Audit Committee Effectiveness: Australia and Saudi Arabia

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Declaration

I, Ibrahim Al-Lehaidan, declare that the PhD thesis entitled Audit Committee Effectiveness: Australia and Saudi Arabia, is no more than 100,000 words in length, exclusive of tables, figures, appendices, references, headers and footnotes. This thesis does not include any material that has been submitted previously, in whole or in part, for the award of any other academic degree. Except where otherwise stated, this thesis is my own work.

Abstract

The mere presence of the audit committee does not necessarily translate into an effective monitoring body. As a result, the search for mechanisms to enhance corporate governance and increase the quality of financial reports has mostly focused on the structure of audit committees.

This thesis empirically investigates whether there is an association between audit committee effectiveness (ACE) and the selection of a high quality auditor for both Australian and Saudi listed companies using their local guidelines to enhance ACE as benchmarks. In addition, the association between ACE and non-audit services (NAS) purchases is examined only for Australian listed company as providing such services by the incumbent auditors is not allowed for Saudi listed companies.

Moreover, this thesis also empirically examine the relationships between six audit committee characteristics, namely, independence, size, activity, charter, expertise and literacy and the selection of a high quality auditor for both Australian and Saudi listed companies. Also the relationships between the six audit committee characteristics and NAS purchases are empirically tested only for Australian listed companies.

While there was a positive (negative) association between ACE and the selection of a specialist auditor (the magnitude of NAS purchases) for the Australian Stock Exchange (ASX) listed companies, there was no association between ACE and the selection of a specialist auditor for the Saudi Stock Market listed companies. Because both countries have very similar recommendations regarding enhancing audit committee effectiveness, the findings of this thesis indicate that there are other factors such as different audit committee framework, different market development and cultural factors that might affect ACE.

In addition, the findings indicate that audit committee independence is the most important determinant of both audit quality and NAS purchases for the ASX listed companies. Because complying with audit committee recommendations is costly especially for small companies, which have limited resources, audit committee independence should have the priority when locating the limited resources.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Recent high profile corporate collapses worldwide (e.g., Enron Corp. and WorldCom in U.S; HIH Insurance Group in Australia) have captured the attention of investors, regulators and academics not only in countries that suffered from such corporate collapses, but also in countries that have never experienced such crises. As a result, more attention has been given to enhance corporate governance worldwide in order to prevent or at least reduce the probability of the occurrence of financial failures and to restore the confidence in capital markets after they were shocked by the collapse of giant companies.

However, the search for mechanisms to enhance corporate governance and increase the quality of financial reports has mostly focused on the structure of audit committees. For example, Levitt (1998), the former US Securities and Exchange Commission chairman (SEC), stated that:

> *"Qualified, independent and tough minded audit committees represent the most reliable guardians of the public interest".*

In response to Levitt's call and the public pressure, the Blue Robin Committee (BRC) was formed by the New York Stock Exchange (NYSE) and the National Association of Securities Dealers (NASD). The BRC issued 10 recommendations for strengthening audit committee effectiveness (ACE).

A number of studies has investigated the efficacy of the BRC recommendations in enhancing ACE. For example, Abbott et al. (2002) investigated the relationship between ACE and financial reporting misstatements using the BRC recommendations as benchmarks. They found that companies with an audit committee, which was independent and active, were less likely to have financial reporting misstatements. Their results support the BRC recommendations and provide indicators for the efficacy of such recommendations in enhancing audit committee ability to discharge its duties effectively.

In Australia, the ASX Corporate Governance Council (ASX CGC) was formed on 15 August 2002, bringing together 21 groups from disparate business backgrounds and carrying the varying aims and priorities that accompany those constituencies (Australian Stock Exchange Corporate Governance Council 2003).

In March 2003, the ASX adopted the new principles and recommendations of the ASX CGC aimed at improving corporate governance, in general, and audit committees, in particular, to ensure the integrity of financial reports (Australian Stock Exchange Corporate Governance Council 2003).

On the other hand, the Saudi Ministry of Commerce (SMC) issued its first regulation and a set of recommendations regarding audit committees in 1994 aimed at strengthening audit quality and the integrity of financial reports (Saudi Ministry of Commerce 1994). The Saudi market has not yet experienced any corporate collapses.

However, very limited research has been done to evaluate ACE in Australia and Saudi Arabia using their own set of principles and recommendations as benchmarks. As a result, very little is known about the efficacy of such principles and recommendations in these two countries.

This study is focused on the audit committee's roles in auditor selection and protection of auditor independence by limiting NAS purchases because of two reasons. First, a number of researchers, regulators and professional bodies (e.g., Birkett 1986, Braiotta 1994, SMC 1994, Blue Robin Committee 1999, Ramsay 2001, Australian Stock Exchange Corporate Governance Council 2003) has considered the nomination and selection of external auditors and the protection of their independence to be the primary responsibilities of the audit committee. Second, independent audit committee members have incentives to protect their reputational capital by assuming significant responsibility for the engagement of the audit firm and the protection of its independence (Fama and Jensen 1983).

As a result, this study investigates the efficacy of the ASX CGC and SMC best practices and recommendations regarding audit committees in the context of auditor selection. In addition, only the efficacy of the ASX best practices and recommendations regarding audit committee in the NAS purchases will be evaluated because providing NAS is not allowed for incumbent auditors in Saudi Arabia.

It should be noted that NAS purchases throughout this thesis include only NAS purchases from the incumbent auditor.

This introductory chapter presents the rationale and the basis for this thesis. This chapter is divided into five sections. Section 1 presents the research objectives. In Section 2, a number of motivations that justify the conduct of this study are provided. Section 3 identifies the contribution to knowledge of this study. In Section 4, the structure of this thesis will be presented briefly. Finally, Section 5 provides a short summary for this chapter.

1.2 Research Objectives

In order to evaluate the efficacy of the ASX CGC and SMC best practices and recommendations regarding audit committees in the context of auditor selection and the efficacy of the ASX best practices and recommendations in the context of NAS purchases, the following primary objectives must be achieved using such best practices and recommendations as benchmarks.

