression			Robust regression			GLS regression	OLS regression
	LNNAF	LNTOTALFEES	FEERATIO 1	LNNAF	LNTOTALFEES	FEERATIO 1	FEERATIO 2	FEERATIO 2
LNASSET	-0.026 (-0.85)	-0.009 (-0.41)	-0.014 (-1.96)*	-0.033 (-1.25)	-0.009 (-0.34)	-0.016 (-2.09)**	-0.043 (-1.80)*	-0.043 (-1.89)*
NEWDIR	-0.007 (-0.06)	-0.016 (-0.18)	0.033 (1.11)	0.047 (0.43)	-0.024 (-0.26)	0.033 (0.99)	0.044 (0.41)	0.044 (0.66)
RETURN	-0.081 (-0.46)	0.071 (0.56)	-0.057 (-1.32)	-0.239 (-1.30)	-0.134 (-0.68)	-0.071 (-1.66)*	-0.210 (-1.89)*	-0.210 (-1.99)**
Adjusted. R^2 / Pseudo R^2	0.090	0.099	0.044	0.138	0.086	0.077	0.025	0.011

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.

5.4.2.3 New definitions for AC and BoD variables

As with the model of the AFs, this study provides new definitions for the hypotheses variables to see whether alternative definitions influence the main findings. Following DeFond et al. (2005) and Abbott et al. (2003b) approaches, the new definitions for the variables of the BoD and AC (BRDSIZE, BRDNED, ACEXP, ACMEET, and ACIND) are as follows:

1. BRDSIZE_1 is coded as 1 if the size of the company's board is less than sample median, and zero if otherwise.

2. BRDNED_1 is coded as 1 if 60 % of the directors of the company are independent, and zero if otherwise.

3. ACEXP_1, is coded as 1 if the AC has at least one director with accounting or finance expertise, and zero if otherwise.

4. ACMEET_1 is coded as 1 if the frequency of the AC meeting is larger than the sample median and zero if otherwise.

5. ACIND_1 defines the proportion of independent NED of the AC.

The other variables definitions remain unchanged. Table No.5.15 provides the results of the new definitions. As can be seen, the results for the new definitions are relatively consistent with the main findings, except for ACMEET_1. ACMEET_1 and BRDNED_1 were found to have positive correlation coefficients related to the non-audit services fees, indicating that the companies with BoDs that have an independent membership of less than 60 percent, and whose AC meetings are more frequent than the sample median, are likely to have limit the level of non-audit services fees.

BRDSIZE_1 is found insignificantly and with positive correlation coefficients related to the measurements of the non-audit services fees, which indicate that the companies with a large size board that is more than the sample median are likely to have a stable amount of non-audit services fees.

This may suggest that companies with large numbers of members of the board are likely to have limited the level of non-audit services. The results for the variables of the non-audit service fees seem to be sensitive to the new definition of size of the board.

ACEXP_1 is found to have positive correlation coefficients related to the all auditor independence measurements, except for LNTOTALFEES, which is found to be negatively related to the auditor independence measurements. This indicates that the ACs with at least one member equipped with financial expertise are more likely to reduce the level of non-audit services fees as they have the perception that higher non-audit services may weaken the auditor independence. The results of the control variables are relatively unchanged. Generally the main findings on the independence of BoDs are not modified by new definitions for independent NEDs.

5.4.2.4 The other control variables

Various control variables are provided in the main model to see whether the inclusion of these variables influence the results. As with the model of the AFs, these variables are: (Growth=GROWTH), (liquidity ratio=LIQ), and (Return on assets=ROA). They are expected to be positively related to the non-audit services fees. Previous literature indicates that higher growth companies and more profitable companies are likely to have more resources to purchase non-audit services (Antle et al., 2006; Habib and Islam, 2007). The results are displayed in the table No.5.16. The results for the main control variables and the hypotheses variables are relatively similar to the main results. GROWTH is found to be insignificant with positive correlation coefficients related to FEERATIO 2 and FEERATIO 1. The results of FEERATIO 2 is relatively consistent with the result of Habib and Islam (2007), who indicate that companies that have higher growth and higher profitability are likely to purchase more non audit services.

ROA is found to have insignificant and positive correlation coefficients related to LNNAF, but negative and insignificant related with other measures. In general, the main results are unchanged and the extra control variables are unlikely to influence the results.

Table 5.15: The results of non-audit services model for new definitions for AC and BoD variables.

Variable name	Coefficient (t-values)			
	LNNAF	LNTOTALFEES	FEERATIO 1	FEERATIO 2
Constant	1.305 (1.65)	2.193 (2.84)**	0.517 (3.79)***	1.041 (2.19)**
BRDSIZE_1	0.165 (1.34)	0.163 (1.27)	-0.016 (-0.61)	-0.114 (-1.25)
BRDEXP	-0.089 (-1.58)	-0.090 (-1.47)	-0.019 (-1.46)	-0.043 (-0.92)
BRDMEET	-0.067 (-0.74)	-0.014 (-0.24)	-0.005 (-0.29)	-0.043 (-0.61)
BRDNED_1	0.177 (1.36)	0.350 (2.44)**	-0.017 (0.65)	-0.133 (-1.40)
ACSIZE	0.196 (1.49)	0.069 (0.53)	0.016 (0.67)	0.097 (1.10)
ACEXP_1	0.020 (0.21)	-0.106 (-1.05)	0.037 (1.47)	0.215 (2.44)**
ACMEET_1	0.032 (0.26)	-0.043 (-0.34)	0.017 (0.66)	0.070 (0.78)
ACIND_1	0.005 (0.12)	0.064 (1.75)*	-0.024 (-2.20)**	-0.068 (-1.76)*
BLOCK	0.001 (2.61)**	0.000 (0.59)	0.000 (2.36)**	0.000 (1.89)*
INOWN	-0.001 (-0.64)	-0.000 (-0.13)	-0.000 (-0.20)	-0.000 (-0.30)
LEVERG	0.154 (0.47)	0.104 (0.33)	0.106 (1.33)	0.223 (0.81)
LNASSET	-0.039 (-1.35)	-0.003 (-0.11)	-0.018 (-2.14)**	-0.050 (-1.71)*
NEWDIR	0.203 (1.77)*	0.072 (0.72)	0.043 (1.25)	0.122 (1.00)
RETURN	-0.164 (-0.74)	-0.127 (-0.54)	-0.054 (-1.06)	-0.141 (-0.79)
Adjusted. R^2	0.073	0.083	0.018	0.026

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.

Table 5.16: The results of non audit services model for the other control variables				
Variable name	Coefficient (t-values)			
	LNNAF	LNTOTALFEES	FEERATIO 1	FEERATIO 2
Constant	3.848 (2.78)**	4.934 (3.76)***	0.669 (2.61)**	1.178 (1.18)
BRDSIZE	-0.032 (-046)	0.009 (0.20)	-0.019 (-1.44)	-0.076 (-1.39)
BRDEXP	-0.152 (-2.09)**	-0.147 (-2.56)**	-0.010 (-0.58)	0.000 (0.01)
BRDMEET	-0.155 (-1.51)	-0.092 (-1.34)	-0.014 (-0.70)	-0.053 (-0.89)
BRDNED	0.167 (2.81)**	0.120 (2.01)**	0.008 (0.62)	0.001 (0.04)
ACSIZE	0.156 (1.34)	0.023 (0.21)	-0.224 (-0.93)	0.117 (1.37)
ACEXP	0.027 (0.29)	0.032 (0.32)	-0.022 (-1.08)	-0.074 (-0.92)
ACMEET	-0.439 (-1.82)*	-0.503 (-2.95)**	-0.006 (-0.21)	0.080 (0.74)
ACIND	-0.034 (-0.19)	-0.019 (-0.12)	0.009 (0.23)	-0.016 (-0.11)
BLOCK	0.000 (1.72)*	0.000 (1.40)	0.000 (2.83)**	0.000 (1.88)*
INOWN	-0.002 (-0.56)	0.000 (0.05)	-0.000 (-0.71)	-0.003 (-1.45)
LEVERG	-0.004 (-0.01)	0.025 (0.08)	0.066 (1.03)	0.012 (0.06)
LNASSET	-0.040 (-0.95)	-0.013 (-0.47)	-0.018 (-2.55)**	-0.049 (-2.25)**
NEWDIR	0.074 (0.44)	-0.014 (-0.14)	0.035 (1.09)	0.140 (1.18)
RETURN	-0.232 (-0.95)	-0.110 (-0.49)	-0.052 (-1.15)	-0.170 (-1.08)
GROWTH	0.042 (0.33)	0.020 (0.33)	0.033 (0.94)	0.100 (0.84)
LIQ	-0.018 (-1.46)	-0.016 (-1.49)	-0.003 (-1.27)	-0.016 (-1.54)
ROA	0.720 (0.62)	-0.023 (-0.01)	-0.298 (-0.99)	-0.068 (-0.06)
Adjusted. R^2	0.045	0.096	0.063	0.090

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.

5.4.2.5 The two-stage least-squares (2SLS) regression and the endogeneity

As highlighted previously in the section robustness tests and additional analysis for the AFs model, evidence from previous studies indicate that there are two potentials outcomes of the joint provision of non-audit services and audit. There are two sets of disputes that non-audit services fees may influence the AFs, or vice versa. The first potential is that higher non-audit services fees are used to discount the audit services in order to obtain a higher profit margin on the lucrative non-audit services fees. The second dispute relates to the knowledge spillovers which are believed to reduce the fixed or marginal costs of non-audit services or audits. This indicates that there will be a negative correlation between non-audit services fees and AFs. Both disputes lead to the endogeneity problem. Furthermore, previous literature also indicates that the characteristics of the AC and BoD are likely to be associated with endogeneity (Larcker and Rusticus, 2010; Larcker and Richardson, 2004). To address these issues, this study first determines whether these variables suffer from the problem of endogeneity by carrying out the test of Durbin and Wu-Hausman on each of these variables. Table No.5.17 displays the results of Durbin and Wu–Hausman tests on each variable analyzed under FEERATIO 1, FEERATIO 2, LNNAF, and LNTOTALFEES models. As can be seen, the F statistics are insignificant in all models, which indicates that there is no existence of endogeneity. This may not require the test through the two-stage least-squares (2SLS) regression. Baum et al. (2003), argue that in the absence of the problem of the endogeneity, the results of the two-stage least-squares regressions are biased and unacceptable. In brief, the estimated results using the least square regression with robust standard error in the main analysis is more efficient because of the absence of the problem of the endogeneity.

Table 5.17: Test the non-audit services model with the endogeneity test				
The Durbin and Wu–Hausman tests H0 = the residual of the characteristics of the BoDs and ACs include (BRDSIZE, BRDEXP, BRDMEET, and BDRNED, ACSIZE, ACEXP, ACMEET, and ACIND_1) and LNNAF are exogenous Reject H0 if F statistic significant				
Variable name	LNNAF	LNTOTALFEES	FEERATIO 1	FEERATIO 2
	Chi2 (1)	Chi2 (1)	Chi2 (1)	Chi2 (1)
BRDSIZE	0.052 (p=0.819)	0.909 (p=0.340)	1.152 (p=0.283)	0.135 (p=0.712)
BRDEXP	0.337 (p=0.561)	0.011 (p=0.913)	0.764 (p=0.382)	0.002 (p=0.958)
BRDMEET	0.306 (p=0.580)	0.010 (p=0.916)	0.067 (p=0.794)	0.011 (p=0.914)
BRDNED	0.088 (p=0.765)	0.005 (p=0.942)	0.124 (p=0.723)	0.278 (p=0.597)
ACSIZE	1.863 (p=0.172)	0.021 (p=0.883)	1.110 (p=0.290)	0.878 (p=0.348)
ACEXP	0.000 (p=0.988)	0.383 (p=0.535)	0.211 (p=0.645)	0.010 (p=0.916)
ACMEET	0.596 (p=0.439)	0.066 (p=0.796)	0.543 (p=0.461)	1.234 (p=0.266)
ACIND_1	2.586 (p=0.107)	0.157 (p=0.691)	0.190 (p=0.662)	0.832 (p=0.361)
LNNAF	1.155 (p=0.282)	0.486 (p=0.485)	0.388 (p=0.533)	0.669 (p=0.413)

5.5 Auditor industry specialist: Analysis No.3

5.5.1 Multivariate regression for auditor industry specialist model

The results for the industry specialist model are displayed in Table No.5.18, by year to year and pooled samples. Nevertheless, SPECLST_WEIGHTED, SPECLST_M_S and SPECLST_P_S are modeled when they are on the pooled sample, because of the lack of F statistics for several years. The pseudo- R^2 or adjusted R^2 for all models are between 0.4% and 53.8%, and these values are comparatively higher than those documented by Chen et al. (2005) and Abbott et al. (2003a), who report them to be in between 6.7% and 7.6% and 2% and 10% respectively. Overall, the regression results for (SPEC_AUD), which is measured using the approach of the market share, are comparatively consistent across both the pooled samples and year to year. Contrary to expectations, the study found that BRDNED has significant and negative correlation coefficients with SPECLST_M_S_LEADER in a pooled sample, and found to be significant and positive with SPECLST_MS_30 in year 2011 and 2012 samples, and SPECLST_M_S_LEADER in year 2011 sample.

Similarly, BRDSIZE has significant and negative correlation coefficients with SPECLST_MS_30 in the year 2011, and significant and positive correlation coefficients with SPECLST_M_S_LEADER in the pooled samples. Likely, BRDMEET has significant and negative correlation coefficients with SPECLST_MS_30, SPECLST_M_S, SPECLST_P_S and SPECLST_WEIGHTED in the pooled samples, and significant and negative correlation coefficients with SPECLST_M_S_LEADER in the year 2010, 2011 and pooled samples. BRDEXP has significant and negative correlation coefficients with SPECLST_MS_30 in the year 2011, 2013 and pooled samples, and significant and negative correlation coefficients with SPECLST_M_S_LEADER in the year 2013 and pooled sample, and significant and negative correlation coefficients with SPECLST_M_S in the pooled samples.

ACSIZE has significant and negative correlation coefficients with SPECLST_MS_30 in the year 2010 sample, and significant and positive correlation coefficients with SPECLST_P_S and SPECLST_WEIGHTED in the pooled samples, while ACIND is found insignificantly across all the industry specialist measures except for the SPECLST_M_S, which is found to be significant and positively related to ACIND in the pooled models. This positive relationship may indicate that the ACs that consist solely of independent members are more likely to employ industry specialist auditors than non-specialist auditors. ACEXP is found to be insignificantly related across all the industry specialist auditors measures, except with SPECLST_M_S_LEADER, SPECLST_P_S and SPECLST_WEIGHTED, which are found significantly and negatively with SPECLST_M_S_LEADER in the year 2010 sample, SPECLST_P_S and SPECLST_WEIGHTED in pooled samples. However, ACMEET is found to be insignificantly related across all the industry specialist auditors' measures, except with SPECLST_MS_30, which is found significantly and negatively with SPECLST_MS_30 in the pooled sample. This indicates that the companies with less AC meetings frequencies are more likely to employ industry specialist auditors.

INOWN is found to be significantly and positively correlated to SPECLST_M_S_LEADER, SPECLST_MS_30, and SPECLST_M_S in pooled models. This may suggest that, as the percentage of insider ownership rises, there is more demand for industry specialist auditors because of the detailed information that is received by the companies' directors. However, both variables (LEVERGN) and (LNASSET) show positive relationships with some of the SPEC_AUD measures, this indicates that higher leverage companies and big companies demand more industry specialist auditors in order to compensate for the increases in costs.

ROA is found to be insignificant across all the industry specialist auditors' measures, except with SPECLST_MS_30, SPECLST_P_S and SPECLST_WEIGHTED, which is found significantly and negatively with SPECLST_MS_30 in year 2010 sample, SPECLST_P_S and SPECLST_WEIGHTED in pooled samples. This indicates that the more complex firms and high-risk companies have increased demand for industry specialist auditors.

In general, the findings of the characteristics of the AC and BoD and related control variables are sensitive to the choice of industry specialist measures. Nevertheless, although the results are inconsistent in year to year analysis in the pooled sample, in one out of five of SPEC_AUD measures, ACMEET and ACIND are found significantly with the use of industry specialist auditors. Companies with ACs that consist solely of independent members are more likely to employ industry specialist auditors. Also, contradictory to the expectation, higher frequency AC meetings are not necessarily correlated to the choice of higher quality auditors.

5.5.2 The additional analyses:

In this section, the current study investigates whether the primary results of the (SPEC_AUD) model are robust to the specifications of different models. The tests contain the heteroscedasticity and multicollinearity tests, various regression estimators, new definitions for hypotheses variables, the other control variables, the two-stage least-squares (2SLS) regression and the endogeneity.

5.5.2.1 Heteroscedasticity and multicollinearity tests

To confirm whether heteroscedasticity exists, table No.5.19 providse the results of the auditor industry specialist measures. All models indicate a significant p value between $p < 0.10$ and $p < 0.01$, indicating the existing of heteroscedasticity. The results of tolerance test and VIF value are displayed in table No.5.20. Because all the variables have values of VIF 1.103 to 2.192 and the values of tolerance, which is higher than 0.10 indicate that there is no problem of multicollinearity existing.

Note: The dependent variables, which are the continuous version (such as SPECLST_M_S, SPECLST_P_S and SPECLST_WEIGHTED), and the heteroscedasticity test are carried out by using the Breush-Pagan or Cook-Weisberg test, while for the dichotomous version (such as SPECLST_M_S_LEADER and SPECLST_MS_30), this study used a heteroscedasticity test for Probit / Logit model that is available in Stata software.

5.5.2.2 Various regression estimators

Previously, both variables (SPECLST_MS_30 and SPECLST_M_S_LEADER) were estimated using heteroscedastic (OLS) regression, the other measures were regressed by using a least square regression with robust standard errors, which is effective in controlling for heteroscedasticity. As the benchmark of comparison, in this section, (SPECLST_MS_30 and SPECLST_M_S_LEADER) were regressed by probit regression, while the other measures are estimated using Generalized least square (GLS) and OLS regressions. The results are displayed in Table No.5.21. As can be seen, the results of Probit, OLS and GLS regressions are comparatively consistent with the main result, which indicates that the main findings are robust to various regression estimators.

5.5.2.3 New definitions for AC and BoD variables

As with the model of the AFs and non-audit services fees, this study provides new definitions for AC and BoD variables to see whether alternative definitions influence the main findings. Following DeFond et al. (2005) and Abbott et al.'s (2003) approaches, new definitions for the variables of the BoD and AC (BRDSIZE, BRDNED, ACEXP, ACMEET, and ACIND) are as follows:

1. BRDSIZE_1 is coded as 1 if the size of the company's board is less than sample median, and zero if otherwise.

2. BRDNED_1 is coded as 1 if 60 % of the directors of the company are independent, and zero if otherwise.

3. ACEXP_1, and coded as 1 if the AC had at least one director is equipped with accounting or finance expertise, and zero if otherwise.

4. ACMEET_1 is coded as 1 if the frequency of the AC meeting is larger than the sample median and zero if otherwise.

5. ACIND_1 is defines the proportion of independent NED of the AC.

The other variables' definitions remain unchanged. The results are displayed in Table No.5.22. The main findings indicate that in the pooled sample, four out of five, the industry specialist model indicates that ACs with lower frequencies of AC meetings and solely independent members are more likely to employ industry specialist auditors. However, when the new definitions are introduced, none of these variables are significant. Furthermore, this study found consistent evidence that companies that have ACs with at least 1 member with financial expertise are more likely to appoint auditor industry specialists. In brief, the results for the ACMEET variable and ACIND variable in the main findings are sensitive to the new definitions.

5.5.2.4 The other control variables

In line with the AFs and non audit services fees model, various control variables are provided in the main model to see whether the inclusion of these variables influences the results. These variables are: (Growth=GROWTH), and (liquidity ratio=LIQ), which are expected to positively correlate to the appointment of industry specialist auditors. Previous literature indicates that higher growth companies and higher risk companies are associated with a higher cost of agency (Firth and Smith, 1992; Francis and Wilson, 1988), and that they are therefore likely to employ industry specialist auditors. The results are displayed in Table No.5.23. The results for the main control variables and the hypothesis variables are comparatively similar to the main results. LIQ and GROWTH were found insignificant with all models of the SPEC_AUD. In general, the main finding is unchanged, and the other control variables did not influence the results.

5.5.2.5 The two-stage least-squares (2SLS) regression and the endogeneity

Consistent with the approach used with the prior models, this study carries out the Wald test for dichotomous dependent variables and Durbin-Wu-Hausman test for continuous dependent variables to see whether the CG variables are associated with the problem of endogeneity. The characteristics of the BoDs include (BDRNED, BRDSIZE, BRDEXP, and BRDMEET) and the characteristics of ACs include (ACIND_1, ACSIZE, ACEXP, and ACMEET) and are treated as endogenous variables. Table No.5.24 is displays the results of the Durbin-Wu-Hausman test. As can be seen, all the variables of CG show insignificant results in all models, which indicate that there is no endogeneity.