- Investigate the association between audit committee effectiveness (ACE) and the auditor selection process for Australian and Saudi listed companies
- Determine which audit committee characteristic is the most important determinant of audit quality for Australian and Saudi listed companies.
- Investigate the association between ACE and the magnitude of NAS purchases for Australian listed companies only because providing such services are not allowed for incumbent auditors in Saudi Arabia.
- Determine which audit committee characteristic is the most important determinant of the magnitude of NAS purchases for Australian listed companies only.

Moreover, despite the fact that the ASX CGC and SMC best practices and recommendations aimed at improving ACE are quite similar in their requirements and their aims, differences in audit committee frameworks and market developments still exist between Australia and Saudi Arabia.

Therefore, by comparing the results of the determinants of audit quality between Australia and Saudi Arabia, the differences in audit committee frameworks and market developments between the two countries could be used as possible explanations for any mixed results.

1.3 Research Motivations

A number of motivations justify the importance of this research. First, it will be the first study- to my knowledge- that evaluates the efficacy of the ASX CGC and SMC best practices and recommendations in the context of auditor selection. Second, it will be the first study- to my knowledge- that evaluates the efficacy of the ASX CGC best practices and recommendations in the context of NAS purchases.

Third, it will be the first study– to my knowledge – that uses six different audit committee characteristics to evaluate ACE in the context of auditor selection and NAS purchases as most of the prior studies used only two or three audit committee characteristics. For example, while Abbott and Parker (2000) used only audit committee independence and activity to examine the impact of having effective audit committee on audit quality, Chen et al (2005) used audit committee independence, activity and expertise to examine the same issue.

Fourth, it will be the first study– to my knowledge – that uses the term " independent directors" instead of the term "non-executive directors" to identify audit committee independence to examine the association between ACE and the auditor selection process. Prior studies ignored the area of grey directors who are not executive directors, but have a direct or indirect interest with the company when determining the independence of the audit committee. For example, Abbott and Parker (2000) and Chen et al (2005) considered an audit committee to be independent if all its members were non-executive directors ignoring the presence of grey directors in such committee.

Finally, it will be the first study– to my knowledge – that identifies the most important determinant of audit quality and NAS purchases among the six audit committee characteristics examined by comparing the coefficients of the significant audit committee characteristics. This will be very useful especially for small firms that

lack the availability of sufficient resources to meet all the best practices and recommendations regarding audit committees because it will help such firms to allocate their limited resources to the most important determinants of audit quality and NAS purchases.

1.4 Contribution to Knowledge

Kalbers and Fogarty (1993) reported that little empirical research has been conducted to investigate ACE and concluded that the evidence collected to date was weak. In addition, Collier (1996) and Collier and Gregory (1999) argued that the evidence collected on audit committee effectiveness is limited.

Consequently, the research into ACE within Australian and Saudi listed companies in the context of auditor selection and NAS purchases will contribute to the existing ACE literature in different ways. First, this study will examine some audit committee characteristics, namely, audit committee size, charter, expertise and literacy, which have never been investigated before, in their relationship to audit quality and NAS purchases in Saudi Arabia. Prior studies used only audit committee independence and activity to investigate the relationships between these variables and both auditor selection and NAS purchases (e.g., Abbott and Parker 2000; Abbott et al. 2003 and Chen et al. 2005).

Second, this study will evaluate the influence of having different audit committee frameworks and market developments on ACE in the context of auditor selection by comparing the results of the two countries as both countries have almost similar best practices and recommendations regarding audit committees.

Finally, this study has the potential to contribute further to the ACE literature through the database that will be developed especially for Australian listed companies. This database could be used to study other issues and could be used by others to study similar issues.

1.5 The Structure of the Thesis

This thesis has nine chapters including this introduction. Chapter 2 reviews audit committee developments over-time for a number of different countries including the

US, UK, Canada, Australia and Saudi Arabia. Chapter 3 presents a review of the audit committee literature in general and ACE literature in particular. In addition, this chapter focuses on the audit committee literature related to the auditor selection and controlling NAS purchases. Finally, a number of gaps in ACE literature will be identified and six research questions will be stated.

Chapter 4 identifies the differences between Australia and Saudi Arabia in terms of audit committee frameworks and market developments. Moreover, audit committee theories are reviewed and the advantages and disadvantages of such theories are discussed. Furthermore, the theoretical framework of this study is developed and presented in Figure 4.1. Finally, 14 different hypotheses that will be tested in this study will be developed and stated.

Chapter 5 focuses on the methodology adopted in this research and provides justification for the use of specific research methods and data collection techniques. In addition, dependent, independent and control variables will be defined and operationalized. Finally, a number of regressions that will be conducted to examine the hypotheses of this study will be presented and discussed.

Chapter 6 presents the descriptive data analysis for the full Australian and Saudi samples. In Chapter 7, the univariate and multivariate analysis will be presented and discussed in detail. The univariate analysis explores the presence of multicollinearity by examining the correlations among the independent variables (correlation analysis). In addition, the univariate analysis uses the t-test of two-independent samples (groups) to identify if the differences in means between two-independent groups occur only by chance or not. This chapter presents the main regression analysis that will be used to test the hypotheses of this study. The main regression analysis is divided into two parts. While Part 1 models audit quality and explores the determinants of such quality, Part 2 investigate the determinants of the magnitude of NAS purchases. Finally, an additional test to examine the impact of having different compliance requirements for companies within the ASX on the results of the main regression analysis is provided.

Chapter 8 presents a number of sensitivity tests that should be performed to insure that the results of the main regression analysis in Chapter 7 were not driven by

changing a number of factors that might affect such results. Finally, Chapter 9 provides a summary of the most important findings for this study. In addition, a number of recommendations, limitations and future research opportunities has been identified and discussed in this chapter.

1.6 Summary

The increased number of corporate collapses in the last few years (e.g., Enron Corp. and WorldCom in U.S; HIH Insurance Group in Australia) put pressure on regulators and academics to find ways to improve corporate governance mechanisms in general and audit committee in particular. As a result, both the ASX CGC and SMC issued the best practices and recommendations aimed to improve ACE.

The aim of this study is to evaluate the efficacy of the ASX CGC and SMC best practices and recommendations in the context of auditor selection and to explore the efficacy of ASX CGC best practices and recommendations in the context of the magnitude of NAS purchases.

In addition, a number of research objectives, motivations and contributions to knowledge were identified and discussed. Finally, the organization of this thesis was reviewed in this chapter.