Table 5.18: Multivariate regression for industry specialist model

$SPEC\_AUD = \beta_0 + \beta_1 ACEXP + \beta_2 ACIND + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 BRDEXP + \beta_6 BRDMEET + \beta_7 BRDNED + \beta_8 BRDSIZE + \beta_9 INOWN + \beta_{10} LEVERG + \beta_{11} LNASSET + \beta_{12} ROA + \varepsilon$

Coefficient
(t-statistics)

Variable name	2010		2011		2012		2013		Pooled (N=152)				
	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLIST_M_S	SPECLIST_P_S	SPECLST_WEIGHTED
Constant	0.480 (0.32)	2.661 (3.52)**	1.876 (1.25)	2.526 (2.23)**	1.187 (0.98)	0.601 (0.61)	0.939 (0.77)	2.063 (1.63)	2.539 (2.84)**	3.079 (4.04)***	1.659 (3.90)***	-0.399 (-1.30)	-0.089 (-0.40)
BRDSIZE	0.095 (1.00)	-0.063 (-1.33)	-0.052 (-0.41)	-0.198 (-2.05)*	-0.109 (-0.90)	-0.029 (-0.30)	0.191 (1.98)	0.059 (0.59)	0.090 (2.05)**	0.039 (1.05)	0.016 (0.77)	0.023 (1.60)	0.017 (1.60)
BRDEXP	-0.042 (-0.47)	-0.036 (-0.80)	-0.124 (-1.41)	-0.118 (-1.78)*	0.002 (0.02)	-0.123 (-1.52)	-0.300 (-3.21)**	-0.219 (-2.26)**	-0.120 (-2.71)**	-0.102 (-2.69)**	-0.074 (-3.59)***	0.020 (1.38)	0.006 (0.64)
BRDMEET	-0.300 (-2.37)**	-0.031 (-0.51)	-0.282 (-1.79)*	-0.109 (-0.92)	-0.195 (-1.27)	-0.140 (-1.12)	-0.121 (-0.96)	-0.182 (-1.39)	-0.249 (-3.73)***	-0.151 (-2.65)**	-0.094 (-2.97)**	-0.040 (-1.77)*	-0.037 (-2.20)**
BRDNED	-0.084 (-0.94)	0.026 (0.59)	0.215 (1.81)*	0.184 (2.06)*	0.108 (1.02)	0.165 (1.93)*	0.019 (0.22)	0.056 (0.64)	-0.070 (-1.77)*	-0.040 (-1.19)	-0.029 (-1.58)	-0.008 (-0.67)	-0.007 (-0.80)
ACSIZE	-0.067 (-0.43)	-0.209 (-2.68)**	-0.060 (-0.34)	-0.023 (-0.18)	-0.025 (-0.14)	0.140 (0.93)	-0.030 (-0.17)	0.053 (0.29)	-0.019 (-0.26)	-0.020 (-0.32)	-0.039 (-1.09)	0.039 (5.20)***	0.079 (4.07)***
ACEXP	-0.299 (-2.34)**	-0.107 (-1.68)	-0.036 (-0.26)	-0.031 (-0.30)	-0.189 (-1.30)	0.062 (0.53)	0.204 (1.62)	0.113 (0.86)	-0.086 (-1.33)	-0.054 (-0.97)	-0.011 (-0.37)	-0.036 (-1.77)*	-0.029 (-1.88)*
ACMEET	0.421 (1.66)	-0.070 (-0.55)	-0.008 (-0.06)	-0.144 (-1.42)	0.279 (1.58)	0.051 (0.36)	-0.238 (-1.27)	-0.269 (-1.38)	-0.249 (-1.52)	-0.377 (-2.70)**	-0.112 (-1.45)	0.002 (0.05)	-0.016 (-0.40)
ACIND	0.054 (0.24)	0.033 (0.29)	0.217 (0.98)	0.246 (1.48)	-0.181 (-0.75)	0.124 (0.63)	0.174 (0.84)	0.054 (0.25)	0.149 (1.35)	0.129 (1.37)	0.112 (2.12)**	0.047 (1.40)	0.020 (0.82)
INOWN	0.005 (0.98)	0.000 (0.19)	0.003 (0.65)	-0.000 (-0.12)	0.004 (0.69)	0.004 (0.84)	0.005 (0.85)	0.001 (0.30)	0.007 (2.66)**	0.004 (1.90)*	0.005 (4.21)***	-0.001 (-0.99)	0.000 (0.17)
LEVERG	0.097 (0.21)	-0.151 (-0.65)	0.040 (0.07)	0.188 (0.42)	0.104 (0.17)	0.301 (0.61)	0.470 (0.70)	0.329 (0.48)	-0.110 (-0.44)	-0.028 (-0.13)	-0.120 (-1.00)	0.438 (5.10)***	0.192 (3.07)**
LNASSET	0.065 (1.39)	0.031 (1.33)	0.021 (0.37)	0.052 (1.17)	0.023 (0.41)	-0.039 (-0.85)	0.017 (0.50)	-0.003 (-0.10)	0.043 (1.96)*	0.017 (0.92)	0.001 (0.14)	0.035 (4.66)***	0.022 (4.04)***

Table 5.18: Continued

Variable name	Coefficient (t-statistics)												
	2010 (N=38)		2011 (N=38)		2012 (N=38)		2013 (N=38)		Pooled (N=152)				
	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLIST_M_S	SPECLIST_P_S	SPECLST_WEIGHTED
ROA	-0.502 (-0.34)	-1.371 (-1.85)*	-0.164 (-0.29)	-0.226 (-0.54)	-1.445 (-0.72)	-0.607 (-0.37)	3.041 (1.60)	2.339 (1.19)	-0.299 (-0.39)	-0.670 (-1.03)	-0.377 (-1.04)	-1.268 (-4.89)***	-0.702 (-3.71)***
Adjusted. R^2 / Pseudo R^2	0.154	0.088	0.023	0.062	0.004	0.081	0.271	0.057	0.152	0.095	0.226	0.538	0.364

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.

Table 5.19: Test the industry specialist model with the Heteroscedasticity test		
Breush-Pagan or Cook-Weisberg test H0 = The variance of the residuals is constant Reject H0 if F statistic significant		
Dependent variable	Chi2 (1)	Prob > chi2
SPECLST_M_S_LEADER	3.44	0.0638
SPECLST_MS_30	33.18	0.0000
SPECLIST_M_S	6.05	0.0139
SPECLIST_P_S	4.92	0.0266
SPECLST_WEIGHTED	17.30	0.0000

Table 5.20: value of the tolerance and VIF for industry specialist model		
Name of the Variables	Tolerance	VIF
BRDSIZE	0.659	1.517
BRDEXP	0.499	2.003
BRDMEET	0.688	1.453
BRDNED	0.906	1.103
ACSIZE	0.904	1.106
ACEXP	0.459	2.192
ACMEET	0.869	1.151
ACIND	0.727	1.375
INOWN	0.878	1.139
LEVERG	0.817	1.224
LNASSET	0.570	1.753
ROA	0.781	1.280
	Mean VIF =	1.441
Note: * are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.		

Table 5.21: The results of the various regression estimators for the industry specialist model (N=152)

Variable name	OLS regression			GLS regression			Probit regression	
	SPECLIST_M_S	SPECLIST_P_S	SPECLST_WEIGHTED	SPECLIST_M_S	SPECLIST_P_S	SPECLST_WEIGHTED	SPECLST_M_S_LEADER	SPECLST_MS_30
Constant	1.659 (3.90)***	-0.399 (-1.30)	-0.073 (-0.33)	2.411 (3.67)***	-0.099 (-0.80)	-0.073 (-0.33)	5.926 (2.16)**	3.463 (1.75)*
BRDSIZE	0.016 (0.77)	0.023 (1.60)	0.020 (1.83)*	-0.023 (1.83)*	-0.001 (-0.02)	0.020 (1.83)*	0.295 (2.01)**	0.188 (1.09)
BRDEXP	-0.076 (-3.59)***	0.020 (1.38)	0.011 (0.98)	-0.063 (-2.02)**	0.000 (0.03)	0.011 (0.98)	-0.394 (-2.73)**	-0.480 (-2.78)**
BRDMEET	-0.094 (-2.97)**	-0.040 (-1.77)*	-0.037 (-2.22)**	-0.116 (-2.10)**	0.004 (0.58)	-0.037 (-2.22)**	-0.743 (-3.37)**	-0.444 (-2.02)*
BRDNED	-0.029 (-1.58)	-0.008 (-0.67)	-0.009 (-0.95)	0.067 (2.42)**	0.009 (1.65)*	-0.009 (-0.95)	-0.209 (-1.71)*	-0.129 (-0.95)
ACSIZE	-0.039 (-1.09)	0.138 (5.20)***	0.076 (3.97)***	-0.144 (-2.39)	0.021 (2.09)**	0.076 (3.97)***	-0.090 (-0.36)	-0.056 (-0.20)
ACEXP	-0.011 (-0.37)	-0.036 (-1.72)*	-0.033 (-2.06)**	-0.092 (-1.84)*	0.016 (1.77)*	-0.033 (-2.06)**	-0.202 (-0.96)	-0.111 (-0.43)
ACMEET	-0.113 (-1.45)	0.002 (0.05)	-0.025 (-0.62)	-0.178 (-2.15)**	0.021 (0.92)	-0.025 (-0.62)	-0.706 (-1.43)	-0.030 (-0.10)
ACIND	0.112 (2.12)**	0.047 (1.40)	0.032 (1.18)	0.049 (0.65)	0.000 (0.34)	0.032 (1.18)	0.310 (0.88)	0.221 (0.54)
INOWN	0.005 (4.21)***	-0.009 (-0.99)	0.000 (0.35)	0.005 (2.71)**	-0.000 (-0.79)	0.000 (0.35)	0.042 (1.58)	0.050 (1.06)
LEVERG	-0.120 (-1.00)	0.438 (5.10)***	0.182 (2.87)**	-0.182 (-0.99)	0.187 (5.28)***	0.182 (2.87)**	-0.257 (-0.29)	0.481 (0.48)
LNASSET	0.001 (0.14)	0.035 (4.66)***	0.022 (4.02)***	0.006 (0.37)	0.006 (2.08)**	0.022 (4.02)***	0.126 (1.79)*	0.037 (0.51)

Table 5.21: Continued

Variable name	Coefficient (t-statistics)							
	OLS regression			GLS regression			Probit regression	
	SPECLIST_M_S	SPECLIST_P_S	SPECLST_WEIGHTED	SPECLIST_M_S	SPECLIST_P_S	SPECLST_WEIGHTED	SPECLST_M_S_LEADER	SPECLST_MS_30
ROA	-0.377 (-1.04)	-1.268 (-4.89)***	-0.725 (-3.77)***	-0.584 (-0.98)	-0.390 (-3.05)**	-0.725 (-3.77)***	-0.499 (-0.21)	-1.400 (-0.51)
Adjusted. R^2 / Pseudo R^2	0.226	0.538	0.365	0.547	0.464	0.416	0.191	0.154

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.

Table 5.22: The results of the industry specialist model for new definitions (N=152)					
	Coefficient (t-statistics) [a]				
Variable name	SPECLST_MS_LEADER	SPECLST_MS_30	SPECLIST_MS	SPECLIST_PS	SPECLST_WEIGHTED
Constant	2.908 (1.94)*	2.368 (1.36)	1.158 (5.13)***	-0.492 (-3.03)**	-0.252 (-2.13)**
BRDSIZE_1	-0.155 (-0.55)	-0.390 (-1.14)	-0.034 (-0.81)	0.006 (0.19)	-0.014 (-0.62)
BRDEXP	-0.459 (-3.39)**	-0.614 (-3.44)**	-0.079 (-3.96)***	0.015 (1.09)	0.001 (0.140)
BRDMEET	-0.667 (-3.09)**	-0.375 (-1.74)*	-0.081 (-2.66)**	-0.026 (-1.19)	-0.025 (-1.55)
BRDNED_1	-0.327 (-1.15)	-0.229 (-0.67)	-0.010 (-0.26)	-0.014 (-0.47)	-0.020 (-0.93)
ACSIZE	-0.143 (-0.58)	-0.038 (-0.14)	-0.042 (-1.12)	0.121 (4.41)***	0.066 (3.33)**
ACEXP_1	-0.087 (-0.34)	-0.408 (-1.28)	-0.016 (-0.42)	0.025 (0.89)	0.003 (0.15)
ACMEET_1	-0.277 (-1.02)	0.110 (0.35)	-0.018 (-0.46)	-0.027 (-0.94)	-0.019 (-0.94)
ACIND_1	0.005 (0.05)	0.239 (1.80)*	-0.000 (-0.00)	0.003 (0.28)	0.004 (0.49)
INOWN	0.442 (1.40)	0.065 (1.31)	0.005 (3.81)***	-0.000 (-0.95)	0.000 (0.33)
LEVERG	0.115 (0.14)	0.670 (0.68)	-0.080 (-0.67)	0.421 (4.86)***	0.174 (2.77)**
LNASSET	0.103 (1.58)	0.018 (0.27)	0.004 (0.43)	0.032 (4.51)***	0.019 (3.60)***
ROA	1.152 (0.50)	-0.553 (-0.20)	-0.109 (-0.31)	-1.173 (-4.53)***	-0.561 (-3.06)**
Adjusted. R^2 / Pseudo R^2	0.184	0.208	0.193	0.526	0.349

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01, a=z-statistics for hetroskedastic ordinal regression.

Table 5.23: The results of the industry specialist model with the other control variables (N=152)					
	Coefficient (t-statistics) [a]				
Variable name	SPECLST_MS_LEADER	SPECLST_MS_30	SPECLIST_MS	SPECLIST_PS	SPECLST_WEIGHTED
Constant	5.046 (1.76)*	2.611 (1.27)	1.643 (3.71)***	-0.534 (-1.68)*	-0.122 (-0.53)
BRDSIZE	0.320 (2.13)**	0.227 (1.27)	0.016 (0.76)	0.026 (1.71)*	0.021 (1.91)*
BRDEXP	-0.363 (-2.47)**	-0.446 (-2.56)**	-0.075 (-3.49)**	0.022 (1.44)	0.013 (1.17)
BRDMEET	-0.734 (-3.30)**	-0.432 (-1.96)**	-0.094 (-2.93)**	-0.037 (-1.63)	-0.036 (-2.15)**
BRDNED	-0.220 (-1.78)*	-0.146 (-1.05)	-0.030 (-1.59)	0.001 (0.10)	-0.010 (-1.08)
ACSIZE	-0.031 (-0.13)	0.035 (0.12)	-0.037 (-1.01)	0.143 (5.36)***	0.081 (4.15)***
ACEXP	-0.222 (-1.05)	-0.146 (-0.57)	-0.012 (-0.40)	-0.035 (-1.58)	-0.035 (-2.16)**
ACMEET	-0.726 (-1.44)	-0.120 (-0.39)	-0.114 (-1.46)	0.002 (0.04)	-0.026 (-0.65)
ACIND	0.656 (1.59)	0.638 (1.32)	0.118 (2.08)**	0.069 (1.66)*	0.049 (1.60)
INOWN	0.045 (1.68)*	0.053 (1.06)	0.005 (4.15)***	-0.001 (-0.62)	0.000 (0.64)
LEVERG	0.262 (0.28)	1.102 (1.03)	-0.108 (-0.85)	0.489 (5.28)***	0.210 (3.12)**
LNASSET	0.126 (1.77)*	0.030 (0.42)	0.001 (0.13)	0.035 (4.68)***	0.022 (4.01)***
GROWTH	0.247 (0.86)	0.093 (0.29)	0.016 (0.39)	0.026 (0.87)	0.027 (1.22)
LIQ	0.049 (1.57)	0.068 (1.53)	0.001 (0.25)	0.004 (1.47)	0.002 (1.18)
ROA	-1.702 (-0.67)	-2.899 (-0.99)	-0.410 (-1.08)	-1.357 (-4.96)***	-0.799 (-4.01)***
Adjusted. R^2 / Pseudo R^2	0.207	0.172	0.216	0.539	0.369

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01, a=z-statistics for hetroskedastic ordinal regression.

Table 5.24: Test the industry specialist model with the endogeneity test

The Durbin and Wu–Hausman tests and Wald test

H0 = the residual of the characteristics of the BoDs and ACs include (BRDSIZE, BRDEXP, BRDMEET, and BDRNED, ACSIZE, ACEXP, ACMEET, and ACIND_1) are exogenous

Reject H0 if F statistic significant

Variable name	SPECLST_M_S_LEADER	SPECLST_MS_30	SPECLIST_M_S	SPECLIST_P_S	SPECLST_WEIGHTED
	Chi2 (1)	Chi2 (1)	Chi2 (1)	Chi2 (1)	Chi2 (1)
BRDSIZE	1.737 (P=0.187)	0.018 (P=0.891)	0.049 (P=0.823)	0.375 (P=0.539)	0.013 (P=0.909)
BRDEXP	0.036 (P=0.847)	0.061 (P=0.804)	1.825 (P=0.176)	0.010 (P=0.917)	0.103 (P=0.748)
BRDMEET	0.208 (P=0.647)	0.258 (P=0.611)	0.374 (P=0.540)	0.232 (P=0.629)	0.049 (P=0.824)
BRDNED	0.011 (P=0.972)	1.584 (P=0.208)	0.037 (P=0.846)	0.197 (P=0.657)	0.007 (P=0.932)
ACSIZE	0.171 (P=0.679)	0.130 (P=0.717)	1.008 (P=0.315)	0.907 (P=0.340)	0.088 (P=0.766)
ACEXP	1.974 (P=0.160)	0.588 (P=0.443)	0.055 (P=0.813)	2.483 (P=0.115)	0.046 (P=0.828)
ACMEET	0.057 (P=0.810)	0.035 (P=0.850)	0.030 (P=0.860)	0.063 (P=0.801)	0.067 (P=0.794)
ACIND_1	0.817 (P=0.366)	0.050 (P=0.821)	0.188 (P=0.664)	0.148 (P=0.699)	0.112 (P=0.737)

5.6 The summary

This chapter shows empirical findings on the effects of the ACs and BoDs characteristics on AQ. The hypothesis variables for the frequencies of meetings of the ACs and BoDs, the number of independent members, the size of ACs, and financial expertise are examined with three models of AQ: AFs, non audit services, and industry specialist auditors. The employment of auditor industry specialists, higher AFs and lower non audit services fees are all associated with higher AQs.

In the model of the AFs, multivariate regression indicates that independent BoDs are positively related to AFs. These may suggest that independent BODs use their supervisory function to demand intensive audit efforts from auditors, resulting in higher AFs. The other ACs and BoDs characteristics provide inconsistent results with AFs across all models (year to year and in the pooled samples). The control variables are significant in the predicted direction, except of GROWTH and LEVERG, which were found insignificant in relation to the AFs model. The result for independent BoDs is robust to the specifications of different models including various regression estimators, analysis of the size of the client, new definitions for hypotheses variables, other control variables, and two-stage least-squares (2SLS) regression.

There are 4 auditor independence measures (FEE) examined in the non audit services model, include: FEERATIO 1, FEERATIO 2, LNNAF and LNTOTALFEE. This study found a positive relationship between the independent BoD and measures of auditor independence, especially the measures of LNTOTALFEES and LNNAF, in most year to year models. FEERATIO 2 and FEERATIO 1 are insignificant with the independent BoDs but report similar positive correlation coefficients. Previous studies argue that the variables LNTOTALFEES and LNNAF are better measurements than the ratios of non audit services to capture the economic importance of the client to the auditor relationship (Larcker and Richardson, 2004; Ashbaugh et al., 2003). The positive relationship may indicate that independent BoDs seem to support that higher provision of non audit services do not necessarily weaken the audit independence, but it may improve the AQs due to the effects of more experience of the auditors.

The effects of more experience of the auditors and improving their judgments, leads to an increase in the AQ. The other hypothesis variables provide inconsistent support associated with non audit services. Amongst the control variables, LNASSET is found negatively correlated with non audit services in most year to year and pooled models. The results for independent NED on BoDs are robust to the specifications of different models and tests.

In the auditor industry specialist model (SPEC_AUD*)*, there are five measures: SPECLST_M_S_LEADER, SPECLST_MS_30, SPECLST_M_S, SPECLST_P_S and SPECLST_WEIGHTED. The multivariate regressions of the auditor industry specialist model indicate that the AC and BoD characteristics with the related control variables are sensitive to the choice of industry specialist measures. Furthermore, in the pooled sample, when four out of five auditor industry specialist measures were used, the results indicate that ACs with less frequencies of AC meetings and which consist of solely independent members are more likely to employ industry specialist auditors.

Although these results are robust to various regression estimators and 2SLS tests, they are sensitive to the new variables definitions. When the definition of ACMEET is changed from the total number of AC meeting to be a dichotomous variable (ACMEET_1), (coded as 1 if the frequency of the AC meeting is larger than the sample median and zero if otherwise), and the definition of ACEXP is changed from the proportion of AC members with accounting experience and financial qualification to be a dichotomous variable, (ACEXP_1), (coded as 1 if the AC had at least one director is equipped with accounting or finance expertise, and zero if otherwise), the results are no longer significant. The summary of the results and hypothesis are displayed in Table No.5.25. The significant findings are based on the consistency of the findings in the samples of the pooled and year to year.

For Hypothesis 1, that there is a positive relationship between the size of the board and non-audit services fees, the result was the opposite and provided inconsistent support associated with non audit services fees.

Inconsistent with hypothesis 2, board sizesis insignificant with AFs in all models. A possible explanation of this result is that the small board sizes pay high AFs.

Consistent with hypothesis 3, that there is a positive relationship between the independent board and AFs, the result indicates that the independent NEDs on boards demand extra effort in audit for ratification of the monitoring function., therefore increasing the AFs and the perceived quality of the audit, primarily for the purpose of protecting their interests.

Hypothesis 4 predicts that there is a negative relationship between the size of the board and the engagement of industry-specialist auditors. The insignificant negative coefficient on the size of the board does not support this hypothesis. Therefore, in respect to the small number of board members, this study does not support the view that a small number of board members employ more industry specialist auditors.

Hypothesis 5 predicts a positive relationship between the independent board and engagement of industry-specialist auditors. The results do not support this hypothesis. The results show lower percentages of independent board members are more likely to employ industry specialist auditors.

Hypothesis 6 predicts a negative relationship between the independent board and non-audit services fees. The results do not support this hypothesis. The positive relationship may indicate that the independent boards view joint provision of non audit services and audit as not necessarily compromising audit independence but perhaps expanding the knowledge of the auditors and improving their judgments, which leads to increase the AQ.

Hypothesis 7 predicts a negative relationship between the financial expertise of the board and non-audit services fees. The results do not support this hypothesis. The positive relationship indicates that boards of directors with financial expertise can increase the non-audit services fees through the auditors' services.

Hypothesis 8 predicts a positive relationship between the financial expertise of the board and AFs. The results do not support this hypothesis. The negative relationship with audit fees suggests that boards of directors that are equipped with financial expertise and that also have a higher frequency of board meetings are associated with increased audit fees.

Hypothesis 9 predicts a positive relationship between the frequency of the meeting of the board and AFs. The results do not support this hypothesis. The negative relationship with audit fees, suggests that boards of directors that are equipped with financial expertise and that have a higher frequency of board meetings are associated with lower audit fees.

Hypothesis 10 predicts a positive relationship between the financial expertise of the board and the engagement of industry-specialist auditors. The results do not support this hypothesis. The negative relationship with the engagement of industry-specialist auditors indicates that the financial expertise of the board may reduce the audit effort and fees.

Hypothesis 11 predicts a negative relationship between the meeting frequency of the board and non-audit services fees. The results do not support this hypothesis. The positive relationship with non-audit services fees, indicates that the boards of directors that are equipped with financial expertise and that have a higher frequency of board meetings are paying more non-audit services fees for the auditor’s services.

Hypothesis 12 predicts a positive relationship between the size of the AC and AFs. The results do not support this hypothesis. The results indicate that a small size of the AC pays high audit fees for the auditors' effort.

Hypothesis 13 predicts a positive relationship between the meeting frequency of the board and the engagements of industry-specialist auditors. The results do not support this hypothesis. The negative relationship with engagements of industry-specialist auditors indicate that small boards that have a lower frequency of meetings are more likely to engage industry specialist auditors.

Hypothesis 14 predicts a positive relationship between the size of the AC and the engagement of industry-specialist auditors. The results do not support this hypothesis. The negative relationship with engagements of industry-specialist auditors indicate that the small audit committees' members that have a lower frequency of meetings are more likely to engage industry specialist auditors.

Hypothesis 15 predicts a negative relationship between the size of the AC and non-audit services fees. The results do not support this hypothesis. The results indicate that the small size ACs pay high non-audit services fees for the auditor's efforts.

Hypothesis 16 predicts a negative relationship between the solely independent AC and non-audit services fees. The results do not support this hypothesis. The positive relationship with non-audit services fees indicates that a solely independent AC demands extra effort in audit therefore increasing the non-audit services fees and the perceived quality of the audit.

Hypothesis 17 predicts a positive relationship between the solely independent AC and AFs. The results do not support this hypothesis. The negative relationship with audit fees indicates that solely independent AC members that have a lower frequency of meetings demand extra effort in audit therefore increasing the audit fees and the perceived quality of the audit.

Hypothesis 18 predicts a positive relationship between the financial expertise of the AC and AFs. The results do not support this hypothesis. The negative relationship with audit fees, suggests that ACs that are equipped with financial expertise and that have a higher frequency of AC meetings are associated with increased audit fees.

Hypothesis 19 predicts that there is a positive relationship between the solely independent AC and the engagement of industry-specialist auditors. The negative relationship with engagement of industry-specialist auditors indicates that solely independent members that have a lower frequency of meetings are more likely to engage industry-specialist auditors.

Hypothesis 20 predicts a positive relationship between the financial expertise of the AC and the engagement of industry-specialist auditors. The results do not support this hypothesis. The negative relationship with the engagement of industry-specialist auditors indicates that the financial expertise of the ACs that have a lower frequency of meetings are more likely to engage industry specialist auditors.

Hypothesis 21 predicts a negative relationship between the financial expertise of the AC and non-audit services fees. The results do not support this hypothesis. The positive relationship indicates that ACs with financial expertise can increase the non-audit services fees through the auditors' services.

Hypothesis 22 predicts a negative relationship between the frequency of the meetings of the AC and non-audit services fees. The results do not support this hypothesis. The positive relationship between audit committee meetings and non-audit services fees indicates that a higher number of audit committee meetings demand a higher quality audit from their auditors.

Hypothesis 23 predicts a positive relationship between the frequency of meetings of the ACs and AFs. The results do not support this hypothesis. The negative relationship with audit fees suggests that ACs that are equipped with financial expertise and that have a higher frequency of AC meetings are associated with increased audit fees.

Hypothesis 24 predicts a positive relationship between frequency of the meetings of the AC and the engagement of industry-specialist auditors. The results do not support this hypothesis. The negative relationship with the engagement of industry-specialist auditors indicates that the ACs which have a lower frequency of AC meetings are more likely to engage industry specialist auditors.

Table 5.25: A brief of the hypothesis and the findings – the relationship between the AQ and the characteristics of CG.			
Hypotheses	Findings (Supported/Not supported)	Hypotheses	Findings (Supported/Not supported)
H1: There is a positive relationship between the size of the board and non-audit services fees.	Not supported	H2: There is a negative relationship between the size of the board and AFs.	Not supported
H3: There is a positive relationship between the independent board and AFs.	Supported	H4: There is a negative relationship between the size of the board and the engagement of industry-specialist auditor.	Not supported
H5: There is a positive relationship between the independent board and engagement of industry-specialist auditors.	Not supported	H6: There is a negative relationship between the independent board and non-audit services fees.	Not supported
H7: There is a negative relationship between the financial expertise of the board and non-audit services fees.	Not supported	H8: There is a positive relationship between the financial expertise of the board and AFs.	Not supported
H9: There is a positive relationship between the frequency of the meeting of the board and AFs.	Not supported	H10: There is a positive relationship between the financial expertise of the board and the engagement of industry-specialist auditors.	Not supported
H11: There is a negative relationship between the meeting frequency of the board and non-audit services fees.	Not supported	H12: There is a positive relationship between the size of the AC and AFs.	Not supported
H13: There is a positive relationship between the meeting frequency of the board and the engagements of industry-specialist auditors.	Not supported	H14: There is a positive relationship between the size of the AC and the engagement of industry-specialist auditors.	Not supported
H15: There is a negative relationship between the size of the AC and non-audit services fees.	Not supported	H16: There is a negative relationship between the solely independent AC and non-audit services fees.	Not supported

Table 5.25: Continued			
Hypotheses	Findings (Supported/Not supported)	Hypotheses	Findings (Supported/Not supported)
H17: There is a positive relationship between the solely independent AC and AFs.	Not supported	H18: There is a positive relationship between the financial expertise of the AC and AFs.	Not supported
H19: There is a positive relationship between the solely independent AC and the engagement of industry-specialist auditors.	Not supported	H20: There is a positive relationship between the financial expertise of the AC and the engagement of industry-specialist auditors.	Not supported
H21: There is a negative relationship between the financial expertise of the AC and non-audit services fees.	Not supported	H22: There is a negative relationship between the frequency of the meeting of the AC and non-audit services fees.	Not supported
H23: There is a positive relationship between the frequency of a meeting of the AC and AFs.	Not supported	H24: There is a positive relationship between frequency of the meeting of the AC and the engagement of industry-specialist auditors.	Not supported

Chapter VI:

THE RESULTS OF THE FINDINGS AND ANALYSIS: THE EFFECTIVENESS OF THE AC, BODs, AQ AND EM

6.0 Introduction

This chapter provides the results of the second empirical analysis of the ACs and BoDs' characteristics and the quality of the external auditor in constraining EM. Consistent with the previous chapter, the proxies of the AQ, the variables of the AC and BoD are measured in terms of their effectiveness (such as size of the board, financial expertise, number of meeting, and number of independent members). This chapter is structured as follows: the next section provides the descriptive statistics and correlation matrix. This is followed by separate sections on research design, multivariate test results and a sensitivity analysis. The final section summarizes and concludes the chapter.

6.1 Descriptive Statistics

This section reports the results of the univariate test and descriptive statistics. Table No.6.1 provides descriptive statistics for all relevant variables used to examine the relationship between the AC, BoDs, AQ and EM for the sample of 148 firm-year observations. This study highlights the descriptive statistics for EM, CFO, and MTBV, because the other variables have similar standard deviations and means as described in Chapter 5.

Across the three measures of DACC, the mean and median of DACC_JM, DACC_MJM and DACC_ROA are relatively consistent, at 0.041 (0.020), 0.041 (0.020), and 0.045 (0.030), respectively. Furgeson et al. (2004) using the modified Jones (1991) model, found that the mean (median) absolute values of the sample companies' discretionary accruals during the period 1996 to 1998 to be 0.092 and 0.073, which is much higher than those documented in this study.

This is most likely due to the reforms initiated by the regulatory body in the promotion of best practices in corporate behavior. These improvements, for instance, can be seen from the Peasnell at al. (2000) study that argue that in the post-Cadbury time period, EM (income-increasing accrual management to avoid earnings losses or a declines in earnings**)** occurred in smaller firms that have a BoD membership higher than the number of NEDs. This is in contrast to the pre-Cadbury time period, where there is no evidence to indicate the composition of NEDs on BoDs is associated with manipulating earnings. They conclude that the publication of the Cadbury Report (1992) had a material effect on the monitoring function of the board by helping companies to raise the level of corporate behavior, especially the monitoring of non-executive roles.

The mean (median) of CFO and MTBV are 0.194 (0.012) and 0.814 (0.656), respectively. Peasnell et al. (2005) report that the mean (median) of CFO was 0.116 (0.108). In comparison with previous studies, the mean (median) of the CFO which is documented in this study is relatively higher.

6.2 The correlation matrix

This section will provide the correlation matrix for all variables that have been used in the EM models (see Table 6.2). High correlations between AQ measures and discretionary accruals are expected because they are interconnected. The AQ, the SPECLST_ WEIGHTED and SPECLST _P_S variables are negatively correlated with DACC_ROA and DACC_JM measures (correlation coefficients between -0.119 and -0.061), which indicates that the auditors' specialists in the industry are effective in constraining opportunistic earnings. In addition, none of the non-audit services and AFs measures are significantly correlated with all DACC. However, with respect to the AC and independence of the BoDs, BRDNED is significantly and negatively correlated with all DACC measures. This may indicate that independent NEDs either on the AC or BODs contribute to the supervision of the company, and are therefore likely to constrain opportunistic earnings. The other AC or BoDs characteristics are insignificantly correlated with all DACC measures.

Table 6.1: Descriptive statistics (Number of observations =148)							
Variables	Mean	Median	Std. Deviation	First Quartile (25th)	Third Quartile (75th)	Minimum	Maximum
DACC_JM	0.041	0.020	0.093	-0.020	0.090	-0.150	0.590
DACC_MJM	0.041	0.020	0.088	-0.020	0.090	-0.120	0.590
DACC_ROA	0.045	0.030	0.092	-0.020	1.000	-0.130	0.590
ACEXP	2.081	2.000	0.853	1.000	3.000	1.000	3.000
ACIND	0.756	1.000	0.430	1.000	1.000	0.000	1.000
ACMEET	3.959	4.000	0.257	2.000	4.000	4.010	4.000
ACSIZE	3.391	3.000	0.489	3.000	4.000	3.000	4.000
BRDNED	2.750	3.000	1.488	1.000	4.000	1.000	7.000
BLOCK	77.505	56.510	145.406	30.840	77.000	0.000	928.000
BRDEXP	2.736	3.000	1.219	1.250	4.000	1.000	5.000
BRDMEET	4.189	4.000	0.653	4.000	4.000	4.000	7.000
BRDSIZE	6.236	6.000	1.019	5.000	6.000	4.000	8.000
FEERATIO 1	0.409	0.410	0.139	0.360	0.467	0.000	0.760
FEERATIO 2	0.798	0.700	0.488	0.467	0.875	0.000	3.230
MTBV	0.814	0.656	1.000	0.000	1.140	0.000	9.729
INOWN	4.400	0.000	14.346	0.000	0.000	0.000	68.500
LEVERG	0.141	0.100	0.158	0.000	0.357	0.000	0.600
LNAFEE	2.000	2.015	0.606	1.610	2.300	0.000	4.260
LNASSET	5.266	4.620	2.134	3.823	6.825	0.000	11.062
LNNAF	1.686	1.610	0.658	1.445	1.950	0.000	5.050
LNTOTALFEES	2.560	2.560	0.662	2.400	2.770	0.000	5.320
CFO	0.194	0.012	0.647	0.000	0.107	-3.000	2.730

Table No.6.1: (continued)

Variables	Mean	Median	Std. Deviation	First Quartile (25th)	Third Quartile (75th)	Minimum	Maximum
SPECLIST_M_S	0.623	0660	0.206	0.530	0.720	0.000	1.000
SPECLST_ M_S_LEADER	0.668	1.000	0.472	0.000	1.000	0.000	1.000
SPECLST_ WEIGHTED	0.156	0.100	0.149	0.040	0.332	0.000	0.480
SPECLST_MS_30	0.864	1.000	0.343	1.000	1.000	0.000	1.000
SPECLST_P_S	0.249	0.140	0.251	0.070	0.550	0.000	1.000

ACEXP = the proportion of AC members with accounting experience and financial qualification to AC size; ACIND = coded as 1 if AC had solely NEDs; zero otherwise; ACMEET = number of AC meetings during the year; ACSIZE = number of AC members; BLOCK = the cumulative percentage shares ownership of the block holders who hold at least 5 % or more of outstanding common shares and who are unaffiliated with management; BRDEXP = the total number of directors with financial qualification and accounting experience to the size of the board; BRDMEET = total number of the meetings of the board during the year; BRDNED = the proportion of NEDs on BoD size; BRDSIZE = numbers of board members during the year; CFO=cash flow from operation scaled by lagged total asset; DACC_JM=discretionary accrual based on Jones' Model (1991), DACC_MJM=discretionary accruals based on Modified Jones model; DACC_ROA=discretionary accruals by Kothari et al. (2005), including lagged (ROA) in the accrual regression to control for performance of the firm; FEERATIO 1= the fee ratio of non audit service fees to total fees; FEERATIO 2= the fee ratio of non audit service fees to AFs; INOWN = the cumulative percentage of total shares owned by the directors of a firm; LEVERG = the proportion of debts to total assets; LNAFEE= the natural log of AFs; LNASSET = the natural logarithm of total assets; ; LNNAF=natural log of non audit service fees; LNTOTALFEES=natural log of the sum of audit and non audit service fees; MTBV= market to book value ratio; SPECLIST_M_S: continuous variable which equals to the respective auditor market share; SPECLST_M_S_LEADER: coded as 1 if the auditor earned the largest market share in each particular industry, zero if otherwise; SPECLST_MS_30: coded as 1 if the auditor market share exceeds 30 percent in each particular industry, zero if otherwise; SPECLST_P_S: continuous variable which equals to the respective auditor portfolio share; SPECLST_WEIGHTED= continuous variable which equals to the compliment between portfolio share.

Table 6.2: Correlation matrix (Pairwise) (Number of observations=148)

	Variables	DACC_JM (1)	DACC_MJM (2)	DACC_ROA (3)	LNAFEE (4)	LNNAF (5)	LNTOTALFEES (6)	FEERATIO 1 (7)	FEERATIO 2 (8)	SPECLST_M_S_LEADER (9)	SPECLST_MS_30 (10)	SPECLST_M_S (11)
1	DACC_JM	1.000										
2	DACC_MJM	**0.980****	1.000									
3	DACC_ROA	**0.936****	**0.943****	1.000								
4	LNAFEE	0.010	0.049	0.001	1.000							
5	LNNAF	-0.018	0.043	-0.017	**0.638****	1.000						
6	LNTOTALFEES	-0.012	0.035	-0.023	**0.929****	**0.844****	1.000					
7	FEERATIO 1	-0.057	-0.125	-0.057	0.103	**0.720****	**0.456****	1.000				
8	FEERATIO 2	-0.054	-0.027	-0.067	-0.007	**0.660****	**0.354****	**0.910****	1.000			
9	SPECLST_M_S_LEADER	0.159	0.165*	0.174*	0.174*	0.056	0.128	-0.094	-0.067	1.000		
10	SPECLST_MS_30	0.055	0.073	0.093	**0.331****	**0.246****	**0.321****	0.086	0.015	**0.520****	1.000	
11	SPECLST_M_S	-0.065	-0.066	-0.061	**0.391****	**0.259****	**0.401****	0.134	0.099	**0.525****	**0.587****	1.000
12	SPECLST_P_S	-0.119	-0.085	-0.108	0.109	-0.012	0.077	-0.049	-0.071	0.172*	-0.038	0.003
13	SPECLST_WEIGHTED	-0.117	0.073	-0.100	0.174*	0.018	0.134	-0.065	-0.060	**0.341****	0.173*	**0.228****
14	BRDSIZE	0.091	0.094	-0.015	0.092	0.036	0.048	-0.103	-0.086	0.037	-0.122	**-0.268****
15	BRDNED	**-0.299****	**-0.286****	**-0.271****	0.048	0.079	0.031	-0.036	-0.034	-0.080	-0.120	-0.095
16	BRDEXP	-0.061	-0.027	-0.097	-0.055	-0.047	-0.069	-0.069	-0.028	**-0.235****	**-0.248****	**-0.278****
17	BRDMEET	-0.104	-0.110	-0.118	0.010	-0.110	-0.023	-0.073	-0.097	**-0.237****	-0.037	0.055
18	ACSIZE	-0.036	-0.006	-0.068	0.035	0.094	0.034	-0.030	0.038	0.006	-0.007	-0.159
19	ACIND	-0.149	-0.105	-0.098	0.065	0.077	0.058	0.003	-0.009	-0.064	0.006	0.082
20	ACEXP	-0.094	-0.050	-0.080	0.004	-0.026	-0.019	-0.072	-0.051	-0.102	-0.055	-0.011

Table 6.2: (continued)

Variables		DACC_JM (1)	DACC_MJM (2)	DACC_ROA (3)	LNAFEE (4)	LNNAF (5)	LNTOTALFEES (6)	FEERATIO 1 (7)	FEERATIO 2 (8)	SPECLST_M_S_LEADER (9)	SPECLST_MS_30 (10)	SPECLST_M_S (11)
21	ACMEET	-0.037	-0.040	-0.043	-0.067	-0.050	-0.058	-0.001	0.019	**0.224****	0.092	**0.256****
22	INOWN	-0.001	-0.055	-0.002	0.026	-0.060	-0.002	-0.053	-0.081	0.171*	0.108	**0.277****
23	BLOCK	-0.112	-0.105	-0.111	-0.027	0.053	0.003	0.085	0.056	**-0.231****	-0.067	-0.012
24	MTBV	0.156	0.151	0.163*	0.053	-0.027	-0.002	-0.140	-0.122	0.046	-0.046	-0.108
25	CFO	0.021	0.074	-0.031	0.103	0.147	0.129	0.094	0.093	**0.284****	0.110	0.068
26	LEVERG	0.201*	**0.243****	**0.250****	0.031	-0.012	0.029	0.025	-0.024	0.024	-0.007	-0.024
27	LNASSET	-0.073	-0.079	-0.125	0.040	-0.410	-0.006	-0.119	-0.101	0.019	0.084	0.110

		SECLST_P_S (12)	SPECLST_WEIGHTED (13)	BRDSIZE (14)	BRDNED (15)	BRDEXP (16)	BRDMEET (17)	ACSIZE (18)	ACIND (19)	ACEXP (20)	ACMEET (21)	INOWN (22)
12	SECLST_P_S	1.000										
13	SPECLST_WEIGHTED	**0.899****	1.000									
14	BRDSIZE	**0.385****	**0.351***	1.000								
15	BRDNED	**0.274****	**0.234****	**0.479****	1.000							
16	BRDEXP	**0.394****	**0.348****	**0.439****	**0.409****	1.000						
17	BRDMEET	0.073	0.103	-0.057	0.035	-0.039	1.000					
18	ACSIZE	**0.344****	**0.300****	**0.208****	0.089	0.003	0.064	1.000				
19	ACIND	**0.261****	**0.258****	**0.241****	**0.541****	**0.396****	0.163*	0.003	1.000			
20	ACEXP	**0.355****	**0.331****	0.166*	0.059	**0.589****	-0.077	0.070	**0.350****	1.000		
21	ACMEET	0.107	0.141	-0.119	-0.133	-0.034	0.046	-0.089	**0.279****	0.201*	1.000	
22	INOWN	-0.068	-0.033	-0.194*	0.032	-0.016	-0.011	-0.125	-0.050	0.025	0.049	1.000

Table 6.2: (continued)

Variables		SECLST_P_S (12)	SPECLST_WEIGHTED (13)	BRDSIZE (14)	BRDNED (15)	BRDEXP (16)	BRDMEET (17)	ACSIZE (18)	ACIND (19)	ACEXP (20)	ACMEET (21)	INOWN (22)
23	BLOCK	0.013	0.001	-0.142	-0.171*	**0.224****	-0.016	-0.085	0.100	0.209*	-0.009	-0.065
24	MTBV	0.051	0.068	0.131	0.081	-0.007	-0.008	0.070	0.121	-0.103	0.067	0.009
25	CFO	**0.288****	**0.337****	**0.348****	0.116	0.176*	-0.171*	0.257*	0.095	0.190*	0.036	0.047
26	LEVERG	**0.411****	**0.379****	0.115	-0.119	**0.250****	0.037	-0.006	0.116	**0.316****	0.027	0.185*
27	LNASSET	**0.403****	**0.523****	**0.230****	0.194	**0.413****	**0.338****	0.135	**0.349****	**0.455****	0.061	0.092

		BLOCK (23)	MTBV (24)	CFO (27)	LEVERG (28)	LNASSET (29)
23	BLOCK	1.000				
24	MTBV	-0.145	1.000			
25	CFO	-0.023	0.065	1.000		
26	LEVERG	0.139	0.038	0.129	1.000	
27	LNASSET	**0.434****	0.015	0.164*	**0.268****	1.000

Table 6.2 (continued)
ACEXP = the proportion of AC members with accounting experience and financial qualification to AC size; ACIND = coded as 1 if AC had solely NEDs; zero otherwise; ACMEET = number of AC meetings during the year; ACSIZE = number of AC members; BRDEXP = the total number of directors with financial qualification and accounting experience to the size of the board; BRDMEET = total number of the meetings of the board during the year; BRDNED = the proportion of NEDs on BoD size; BRDSIZE = numbers of board members during the year; CFO=cash flow from operation scaled by lagged total asset; DACC_JM=discretionary accrual based on Jones' Model (1991), DACC_MJM=discretionary accruals based on Modified Jones model; DACC_ROA=discretionary accruals by Kothari et al. (2005), including lagged (ROA) in the accrual regression to control for performance of the firm; FEERATIO 1= the fee ratio of non audit service fees to total fees; FEERATIO 2= the fee ratio of non audit service fees to AFs; INOWN = the cumulative percentage of total shares owned by the directors of a firm; LEVERG = the proportion of debts to total assets; LNAFEE= the natural log of AFs; LNASSET = the natural logarithm of total assets; ; LNNAF=natural log of non audit service fees; LNTOTALFEES=natural log of the sum of audit and non audit service fees; MTBV= market to book value ratio; SPECLIST_M_S: continuous variable which equals to the respective auditor market share; SPECLST_M_S_LEADER: coded as 1 if the auditor earned the largest market share in each particular industry, zero if otherwise; SPECLST_MS_30: coded as 1 if the auditor market share exceeds 30 percent in each particular industry, zero if otherwise; SPECLST_P_S: continuous variable which equals to the respective auditor portfolio share; SPECLST_WEIGHTED= continuous variable which equals to the compliment between portfolio share, **Correlation is significant at the 0.01 level (2-tailed) in bold, * correlation is significant at the 0.05 level (2-tailed).