CHAPTER 2: THE DEVELOPMENT OF AUDIT COMMITTEES

2.1 Introduction

Audit committees are an essential element of corporate governance (Green, 1994). In defining an audit committee emphasis is usually placed on its composition and functions. For instance, Canadian Institute of Chartered Accountants (CICA, 1992: 20) defined audit committee as:

> *"A committee of directors of an organization whose specific responsibility is to review the annual financial statements before submission to the board of directors. The committee generally acts as liaison between the auditor and the board of directors and its activities may include the review of nomination of the auditor, overall scope of the audit, results of the audit, internal financial controls, and financial information for publication"*

In the view of Marrian (1988: 2), it is:

> *"A committee of the board normally comprising three to five directors with no operating responsibility in financial management. Its primary tasks are to review the financial statements, the effectiveness of the company's accounting and internal control systems, and the findings of the auditors, and to make recommendations on the appointment and remuneration of the external auditors"*

According to Rickard (1993: 35):

> *"An audit committee consists of a group of senior staff, chaired by the chief executive officer or his deputy. The committee's responsibility is to safeguard the independence of the internal audit function and ensure continual improvement in management performance and accountability by seeking action on internal audit and external audit reports"*

All the above definitions agree that an audit committee is a sub-committee of the main board of directors of a company, usually formed from non-executive directors, and

charged with matters relating to financial reporting, internal control systems and audit and to act as a link between the board of directors, internal and external auditors.

Similarly, Dilworth (1989) argued that audit committees are one mechanism through which auditors are held accountable for the scope, nature and quality of their work. Audit committees can thus exert a powerful influence on auditors through their role in conducting a specific inquiry into the scope, nature and quality of the audit work done.

2.2 The Development of Audit Committees

In recent years, the accounting profession, users of financial statements and the government have expressed concern over the incidence of fraudulent financial reporting. One response on the part of companies to this concern has been the establishment of audit committees (McMullen 1996).

A historical review of the development of audit committees in the US, Canada, the UK, Australia, and Saudi Arabia will highlight the importance of such committees to ensure reliable, high quality financial reporting and thus by implication the need for an effective audit committee to enhance the integrity of companies' financial reports.

2.2.1 The development of audit committees in the USA

McKee (1979) claimed that prior to the rise of the auditing profession in the United States, committees such as the audit committee of the East Tennessee and Western North Carolina Railroad frequently handled the auditing task in 1870. On 28 February 1870, shareholders of the ET&WNCRR appointed a special committee, which was required to inspect the accounts of the offices of the Board of Directors of the company and report at the next meeting (McKee 1979). The author remarked that this might be one of the earliest documented instances in the United States of an audit committee reporting to the board of directors of a corporation.

However, the concept of audit committees and their responsibilities have evolved dramatically since they were first proposed in the late 1930s. This concept is not new as, according to Birkett (1986) audit committees first attracted attention in the early 1930s when the SEC and New York Stock Exchange (NYSE) encouraged their establishment after the McKesson and Robbins case. Rittenberg and Nair (1994)

however pointed out that audit committees were first proposed by the American Institute Certified of Public Accountants (AICPA) as early as 1937 and have been endorsed by the SEC since 1940.

One interesting trend uncovered during a review of relevant literature suggests that, in all of the countries where they have become established, audit committees have been stimulated by unexpected company failures and/or corporate malpractice (Vanasco, 1994; Guthrie and Turnbull, 1995; Wolnizer, 1995; Teoh and Lim, 1996; Porter and Gendall, 1998).

In addition, Green (1994) noted that corporate audit committees have developed and evolved as a result of dissatisfaction with methods of corporate governance. Abdolmohammadi and Levy (1992) point out that audit committees have been under pressure to accept increasingly higher levels of responsibility over the past decade because of the increasing public pressure for greater corporate accountability.

The volume of research on audit committees is more in the US than in other countries. Perhaps, this is due to the fact that the history of audit committees in the United States is longer than elsewhere (Spira 1999). During the 1970s, the role of audit committees received a great deal of attention because of demands for greater corporate accountability and governance. In view of the increasing size of corporations and the separation of ownership and management, shareholders and other constituencies needed more assurance with respect to the integrity of the internal and external auditing process and the financial reporting process (Spangler and Braiotta, 1990).

In addition, Woolf (1997) mentioned that the appointment of an audit committee is an important development intended to enhance the communication between the board of directors and both the internal and external auditors. It is widely accepted that the idea of audit committees as discussed by Cadbury Committee (1992) derived from North American experience (Collier, 1996).

The SEC has supported the establishment of audit committees for many years and has strongly recommended that its registrants establish audit committees since the early 1940s (Birkett, 1986). Although the term “audit committee” had not been used yet, the SEC discussed the need to establish a specific group, composed of non-executive directors, to take on specific functions such as the selection of external auditors. The

SEC decided not to make this a requirement because it would have placed a large burden on small companies (Abdolmohammadi and Levy, 1992).

The first reference to this special group of directors is found in *Accounting Series Release No. 19 (ASR No. 19)*, in the *Matter of Mckesson & Robbins, Inc* (Reinstein and Luecke, 2001). In that ASR, the SEC recommended using audit committees to:

- Oversee the performance of internal and external auditors;
- Facilitate the organization's relationship with the external audit firm;
- Coordinate the financial audit;
- Negotiate audit fees; and
- Improve the financial reporting process.

In addition, in response to the McKesson & Robbins case, the NYSE also recommended that a special committee of the board composed of directors who are not officers of the company select the external auditors (Maassen 2004).

However, audit committees did not receive much attention until the late 1960s and 1970s (Collier, 1996; Kalbers and Fogarty, 1998). Williams (1977) noted that in July 1967 the Executive Committee of the American Institute of Certified Public Accountants (AICPA) recommended that all publicly owned companies should have audit committees composed of non-executive directors with whom the external auditors could communicate whenever a significant question having a material effect on the company's financial reports could not be resolved at the management level.

A survey by Mautz and Neumann (1970) showed that 32 percent of the corporations responding had audit committees. The *Bar Chris Case* in 1968 and the *post-Watergate* findings in the early 1970s resulted in the audit committees being promoted once again to increase confidence in financial reporting (Solomon 1978). In response, the SEC issued Accounting Series Release No. 123 (SEC 1972) titled Standing Audit Committees Composed on Non-executive Directors, which stated.