6.3 Multivariate regression for Earnings Management

Multivariate regressions are estimated using least square regression with robust standard error, which is effective in controlling for heteroscedasticity. Table No.6.3 displays the results of the three measures of discretionary accruals: including DACC_ROA, DACC_ MJM, and DACC_ JM. Since there is a multiple variables substitute for the proxy of AQ and most of them are highly correlated with each other, all of them are included in a single empirical model. In total thirty models of EM were examined. The range of the adjusted R^2 is between 0.113 and 0.158, which is lower than that reported in a previous United Kingdom study conducted by Peasnell et al. (2005). This may be due to size of the sample and specifications of the different model.

As can be seen from Table No.6.3, LNAFEE is found negatively correlated with DACC_ROA and DACC_JM measurements, which indicates that companies with higher AFs are more likely to constrain EM. There is a possibility that companies with higher AFs stimulate more effort to audit, and this in turn reduces the likelihood of opportunistic earnings. This result is consistent with the claim made by Caramanis and Lennox (2008), who report that when the hours of audit are lower, companies report larger income-increasing discretionary accruals.

In all models, the non-audit services fees measures are insignificantly associated with DACC. This result is consistent with Ruddock et al. (2006), and Chung and Kallapur (2003), who found no evidence of a relationship between the EM and non-audit services. Although there is no statistically significant relationship, the results provide a mixed directional sign of the EM and non-audit services coefficients, indicating that the measures of the independent auditor are sensitive to the research design.

The findings for auditors' specialists in the industry are conditional. The auditors' specialists measured by SPECLST _WEIGHTED and SPECLST _P_S show significant negative correlation coefficients with all DACC measures.

However, using the approach of market share to calculate the variables of auditors' industry specialists, it shows that none of these measures are significantly associated with all DACC. Krishnan (2001) argues that the portfolio approach is better at capturing the efforts of the auditors to differentiate their products, rather than the industry market share approach. These negative findings may indicate that EM in companies with auditors specialists is lower than companies with non-specialist auditors. This is consistent with Krishnan (2003) who indicates that auditors' specialists in the industry provide a higher AQ than non-specialist auditors through the mitigation of accruals based earnings.

In relation to the characteristics of AC and BoDs, none of these variables are significantly related with DACC except for BRDMEET, BRDNED and ACMEET. BRDMEET is found negatively and significantly related with EM (LNNAF, FEERATIO 2, SPECLST_M_S, SPECLST_P_S, and SPECLST_WEIGHTED) in the DACC_ROA model for the pooled sample, and negatively and significantly related with EM (SPECLST_WEIGHTED) in the DACC_ JM for the pooled sample. BRDNED is found to be negatively and significantly related with EM (all variables) only in the DACC_JM model for the pooled sample. ACMEET is found significantly negatively correlated with the three measures of discretionary accruals (DACC_ROA, DACC_ MJM, and DACC_ JM). ACSIZE is found to be negatively related with EM in the DACC_ROA, DACC_ MJM, and DACC_ JM models for the pooled sample. Although the relationship is weak, these findings are consistent with those of Yang and Krishnan (2005). As compared with previous studies in the United Kingdom, the findings are contradictory to Habbash et al (2010) and Habbash (2010). The possible explanation for the contradictory findings may be due to the differences in research design. Habbash (2010) segregates the variables of AC and BoDs in two different EM models, while Habbash et al. (2010) do not control the variables of AC in their EM model.

For the control variables, MTBV is found positively related with EM (SPECLST_M_S_LEADER and SPECLST_MS_30) in the DACC_ROA model for the pooled sample. INOWN indicates a negative significant relationship with EM (SPECLST_P_S and SPECLST_WEIGHTED) in the DACC_ MJM model for the pooled sample, while BLOCK is found negatively and significantly related with EM (SPECLST_P_S and SPECLST_WEIGHTED) in the DACC_ MJM, and DACC_ JM models for the pooled sample and with EM (only with SPECLST_WEIGHTED) in the DACC_ROA model for the pooled sample, This negative relationship contradicts the findings documented by Klein (2002), but is relatively consistent with findings with Bowen et al. (2008). CFO is found positively related with EM (SPECLST_P_S and SPECLST_WEIGHTED) only in the DACC_ MJM model for the pooled sample, which indicates that the companies that have high cash flows and negative income have a greater incentive to manage reported earnings. The positive coefficient is consistent with the findings of Frankel et al. (2002). In addition, there is a positive and significant relationship between DACC and LEVERG in most of the DACC models. LNASSET is found positively correlation coefficients with DACC in most models; these findings are consistent with the DeFond and Park (1997) and Becker et al. (1998) findings.

In brief, the results of the multivariate analysis suggest that companies engaging auditor industry specialists and paying higher AFs are associated with lower EM. This is consistent with previous studies such as Krishnan, 2003; Caramis and Lennox, 2008 that indicate that a higher AQ has a greater capacity to constrain earnings manipulation via the extent of their function of monitoring thus improving the quality of reported earnings. In addition, there is no statistically significant relationship noted between the EM and non-audit services, indicating that the joint provision of non-audit services and audit have no impact on opportunistic earnings.

This result contradicts a previous study in the United Kingdom carried out by Antle at al. (2006) which indicates a negative relationship between EM and non-audit services. One of the possible reasons for this may be due to the increase of the non-audit services studies reformation of corporate governance system in the United Kingdom.

However, none of the results indicate that the AC or the BoD characteristics can be clearly linked with EM. As noted by Larker and Richardson (2004), the monitoring role of the auditors depends on the strength of the CG structure for the companies, and thus it is possible that the auditor monitoring roles outweigh the oversight functions of the ACs and BoDs, and thus contribute to the insignificant results for CG variables and EM.

Table 6.3: The results of the EM model with the multivariate regression.

$DACC = \beta_0 + \beta_1 ACEXP + \beta_2 ACIND + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 AQ + \beta_6 BRDEXP + \beta_7 BRDMEET + \beta_8 BRDNED + \beta_9 BRDSIZE + \beta_{10} BLOCK + \beta_{11} CFO + \beta_{12} INOWN + \beta_{13} LEVERGN + \beta_{14} LNASSET + \beta_{15} MTBV + \varepsilon$

The (DACC**)** dependent variable is measured as follows:
(1) DACC_JM; (2) DACC_MJM; and (3) DACC_ROA
The **AQ** proxies are: FEERATIO 1, FEERATIO 2, LNAFEE, LNNAF, LNTOTALFEES, SPECLST_M_S, SPECLST_M_S_LEADER, SPECLST_MS_30, SPECLST_P_S or SPECLST_WEIGHTED

Variables	Coefficient (t-statistics)									
	(1) DACC_JM									
Model	LNAFEE (1)	LNNAF (2)	LNTOTALFEES (3)	FEERATIO 1 (4)	FEERATIO 2 (5)	SPECLST_M_S_LEADER (6)	SPECLST_MS_30 (7)	SPECLST_M_S (8)	SPECLST_P_S (9)	SPECLST_WEIGHTED (10)
Cons	0.519 (3.12)**	0.509 (3.09)**	0.523 (3.13)**	0.517 (3.18)**	0.512 (3.17)**	0.467 (2.81)**	0.488 (2.92)**	0.526 (3.18)**	0.406 (2.47)**	0.431 (2.70)**
LNAFEE	-0.002 (-0.23)									
LNNAF		0.001 (0.02)								
LNTOTALFEES			-0.003 (-0.30)							
FEERATIO 1				-0.016 (-0.31)						
FEERATIO 2					-0.002 (-0.18)					
SPECLST_M_S_LEADER						0.018 (0.95)				
SPECLST_MS_30							0.010 (0.46)			
SPECLST_M_S								-0.017 (-0.41)		
SPECLST_P_S									-0.091 (-2.29)**	
SPECLST_WEIGHTED										-0.177 (-2.57)**

Table 6.3: (continued)										
BRDSIZE	0.012 (1.24)	0.000 (0.02)	0.011 (1.23)	0.011 (1.19)	0.11 (1.20)	0.012 (1.23)	0.012 (1.27)	0.011 (1.15)	0.013 (1.41)	0.011 (1.24)
BRDNED	-0.016 (-1.93)*	-0.016 (-1.95)*	-0.015 (-1.92)*	-0.016 (-1.98)*	-0.016 (-2.00)**	-0.015 (-1.83)*	-0.016 (-1.98)*	-0.016 (-2.03)**	-0.015 (1.85)*	-0.016 (-2.04)**
BRDEXP	0.000 (0.02)	0.001 (0.07)	0.000 (0.01)	0.000 (0.06)	0.000 (0.08)	0.002 (0.26)	0.001 (0.17)	-0.000 (-0.05)	0.003 (0.37)	0.003 (0.37)
BRDMEET	-0.019 (-1.44)	-0.019 (-1.43)	-0.019 (-1.44)	-0.019 (-1.44)	-0.019 (-1.44)	-0.014 (-0.99)	-0.018 (-1.34)	-0.019 (-1.46)	-0.019 (-1.50)	-0.022 (-1.70)*
ACSIZE	-0.018 (-1.13)	-0.018 (-1.13)	-0.017 (-1.13)	-0.018 (-1.13)	-0.017 (-1.12)	-0.016 (-1.02)	-0.017 (-1.10)	-0.019 (-1.19)	-0.004 (-0.28)	-0.007 (-0.46)
ACIND	-0.012 (-0.58)	-0.012 (-0.57)	-0.012 (-0.57)	-0.012 (-0.56)	-0.012 (-0.56)	-0.015 (-0.68)	-0.013 (-0.68)	-0.010 (-0.46)	-0.011 (-0.53)	-0.010 (-0.47)
ACEXP	-0.016 (-1.32)	-0.017 (-1.34)	-0.016 (-1.33)	-0.017 (-1.36)	-0.017 (-1.36)	-0.015 (-1.18)	-0.016 (-1.34)	-0.017 (-1.34)	-0.016 (-1.29)	-0.019 (-1.55)
ACMEET	-0.090 (-2.76)**	-0.088 (-2.74)**	-0.090 (-2.78)**	-0.088 (-2.74)**	-0.088 (-2.74)**	-0.088 (-2.76)**	-0.087 (-2.73)**	-0.087 (-2.72)**	-0.078 (-2.46)**	-0.078 (-2.47)**
INOWN	-0.000 (-0.65)	-0.000 (-0.65)	-0.000 (-0.66)	-0.000 (-0.67)	-0.000 (-0.66)	-0.000 (-0.74)	-0.000 (-0.66)	-0.000 (-0.56)	-0.000 (-0.97)	-0.000 (-1.08)
BLOCK	-0.000 (-1.15)	0.010 (1.38)	-0.000 (-1.49)	-0.000 (-1.48)	0.010 (1.35)	0.010 (1.44)	-0.000 (-1.42)	-0.000 (-1.56)	-0.000 (-1.86)*	-0.000 (-2.24)**
MTBV	0.010 (1.39)	-0.000 (-0.70)	0.010 (1.37)	0.010 (1.33)	-0.000 (-0.67)	-0.000 (-0.92)	0.011 (1.42)	0.010 (1.30)	0.010 (1.37)	0.010 (1.37)
CFO	-0.000 (-0.69)	-0.000 (-1.50)	-0.000 (-1.49)	-0.000 (-0.64)	-0.000 (-1.51)	-0.000 (-1.11)	-0.000 (-0.75)	-0.000 (-0.62)	-0.000 (-0.44)	-0.000 (-0.17)
LEVERG	0.119 (2.31)**	0.119 (2.30)**	0.119 (2.32)**	0.120 (2.30)**	0.119 (2.31)**	0.117 (2.29)**	0.119 (2.31)**	0.119 (2.30)**	0.170 (3.07)**	0.168 (3.11)**
LNASSET	0.004 (0.81)	0.004 (0.81)	0.004 (0.80)	0.004 (0.77)	0.004 (0.79)	0.002 (0.43)	0.004 (0.66)	0.004 (0.88)	0.004 (1.25)	0.010 (1.86)**
Adj. R_2	0.115	0.114	0.115	0.115	0.115	0.120	0.116	0.115	0.148	0.157

Table 6.3: (continued)										
Variables	Coefficient (t-statistics)									
	(2) DACC_MJM									
Model	LNAFEE (11)	LNNAF (12)	LNTOTALFEES (13)	FEERATIO 1 (14)	FEERATIO 2 (15)	SPECLST_M_S_LEADER (16)	SPECLST_MS_30 (17)	SPECLST_M_S (18)	SPECLST_P_S (19)	SPECLST_WEIGHTED (20)
Cons	0.493 (3.19)**	0.424 (3.15)**	0.497 (3.19)**	0.505 (3.32)**	0.502 (3.34)**	0.449 (2.90)**	0.466 (2.99)**	0.508 (3.29)**	0.401 (2.62)**	0.437 (2.91)**
LNAFEE	0.001 (0.15)									
LNNAF		0.006 (0.51)								
LNTOTALFEES			0.001 (0.11)							
FEERATIO 1				-0.006 (-0.13)						
FEERATIO 2					-0.001 (-0.05)					
SPECLST_M_S_LEADER						0.023 (1.27)				
SPECLST_MS_30							0.018 (0.83)			
SPECLST_M_S								-0.007 (-0.18)		
SPECLST_P_S									-0.089 (-2.40)**	
SPECLST_WEIGHTED										-0.148 (-2.28)**
BRDSIZE	0.005 (0.61)	0.006 (0.64)	0.006 (0.62)	0.005 (0.61)	0.005 (0.61)	0.005 (0.63)	0.006 (0.70)	0.005 (0.59)	0.007 (0.81)	0.005 (0.62)
BRDNED	-0.012 (-1.56)	-0.012 (-1.64)	-0.012 (-1.56)	-0.011 (-1.55)	-0.012 (-1.56)	-0.010 (-1.35)	-0.011 (-1.52)	-0.012 (-1.57)	-0.010 (-1.40)	-0.011 (-1.59)

Table 6.3: (continued)										
BRDEXP	0.001 (0.15)	0.002 (0.21)	0.001 (0.14)	0.001 (0.12)	0.001 (0.13)	0.003 (0.38)	0.003 (0.31)	0.001 (0.07)	0.004 (0.44)	0.003 (0.39)
BRDMEET	-0.016 (-1.35)	-0.016 (-1.29)	-0.016 (-1.35)	-0.016 (-1.35)	-0.016 (-1.35)	-0.010 (-0.79)	-0.015 (-1.19)	-0.017 (-1.36)	-0.017 (-1.41)	-0.019 (-1.58)
ACSIZE	-0.012 (-0.83)	-0.013 (-0.88)	-0.012 (-0.82)	-0.012 (-0.82)	-0.012 (-0.82)	-0.010 (-0.68)	-0.011 (-0.78)	-0.012 (-0.84)	0.000 (0.05)	-0.003 (-0.22)
ACIND	-0.007 (-0.35)	-0.007 (-0.37)	-0.007 (-0.35)	-0.007 (-0.34)	-0.007 (-0.35)	-0.010 (-0.50)	-0.009 (-0.45)	-0.006 (-0.30)	-0.006 (-0.30)	-0.005 (-0.26)
ACEXP	-0.012 (-1.07)	-0.012 (-1.08)	-0.012 (-1.06)	-0.012 (-1.06)	-0.013 (-1.06)	-0.010 (-0.84)	-0.012 (-1.02)	-0.012 (-1.06)	-0.012 (-1.00)	-0.014 (-1.23)
ACMEET	-0.088 (-2.89)**	-0.086 (-2.88)**	-0.088 (-2.92)**	-0.088 (-2.95)**	-0.089 (-2.95)**	-0.088 (-2.97)**	-0.087 (-2.91)**	-0.088 (-2.93)**	-0.078 (-2.65)**	-0.079 (-2.96)**
INOWN	-0.001 (-1.49)	-0.001 (-1.45)	-0.001 (-1.48)	-0.001 (-1.49)	-0.001 (-1.48)	-0.000 (-1.60)	-0.001 (-1.51)	-0.001 (-1.42)	-0.001 (-1.83)*	-0.000 (-1.87)*
BLOCK	-0.000 (-1.47)	-0.000 (-1.52)	-0.000 (-1.47)	-0.000 (-1.44)	-0.000 (-1.46)	-0.000 (-1.95)	-0.000 (-1.31)	-0.000 (-1.47)	-0.000 (-1.82)*	-0.000 (-2.09)**
MTBV	0.009 (1.31)	0.009 (1.34)	0.009 (1.32)	0.009 (1.29)	0.009 (1.30)	0.009 (1.40)	0.009 (1.40)	0.009 (1.28)	0.009 (1.31)	0.009 (1.30)
CFO	-0.000 (-0.04)	-0.000 (-0.09)	-0.000 (-0.05)	-0.000 (-0.02)	-0.000 (-0.03)	-0.000 (-0.36)	-0.000 (-0.14)	-0.000 (-0.00)	0.000 (0.25)	0.000 (0.43)
LEVERG	0.141 (2.92)**	0.140 (2.91)**	0.141 (2.92)**	0.142 (2.92)**	0.141 (2.92)**	0.139 (2.91)**	0.141 (2.94)**	0.141 (2.93)**	0.190 (3.70)***	0.183 (3.59)***
LNASSET	0.001 (0.38)	0.002 (0.41)	0.002 (0.39)	0.001 (0.37)	0.002 (0.38)	-0.000 (-0.08)	0.000 (0.16)	0.002 (0.41)	0.004 (0.84)	0.007 (1.35)
Adj. R_2	0.121	0.123	0.121	0.121	0.121	0.132	0.126	0.121	0.158	0.154

Table 6.3: (continued)										
Variables	Coefficient (t-statistics)									
	(3) DACC_ROA									
Model	LNAFEE (21)	LNNAF (22)	LNTOTALFEES (23)	FEERATIO 1 (24)	FEERATIO 2 (25)	SPECLST_M_S_LEADER (26)	SPECLST_MS_30 (27)	SPECLST_M_S (28)	SPECLST_P_S (29)	SPECLST_WEIGHTED (30)
Cons	0.543 (3.33)**	0.535 (3.30)**	0.553 (3.38)**	0.539 (3.38)**	0.529 (3.34)**	0.453 (2.79)**	0.478 (2.92)**	0.548 (3.38)**	0.438 (2.70)**	0.470 (2.96)**
LNAFEE	-0.006 (-0.49)									
LNNAF		-0.003 (-0.34)								
LNTOTALFEES			-0.007 (-0.68)							
FEERATIO 1				-0.034 (-0.67)						
FEERATIO 2					-0.008 (-0.56)					
SPECLST_M_S_LEADER						0.029 (1.57)				
SPECLST_MS_30							0.022 (0.96)			
SPECLST_M_S								-0.028 (-0.67)		
SPECLST_P_S									-0.075 (-1.90)*	
SPECLST_WEIGHTED										-0.119 (-1.74)*
BRDSIZE	-0.001 (-0.10)	-0.001 (-0.15)	-0.001 (-0.12)	-0.002 (-0.20)	-0.002 (-0.20)	-0.001 (-0.13)	-0.000 (-0.04)	-0.002 (-0.24)	0.000 (0.00)	-0.001 (-0.15)
BRDNED	-0.005 (-0.62)	-0.005 (-0.62)	-0.004 (-0.59)	-0.005 (-0.67)	-0.006 (-0.72)	-0.004 (-0.46)	-0.005 (-0.67)	-0.006 (-0.78)	-0.005 (-0.58)	-0.006 (-0.72)

Table 6.3: (continued)										
BRDEXP	-0.006 (-0.68)	-0.005 (-0.64)	-0.006 (-0.70)	-0.005 (-0.61)	-0.005 (-0.56)	-0.002 (-0.26)	-0.003 (-0.35)	-0.007 (-0.75)	-0.003 (-0.34)	-0.004 (-0.38)
BRDMEET	-0.021 (-1.65)	-0.022 (-1.67)*	-0.021 (-1.66)	-0.021 (-1.65)	-0.022 (-1.67)*	-0.013 (-0.96)	-0.019 (-1.47)	-0.022 (-1.69)*	-0.022 (-1.70)*	-0.023 (-1.82)*
ACSIZE	-0.013 (-0.87)	-0.013 (-0.83)	-0.013 (-0.86)	-0.013 (-0.87)	-0.013 (-0.84)	-0.010 (-0.70)	-0.013 (-0.82)	-0.016 (-0.99)	-0.003 (-0.16)	-0.006 (-0.40)
ACIND	-0.003 (-0.17)	-0.003 (-0.16)	-0.003 (-0.16)	-0.003 (-0.13)	-0.003 (-0.13)	-0.006 (-0.35)	-0.006 (-0.28)	-0.000 (-0.01)	-0.003 (-0.12)	-0.001 (-0.09)
ACEXP	-0.008 (-0.71)	-0.009 (-0.74)	-0.008 (-0.72)	-0.009 (-0.80)	-0.010 (-0.80)	-0.006 (-0.50)	-0.009 (-0.72)	-0.009 (-0.75)	-0.008 (-0.70)	-0.011 (-0.88)
ACMEET	-0.080 (-2.52)**	-0.079 (-2.50)**	-0.081 (-2.55)**	-0.076 (-2.44)**	-0.076 (-2.42)**	-0.077 (-2.48)**	-0.076 (-2.42)**	-0.076 (-2.41)**	-0.069 (-2.21)**	-0.070 (-2.25)**
INOWN	-0.001 (-1.05)	-0.001 (-1.08)	-0.001 (-1.07)	-0.001 (-1.11)	-0.001 (-1.11)	-0.000 (-1.21)	-0.000 (-1.09)	-0.001 (-0.91)	-0.000 (-1.32)	-0.001 (-1.35)
BLOCK	-0.000 (-1.33)	-0.000 (-1.30)	-0.000 (-1.30)	-0.000 (-1.27)	-0.000 (-1.32)	-0.000 (-0.74)	-0.000 (-1.18)	-0.000 (-1.43)	-0.000 (-1.62)	-0.000 (-1.81)*
MTBV	0.011 (1.60)	0.011 (1.57)	0.012 (1.57)	0.011 (1.48)	0.011 (1.51)	0.012 (1.69)*	0.012 (1.68)*	0.011 (1.47)	0.011 (1.58)	0.011 (1.57)
CFO	-0.000 (-0.94)	-0.000 (-0.91)	-0.000 (-0.89)	-0.000 (-0.83)	-0.000 (-0.86)	-0.000 (-1.33)	-0.000 (-1.07)	-0.000 (-0.82)	-0.000 (-0.73)	-0.000 (-0.59)
LEVERG	0.174 (3.44)***	0.174 (3.44)**	0.176 (3.46)**	0.177 (3.48)**	0.175 (3.45)**	0.172 (3.41)**	0.174 (3.44)**	0.174 (3.43)**	0.215 (3.94)***	0.206 (3.85)***
LNASSET	0.001 (0.20)	0.001 (0.17)	0.001 (0.18)	0.000 (0.11)	0.001 (0.15)	-0.002 (-0.36)	-0.000 (-0.06)	0.002 (0.34)	0.003 (0.53)	0.005 (0.93)
Adj. R_2	0.114	0.113	0.115	0.115	0.114	0.128	0.118	0.115	0.136	0.132

Note:
* are significant at p-value <0.10, ** are significant at p-value <0.05 and *** at p-value <0.01.