> "*…SEC endorses the establishment by all publicly held companies of audit committees composed of non-executive directors …to assist in providing the*

> *greatest possible protection for investors who rely on such financial statements*"

The NYSE issued a White Paper in 1973 that contained a similar recommendation (Rittenberg and Nair, 1994). Rittenberg and Nair (1994) noted that the White Paper viewed the audit committee as a necessary corporate mechanism instead of being only a corporate luxury.

In the 1970s, massive financial disclosure problems at companies such as Lockheed and Penn Central created a debate as some blamed financial accounting irregularities on too-familiar relationships between corporate boards and outside auditors (Solomon 1978). To mitigate the problem, The US Congress passed the Foreign Corrupt Practice Act of 1977, and securities exchanges adopted rules requiring a corporate board to have an independent audit committee (Abdel-Khalik 1983). This Act also imposed a statutory liability on directors of quoted companies to maintain adequate internal control systems.

In the light of the increased scandals in the late 1970s and early 1980s, the voluntary adoption of audit committees in US public companies has increased dramatically (Al-Moataz 2003). Kalbers and Fogarty (1998) found that the percentage of firms with audit committees has gone from nearly ten percent in 1958 to nearly forty percent in 1972 and to over ninety percent in 1982.

Commission on Auditor's Responsibilities (1978) emphasized the importance of audit committees and independent directors in achieving a proper balance between the auditor and management and in protecting the shareholders' interest.

In 1985, five sponsoring private sector organisations, namely, AICPA, American Accounting Association, National Association of Accountants, Institute of Internal Auditors, and Financial Executive Institute created the Independent National Commission on Fraudulent Financial Reporting (NCFFR), commonly known as the Treadway Commission (Cottell and Rankin, 1988).

Rezaee and Lander (1993) noted that during the approximately two years span between the commission's formation and the release of its final recommendations, the

Treadway Commission reviewed dozens of studies that were conducted by major universities and organisations. These studies focused on the areas of lawsuits brought against auditors, management, and companies for business failures and fraudulent activities, the role of the SEC in financial reporting, corporate codes of conduct, accounting education, opinion shopping, audit committees, quality assurance, and many other areas.

Although most groups had made recommendations on the establishment and general composition of the audit committee, The Report by the Treadway Commission (1987) was the first to provide specific guidelines on the roles and structure of audit committees. The Treadway Commission's Report offered 11 specific recommendations designed to enhance the effectiveness of audit committees:

1. Audit committees should have adequate resources and authority to discharge their responsibilities.
2. Audit committees should be informed, vigilant, and effective overseers of the company's financial reporting process and its internal control system.
3. Audit committees should review management's evaluation of the independence of the company's public accountants.
4. Audit committees should oversee the quarterly as well as the annual reporting process.
5. The SEC should mandate the establishment of an audit committee composed solely of independent directors in all public companies.
6. The SEC should require committees to issue a report describing their responsibilities and activities during the year in the company's annual report to shareholders.
7. A written charter for the committee should be developed. The full board should approve, review, and revise it when necessary.
8. Before the beginning of each year, audit committees should review management's plan to engage the company's independent public accountant to perform management advisory services.
9. Management should inform audit committees of any second opinions sought on significant accounting issues.

10. Together with top management, the audit committee should ensure that the internal auditing involvement in the entire financial reporting process is appropriate and properly co-ordinated with the independent auditor.
11. Annually, audit committees should review the program that management establishes to monitor compliance with the company's code of ethics.

This report further recommended that all public companies be required by the SEC to establish audit committees composed solely of non-executive directors. However, the SEC did not respond to such recommendation (Solomon 1978). The release of the Treadway Report positioned the audit committee as the "keystone" of corporate financial governance (Vanasco, 1994).

Furthermore, the National Association of Securities Dealers Automated Quotations (NASDAQ) adopted a requirement in 1989 that audit committees should be established and the majority of the members of which shall be independent directors (Rittenberg and Nair, 1994).

DeZoort (1997) noted that a number of the US stock exchanges reacted quickly to the heightened interest in boards of directors and audit committees. The NYSE mandated audit committees for companies traded on its exchange in 1978. In 1989, the National Association of Securities Dealers joined the NYSE in requiring audit committees for companies listed on NASDAQ/NMS.

The American Stock Exchange (AMEX), while not requiring audit committees for its listed companies, began in 1979 to strongly recommend audit committees with members that are independent of management.

In 1989, the AICPA established a requirement for external auditors to communicate formally with audit committees as a standard part of the audit (DeZoort 1997). This movement toward the establishment of audit committees, as Cottell and Rankin (1988) described, is largely the result of institutional pressures on corporations both to strengthen corporate governance and to enhance the external auditor's independence and performance.

During the 1990s, as some companies increasingly began to manage their financial disclosures, the practice prompted some to question the integrity of financial

statements. The SEC Chairman, Levitt (1998), addressed this concern in his well-known speech "The Numbers Game". He called for a committee to examine the financial reporting system. As a result, The SEC encouraged the NYSE and the NASD to form a private sector body to investigate the problems the SEC perceived.

On October 1998 the NYSE and the NASD formed the Blue Robin Committee (BRC) on improving the effectiveness of corporate audit committees. The objective of this Committee was to evaluate U.S. corporate financial reporting and specifically to assess the current mechanisms for oversight and accountability among corporate audit committees, independent auditors, and financial and senior management (Millstein, 1999).

The Committee highlighted that audit committee disclosures should be an important part of a firm's financial disclosures (Hurtt et al, 1999). The Committee issued a report known as the BRC Report in February 1999 (Blue Robin Committee, 1999). The Report provided ten recommendations aimed at improving the audit committee effectiveness. These recommendations are grouped in three general categories to enhance the process through which the audit committee carries out its duties (Millstein, 1999; Reinstein and Luecke, 2001):

1) Strengthening the independence of the audit committee;
2) Making the operation of the audit committee more effective; and
3) Improving the mechanisms for discussion and accountability among the audit committee, the outside auditors, and the management.