6.4 The additional analyses

This section details the additional analyses that were conducted in order to see whether the primary results are robust to the specifications of different models. The tests contain the heteroscedasticity and multicollinearity tests, various regression estimators, new definitions for AC and BoD variables, the other control variables, the two-stage least-squares (2SLS) regression and endogeneity.

6.4.1 Heteroscedasticity and multicollinearity tests

To confirm whether heteroscedasticity exists, table No.6.4 provide the results of the heteroscedasticity test by using the Breush-Pagan or Cook-Weisberg test. Most of the models indicate a significant p value between $p < 0.05$ and $p < 0.01$, which indicates that heteroscedasticity exists. The results of the tolerance test and VIF value are displayed in table No.6.5. As all the variables have values of VIF thatare between 1.10 to 2.80 and the values of tolerance are higher than 0.10, this indicates that there is no problem of multicollinearity.

6.4.2 Various regression estimators

Due to the problem of heteroscedasticity, the main analyses were regressed using least square regression with a robust standard error. As the benchmark of comparison, in this section, the results of the multivariate regression analysis were regressed using GLS regression, which is effective in controlling for heteroscedasticity and autocorrelation. The results are displayed in Table No.6.6. As can be seen, the results of GLS regression analysis are relatively consistent with the main results.

6.4.3 New definitions for AC and BoD variables

In order to check whether the alternative definitions influence the main findings, as in the previous chapter, this study provides alternative definitions of the AC and BoD variables.

Following DeFond et al. (2005) and Abbott et al.'s (2003b) approaches, the new definitions for the variables of the BoD and AC (BRDSIZE, BRDNED, ACEXP, ACMEET, and ACIND*)* are as follows:

1. BRDSIZE_1 is coded as 1 if the size of the company's board is less than the sample median, and zero if otherwise.

2. BRDNED_1 is coded as 1 if 60 % of the directors of the company are independent, and zero if otherwise.

3. ACEXP_1, and coded as 1 if the AC had at least one director is equipped with accounting or finance expertise, and zero if otherwise.

4. ACMEET_1 is coded as 1 if the frequency of the AC meeting is larger than the sample median and zero if otherwise.

5. ACIND_1 is defines the proportion of independent NED of the AC.

As can be seen from Table No.6.7, the results of the alternative definitions are relatively consistent with the main findings except for BRDNED_1, which is found to be insignificantly and positively related across all the DACC measures in all the models. Furthermore, in contrast to the main findings, BRDSIZE_1 is found positively correlated with all the DACC measures in all the models. ACIND1 and ACEXP_1 are found negatively correlated with all the measures. Similarly, ACMEET is found negatively correlated with all the measures except with DACC_MJM in model (11). The other results remain unchanged, as documented in the main findings.

The negative relationship between DACC and ACIND_1 indicates that companies whose AC has a higher proportion of independent NEDs is likely to be associated with lower EM, although this is not the case for ACs consisting solely of independent members. This may suggest the importance of the role of the executive members and their contribution to the effective AC. Overall, the results that have been obtained for the auditor's industry specialist variables hold for selected models.

6.4.4 The two-stage least-squares (2SLS) regression and endogeneity

The main results indicate that EM levels reduce when companies hire auditors' industry specialists, and this is consistent with the claim that the auditors' industry specialists use their industry competency (specialist skills) to constrain opportunistic earnings. However, it can be claimed that since the NEDs have difficulty in differentiating non-discretionary and discretionary accruals, it is possible that the companies will select the auditor's industry specialist to signal that EM is constrained by the presence of higher AQ and not necessarily due to their competency (specialist skills) (Francis et al., 1999).

Also, Caramanis and Lennox (2008) claim that companies which have an interest in managing earnings would be an incentive to hire lower auditor effort (AFs), which indicates a negative relationship between EM and AFs. Moreover, previous literature indicates that the characteristics of the CG are associated with the problem of endogeneity. Therefore, taking into account all of these possibilities, this study tests whether the models of EM containing these variables are subject to the problem of endogeneity.

The Durbin-Wu-Hausman test was performed on the selected models. The findings are displayed in Table No.6.8. The null hypotheses are the characteristics of the BoDs and include (BDRNED, BRDSIZE, BRDEXP, and BRDMEET), the characteristics of ACs include (ACIND_1, ACSIZE, ACEXP, and ACMEET), LNAFEE, SPECLST_P_S, and SPECLST_WEIGHTED are exogeneous. If the F statistic is significant, then the null hypothesis would be rejected, which indicates that endogeneity exists.

As can be seen from Table No.6.8, the values of the F statistic from the AC and BoD variables and LNAFEE, SPECLST_P_S, and SPECLST_WEIGHTED are insignificant in all models, which indicates that there is no endogeneity.

Table 6.4: Test of heteroscedasticity for EM model				
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity				
H0: variance of the residual term is constant Reject H0 if p value is significant				
$DACC = \beta_0 + \beta_1 ACEXP + \beta_2 ACIND + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 AQ + \beta_6 BRDEXP + \beta_7 BRDMEET + \beta_8 BRDNED + \beta_9 BRDSIZE + \beta_{10} BLOCK + \beta_{11} CFO + \beta_{12} INOWN + \beta_{13} LEVERG + \beta_{14} LNASSET + \beta_{15} MTBV + \varepsilon$				
Model	Dependent variable (DACC)	Audit quality proxy (AQ)	chi2(1)	Prob > chi2
(1)	DACC_JM	LNAFEE	2.09	0.148
(2)	DACC_JM	LNNAF	1.07	0.302
(3)	DACC_JM	LNTOTALFEES	0.02	0.892
(4)	DACC_JM	FEERATIO 1	10.18	0.001
(5)	DACC_JM	FEERATIO 2	16.92	0.000
(6)	DACC_JM	SPECLST_M_S_LEADER	5.63	0.017
(7)	DACC_JM	SPECLST_MS_30	0.01	0.940
(8)	DACC_JM	SPECLST_M_S	0.16	0.685
(9)	DACC_JM	SPECLST_P_S	17.61	0.000
(10)	DACC_JM	SPECLST_WEIGHTED	21.74	0.000
(11)	DACC_MJM	LNAFEE	2.96	0.085
(12)	DACC_MJM	LNNAF	0.78	0.378
(13)	DACC_MJM	LNTOTALFEES	0.01	0.918
(14)	DACC_MJM	FEERATIO 1	12.16	0.000
(15)	DACC_MJM	FEERATIO 2	19.28	0.000
(16)	DACC_MJM	SPECLST_M_S_LEADER	6.12	0.013
(17)	DACC_MJM	SPECLST_MS_30	0.04	0.839
(18)	DACC_MJM	SPECLST_M_S	0.22	0.642
(19)	DACC_MJM	SPECLST_P_S	22.34	0.000
(20)	DACC_MJM	SPECLST_WEIGHTED	28.45	0.000
(21)	DACC_ROA	LNAFEE	3.39	0.065
(22)	DACC_ROA	LNNAF	0.38	0.538
(23)	DACC_ROA	LNTOTALFEES	0.05	0.816
(24)	DACC_ROA	FEERATIO 1	8.97	0.003
(25)	DACC_ROA	FEERATIO 2	14.47	0.000
(26)	DACC_ROA	SPECLST_M_S_LEADER	6.000	0.120
(27)	DACC_ROA	SPECLST_MS_30	0.11	0.742
(28)	DACC_ROA	SPECLST_M_S	0.28	0.593
(29)	DACC_ROA	SPECLST_P_S	14.11	0.000
(30)	DACC_ROA	SPECLST_WEIGHTED	19.37	0.000

Table 6.5: Value of the tolerance and VIF for the EM model														
Model	(1)		(2)		(3)		(4)		(5)		(8)		(9)	
Variable	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance
LNAFEE	1.05	0.950												
LNNAF			1.08	0.920										
LNTOTALFEES					1.05	0.952								
FEERATIO 1							1.10	0.903						
FEERATIO 2									1.08	0.923				
SPECLST_M_S											1.50	0.663		
SPECLST_P_S													1.97	0.506
BRDSIZE	1.98	0.505	1.96	0.508	1.96	0.508	1.98	0.503	1.99	0.501	2.01	0.496	1.97	0.508
BRDNED	2.67	0.373	2.69	0.372	2.67	0.373	2.68	0.373	2.67	0.373	2.67	0.373	2.80	0.357
BRDEXP	2.45	0.407	2.43	0.411	2.44	0.409	2.40	0.415	2.41	0.414	2.64	0.378	2.43	0.440
BRDMEET	1.46	0.681	1.47	0.677	1.46	0.681	1.46	0.681	1.47	0.678	1.47	0.678	1.46	0.681
ACSIZE	1.18	0.842	1.19	0.839	1.18	0.843	1.18	0.843	1.19	0.840	1.22	0.815	1.31	0.760
ACIND	2.28	0.438	2.28	0.438	2.28	0.437	2.27	0.440	2.26	0.441	2.30	0.434	2.29	0.436
ACEXP	2.32	0.431	2.31	0.432	2.31	0.432	2.32	0.430	2.33	0.429	2.31	0.432	2.31	0.431
ACMEET	1.34	0.742	1.33	0.749	1.34	0.745	1.33	0.751	1.33	0.750	1.36	0.735	1.39	0.717
INOWN	1.26	0.790	1.26	0.789	1.26	0.791	1.27	0.787	1.27	0.784	1.30	0.764	1.30	0.765
BLOCK	1.76	0.567	1.77	0.562	1.76	0.567	1.78	0.561	1.76	0.566	1.78	0.561	1.78	0.561
MTBV	1.11	0.901	1.11	0.900	1.10	0.901	1.13	0.885	1.12	0.887	1.13	0.879	1.11	0.901
CFO	1.30	0.765	1.32	0.756	1.31	0.758	1.33	0.749	1.32	0.756	1.33	0.748	1.31	0.763
LEVERG	1.32	0.754	1.32	0.754	1.32	0.754	1.33	0.748	1.32	0.753	1.32	0.754	1.60	0.622
LNASSET	2.39	0.418	2.40	0.416	2.39	0.417	2.42	0.412	2.40	0.416	2.52	0.396	2.48	0.402
Mean VIF	1.72		1.73		1.72		1.73		1.73		1.79		1.83	

Table 6.6: The results of Generalized least square (GLS) estimator regression for the EM model										
Variables	Coefficient (t-statistics)									
	(1) DACC_JM									
Model	LNAFEE (1)	LNNAF (2)	LNTOTALFEES (3)	FEERATIO 1 (4)	FEERATIO 2 (5)	SPECLST_M_S_LEADER (6)	SPECLST_MS_30 (7)	SPECLST_M_S (8)	SPECLST_P_S (9)	SPECLST_WEIGHTED (10)
Cons	0.519 (3.12)**	0.509 (1.79)*	0.567 (3.35)**	0.517 (1.62)	0.512 (1.84)*	0.466 (2.80)**	0.488 (1.70)*	0.526 (1.82)*	0.406 (1.27)	0.431 (1.33)
LNAFEE	-0.003 (-0.23)									
LNNAF		0.000 (0.02)								
LNTOTALFEES			0.002 (0.19)							
FEERATIO 1				-0.016 (-0.25)						
FEERATIO 2					-0.003 (-0.12)					
SPECLST_M_S_LEADER						0.018 (1.14)				
SPECLST_MS_30							0.011 (0.45)			
SPECLST_M_S								-0.017 (-0.43)		
SPECLST_P_S									-0.091 (-2.64)**	
SPECLST_WEIGHTED										-0.177 (-2.63)**
BRDSIZE	0.012 (1.24)	0.011 (1.48)	0.010 (1.05)	0.011 (1.39)	0.012 (1.30)	0.011 (1.65)*	0.012 (1.62)	0.011 (1.42)	0.013 (1.58)	0.012 (1.37)

Table 6.6: (continued)										
BDRNED	-0.016 (-1.93)*	-0.016 (-2.42)**	-0.016 (-2.80)**	-0.016 (-2.44)**	-0.016 (-2.84)**	-0.015 (-2.79)**	-0.016 (-2.53)**	-0.016 (-2.74)**	-0.014 (-2.25)**	-0.016 (-2.41)**
BRDEXP	0.000 (0.02)	0.001 (0.07)	0.002 (0.29)	0.001 (0.06)	0.001 (0.09)	0.002 (0.23)	0.001 (0.15)	-0.000 (-0.04)	0.003 (0.36)	0.003 (0.36)
BRDMEET	-0.019 (-1.44)	-0.019 (2.27)**	-0.016 (2.33)**	-0.019 (2.29)	-0.019 (2.29)**	-0.014 (-0.94)	-0.018 (-1.26)	-0.019 (-1.37)	-0.019 (-1.34)	-0.022 (-1.62)*
ACSIZE	-0.018 (-1.13)	-0.018 (-1.36)	-0.020 (-1.66)*	-0.018 (-1.85)**	-0.017 (-1.34)	-0.016 (-1.77)*	-0.017 (-1.79)*	-0.019 (-2.13)	-0.004 (-0.47)	-0.007 (-0.68)
ACIND	-0.012 (-0.58)	-0.012 (-0.70)	-0.011 (-0.63)	-0.012 (-0.92)	-0.012 (-0.70)	-0.015 (-1.32)	-0.013 (-1.24)	-0.010 (-1.01)	-0.011 (-0.97)	-0.010 (-0.91)
ACEXP	-0.016 (-1.32)	-0.017 (-1.98)**	-0.015 (-1.78)*	-0.017 (-2.24)**	-0.017 (-1.82)*	-0.015 (-2.31)**	-0.016 (-2.30)**	-0.017 (-2.29)**	-0.016 (-1.96)**	-0.019 (-2.49)**
ACMEET	-0.090 (2.76)**	-0.088 (-1.50)	-0.105 (-1.64)	-0.088 (-1.43)	-0.088 (-1.57)	-0.088 (-1.41)	-0.087 (-1.38)	-0.087 (-1.37)	-0.078 (-1.16)	-0.078 (-1.14)
INOWN	-0.000 (-0.65)	-0.000 (-0.91)	-0.000 (-1.00)	-0.000 (-0.52)	-0.000 (-0.90)	-0.000 (-0.57)	-0.000 (-0.51)	-0.000 (-0.40)	-0.000 (-0.69)	-0.000 (-0.83)
BLOCK	-0.000 (-1.51)	-0.000 (-2.48)**	-0.000 (-2.69)**	-0.000 (-2.46)**	-0.000 (-2.47)**	-0.000 (-1.82)	-0.000 (-2.62)**	-0.000 (-2.76)**	-0.000 (-3.06)**	-0.000 (-5.27)***
MTBV	0.010 (1.39)	0.010 (2.49)**	0.010 (2.54)**	0.010 (2.70)**	0.010 (2.06)**	0.010 (3.19)**	0.010 (3.04)**	0.010 (2.62)**	0.010 (3.02)**	0.010 (2.94)**
CFO	-0.000 (-0.69)	-0.000 (-1.80)*	-0.000 (-1.23)	-0.000 (-0.89)	-0.000 (-1.47)	-0.000 (-0.99)	-0.000 (-0.83)	-0.000 (-0.71)	-0.000 (-0.55)	-0.000 (-0.26)
LEVERG	0.119 (2.31)**	0.119 (2.02)**	0.120 (2.26)**	0.121 (2.10)**	0.119 (2.04)**	0.117 (2.06)**	0.119 (2.01)**	0.119 (2.05)**	0.170 (3.00)**	0.168 (3.51)**
LNASSET	0.004 (0.81)	0.004 (1.11)	0.004 (0.80)	0.004 (0.79)	0.004 (1.16)	0.002 (0.45)	0.004 (0.69)	0.004 (0.96)	0.006 (0.99)	0.010 (1.61)
Adj. R_2	0.110	0.106	0.123	0.094	0.091	0.124	0.100	0.115	0.148	0.146

Table 6.6: (continued)										
Variables	Coefficient (t-statistics)									
	(2) DACC_MJM									
Model	LNAFEE (11)	LNNAF (12)	LNTOTALFEES (13)	FEERATIO 1 (14)	FEERATIO 2 (15)	SPECLST_M_S_LEADER (16)	SPECLST_MS_30 (17)	SPECLST_M_S (18)	SPECLST_P_S (19)	SPECLST_WEIGHTED (20)
Cons	0.496 (3.19)**	0.509 (3.09)**	0.566 (3.35)**	0.517 (3.18)**	0.512 (3.17)**	0.467 (2.81)**	0.488 (2.92)**	0.526 (3.18)**	0.406 (2.47)**	0.431 (2.70)**
LNAFEE	0.002 (0.15)									
LNNAF		0.000 (0.02)								
LNTOTALFEES			0.002 (0.16)							
FEERATIO 1				-0.016 (-0.31)						
FEERATIO 2					-0.003 (-0.18)					
SPECLST_M_S_LEADER						0.018 (0.95)				
SPECLST_MS_30							0.010 (0.46)			
SPECLST_M_S								-0.017 (-0.41)		
SPECLST_P_S									-0.091 (-2.29)**	
SPECLST_WEIGHTED										-0.177 (-2.57)**
BRDSIZE	0.006 (0.61)	0.012 (1.23)	0.010 (1.02)	0.011 (1.19)	0.012 (1.20)	0.012 (1.23)	0.012 (1.27)	0.011 (1.15)	0.013 (1.41)	0.012 (1.24)
BRDNED	-0.012 (-1.56)	-0.012 (-1.95)*	-0.016 (-2.00)**	-0.016 (-1.98)**	-0.016 (-2.00)**	-0.015 (-1.83)*	-0.016 (-1.98)**	-0.016 (-2.03)**	-0.014 (-1.85)*	-0.016 (-2.06)**

Table 6.6: (continued)										
BRDEXP	0.001 (0.15)	0.001 (0.07)	0.002 (0.26)	0.001 (0.06)	0.000 (0.08)	0.002 (0.26)	0.001 (0.17)	-0.000 (-0.05)	0.003 (0.37)	0.003 (0.37)
BRDMEET	-0.016 (-1.35)	-0.019 (-1.43)	-0.016 (-1.27)	-0.019 (-1.44)	-0.019 (-1.44)	-0.014 (-0.99)	-0.018 (-1.34)	-0.019 (-1.46)	-0.019 (-1.50)	-0.022 (-1.70)*
ACSIZE	-0.012 (-0.83)	-0.018 (-1.13)	-0.027 (-1.29)	-0.018 (-1.13)	-0.017 (-1.12)	-0.016 (-1.02)	-0.017 (-1.10)	-0.019 (-1.19)	-0.004 (-0.28)	-0.007 (-0.46)
ACIND	-0.007 (-0.35)	-0.012 (-0.57)	-0.011 (-0.49)	-0.012 (-0.56)	-0.012 (-0.56)	-0.015 (-0.68)	-0.013 (-0.63)	-0.010 (-0.46)	-0.011 (-0.53)	-0.010 (-0.47)
ACEXP	-0.013 (-1.07)	-0.017 (-1.34)	-0.015 (-1.25)	-0.017 (-1.36)	-0.017 (-1.36)	-0.015 (-1.18)	-0.017 (-1.32)	-0.017 (-1.34)	-0.016 (-1.29)	-0.019 (-1.55)
ACMEET	-0.088 (-2.89)**	-0.088 (-2.74)**	-0.105 (-3.12)**	-0.088 (-2.74)**	-0.088 (-2.74)**	0.088 (2.76)**	-0.087 (-2.73)**	-0.087 (-2.72)**	-0.078 (-2.46)**	-0.078 (-2.47)**
INOWN	-0.000 (-1.49)	-0.000 (-0.65)	-0.000 (-0.70)	-0.000 (-0.67)	-0.000 (-0.66)	-0.000 (-0.74)	-0.000 (-0.66)	-0.000 (-0.56)	-0.000 (-1.97)	-0.000 (-1.08)
BLOCK	-0.000 (-1.47)	-0.000 (-1.51)	-0.000 (-1.69)*	-0.000 (-1.48)	-0.000 (-1.51)	-0.000 (-1.11)	-0.000 (-1.42)	-0.000 (-1.56)	-0.000 (-1.86)*	-0.000 (-2.24)**
MTBV	0.009 (1.31)	0.010 (1.38)	0.010 (1.38)	0.010 (1.33)	0.010 (1.35)	0.010 (1.44)	0.011 (1.42)	0.010 (1.30)	0.010 (1.37)	0.010 (1.37)
CFO	-0.000 (-0.04)	-0.000 (-0.70)	-0.000 (-0.69)	-0.000 (-0.69)	-0.000 (-0.67)	-0.000 (-0.92)	-0.000 (-0.72)	-0.000 (-0.62)	-0.000 (-0.44)	-0.000 (-0.17)
LEVERG	0.141 (2.92)**	0.119 (2.30)**	0.120 (2.33)**	0.120 (2.32)**	0.119 (2.31)**	0.118 (2.29)**	0.119 (2.31)**	0.119 (2.30)**	0.170 (3.07)**	0.168 (3.11)*
LNASSET	0.002 (0.38)	0.004 (0.81)	0.004 (0.81)	0.004 (0.77)	0.004 (0.79)	0.002 (0.43)	0.004 (0.66)	0.005 (0.88)	0.006 (1.25)	0.010 (1.86)*
Adj. R_2	0.121	0.106	0.123	0.094	0.088	0.124	0.100	0.115	0.157	0.146

Table 6.6: (continued)										
Variables	Coefficient (t-statistics)									
	(3) DACC_ROA									
Model	LNAFEE (21)	LNNAF (22)	LNTOTALFEES (23)	FEERATIO 1 (24)	FEERATIO 2 (25)	SPECLST_M_S_LEADER (26)	SPECLST_MS_30 (27)	SPECLST_M_S (28)	SPECLST_P_S (29)	SPECLST_WEIGHTED (30)
Cons	0.543 (3.33)**	0.535 (3.30)**	0.553 (3.38)**	0.539 (3.38)**	0.529 (3.34)**	0.454 (2.79)**	0.478 (2.92)**	0.548 (3.38)**	0.438 (2.70)**	0.470 (2.96)**
LNAFEE	-0.006 (-0.49)									
LNNAF		-0.004 (-0.34)								
LNTOTALFEES			-0.007 (-0.68)							
FEERATIO 1				-0.036 (-0.67)						
FEERATIO 2					-0.008 (-0.56)					
SPECLST_M_S_LEADER						0.029 (1.57)				
SPECLST_MS_30							0.022 (0.96)			
SPECLST_M_S								-0.028 (-0.67)		
SPECLST_P_S									-0.074 (-1.90)**	
SPECLST_WEIGHTED										-0.119 (-1.74)*
BRDSIZE	-0.000 (-0.10)	-0.001 (-0.15)	-0.001 (-0.12)	-0.001 (-0.20)	-0.002 (-0.20)	-0.001 (-0.13)	-0.000 (-0.04)	-0.002 (-0.24)	0.000 (0.00)	-0.001 (-0.15)
BRDNED	-0.005 (-0.62)	-0.005 (-0.62)	-0.004 (-0.59)	-0.005 (-0.67)	-0.006 (-0.72)	-0.003 (-0.46)	-0.005 (-0.67)	-0.006 (-0.78)	-0.004 (-0.58)	-0.005 (-0.72)

Table 6.6: (continued)										
BRDEXP	-0.006 (-0.68)	-0.006 (-0.64)	-0.006 (-0.70)	-0.005 (-0.61)	-0.005 (-0.56)	-0.002 (-0.26)	-0.019 (-1.47)	-0.007 (-0.75)	-0.003 (-0.34)	-0.004 (-0.38)
BRDMEET	-0.022 (-1.65)*	-0.022 (-1.67)*	-0.022 (-1.66)*	-0.021 (-1.66)*	-0.022 (-1.65)*	-0.014 (-0.96)	-0.019 (-0.47)	-0.022 (-1.69)*	-0.022 (-1.70)*	-0.024 (-1.82)*
ACSIZE	-0.013 (-0.87)	-0.013 (-0.83)	-0.013 (-0.86)	-0.014 (-0.87)	-0.013 (-0.84)	-0.010 (-0.70)	-0.012 (-0.82)	-0.015 (-0.99)	-0.002 (-0.16)	-0.006 (-0.40)
ACIND	-0.003 (-0.17)	-0.003 (-0.16)	-0.003 (-0.16)	-0.002 (-0.13)	-0.003 (-0.13)	-0.008 (-0.35)	-0.006 (-0.28)	-0.000 (-0.01)	-0.002 (-0.12)	-0.001 (-0.09)
ACEXP	-0.008 (-0.71)	-0.009 (-0.74)	-0.008 (-0.72)	-0.009 (-0.80)	-0.010 (-0.80)	-0.006 (-0.50)	-0.008 (-0.72)	-0.009 (-0.75)	-0.008 (-0.70)	-0.010 (-0.88)
ACMEET	-0.081 (-2.52)**	-0.079 (-2.50)**	-0.081 (-2.52)**	-0.076 (-2.44)**	-0.076 (-2.42)**	-0.077 (-2.48)**	-0.096 (-2.42)**	-0.076 (-2.41)**	-0.069 (-2.21)**	-0.070 (-2.25)**
INOWN	-0.001 (-1.05)	-0.001 (-1.08)	-0.001 (-1.07)	-0.001 (-1.11)	-0.001 (-1.11)	-0.000 (-1.21)	-0.000 (-1.09)	-0.000 (-1.91)	-0.001 (-1.32)	-0.001 (-1.35)
BLOCK	-0.000 (-1.33)	-0.000 (-1.30)	-0.000 (-1.30)	-0.000 (-1.27)	-0.000 (-1.32)	-0.000 (-1.74)	-0.000 (-1.18)	-0.000 (-1.43)	-0.000 (-1.62)	-0.000 (-1.81)*
MTBV	0.011 (1.60)	0.012 (1.57)	0.012 (1.57)	0.011 (1.46)	0.011 (1.51)	0.012 (1.69)*	0.012 (1.68)	0.011 (1.47)	0.011 (1.58)	0.011 (1.57)
CFO	-0.000 (-0.94)	-0.000 (-0.91)	-0.000 (-0.89)	-0.000 (-0.83)	-0.000 (-0.86)	-0.000 (-1.33)	-0.000 (-1.07)	-0.000 (-0.82)	-0.000 (-0.73)	-0.000 (-0.59)
LEVERG	0.175 (3.44)**	0.175 (3.44)**	0.176 (3.46)**	0.177 (3.48)***	0.175 (3.45)**	0.172 (3.41)**	0.174 (3.44)**	0.174 (3.43)**	0.215 (3.94)***	0.207 (3.85)***
LNASSET	0.001 (0.20)	0.000 (0.17)	0.001 (0.18)	0.001 (0.11)	0.001 (0.15)	-0.001 (-0.36)	-0.00 (-0.06)	0.002 (0.34)	0.003 (0.55)	0.005 (0.93)
Adj. R_2	0.148	0.094	0.118	0.097	0.072	0.181	0.127	0.149	0.136	0.164
*** are significant at p<0.01, ** are significant at p<0.05 and *at p<0.10.										

Table 6.7: The results of EM model for the different test variable definitions (N=148)									
Variables	Coefficient (z-statistics)								
	DACC_JM			DACC_MJM			DACC_ROA		
Model	LNAFEE (1)	SPECLST_P_S (9)	SPECLST_WEIGHTED (10)	LNAFEE (11)	SPECLST_P_S (19)	SPECLST_WEIGHTED (20)	LNAFEE (21)	SPECLST_P_S (29)	SPECLST_WEIGHTED (30)
Cons	0.194 (2.34)**	0.142 (1.60)	0.161 (1.83)*	0.149 (1.95)*	0.111 (1.35)	0.132 (1.60)	0.211 (2.38)**	0.165 (1.92)*	0.184 (2.16)**
LNAFEE	-0.001 (-0.10)			0.005 (0.52)			-0.003 (-0.25)		
SPECLST_P_S		-0.125 (3.04)**			-0.118 (3.12)**			-0.103 (2.61)**	
SPECLST_WEIGHTED			-0.207 (-2.90)**			-0.177 (-2.66)**			-0.147 (-2.13)**
BRDSIZE_1	0.018 (1.15)	0.020 (1.18)	0.014 (0.82)	0.014 (0.96)	0.017 (1.06)	0.011 (0.71)	0.017 (0.99)	0.018 (1.10)	0.013 (0.82)
BRDNED_1	0.004 (0.28)	0.007 (0.46)	0.008 (0.48)	0.001 (0.08)	0.007 (0.46)	0.007 (0.46)	0.003 (0.16)	0.004 (0.27)	0.004 (0.27)
BRDEXP	-0.005 (-0.78)	0.000 (0.02)	-0.003 (-0.50)	-0.003 (-0.45)	0.002 (0.29)	-0.001 (-0.26)	-0.006 (-0.86)	-0.001 (-0.19)	-0.004 (-0.67)
BRDMEET	-0.020 (-2.29)**	-0.023 (-1.70)*	-0.025 (-1.84)*	-0.016 (-1.99)**	-0.018 (-1.51)	-0.020 (-1.62)	-0.019 (-1.48)	-0.021 (-1.68)*	-0.023 (-1.75)*
ACSIZE	-0.013 (-0.96)	0.013 (0.19)	-0.001 (-0.08)	-0.009 (-0.71)	0.006 (0.41)	0.001 (0.06)	-0.013 (-0.86)	-0.000 (-0.00)	-0.005 (-0.35)
ACIND_1	-0.013 (-1.30)	-0.013 (-1.77)*	-0.012 (-1.71)*	-0.011 (-1.23)	-0.011 (-1.60)	-0.011 (-1.53)	-0.008 (-1.09)	-0.009 (-1.28)	-0.009 (-1.22)
ACEXP_1	-0.016 (-0.90)	-0.018 (-1.10)	-0.019 (-1.20)	-0.014 (-0.85)	-0.017 (-1.13)	-0.018 (-1.20)	-0.024 (-1.46)	-0.025 (-1.57)	-0.025 (-1.62)

Table 6.7: (continued)									
ACMEET_1	-0.003 (-0.19)	-0.013 (-0.76)	-0.006 (-0.39)	0.000 (0.02)	-0.010 (-0.64)	-0.004 (-0.23)	-0.007 (-0.45)	-0.015 (-0.94)	-0.009 (-0.59)
INOWN	-0.000 (-1.11)	-0.000 (-1.54)	-0.000 (-1.48)	-0.000 (-2.08)**	-0.001 (-2.25)**	-0.001 (-2.12)**	-0.001 (-1.12)	-0.000 (-1.58)	-0.000 (-1.46)
BLOCK	-0.000 (-1.80)*	-0.000 (-1.80)*	-0.000 (-2.10)**	-0.000 (-1.59)	-0.000 (-1.75)*	-0.000 (-1.95)*	-0.000 (-1.12)	-0.000 (-1.62)	-0.000 (-1.75)*
MTBV	0.013 (1.99)**	0.013 (1.80)*	0.013 (1.82)*	0.012 (1.89)*	0.012 (1.71)*	0.012 (1.72)*	0.014 (1.91)*	0.014 (1.95)*	0.014 (1.96)*
CFO	-0.000 (-0.26)	0.000 (0.13)	0.000 (0.30)	0.000 (0.22)	0.000 (0.75)	0.000 (0.85)	-0.000 (-0.70)	-0.000 (-0.38)	-0.000 (-0.30)
LEVERG	0.141 (1.92)*	0.203 (3.70)***	0.189 (3.53)**	0.159 (2.26)**	0.218 (4.32)***	0.201 (4.02)***	0.177 (4.53)**	0.228 (4.33)***	0.211 (4.07)***
LNASSET	0.000 (0.02)	0.004 (0.74)	0.007 (1.36)	-0.000 (-0.49)	0.001 (0.36)	0.004 (0.89)	-0.002 (-0.56)	0.000 (0.05)	0.003 (0.47)
Adj. R^2	0.138	0.103	0.098	0.158	0.126	0.109	0.187	0.138	0.124
*** are significant at p<0.01, ** are significant at p<0.05 and *at p<0.10.									

Table 6.8: Test of the EM model with the endogeneity test

Durbin-Wu-Hausman Test
H0 = the residual of the characteristics of the BODs and ACs include (BRDSIZE, BRDEXP, BRDMEET, and BDRNED, ACSIZE, ACEXP, ACMEET, and ACIND_1), LNNAF, SPECLST_P_S, and SPECLST_WEIGHTED are exogenous
Reject H0 if F statistic significant

Variables	Chi2 (1)								
	DACC_JM			DACC_MJM			DACC_ROA		
Model	LNAFEE (1)	SPECLST_P_S (9)	SPECLST_WEIGHTED (10)	LNAFEE (11)	SPECLST_P_S (19)	SPECLST_WEIGHTED (20)	LNAFEE (21)	SPECLST_P_S (29)	SPECLST_WEIGHTED (30)
LNAFEE	1.574 (p=0.209)			1.614 (p=0.203)			1.404 (p=0.235)		
SPECLST_P_S		0.104 (p=0746)			0.104 (p=0.746)			0.194 (p=0.659)	
SPECLST_WEIGHTED			0.063 (p=0.801)			0.065 (p=0.698)			0.034 (p=0.852)
BRDSIZE	0.114 (p=0735)	1.108 (p=0.292)	1.872 (p=0.171)	0.503 (p=0.478)	1.108 (p=0.292)	1.588 (p=0.207)	0.098 (p=0.753)	2.049 (p=0.152)	0.910 (p=0.339)
BRDNED	0.211 (p=0.645)	1.399 (p=0.236)	1.932 (p=0.164)	0.277 (p=0.598)	1.399 (p=0.236)	1.760 (p=0.184)	0.209 (p=0.647)	2.239 (p=0.134)	1.183 (p=0.276)
BRDEXP	0.244 (p=0.621)	1.402 (p=0.236)	1.937 (p=0.164)	0.498 (p=0.480)	1.402 (p=0.236)	1.759 (p=0.184)	0.227 (p=0.633)	2.213 (p=0.136)	1.181 (p=0.277)
BRDMEET	0.001 (p=0.967)	0.283 (p=0.594)	0.211 (p=0.645)	0.543 (p=0.461)	0.283 (p=0.594)	0.115 (p=0.734)	0.000 (p=0.983)	0.288 (p=0.590)	0.107 (p=0.742)
ACSIZE	4.196 (p=101)	0.003 (p=0.951)	0.058 (p=0.809)	0.321 (p=0.570)	0.003 (p=0.951)	0.161 (p=0.687)	2.169 (p=0.140)	0.003 (p=0.954)	0.283 (p=0.594)
ACIND_1	0.516 (p=0.472)	0.024 (p=0.875)	0.055 (p=0.813)	0.492 (p=0.482)	0.024 (p=0.875)	0.203 (p=0.652)	0.252 (p=0.615)	0.027 (p=0.842)	0.235 (p=0.627)
ACEXP	0.347 (p=0.555)	0.134 (p=0.713)	0.000 (p=0.996)	0.412 (p=0.520)	0.134 (p=0.713)	0.001 (p=0.965)	0.162 (p=0.687)	0.171 (p=0.678)	0.003 (p=0.956)
ACMEET	1.667 (p=0.196)	0.001 (p=0.979)	0.116 (p=733)	0.282 (p=0.595)	0.001 (p=0.979)	0.356 (p=0.566)	0.895 (p=0.344)	0.000 (p=0.995)	0.421 (p=0.516)

6.5 The summary

This chapter shows the empirical findings on the relationship between the effectiveness of ACs and BoDs characteristics and AQ in constraining EM. The effectiveness of the AC and BoD is measured based on size, number of independent members, financial expertise and meeting frequency. The AQ proxies are surrogates by auditors' industry specialist, AFs, and non-audit services fees. EM is measured by the absolute value of the discretionary accruals using the performance-adjusted discretionary accruals, Jones model and the modified Jones model.

The multivariate regressions conducted on the sample of 148 firm-year observations indicate that companies hiring auditors' industry specialists and paying higher AFs are less likely to manage earnings. These results are robust to the specifications of various models. The negative relationship between discretionary accruals and AFs may indicate that the effort of the auditor, which is measured by the audit hours, indirectly minimizes opportunistic earnings between managers, because of their concern that such measures may be discovered by the extensive efforts of the auditor. This claim is consistent with Caramanis and Lennox (2008) who indicates that higher audit hours reduce EM.

With regard to measures of the auditor independence, there is no supporting evidence that non-audit services fees are associated with EM. Moreover, the result of the auditor's industry specialists is significant only with respect to the complementary (SPECLST_WEIGHTED) and portfolio (SPECLST_P_S) approaches. Previously, Krishnan (2001) argued that the portfolio approach is better at capturing the efforts of the auditors' industry specialists to differentiate their products rather than the industry market share approach. The complementary approach, however, captures the complementary effects between both the portfolio approaches and market share (Neal and Riley, 2004).

In contrast to expectations regarding the effectiveness of the AC and BoDs in constraining opportunistic earnings, the current study finds no evidence that the size, number of the independent members, financial expertise and meeting frequency affect the extent of manipulation of earnings. It may be due to the fact that the monitoring characteristics of the ACs and BoDs are offset by the increased AQ. The summary of the results and hypothesis are displayed in Table No.6.9.

Hypothesis 24 predicts a positive relationship between frequency of the meeting of the AC and the engagement of industry-specialist auditors. The results do not support this hypothesis. The negative relationship with the engagement of industry-specialist auditors indicates that the ACs which have lower frequency of meetings are more likely to engage industry specialist auditors.

Hypothesis 25 predicts a negative relationship between the independent board and EM. There is no evidence that the number of independent members affects the extent of the manipulation of earnings.

Hypothesis 26 predicts a positive relationship between the board's size and EM. There is no evidence that the size of the board affects the extent of manipulation of earnings.

Hypothesis 27 predicts a negative relationship between the boards' meeting frequency and EM. There is no evidence that the meeting frequency affects the extent of manipulation of earnings.

Hypothesis 28 predicts a negative relationship between the board's financial expertise and EM. There is no evidence that financial expertise affects the extent of manipulation of earnings.

Hypothesis 29 predicts a negative relationship between the solely independent AC and EM. There is no evidence that a solely independent AC affects the extent of manipulation of earnings.

Hypothesis 30 predicts a negative relationship between the AC's size and EM. There is no evidence that the size of the AC affects the extent of manipulation of earnings.

Hypothesis 31 predicts a negative relationship between the AC's meeting frequency and EM. There is no evidence that the AC's meeting frequency affects the extent of manipulation of earnings.

Hypothesis 32 predicts a negative relationship between the AC's financial expertise and EM. There is no evidence that the AC's financial expertise affects the extent of manipulation of earnings.

Hypothesis 33 predicts a positive relationship between the non audit services fees and EM. There is no evidence that the AC's financial expertise affects the extent of manipulation of earnings. As a result, there is no statistically significant relationship between EM and non-audit services.

Consistent with hypothesis 34 that there is a negative relationship between the industry-specialist auditors and EM, the result indicates that auditor industry specialists provide a higher ability to constrain opportunistic earnings than the non specialist auditor.

Consistent with hypothesis 35 that there is a negative relationship between AFs and EM, the result indicates that companies paying higher AFs are associated with a higher auditor effort, thereby reducing the opportunistic EM because of their concern that it may be discovered by the extensive efforts of the auditor.

Table 6.9: A brief of the hypothesis and the findings – the relationship between the AQ and the characteristics of CG in constraining EM.			
Hypotheses	Findings (Supported/Not supported)	Hypotheses	Findings (Supported/Not supported)
H24: There is a positive relationship between frequency of the meeting of the AC and the engagement of industry-specialist auditors.	Not supported	H25: There is a negative relationship between the independent board and EM.	Not supported
H26: There is a positive relationship between the board's size and EM.	Not supported	H27: There is a negative relationship between the board's meeting frequency and EM.	Not supported
H28: There is a negative relationship between the board's financial expertise and EM.	Not supported	H29: There is a negative relationship between the solely independent AC and EM.	Not supported
H30: There is a negative relationship between the AC's size and EM.	Not supported	H31: There is a negative relationship between the AC's meeting frequency and EM.	Not supported
H32: There is a negative relationship between the AC's financial expertise and EM.	Not supported	H33: There is a positive relationship between the non audit services fees and EM.	Not supported
H34: There is a negative relationship between the industry-specialist auditor and EM.	Supported	H35: There is a negative relationship between AFs and EM.	Supported

Chapter VII:
SUMMARY AND CONCLUSIONS

7.0 Introduction

This final chapter produces the summary and conclusion of the 2 empirical investigations that have been examined in this study. The first investigation take into consideration the relationship between the AQ, AC and BoDs characteristics, while the second investigation dealt with the relationship between the AC and BoDs and the quality of the external auditor in constraining EM. The chapter also details the contribution that it makes, limitations and implications on the investigations, as well as recommendations for future research.

7.1 Summary and conclusion

The issues related to the EM and AQ have been the focus of many regulatory and academic discussions all over the world. The external auditors, AC and BoDs have been recognized as the mechanisms that have the ability to control opportunistic earnings, and therefore directly link with the FRQ, in accordance with the proposition of agency theory. Unfortunately, prior studies are mainly U.S.A – based research where the reputation of the auditor, the structure of the governance and the litigation environment are noticed to be different, and therefore limit the generalizability of the results to other developing countries. The present thesis examines these issues in the context of the Kingdom of Bahrain, based on the Bahrain Stock Exchange (now Bahrain Bourse) between the financial years 2010 and 2013.

Since investors are cannot directly control the EM and AQ, they rely on the external auditors, AC and BoDs to obtain financial statements that are free from any errors, misstatement or fraud. Therefore, in this thesis, there are 3 proxies of the AQ and 8 characteristics of the CG that have been empirically tested.

Consistent with the previous evidence and agency theory regarding the effectiveness of certain characteristics of the AC and BoDs, this study posits that the smaller number of the BoD members, having more independent NEDs, having more regular meetings, and having financial experience are identified as effective BoDs. Similarly, an AC with more members, having more regular meetings, with independent directors, and more financial experience is also defined as an effective AC. Based on the industry specialist auditors, AFs and the hypothesis of signaling or reputation are used as the AQ's proxies. In addition, a Non audit service is substituted for auditor independence, that was observed with skepticism by the regulators, to reduce the auditor objectivity when providing the services of auditing.

Accordingly, the engagement through the use of auditor's specialists in the industry (Carcello and Nagy, 2004; Owhoso et al., 2002; O'Keefe at al., 1994; Bédard and Biggs, 1991), higher AFs (O'Sullivan, 2000; Carcello et al., 2002; Abbott et al., 2003b), and lower Non-audit services fees (Larcker and Richardson, 2004; Raghunandan, 2003; Frankel et al. 2002; Firth, 2002; Sharma and Sidhu, 2001; Wines, 1994) are seen as higher auditor quality or higher AQ. These proxies of the AQ and characteristics of the AC and BoDs are expected to signal to market participants the effectiveness of a particular company in the monitoring of financial reporting, therefore the transfer of the credibility of the company's financial statements.

This study examines two empirical studies. The first study examines the relationship between the effective monitoring characteristics of the AC and BoDs including financial expertise, number of the independent members, frequency of the meeting of AC and BoDs, and size on AQ. Specifically, 3 models of AQ are examined: industry specialist auditors, non audit services, and AFs. From the model of the AFs, this study finds a positive relationship between the independent NEDs on BoD and AFs. This results show that the independent NEDs on boards demand extra effort in audit for ratification of the monitoring function. This result is consistent with the results of Adelopo (2010), Abbot et al. (2003), Carcello et al. (2002), and O'Sullivan (2000).