As such, audit committee disclosures are an important part of a company's financial disclosures. On 10 January 2000, the SEC adopted Release No. 34.42266 titled "Audit Committee Disclosure", which required that companies include in their proxy statements certain disclosures about their audit committees (SEC 2000). These required disclosures included whether the committee had:

- Reviewed and discussed the audited financial statements with management;
- Discussed with the external auditor the matters required to be discussed by Statement on Auditing Standards No. 61 (American Institute of Certified Public Accountants, 1981); and

- Received from the external auditor the disclosures required by Independence Standard Board's Standard No. 1 and discussed with the external auditor the auditor's independence.

In addition, The Release required audit committees to disclose within the "annual proxy statement" whether the board of directors has adopted a written charter for the audit committee. If such a charter does exist, the company is required to include a copy of the charter as an appendix to the company's proxy statement at least once in every three years.

In 2001, the collapse of Enron Corp, the biggest in the corporate history of the United States, has captured the attention of regulators, professional bodies and investors and has rekindled the debate on corporate accountability and raised fears that the corporate system in the US is rotting at its core (Sridhar 2002)**.**

As a result, the US Congress passed legislation, the *Sarbanes-Oxley Act* (2002) that establishes many new requirements, including those governing the composition and responsibilities of audit committees. Most observers would agree that the *Sarbanes-Oxley Act 2002* is the single most important piece of legislation affecting corporate governance, financial disclosure and the practice of public accounting since the US securities laws of the early 1930s (PriceWaterhouseCoopers 2002).

In this Act, special attention was given to the audit committee as one of the most important corporate mechanisms to enhance the integrity of financial reports. In Section 301, the following requirements are recommended:

- Each member of the audit committee shall be a member of the board of directors, and shall otherwise be independent.
- The audit committee shall be directly responsible for the appointment, compensation, and oversight of the work of the external auditor.
- The audit committee shall establish procedures for the "receipt, retention, and treatment of complaints" received by the firm regarding accounting, internal controls, and auditing.
- Each audit committee shall have the authority to engage independent counsel or other advisors, as it determines necessary to carry out its duties.

- Each firm shall provide appropriate funding to the audit committee.

In addition, Section 407 required that the SEC issue rules to require public companies to disclose whether at least one member of its audit committee is a financial expert.

On 24 January 2003, the SEC adopted *Release Nos. 33-8177; 34-47235* titled "Disclosure Required by Sections 406 and 407 of the Sarbanes-Oxley Act of 2002" requiring public companies, other than registered investment companies, to disclose in the annual report whether they have at least one audit committee financial expert serving on the audit committee and whether such person is independent (SEC 2003a). In addition, the Release indicated that if the issuer does not have an audit committee financial expert serving on the audit committee, the issuer must explain why it does not.

On 10 April 2003, the SEC adopted *Release Nos. 33-8220; 34-47654* titled "Standards Relating to Listed Company Audit Committees" directing the national securities exchanges and national securities associations such as the NYSE and NASDAQ Stock Markets to prohibit the listing of any firm that is not complying with the audit committee requirements established by Sarbanes-Oxley Act (SEC 2003b).

The rule applies to public companies that have their stock listed on a national securities exchange or on an automated inter-dealer quotation system of a national securities association (e.g., NASDAQ National or SmallCap Markets). Moreover, the SEC recently adopted another rule that requires audit committees in public companies to pre-approve all permissible non-audit services provided to the issuer by the auditor (SEC 2003c). This final rule will apply to the provision of non-audit services by the auditor beginning on 6 May 2003.

In summary, the story of audit committees started in the US in the 1940s when both the SEC and the NYSE recommended the establishment of audit committees as a means to protect investors and other interested parties. In the 1960s and 1970s, recommendations regarding the establishment of audit committees continued to be made by the SEC, NYSE and professional bodies such as AICPA. The Treadway Commission (1987) was the first to provide specific guidelines on the roles and structure of audit committees. In 1999, the BRC issued its recommendations that

aimed at improving the effectiveness of audit committees as one of the most important corporate governance mechanisms.

These recommendations have later been adopted by the SEC and major stock exchanges such as the NYSE and NASDAQ. Subsequent to the collapse of Enron (2001), the first legislation regarding audit committees was introduced by the US Congress (Sarbanes-Oxley Act 2002), which required all public companies to establish audit committees and recommended that the SEC introduces new listing rules that will lead to more disclosures regarding audit committees. Most recently, the SEC adopted such recommendations and issued a number of releases such as *Release No. 33-8220* (SEC 2003b).

2.2.2 Development of Audit Committees in Canada

In Canada, the pressure for audit committees arose from corporate collapses in the mid 1960s. The bankruptcy of *Atlantic Acceptance Corporation Limited* in 1965, which was a major event in the history of accounting in Canada, has been equated to the *McKesson & Robbins Case* in the United States (Green, 1994). This event had considerable repercussions for Canadian financial practices (Green, 1994; Collier, 1996) and led to the issuance of the Canadian Royal Commission Report in 1965, which recommended that all public companies should establish an audit committee.

In 1967, the Lawrence Commission, an Ontario Select Committee on Company Law, recommended that the establishment of an audit committee should be mandatory for all public companies (Canadian Institute of Chartered Accountants 1981). The Lawrence Committee Report concluded that audit committees would make it easier for auditors to retain their independence with clients, and this report identified the audit committee as an important communication link between the auditor and the board of directors (Canadian Institute of Chartered Accountants 1981).

The Ontario Business Committees Corporation Act 1970 introduced legislation that made audit committees mandatory for all public companies (Vanasco 1994). Basically this Act sets out:

- Composition of the committee and chairman;
- The fact that the committee is to be elected annually;

- Review function of committee prior to accounts being presented to the full board;
- Auditor's position including the right to appear, to be heard, and to attend when required; and
- Auditor's right to have the chairman of the audit committee convene a meeting to consider matters the auditor feels should be brought to the attention of the board of directors or shareholders.

In 1971, the Canadian Central Government adopted the legislation of the Ontario Business Committees Corporation Act 1970 (Solomon 1978). This Act was amended in 1975 to require all public companies to have an audit committee whose duty is to approve the financial statements prior to the submission to the main board of directors for approval. In 1978, Adams Report made further recommendations with respect to the responsibilities of the audit committees (Vanasco 1994).

In 1986, the Macdonald Commission, established by the CICA, concluded that one way of increasing the auditor's leverage with regard to management was to strengthen the performance of the audit committee. In 1988, the Macdonald Commission released the report entitled " Macdonald Report", which made several recommendations regarding audit committees (Macdonald Commission 1987), which include:

- All public companies should establish an audit committee composed primarily of non-executive directors;
- Audit committees should report annually to shareholders;
- Audit committees should review both the interim and annual financial statements prior to publication.

Another significant contribution to audit committee development came with the release of a Notice on Audit Committees in 1990 by the Canadian Securities Administrators (Hansell 2002). It dealt not only with issues of independence and the conduct of audit committees, but also addressed the mandate of the audit committee in considerable detail. For example, it recommended that the audit committee review

non-audit engagements between the corporation and the external auditor and consider the impact of those engagements on the auditor's independence.

The Bank Act, the Trust and Loan Companies Act and the Insurance Companies Act were all amended in 1992 to ensure that the audit committee be composed of at least three non-executive directors of whom none should be officers or employees of the company or its subsidiaries. These Acts also set out specific duties and responsibilities for such committees, which include:

- Reviewing annual financial statements prior to board approval;
- Ensuring that appropriate internal control is used;
- Meeting with external auditors to discuss the financial statements or any matters that may affect the company; and
- Meeting with chief internal auditors and management to discuss the effectiveness of control procedures.

In 1993, the Toronto Stock Exchange (TSX) established a Committee on Corporate Governance, which aimed at improving corporate governance to enhance the integrity of the market (Hansell 2002). In December 1994, the Committee released the report entitled "Where Were the Directors?" also known as the "Dey Report" (Toronto Stock Exchange 1994). This Report proposed fourteen guidelines for corporate governance. For, fiscal years ending on or after 30 June 1995, the TSX has implemented a requirement that TSX-listed firms report on their corporate governance system and on whether their system was accordance with the fourteen guidelines.

The TSX guidelines suggest that a firm's board of directors should assume responsibility for stewardship, including strategic planning, risk management and internal control. The guidelines also suggest that the board of directors should be constituted with a majority of independent directors and that the firm should disclose whether the majority of the board members are independent. In addition, the guidelines discuss orientation and training for new board members, compensation committees, the composition and responsibilities of audit committees and related matters. However, the implementation of such guidelines was voluntary.

As a follow-up to the Dey Report, the TSX and the Institute of Corporate Directors (ICD) surveyed senior executives of TSX-listed firms in 1998 to assess how much progress had been made in improving the quality of corporate governance since the release of the Dey Report (Hansell 2002). In June 1999, the results of this survey were released in the report entitled "Report on Corporate Governance, 1999: Five Years to the Dey" (Hansell 2002).

Moreover, the extent of compliance with the TSX corporate governance guidelines was evaluated by the authors by reviewing the corporate governance disclosures of all 300 TSX firms for the 1997 fiscal year. Results indicated that 94 percent of TSX 300 firms made corporate governance disclosures as required by the TSX. However, the quantity and the quality of the disclosures made varied widely.

In October 1999, responding to one of the recommendations arising out of that survey, the TSX amended its corporate governance disclosure requirements (Bujaki and McConomy 2002). For years ending on or after 31 December 1999, TSX-listed firms are required not only to describe their approach to corporate governance on an annual basis, but also to specifically address each of the fourteen guidelines. The impact of this change can be seen most readily in the expanded corporate governance disclosure sections in the 1999 annual reports of many TSX-listed companies (Bujaki and McConomy 2002).

In July 2000, the TSX, the Canadian Venture Exchange (CDNX) and the CICA established the Joint Committee on Corporate Governance (JCCG) (Bujaki and McConomy 2002). The objective of such committee is to review the current state of corporate governance in Canada, compare Canadian and international best practices and make recommendations for changes that will ensure Canadian corporate governance is among the best in the world. In November 2001, the JCCG issued its final report " Beyond Compliance: Building a Governance Culture" (Joint Committee on Corporate Governance 2001).

This report focuses on three key issues that go beyond compliance and are fundamental to building a healthy governance culture. These are:

1. Measures that can be taken to strengthen the capacity of the board to engage in a mature and constructive relationship with management – one that is

grounded in a mutual understanding of respective roles and the ability of the board to act independently in fulfilling its responsibilities.

2. The critical role that the board must play in choosing the CEO of the company, in actively contributing to the company's strategic direction, approving a strategic plan and monitoring performance against agreed benchmarks.
3. Particular issues that independent directors must face in corporations that have significant shareholders.

It also contains fifteen practical recommendations aimed at raising the standard of quality in practice of corporate governance in Canada and improving the effectiveness of governance in Canadian public corporations (Stevenson et al 2002). It proposed modifications to the TSX disclosure requirements and governance guidelines that were introduced in 1995 following the recommendations of the Dey Report. The new modified disclosure requirements and governance guidelines should apply to all companies regardless of their size.

While all TSX-listed companies are required to provide full and complete governance disclosures regarding the fifteen recommendations, the requirements are quite different for CDNX-listed companies. These companies are classified into Tier 1 (large firms) and Tier 2 (small firms) and not required to comply with any corporate governance guideline.

As a result, the final report by JCCG recommends that the CDNX should set reasonable time frames for full and complete governance disclosures and should work with Tier 1 companies to assist them in developing the capacity to comply with the Guidelines. Moreover, CDNX should encourage Tier 2 companies to disclose and comply with the Guidelines.

The most important change regarding audit committees in the JCCG report was the introduction of financial literacy and accounting expertise requirements for audit committee members. On 26 March 2002 the TSX approved amendments of the corporate governance disclosure guidelines applicable to TSX listed companies. These amendments are in response to the recommendations by the JCCG.

Hansell (2002) provided a summary of the responsibilities of an audit committee under Canadian corporate and securities laws. These responsibilities include:

- The audit committee is required to review the annual financial statements before they are approved by the board of directors;
- Financial statements included in a prospectus must be approved by the audit committee before they are approved by the board;
- Ontario securities laws require the board of directors to review the unaudited interim financial statements, but permit the board to delegate this responsibility to the audit committee;
- Securities regulators encourage audit committees to review the corporation's management discussion and analysis and are proposing to introduce a requirement that they do so as part of the national instrument being proposed by the Canadian Securities Administrators; and
- The Canadian Securities Administrators recommended that the board of directors or audit committee review earnings guidance and news releases containing financial information based on the company's financial statements before the release of those statements.