The other characteristics of the AC and BoD either insignificantly correlated or marginally correlated with AFs. This study conjectures that this may be due to the independent characteristic of the BoD that counteracts the other effective characteristics of the AC and BoD. These results are robust to the specifications of different models and tests.

The results from the model of non audit services fees is the opposite, which indicates that the higher number of independent BoD members is associated with higher non audit services fees. This contrasts with the view that an independent BOD uses its supervisory function to reduce the non audit services as they perceive that higher non audit services fees weaken the auditor independence. This may indicate that the independent board's view of joint provision of non audit services and audit does not necessarily compromise audit independence, but perhaps expands the knowledge of the auditors and improves their judgments, which leads to an increase the AQ (Goldman and Barlev, 1974; Simunic, 1984; Beck et al., 1988; Wallman, 1996; Arrunada, 1999a; 1999b; 2000). However, this result is conditional. It is insignificant when applied to LNTOTALFEES (sum of the total fees) and the LNNAF (levels of non audit services), but there is no statistical evidence found when using the non audit services ratios to measure auditor independence. The other characteristics of CG provide inconsistent support associated with non audit services fees. The results are robust to the specifications of different models and tests.

In association with the model of the auditor industry specialist, the evidence indicates inconsistent results between the effectiveness of the AC and BoD and their engagement of auditor industry specialists in the analysis of year to year. In the pooled sample, when using four out of five auditor industry specialist measures, the results indicate that companies with ACs with less frequency of AC meetings and consisting solely of independent members are associated with more likelihood of employing industry specialist auditors. Whilst significant, these associations are, however, sensitive to the measures of auditor industry expertise, frequencies of ACs meeting, and the new definition of independence variable, therefore the current study cautions against drawing inferences from this result.

The second study examines the roles of the AQ, the ACs and BoDs characteristics in constraining EM. With the purpose of determining financial reporting decisions and the level of opportunistic earnings behavior made by the management, the absolute value of discretionary accruals was used (Becker et al., 1998; Subramanyam 1996; DeFond and Jiambalvo, 1994; Jones 1991). As in previous studies, the absolute values of discretionary accruals were estimated using the performance-adjusted discretionary accruals, Jones model and the modified Jones model. As expected, and consistent with previous United States studies, this study found that companies hiring auditors' industry specialists and paying higher AFs are less likely to be associated with lower levels of discretionary accruals, indicating that a higher AQ constrains opportunistic earnings.

Companies paying higher AFs are associated with a higher auditor effort, thereby reducing the opportunistic EM because of their concern that they may be discovered by the extensive efforts of the auditor. This proposition is consistent with the previous evidence reported by Caramanis and Lennox (2008), who indicate a negative relationship between EM and the hours of audit (effort of audit). The results are robust to the specifications of different models and tests. With regard to the auditor independence, there is no supporting evidence that non-audit services fees are associated with EM. This result contrasts with the evidence documented by Antle et al. (2006), and Ferguson et al. (2004), who indicate the negative and positive relationships between EM and the non-audit services of United Kingdom firms in the periods between 1994 to 2000, and 1996 to 1998 respectively. This may due to the reformation of practices of governance in the United Kingdom resulting from the revision of the United Kingdom CG Code (2010), which was introduced for the first time in July 2003 and placed major emphasis on monitoring functions of the ACs and BoDs. It may also be explained by the developments in studies of Non-audit services. Consistent with this, the first empirical evidence reported in this thesis indicates that the fees of Non-audit services are viewed by independent BoD members as being able to contribute to a higher AQ. This may compensate for the effects of monitoring of Non-audit services on opportunistic earnings. As a result, there is no statistically significant relationship between EM and Non-audit services.

The auditor industry specialist model results seem to be sensitive to the measures of the auditor industry expertise. It indicates a statistically significant relationship with EM when the industry specialist auditor is measured using complementary (SPECLST_WEIGHTED) and portfolio (SPECLST _P_S) approaches, but insignificant association when applying the market share approach. The significant relationship suggests that the auditor industry specialist provides higher ability to constrain opportunistic earnings than the non specialist auditor.

The results for the characteristics of ACs and BoDs indicate no evidence that the size of the board, financial expertise, number of meetings, and number of independent members affect the extent of manipulation of earnings. Similarly, the results of the structure of the ownership also indicate that there is an insignificant relationship with EM. These insignificant relationships may be due to the monitoring characteristics of the ACs and BoDs and institutional investors being offset by the increased AQ. In general, the results may indicate that the auditors are more effective in constraining opportunistic earnings than the ACs and BODs and institutional investors.

With regard to the measures of the AQ, both empirical investigations indicate that the AQ surrogates by industry specialist auditor and Non-audit services fees are sensitive to alternative type of measures. This may support the previous argument that the AQ's measurements are problematic and complex (Jensen and Payne, 2005; Niemi, 2004; Wooten, 2003).

In general, this study concludes that the results confirm agency theory proposition on the characteristics of the independent BoDs that certify their monitoring function by demanding a higher AQ from the auditors, and that higher quality auditors provide higher ability to constrain opportunistic earnings than a lower quality auditor, resulting in the improvement of FRQ. These results are generally consistent with the previous studies made by Caramanis and Lennox, 2008; Cohen et al., 2002.

This result could be attributed to the differences in regulatory environment, national cultures, the relationship between principals and agents, and other institutional factors between the USA, UK and Kingdom of Bahrain. Clark (2004) argues that there are no relationships between principals and agents in South America and Southern Europe and Asia, but it is hard to generalize this concept to the Kingdom of Bahrain, because of many factors including the legal system, corporate governance regulations, culture and the Islamic framework. Furthermore, Benkel et al. (2006) state that the results of previous studies do not necessarily apply to some countries since the CG practices may be different between countries as mentioned in this study. Another possible justification for the difference between the results of this research and those of previous studies is that Bahraini institutional investors do not have the same characteristics, such as culture and experience, as European institutional investors, British institutional investors, or American institutional investors.

7.2 Contributions to Knowledge

The current thesis represents a comprehensive study on the CG, AQ and EM especially in the Kingdom of Bahrain market. Using the current data of the Bahrain Stock Exchange companies for fiscal years from 2010-2013, the first part of the current thesis examines the relationship between the AQ and the characteristics of the CG. The second part of this thesis provides evidence linking CG, AQ and EM. Several proxies were used to measure the AQ, including the use of industry-specialist auditors, non audit services fees, and AFs. The mechanisms of CG are linked to the effects of the ACs and BoD's characteristics and they include the frequency of AC and BoD's meetings, the number of independent members, the size of ACs and BoDs, and financial expertise.

Various contributions to knowledge been made through the present thesis. Firstly, it contributes to the discussion on the importance of the CG and AQ issues subsequent to recent audit failure scandals. The findings from the first empirical investigation indicate that independent BoDs use their supervisory function to demand intensive audit efforts from auditors, resulting in higher AFs and perceived AQ.

The second empirical evidence indicates that the auditors' industry specialists and higher AFs are linked with the reduced manipulations of earnings.

Together, both findings support the agency theory's proposition and the regulatory concern that a higher AQ and the effective BoDs are linked to improve the FRQ and supervision.

Secondly, the current thesis contributes to the growing literature on studies of EM, CG, and AQ. As mentioned in the motivations of the study, most of the previous research in these areas has been conducted in the United States, which provides various auditor incentives, governance structures, institutional settings, and environmental litigation**,** therefore limits the generalizability of the findings to other countries.

In particular, this study expands the previous literature into 5 areas:

1. To the best knowledge of the author, there are no studies that have examined the relationship between the auditors' industry specialist as proxy for AQ and the effectiveness of the AC and BoD in the Kingdom of Bahrain. Prior studies have been conducted in this area by Chen et al. (2005), Beasley and Petroni (2001), and Abbott and Parker (2000) using Australian and United States samples. The investigation in Bahraini companies expands the existing literature by providing evidence of the practice of the CG and various environmental litigation and institutional settings, each of which, it is claimed, can cause quality differences in the audit.

2. None of the previous studies on how the auditors' industry specialists impact the EM and CG have used the complementary approach to calculate the impact of auditors' industry specialists. Most of these studies used the approach of portfolio and market share (Chen et al., 2005; Balsam et al., 2003; Krishnan, 2003a; Beasley and Petroni, 2001; Abbott and Parker, 2000).

3. According to Neal and Riley (2004), the complementary approach, however, captures the complementary effects between both the portfolio share approaches and market share and offers a solution for inconsistencies between these two main approaches.

4. Prior studies that relate to non audit services fees, AFs and CG levels in the United Kingdom have been carried out by Zaman et al. (2011), Adelopo (2010), O'Sullivan and Diacon (2002), O'Sullivan (1999; 2000), and Collier and Gregory (1996). Particularly, Zaman et al. (2011) examine the effect of the effectiveness of the AC and several of the characteristics of the BoD (number of the independent members, duality role and meeting frequency) on non audit services fees and AFs using data from 2001-2004. However, all these studies do not consider the BoD and financial expertise. More recently, Adelopo (2010) investigates the characteristics of CG using the simultaneous equation of the non audit services fees and audit from the FTSE 350 in the periods of two years 2005-2006.

   Collier and Gregory examine the impact of the establishment of AFs and AC, using 1991 data, while O'Sullivan investigates the establishment of the AC and the impact of the number of the independent members on the AC and BoD on AFs, using data from 1992-1995 . Prior United States studies indicate that the BoDs that are financially educated improve the FRQ (Lee, 2008; Agrawal and Chadha, 2005; Xie et al., 2003). By investigating the impact of the financial expertise of the BoDs on the non audit services fees and AFs, this study extends the previous research on the impact of financial education of BoD members on the auditor remuneration in the Kingdom of Bahrain market.

5. In relation to the studies investigating the impact of the AQ and CG on constraining earnings management in the Kingdom of Bahrain, previous studies have been carried out by Habbash et al. (2010), Sun et al. (2010) and Habbash (2010), Kwon et al. (2007), Antle et al. (2006), Peasnell et al. (2000; 2005), Ferguson et al. (2004). Habbash et al. (2010) examine the total meeting of the BoD and commitment of independent directors includes (salary of the directors, composition and meetings), while Sun et al. (2010) control only on meetings of the AC and the size of the BoDs in their EM model.

   All of these studies exclude the characteristics of the AC (such as size, financial expertise, number of meetings, and number of independent members) and financial expertise of the BoD in examining the impact of CG on EM. Recently, Habbash (2010) investigates the AQ and characteristics of the CG include (characteristics of the AC and BoD) variables separately using two different EM models. In his first model, he examines only the characteristics of the BoDs, while in second model he examines the variables of the auditor and the characteristics of AC.

   Antle et al. (2006) examine the joint determination of the discretionary accruals, non audit services fees and AFs using data from 1994-2000, while Kwon et al. (2007) examine how the legal system of the country impacts the auditors' industry specialists in constraining EM in 28 countries including the United Kingdom from 1993-2003. Ferguson et al. examine the big 5 auditors, characteristics of BoD, including roles of CEO duality and non-executive directors on the BoD, on EM using the dates from 1996-1998, while Peasnell et al. investigate characteristics of the BoD including the roles of CEO duality, size of the BoD and number of the independent BoD members, the establishment of Big 5 auditors and AC using the data in the period from 1991-1996. This study fills the gap between all these studies by examining the AQ and characteristics of CG including characteristics of the AC and BoD variables using a single EM model.

Larcker and Richardson (2004) indicate that when the AQ and CG of the companies are isolated from one another, it may lead to incomplete analysis of EM because the supervisory role of the auditors varies depending on the strength of the CG of the company.

6. In the current thesis, there are 3 proxies of AQ to be examined, namely the AFs, the non audit services fees and the use of auditors' industry specialists. Each proxy is measured using various approaches. For instance the non audit services fees proxy contains the ratio of non audit services fees to AFs, ratio of non audit services fees to total fees and the natural log of total fees (amount of non audit services and audit fees).

   The auditors' industry specialist is measured in 5 ways: 2 measures are dichotomous variables (the market share of the auditor at 30% in each particular industry and the leader of the industry) and 3 measures are continuous variables (equal to the respective auditor portfolio share, equal to the respective auditor market share, and equal to the compliment between portfolio share and auditor market share).

   Through investigating the multiple AQ's proxies and various measures for each one, this thesis presents an analysis of the impact of EM and the characteristics of CG that is more comprehensive than the previous studies that examined only one proxy of the AQ.

Finally, the current thesis contributes to the debate on the joint provision of non-audit services and audit. The result from the non audit services model indicates that the companies with a higher provision of independent directors on the BoD seem to be associated with a provision of the highest non audit services. This indicates that an independent BoD may provide provision of the highest non audit services which is likely to improve the AQ because of the effects of the increase in knowledge of the auditors. Moreover, no evidence indicates that the non audit service is associated with opportunistic earnings. This finding contrasts with the regulatory concern that the provisions of the non audit service compromise auditor independence, and thus, reduce the FRQ.

7.3 Implications of the research

The findings of this study should be of potential interest to the BoDs, academics, professionals, and policymakers, especially on issues related to the practice of CG and AQ.

The research's analysis of the AQ and CG may be of use to BoDs as parameter to estimate how the choice of auditor and characteristics of the BoD may affect FRQ. The findings may help BoDs to see the positive effect of the higher quality auditors and independent members on the EM and AQ.

The analysis regarding the auditors' industry specialist may be of interest for the academic community, especially with regard to designing the measures of the auditors' industry specialists, since the measures of the industry specialist are sensitive.

For other professionals, such as financial analysts, the findings may be used to integrate the study on how the market sees higher AQ as constraining EM by influencing the decisions made in the capital markets. If the market sees companies with audited and higher AFs by the auditors' industry specialists associated with higher FRQ, the reported financial statement may be considered as more reliable for credit decisions and investment decision-making.

Finally, policymakers may use the findings relating to Non audit services fees to view the potential benefits of the joint provision of Non audit services and audit. Previously, they argue that the Non audit services compromises the independence of the auditor and therefore prevent several of the Non audit services. According to the results of the current study, it can be concluded that EM does not exist in the Kingdom of Bahrain and is expected to remain so for the foreseeable future.

Consequently, Policy makers can only try to maintain to constrain it by, for example, requiring companies to activate the role of CG and enhancing the quality of audit. In general, the following recommendations can contribute to limiting the practices of EM and increasing the quality of audit and CG:

1. Develop the practices of the CG code in the Kingdom of Bahrain by applying practical guidelines and revising the requirements to maintain the actual and perceived independence of outside directors.
2. Increase awareness of the idea of mechanisms of CG and its role in developing the Bahrain economy and market.
3. Increase the importance of the existence of financial expertise in the ACs and the presence of independent members and compulsory communication with external auditors.
4. Enhance the competence of the independence auditor and solve the issues that exist in the Bahraini audit market.

5. Audit firms must recognize the legal responsibilities towards shareholders by increasing the abilities and skills of their audit teams to detect EM or any transaction management, which includes any illegal action in the preparation of financial reports.

7.4 Limitations of the research

This thesis is subject to various potential limitations. Firstly, the sample for this study is obtained from Bahrain Boursefirms operating in unregulated industries. Therefore, the results of the thesis may not be applicable to companies that are not registered under the Bahrain Bourse or regulated companies, because the internal strength of the governance structure of the firms varies according to industry and size of the company.

Secondly, the variables of the AQ may be a proxy for something other than what is expected in the underlying construct of the tests. In this study, the measures of the AQ are driven by the perceived auditor independence and auditor's reputation capital, and therefore the results are based on the perceptions of the market (AQ as perceived by participants of the market). The use of other measures of the AQ such as auditor's litigation and restatements may help to generalize the actual AQ, rather than the perceived AQ.

Third, the EM phenomena that are referred to in this thesis relate to the opportunistic earnings. Given that the practice of GAAP allows the flexibility in accounting choices, managers may also use their discretion in earnings for transfer of private information, which may maximize the value of the company.

The auditors may underestimate the discretion of earnings made by management since the EM involved is the judgment of the managerial. Thus, the results in this study are limited to the assumption of opportunistic EM.

Fourthly, there is always the probability that the models used in this study have the potential for certain omitted variables biases that are associated both with EM and AQ. However, several steps have been taken to reduce the likelihood of correlated variables, including tests for endogeneity and other control variables.

Finally, it is possible that some of the variables may be subjected to some errors of measurement. The measures of accruals are criticized due to the possibility of non-discretionary accruals and misclassifying discretionary.

Due to these limitations, implications and the findings of the study need to be interpreted with caution.

7.5 Recommendations for future research

There are various ways to expand the studies examined in this thesis. Firstly, as previously noted in the limitations section, the findings of this study are based on the perception of AQ measures that are driven from the reputation of the auditors' capital theory. Francis (2004) claims that the AQ can range from very high to low, and that failure of audit can be classified as very low AQ (end quality), that contains various forms, such as earnings restatement, failure of the business, regulatory sanctions, and litigation. These forms of failure of audit are classified as the actual measures of AQ. Thus, future studies should examine how the used of actual measures of the AQ affect the EM and CG, and can be different compared to the perception of AQ measures.

Secondly, investigation of the topic of this study might be extended to other Gulf Cooperation Council (GCC) Arab States such as Saudi Arabia, United Arab Emirates, Kuwait, and Qatar that have similar characteristics to the Kingdom of Bahrain with the purpose to provide more evidence of EM.

Thirdly, as well as the characteristics of financial expertise, it is claimed that strong backgrounds of the industry increase the understanding of the business environment which helps to improve the FRQ. Cohen et al. (2008) claim that an AC equipped with industry expertise, has better access to the resources which contribute to the superior ability to understand and explain the activities of risks and business, and they will have specific business knowledge.

Therefore, they are able to evaluate whether the companies are using the appropriate reporting procedures, make assumptions and estimation that fit accordingly to their business and their environment. Subsequently these may reflect the true economic value of the company, and thus enhance the FRQ. Therefore, future research should consider whether the strong backgrounds of the industry and financial expertise make the AC and BoDs more effective.

Fourthly, the studies on AQ and CG in constraining EM can be examined further by taking into account the nature of the joint effect of both the mechanisms of the AQ and CG. Such research may contribute to understanding the behavior of the mechanisms of the CG and auditors in association to the FRQ.

Finally, a recommendation for future research might also consider the importance of voluntary corporate disclosure as a mechanism to limit opportunistic earnings. Various studies indicate that high quality disclosure reduce manipulation of earnings (Lapointe-Antunes et al. 2006; Jo and Kim, 2007). In addition, Lapointe-Antunes et al. (2006) and Beattie (2005) indicate that the EM and voluntary disclosure studies are not being fully explored. Therefore, the research in this area can provide comprehensive studies in EM.

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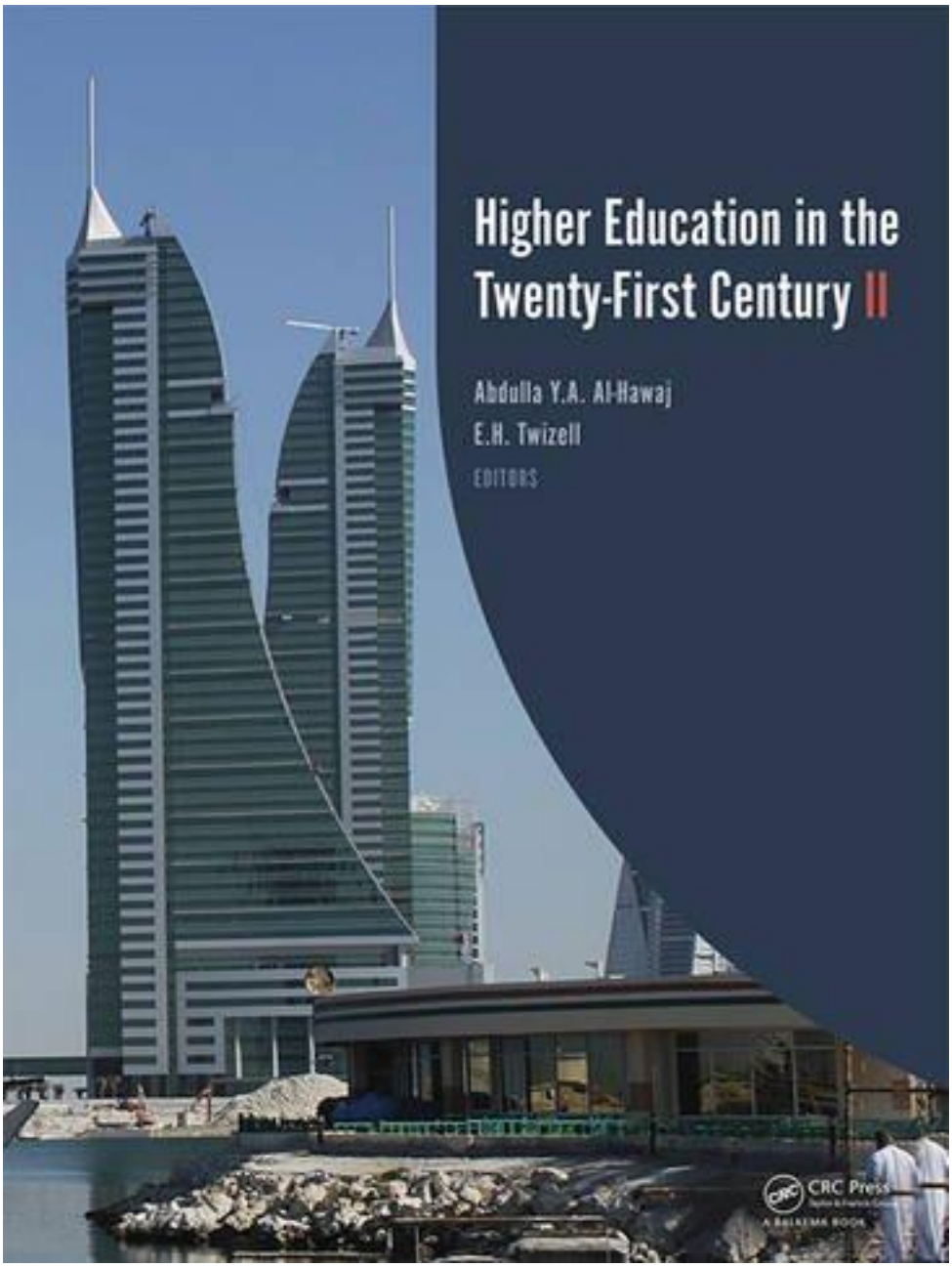
Appendix I

The Bahraini corporate governance code: Its effect on the corporate sector", A Chapter in the Book: "Higher Education in the Twenty-First Century II.