In summary, the legal requirements imposed on audit committees in Canada are minimal. Generally, they must be composed of at least three directors. A majority of whom must be outside directors. Although the legal framework for audit committees has changed very little over the years, best practice standards have evolved significantly. Best practices means, for this purpose, a set of recommended practices developed by a body or organization with broadly-recognized standing or expertise in the area of audit committee effectiveness.

2.2.3 Development of Audit Committees in the UK

The support for audit committees has gained impetus in the last two decades primarily as a result of corporation failures due to poor corporate controls and low confidence in the credibility of financial statements, independence and effectiveness of the external audit function. In the light of these problems, more attention was given to the establishment of audit committees and their role to enhance the reliability and quality of financial statements.

Despite the fact that there is still no statutory requirement to have an audit committee in the UK, public sector initiatives are in evidence from as early as 1973. The internal

audit in the Civil Service noted the advantage of having an audit committee that included the discussion of audit plans and results as one of its roles. Private sector initiatives have been most active in the last two decades. In 1977, the Companies Bill tried to advocate for legislation on the establishment of audit committees. However, its efforts were unsuccessful (Dafinone 2001).

In 1982, Pro-Ned, an organization for the promotion of non-executive directors, was set up by the Bank of England, CBI, and other financial institutions (Goobey, 2001). In 1987, Pro-Ned published the Code of Recommended Best Practice (Pro-Ned, 1987) which included the recommendation that

> *"…the appointment of non-executive directors… to facilitate the establishment of audit committees in large quoted companies"*

In 1986, an Institute of Chartered Accountants of England and Wales working party recommended that audit committees be responsible for both the appointment and remuneration of auditors, the approval of audit plans and the review of management reports issued by auditors. In 1987, the Bank of England issued a paper entitled "the Role of Audit Committees in Banks" that recommended that all banks have to establish an audit committee (Vanasco, 1994b). In the same year, the London Stock Exchange also recommended that all listed companies should establish audit committees composed of non-executive directors.

On May 1991, the Financial Reporting Council, the London Stock Exchange and the Accountancy Profession established the Committee on the Financial Aspects of Corporate Governance to address the financial aspects of corporate governance. In 1992, this committee published its recommendations in a Code of Best Practice- The Cadbury Report (Cadbury Committee 1992).

This report required that all companies listed on the Stock Exchange should disclose, as a continuing listing obligation, a statement of compliance with the Code of Best Practice. It further recommended that the external auditors should review the statement of compliance and they were also required to state if the company had complied with the Code of Best Practice. Paragraph 4.3 of the Code of Best Practice recommended that the Board should establish an audit committee of at least 3 non-

executive directors with written terms of reference, which deal clearly with its authority and duties (Cadbury Committee 1992).

The Hampel Report (1998) restated the recommendations with respect to the establishment, structure, role and duties of audit committees in the UK. The recommendations of both reports (Cadbury Committee and Hampel Report) were included in the Combined Code on Corporate Governance.

The Turnbull Report (1999) considered the role of audit committees and highlighted that the annual review of the effectiveness of internal control could be delegated to the audit committee. However, the definition of internal control in this report was widened to include all controls rather than just financial controls. The delegation of this review to the audit committee therefore inferred that audit committee roles could be extended to include an assessment of the overall risk to the organization.

In late July 2002, the Government asked the Financial Reporting Council (FRC) to put in hand the development of the existing Combined Code guidance on audit committees. On 12 September the FRC issued a Press Notice announcing the establishment of the FRC-Appointed Group. A report by this group was submitted to the FRC in December 2002 and published in January 2003. This report is well known as the Smith Guidance on Audit Committees. This guidance is designed to assist companies in making suitable arrangements for their audit committees and to assist directors serving on the board of audit committees in carrying out their role.

This guidance includes certain essential requirements that every audit committee should meet. Compliance with these is necessary for compliance with the Code. Listed companies that do not comply with these requirements should include an explanation as to why they have not complied with these requirements in the statement required by the Listing Rules. It is recognized that some of the requirements may be inappropriate for some listed companies. In particular, many smaller companies may have fewer than three non-executive and independent directors. All listed companies are encouraged to meet the requirements but if they cannot, or if they believe that a requirement is inappropriate in the circumstances of the company, the right course is to explain the position. Finally, this guidance applies to all the UK-

listed companies and shall apply in respect of accounting periods starting on or after 1 January 2003.

In April 2002, the Secretary of State, Patricia Hewitt, and the Chancellor, Gordon Brown, appointed Derek Higgs to lead a short independent review of the role and effectiveness of non-executive directors. Higgs published his report in January 2003 (Higgs 2003).

Whereas in the US most governance discussion has focused on corporate malpractice, in the UK sharp loss of shareholder value is more common than fraud or corporate collapse. The fall in stock markets in the period 2000-2002 has thrown up some harsh examples. In recent cases of corporate under performance in the UK, the role of the board and its committees has been called into question. Thus, Higgs Report focuses on enhancing the competence and effectiveness of boards and on issues of accountability.

In July 2003, the FRC issued its latest report regarding Corporate Governance entitled the Combined Code on Corporate Governance. This Code supersedes and replaces the Combined Code issued by the Hampel Committee (1998) on Corporate Governance. It derives from a review of the role and effectiveness of non-executive directors (Higgs 2003) and a review of audit committees. It is intended that the new Code will apply for reporting years beginning on or after 1 November 2003.

The Code contains main and supporting principles and provisions. The existing Listing Rules require listed companies to make a disclosure statement in two parts in relation to the Code. In the first part of the statement, the company has to report on how it applies the principles in the Code. In future this will need to cover both main and supporting principles.

The form and content of this part of the statement are not prescribed, the intention being that companies should have a free hand to explain their governance policies in the light of the principles, including any special circumstances, applying to them which have lead to a particular approach.

In the second part of the statement the company has either to confirm that it complies with the Code's provisions or – where it does not – to provide an explanation. This

'Comply or Explain' approach has been in operation for over ten years and the flexibility it offers has been widely welcomed both by company boards and by investors. It is for shareholders and others to evaluate the company's statement.