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The Bahraini corporate governance code: Its effect on the corporate sector

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ABSTRACT: The purpose of the Bahraini corporate governance code is to put the principles of best corporate governance practices into place, and to provide protection to the stakeholders of the company and its investors through compliance with those principles. International experience has shown that the results of good corporate governance are enhanced value of the companies, protecting the investors and attracting investments. This paper examines two empirical studies. First, it examines the relation between the corporate governance characteristics including financial expertise of the board, independent members' composition, frequency of the meeting of committee of audit and boards of directors, board size and the quality of the audit. Secondly, the study examines the efficiency of higher-quality auditors and corporate governance characteristics in constraining earnings management.

1 INTRODUCTION

The issues of quality of audit, corporate governance (CG), and earnings management have received considerable attention from the auditing profession, government regulators, and the public, especially after the recent high profile corporate scandals, the results of which have renewed the importance of an independent audit with linkage to the CG monitoring role (DeFond et al. 2005). Agency theory provides an explanation for why an independent audit is important to the financial market. Wallace (1980) and Lin & Hwang (2010) state that an independent audit helps to reduce the agent-principal conflict by providing assurances that the financial statements are prepared carefully and free from any mistake. It also reduces the likelihood of illegal reporting practices and accounting fraud, such as earnings management, so that market participants can use financial reports without any hesitation (Wallace 1980). Moreover, the auditors can be considered as part of the CG's structure because they regulate the quality of the process of the financial reporting (Beasley & Salterio 2001). The auditors can improve the financial reporting quality through their willingness and competence to report accounting misstatement (DeAngelo 1981) and to respond to aggressive earnings conservatism (Ruddock et al. 2006).

Generally shareholders rely on the ability of the boards and their committees to control the independence of both auditors and management. Thus, the responsibility for the quality of financial reporting is laid on the effectiveness of boards and their committees. The majority of prior studies have concentrated on the committee of audit role as the main factor to ensure financial information integrity and handling with issues related to external audit (Bedard & Gendron 2010, Chen et al. 2005, Abbott et al. 2000). Given that the responsibility for nominating and removing external auditors falls to the board of directors and the members of the committee of audit, their duty is, however, equally important in promoting a higher level of financial reporting quality.

Likewise, some studies have suggested that the effectiveness of committee of audit is linked with whole board composition (Boo & Sharma 2008, Cohen et al. 2002, Collier & Gregory 1996, Menon & Williams 1994). Thus, in this paper, while the demand for a higher quality auditor is recognized, the supervision of roles of the committee of audit and board are argued to be the more important mechanisms through which to promote a higher quality of financial reporting.

Table 1. Listed companies.

Industry group	Number	Suspended
Commercial banks	7	–
Investments	12	2
Services	9	–
Insurance	5	–
Industrial	3	–
Hotels and tourism	5	1
Preferred share	1	–
Closed companies	2	–
Non-Bahraini companies	4	2
Total	48	5

Source: Bahrain Bourse web-site [http://www.bahrainbourse.net/bhb/market.asp?page=market&sec=BOD_Meeting_AGM]

Specifically, this paper examines the relation between the CG characteristics relating to the financial expertise of the board, independent members composition, frequency of the meeting of committee of audit and boards of directors and board size, and the quality of the audit in respect to constraining earnings management. It has been claimed that firms that have effective boards and audit committees are constantly demanding auditors of higher quality because, by employing auditors of higher quality, they add credibility to financial reports, increase the value of the firm and are able to protect themselves from damage to their names and exposure to legal actions; in their entirety these factors promote the interests of shareholders (Carcello et al. 2002).

If there is a lack of participants in the market to supervise the earnings report, they could predict that the firm's directors are in strong supervision to have less in manipulation of earnings. Thus, this paper claims that firms that have supervision mechanisms which consist of the committee of audit and the board of directors with effective characteristics and higher quality auditor are expected to have a higher ability to constrain opportunistic earnings.

2 CONTEXT: CORPORATE GOVERNANCE IN BAHRAIN

Generally, many of the CG principles are embedded in the regulations and rules in force in Bahrain, which pertains to the businesses and activities of the economy under the provisions of Commercial Companies Law – Article 4, "Any type of commercial company based in the Kingdom of Bahrain, must be subject to this law's provisions". There are provisions of CG, most notably in the Law of the Commercial Companies and its implementation, the regulations and the guide of the Central Bank of Bahrain (CBB), and the law establishing and organizing the Bahrain Bourse which represents the largest 48 listed companies and divided into nine sectors, in which five companies are presently suspended from operating (see Table 1). Listed companies are classified according to their activity and the Bahrain Bourse operates as an independent institution supervised by an independent board, chaired by the Governor of the Central Bank of Bahrain.

From the late 1990s until the second quarter of 2008, the economy of Bahrain has observed growth in investment as result of the constant increase in the prices of oil and the improvement of the political and legal frameworks. New regulations and laws have been issued and modified to protect existing stakeholders and investors, and to encourage national and foreign investment in Bahrain. Improving practice of CG also can help the Kingdom of Bahrain to attract more investment. In year 2008, Bahrain was one of the top 20 free economies in the world in terms of index of economic freedom. Furthermore, Bahrain's companies can improve their growth and performance by taking other measures to support investment, such as ensuring higher accountability and transparency in the process of decision making, and creating strong boards of directors. The majority of businesses

in Bahrain have taken the form of companies' limited liability or private Bahraini Joint Stock Closed Company (BSCC) for services that are required by rules and regulations to be provided by a closed joint stock company.

Also it is been observed that many businesses have changed the general partnerships to the closed joint stock companies or limited liability companies. Moreover, Bahrain has a large number of companies in the market, large number of banks in the financial institutions, and large number of medium and small sized companies. It is also noted that foreigners may own up to 100% of the activities of the business of many companies and services. Citizens of the Gulf Co-operation Council (GCC) are provided a national treatment with few exceptions. The Government of Bahrain has established Bahrain Mumtalakat Holding Company (Mumtalakat) that operates on lines of commercial and entrusted to the ownership of several assets. At the end of 2010, the Kingdom of Bahrain adopted the new CG code, because Bahrain was looking forward to increasing the transparency and the market value.

3 OBJECTIVES OF THE RESEARCH

The research associated with this paper has the following objectives

1. To examine the role of external audit and the mechanisms of corporate governance (CG) in constraining earnings management in the Kingdom of Bahrain.
2. To identify the relationship between the committee of audit, the board of directors, and audit quality.

The aim of the associated Ph.D. thesis is to examine the effect of the roles of the audit committee, board of directors, and external audit on the quality of financial reporting (including, quality of audit and management of earnings), for the study's purpose, CG is observed as a system of balances and checks to protect the interests of shareholders. Furthermore, the research focusses on financial statements.

A question answered in the research is "Do the external audit and mechanisms of CG constrain the practices of the management of earnings in the Kingdom of Bahrain?"

4 METHODOLOGY

Corporate governance (CG) is a new phenomenon in the Kingdom of Bahrain and there has been no research on the quality audit, CG and earnings management in Bahrain. Therefore, this study is looking into the relationship between CG and the audit quality and between CG and auditor quality in respect of constraining earnings management in Bahraini firms. Moreover, the present research will collect the secondary data from Bahraini listed companies. Unluckily, there are no data services available in the Kingdom of Bahrain. Therefore, this study is based on data collected through the analysis of the annual reports and a designed questionnaire of the listed companies in Bahrain.

5 LITERATURE REVIEW

The study examines the relationship between three elements. The first is the characteristics of CG, the second element is the auditor quality includes three proxies (non-audit service fees, audit fees, and the engagement of industry-specialist auditors) and thirdly, earnings management. Shleifer & Vishny (1997) defined the CG field as a study of the processes of ensuring investments profitability, reducing the financial investors, and methods that resource suppliers. Charreaux (1997) believes that the system of CG includes all the mechanisms that regulate the behaviour of the managers and the demarcation of their own decision. Michel Albert considers that CG gives managers a unique goal: to maximize dividends and profits (Albert 1994).

Although it is admitted that what constitutes CG is still a matter of debate (Cadbury 2000), it significantly analyses the issue from the viewpoints of both public policy perspective and the perspective of the corporation. From the perspective of the corporation, the emerging consensus is that CG is about maximizing the value of the subject to meet financial needs of a corporation, legal obligations and other contractual matters. This comprehensive definition stresses the need for boards of directors to achieve a balance between the shareholders' interests with the other stakeholders and investors in order to achieve sustainable value over the long term.

Also CG expects, through the audit committees, to improve audit quality. DeAngelo (1981) and Watts & Zimmerman (1986) defined the second element (audit quality) as the auditors' competence to prevent or detect errors and objectivity (in fact mind and appearance) of auditors in reporting such errors. The terms "auditor quality" and "audit quality" are supposed to be synonymous, and this is in line with the recommendation of Clarkson & Simunic (1994) that "the audit of the firm is supposed to supply a single level of audit quality at a moment in time". This study will use three proxies to measure the auditor quality including non-audit service fees, audit fees, and the engagement of industry-specialist auditors.

In addition, the code of CG of Bahrain requires that the committee of audit must possess high levels of competence and integrity. It is responsible for reviewing the financial report and oversees the independence of the external auditors (Hasan & Ahmed 2012). Audit committee may appear in some studies to be related to the management of earnings by using different constructs of the effectiveness of the audit committee, such as a member of a committee with financial expertise (Kalbers & Fogarty 1993), size of the board (Yermack 1996, Xie et al. 2003), independent directors with financial motivation (Chtourou et al. 2001a,b), board size (Yermack 1996, Xie et al. 2003), and independence and composition (Klein 2002).

Moreover, the aim of this research is to examine the relation between the audit committee, board of directors, and auditor quality in constraining earnings management. There is no single definition of the term earnings management. Schipper (1989) defined the management of earnings as "the purposeful mediation in the process of the external financial reporting, in order to get some private gain". Healy & Wahlen (1999) claim that management of earnings occurs when managers use their opinion when preparing the financial statements with the purpose of not reporting on the firm's actual economic performance or in order to gain the benefit of the adjusted figure.

Consistent with this description and definition of the benefit of the study of management of earnings views as opportunistic behaviour of management. Managers involve with the opportunistic earnings for various reasons, such as gaining compensation bonus (Healy 1985, Holthausen et al. 1995, Gaver at al. 1995), the avoidance of debt covenant violation (DeFond & Jiambalvo 1994, Sweeney 1994), prevention of decreases of earnings and losses (Burgstahler & Dichev 1997, Barth et al. 1999), and compensation for political or regulatory costs (Jones 1991, Cahan 1992, Han & Wang 1998).

The following points will, however, explain in brief about the effectiveness of the board of directors.

5.1 *Size of the board*

Lipton & Lorsch (1992) recommend that the size of the board must not be more than eight or nine directors. Jensen (1993) argues that when the board has more than seven or eight members, it is less effective due to the problems to the process of co-ordination, sequentially, contribute lack supervision. In other words, smaller boards are more effective as directors are able to communicate with each other and the meeting is easier to control.

5.2 *Independence of directors*

Directors are responsible for monitoring managers and controlling the management of the company day after day (Fama 1980, Fama & Jensen 1983, Brennan & McDermott 2004). Therefore, higher

numbers of independent directors on boards are expected to monitor functions more effectively, which then leads to financial statements being more reliable.

Also it is been found that independent directors can develop their reputations in making decisions (Fama & Jensen 1983). The study by Beasley (1996) indicates that the largest rate of independent directors on the boards result in a negative impact on financial statement fraud. Regarding earnings management, a stream of literature on independent boards and management of earnings indicate that firms that have a higher percentage of independent members on the board faced a lower incidence of mismanagement of earnings (Klein 2002, Xie et al. 2003, Davidson et al. 2005, Peasnell et al. 2005). In brief, all of these studies recognize that an independent board facilitates effective monitoring.

5.3 *Financial expertise*

The experience and knowledge of the board are important elements in confirming the effectiveness of the supervision functions of the board. Carcello et al. (2002) suggest that the members of the board with experience of a higher number of positions are more demanding of high audit quality work. Moreover, Chtourou et al. (2001) argue that directors with experience are less likely to be connected with management of earnings. The conclusion of both studies is that levels of high of expertise in board members lead to higher incentive to monitoring. Xie et al. (2003) found that earnings management occurred less in firms that are controlled by a board with high financial and corporate background. In brief, all of these studies acknowledge that the boards who have specific experience and knowledge are useful in supervising the management.

5.4 *Board meetings*

A director is responsible for attending board meetings and responsible for taking decisions that are made in the meeting (Ronen & Yaari 2008). Conger et al. (1998) indicate that more regular meetings of a board can improve its effectiveness. The meetings are the main operations of the board (Vafeas 1999) and signs of the efforts that have been made by the directors (Ronen & Yaari 2008).

Busy boards that meet more often are more likely to manage their responsibilities in accordance with the shareholders' interests (Vafeas 1999) because more meeting-time can be helpful in controlling issues such as management of earnings and conflicts of interest (Habbash et al. 2010), and in putting more effort into monitoring the integrity of financial reporting and improving the audit quality. A study was conducted by Xie et al. (2003), employing a sample of 282 observations firm year; they point out that the board that meets frequently may have time to look at issues such as earnings management. Their results conclude that the management of earnings is significantly negatively associated with the number of the meetings of the board.

The studies in the previous sub-sections found that boards more independent directors who are equipped with financial expertise, are smaller in size, and meet more often, are effective in their role of supervision. Similarly, the following sub-sections will explain in brief the effectiveness of the committee of audit.

5.5 *Size of committee of audit*

The size of a committee of audit varies and it depends on the needs of the company and the extent of the responsibilities delegated to the committee. According to the UK CG Code (2010), "The board should be composed of the committee of audit of at least three members, most of [whom] should be non-executive and independent, and that the chairman should be independent". The Bahrain CG Code gives difference size of audit committee members as *per* Principle 3.1: "The board must establish a committee of audit of at least three members of [whom] should be a majority of independent including the chairman". It seems that the size of the committee of audit is also one of the important characteristics that govern the effectiveness of the committee of audit.

Consistent with the argument for an effective committee size , too small a committee size may mean that an insufficient number of directors are able to perform their work in the committee, and therefore the effectiveness of monitoring is reduced (Vafeas 2005). Evidence of committee sizes audit indicates that firms that have a larger committee of audit are more effective in monitoring management. Yang & Krishnan (2005) examine the relationship between quarterly management of earnings and size of the committee of audit in 896 American firms in the years 1996–2000. They found that the management of quarterly earnings is lower for firms that have a high number of committee of audit. This may indicate that the presence of adequate number of members of committee of audit increases the ability of the committee of audit in terms of monitoring the integrity of financial reports. In brief, the larger the size of a committee of audit, the more effective they are in the monitoring of financial reporting.

5.6 *Independent committee of audit*

Agency theory indicates that independence (of a director) is a fundamental quality that contributes to the effectiveness of a monitoring committee (Fama & Jensen 1983) and that the empirical evidence on the independence of the committee of audit is consistent with this proposal. Various studies suggest that the independent committee of audit are probably to be linked with the fraudulent financial reporting (Abbott et al. 2000, 2004) and more probably to be linked with lower earnings management (Klein 2002, Xie et al. 2003, Bedard et al. 2004, Davidson et al. 2005), and lower earnings restatement occurrence (Agrawal & Chadha 2005).

An independent committee of audit is expected to provide judgment and equitable assessment and to be able to monitor the management effectively. In brief, all of these suggest that independent committees of audit are linked with the higher quality of financial reporting and can be considered as effective monitors.

5.7 *Audit committee expertise*

According to the UK CG Code (2012), "The board should satisfy itself that at least one of the committee of audit members has financial experience" (C.3.1). DeZoort (1998) argues that the experience of the audit committee member in auditing and accounting is necessary to obtain a sufficient understanding of the oversight tasks. He proposes the following: "Audit and evaluation of internal control experience makes the difference in the members of the audit committee's performance on the internal control oversight task. It is important, the members of the committee of audit with the experience made internal control provisions more like those of experts (such as practicing auditors) without experience".

In other words, experimental evidence and regulatory concern indicate that the presence of knowledge and appropriate experience, particularly in the auditing and accounting, is likely to improve the audit committee's judgment and performance. The experimental evidence of archival studies also indicates that the financial expertise of the audit committee improves the ability of monitoring and results in an increase in the quality of financial reporting of firms. In general, all the assumption that supports the committee of audit with financial expertise has improved their effective monitoring function.

5.8 *Committee of audit meeting*

Various studies indicate that firms that have a larger number of meetings of the committee of audit less financial re-statement (Abbott et al. 2004), are less likely to be authorized for aggressive accounting and fraud (Abbott et al. 2000, Beasley & Petroni 2001) and are connected with a lower incidence of management of earnings (Xie et al. 2003). These studies indicate that committees of audit who meet often during the fiscal year related to effective monitoring. The more often they meet the more they increase their performance of their supervision duties. Therefore, the higher the number of meetings of the committee of audit, the more their monitoring function is improved.

6 SUMMARY

The previous section indicates that sole independence, more financial expertise, committee of audit with more members lead to a higher supervision function. Therefore, in line with the previous empirical evidence and agency theory proposition the hypotheses of this study show that these characteristics of committees of audit and boards are associated with a higher audit quality. With regard to the earnings management, this research views earnings management as opportunistic earnings.

Based on generic literature review, this research has developed a number of hypotheses to test. Taken together they have been designed to test the audit committee, board of directors, and auditor quality on constraining earnings management. The following are the hypotheses stated in a form that uses the non-audit services fees, audit fees, and the engagement of industry-specialist auditors as proxies for audit quality:

Hypothesis 1: The relationship between the non-audit services fees and size of the board shows a (positive) relationship.

Hypothesis 2: The relationship between the audit fees and size of the board shows a (negative) relationship.

Hypothesis 3: The relationship between the audit fees and independent board shows a (positive) relationship.

Hypothesis 4: The relationship between the engagement of industry-specialist auditors and the size of the board shows a (negative) relationship.

Hypothesis 5: The relationship between the engagement of industry-specialist auditors and an independent board shows a (positive) relationship.

Hypothesis 6: The relationship between the non-audit services fees and independent board shows a (negative) relationship.

Hypothesis 7: The relationship between the non-audit services fees and financial expertise of the board shows a (negative) relationship.

Hypothesis 8: The relationship between the audit fees and financial expertise of the board shows a (positive) relationship.

Hypothesis 9: The relationship between the audit fees and frequency of the meeting of the board shows a (positive) relationship.

Hypothesis 10: The relationship between the engagement of industry-specialist auditors and the financial expertise of the board shows a (positive) relationship.

Hypothesis 11: The relationship between the non-audit services fees and meeting frequency of the board shows a (negative) relationship.

Hypothesis 12: The relationship between the audit fees and size of the committee of audit shows a (positive) relationship.

Hypothesis 13: The relationship between the engagement of industry-specialist auditor and meeting frequency of the board shows a (positive) relationship.

Hypothesis 14: The relationship between the engagement of industry-specialist auditor and size of the audit committee shows a (positive) relationship.

Hypothesis 15: The relationship between the non-audit services fees and size of the audit committee shows a (negative) relationship.

Hypothesis 16: The relationship between the non-audit services fees and solely independent audit committee shows a (negative) relationship.

Hypothesis 17: The relationship between the audit fees and solely independent audit committee shows a (positive) relationship.

Hypothesis 18: The relationship between the audit fees and financial expertise of the audit committee shows a (positive) relationship.

Hypothesis 19: The relationship between the engagement of industry-specialist auditor and solely independent audit committee shows a (positive) relationship.

Hypothesis 20: The relationship between the engagement of industry-specialist auditor and financial expertise of the audit committee shows a (positive) relationship.
Hypothesis 21: The relationship between the non-audit services fees and financial expertise of the audit committee shows a (negative) relationship.
Hypothesis 22: The relationship between the non-audit services fees and frequency of the meeting of the audit committee shows a (negative) relationship.
Hypothesis 23: The relationship between the audit fees and frequency of a meeting of the audit committee shows a (positive) relationship.
Hypothesis 24: The relationship between the engagement of an industry-specialist auditor and frequency of the meeting of the audit committee shows a (positive) relationship.

These characteristics of the committee of audit and board are expected to constrain opportunistic earnings. In other words, this study tested the following hypotheses:

Hypothesis 25: The relationship between earnings management and an independent board shows a (negative) relationship.
Hypothesis 26: The relationship between earnings management and the board's size shows a (negative) relationship.
Hypothesis 27: The relationship between the earnings management and the board's meeting frequency shows a (negative) relationship.
Hypothesis 28: The relationship between the earnings management and board's financial expertise shows a (negative) relationship.
Hypothesis 29: The relationship between the earnings management and solely independent audit committee shows a (negative) relationship.
Hypothesis 30: The relationship between the earnings management and audit committee's size shows a (negative) relationship.
Hypothesis 31: The relationship between the earnings management and audit committee's meeting frequency shows a (negative) relationship.
Hypothesis 32: The relationship between the earnings management and audit committee's financial expertise shows a (negative) relationship.

Similarly, in line with the theoretical proposition and the review of evidence of differentiation of auditors' quality, this study showed that the effectiveness of audit services varies among auditors. In this paper, the higher auditor's quality is associated with the engagement of industry-specialist auditors, lower non-audit services fees, and higher audit fees. These expectations lead to the following hypotheses:

Hypothesis 33: The relationship between the management of earnings and non-audit services fees shows a (positive) relationship.
Hypothesis 34: The relationship between the management of earnings and industry-specialist auditor shows a (positive) relationship.
Hypothesis 35: The relationship between the management of earnings and audit fees shows a (negative) relationship.
Hypothesis 35: There is a (negative) relationship between the management of earnings and audit fees.

7 CONCLUSION

Corporate governance (CG) covers all the mechanisms that control the board of director and the audit committee, to lead them to improve the audit quality. In brief, good CG helps to prevent corporate scandals and fraud. In general, good CG is very important for firms suffering from poor reputations. It can make corporations more attractive for investors, customers, and other stakeholders.

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Appendix: Students and Supervisors

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