While it is expected that listed companies will comply with the Code's provisions most of the time, it is recognized that departure from the provisions of the Code may be justified in particular circumstances. Every company must review each provision carefully and give a considered explanation if it departs from the Code provisions.

In summary, despite the fact that the establishment of audit committees is not mandated by statute in the UK, the self-regulation approach, which has been taken by government through the FRC, requires all listed companies to disclose in their annual reports the degree of compliance with the Combined Code on Corporate Governance. It is felt that a statutory regime would not be as flexible and adaptable as a self-regulatory system (Financial Reporting Council, 2003).

2.2.4 Development of Audit Committees in Australia

The development of audit committees in Australia could be traced to the 1970s following the great company crashes in the seventies, which badly shocked the confidence in Australian companies (Jamieson 1980).

In 1978, a sub-committee of the N.S.W Division of the Security Institute of Australia (SIA) completed a study of the relevance of audit committees to Australia and provided the following recommendations (Turnbull 1980):

- Positive efforts should be made by the SIA, Professional Accounting Bodies, the Stock Exchanges and the Australian Institute of Management to encourage listed companies to appoint audit committees and publicise their existence and membership;
- Professional bodies should be encouraged to present a balanced view on audit committees in an effort to increase their incidence in public companies;
- No attempt should be made at this time, either by statute or stock exchange requirement, to legislate the appointment or responsibilities of audit committees; and
- Audit committees should be composed of only nom-executive directors.

The Company Directors Association of Australia Limited supported corporate self-regulation through the establishment of a special audit or appraisal committee of non-executive directors in its Press Release entitled "Audit Committees and Corporate Self-Regulation" (Turnbull 1980).

The results of a survey by Christofi (1978) indicated that 28 percent of fifty Australian companies surveyed had audit committees and another 10 percent intended to establish an audit committee. In addition, the survey revealed that the practices regarding size, composition and frequency of meetings were similar to those of companies listed on the NYSE.

In 1989, The Cooney Committee, a parliamentary committee, recommended that listed companies be required to establish audit committees (Grice 1993). Two years later, the same recommendation was made by another parliamentary committee called the Lavarch Committee (Grice 1993).

In addition, the accountancy bodies in Australia have reinforced their strong support for audit committees by approving the issue by the Auditing Standards Board in May 1991 of the Statement of Auditing Practice AUP 31 entitled "Communication with an Audit Committee" (Grice 1993). In addition, a survey by Arthur Andersen (1994) of all listed companies in Australia found that 48 percent of companies had audit committees.

In 1992, The Australian Stock Exchange (ASX) released the 1992 Exposure Draft regarding mandating audit committees to all listed companies (Vanasco 1994). However, the ASX decided not to do so because the submissions in response to the 1992 Exposure Draft indicated that such requirement would be burdensome for many listed companies (Baxter and Pragasam 1999).

Instead of mandating audit committees, the ASX introduced its first requirements regarding audit committees in 1993 through the release of two listing rules (Ramsay 2001). *Rule 4.10.2* requires a company to indicate in its annual report information whether the entity had an audit committee at the date of the directors' report and, if it did not, it must explain why (Ramsay 2001).

In addition, *Rule 4.10.3* requires a company to include in its annual report a statement of the main corporate governance practices that the entity had in place during the reporting period (Ramsay 2001).

Among the matters that must be addressed is outlining the procedures for the nomination of external auditors and for reviewing the adequacy of existing external audit arrangements and the role of audit committees in such procedures (Ramsay 2001).

In 1993, the Hilmer Committee was established to remodel the corporate governance debate (Hilmer Report 1993). This committee suggested that an audit committee should be comprised of non-executive directors of which the chairperson and majority should be independent directors. Moreover, in 1996, Working Group of Corporate Practices and Conduct also suggested that an audit committee should have a majority of independent directors (Sarre et al 2001). The Australian Investment Managers' Association (1996) developed guidelines to enhance audit committee effectiveness. These guidelines suggest that a company should establish an audit committee that should be chaired by an independent director and comprise only non-executive directors with a majority of independent directors.

Ramsay (2001) provided a number of recommendations to enhance audit committee effectiveness. These recommendations could be summarised as follows:

- Listed companies must have a qualified audit committee;
- The audit committee must have a written charter;
- The audit committee must be structured to be independent, literate and has at least one member who has accounting and financial expertise;
- The audit committee should meet regularly with pre-arranged dates;
- The audit committee should report to the board of directors and in the external reports; and
- The audit committee should review and assess the external reporting of the company, related party transactions, internal control, risk management, the external and internal audit of the company

There is no legal requirement at present for a company or its board of directors to form an audit committee. However, the Corporation Law Economic Reform Program 9 (CLERP 9) proposals place a strong emphasis on reinforcing the Australian principle-based approach to addressing governance matters and on achieving a balance between regulation and co-regulation (Commonwealth Treasury 2002).

While CLERP 9 proposes mandatory audit committees for the top 500 listed companies, Other companies would be able to apply the principles that suit their individual circumstances. Strong support has been given by CLERP 9 for the ASX to develop best practice standards for corporate governance.

As a result, the ASX Corporate Governance Council (ASX CGC) was formed on 15 August 2002 from 21 different groups that have disparate business backgrounds (The Australian Stock Exchange Corporate Governance Council 2003). Despite the fact that these groups have different perspectives and aims, the common mission for such council was to develop and deliver an industry-wide, supportable and supported framework for corporate governance that could offer a practical guide for listed companies, shareholders, the market and the Australian community (The Australian Stock Exchange Corporate Governance Council 2003).

In March 2003, ASX CGC issued 10 principles aimed at enhancing corporate governance in Australia (The Australian Stock Exchange Corporate Governance Council 2003). Principle 4 has focused on audit committee establishment and structure. It provides recommendations and guidelines to improve ACE. These recommendations and guidelines could be summarised as follows:

- The board should establish an audit committee;
- The audit committee should be structured to consist of:
    - Only non-executive directors
    - A majority of independent directors
    - An independent director, who is not the chairperson of the board
    - Has at least three members
    - At least one member who has financial expertise

  - Literate audit committee members

- The audit committee should have a formal charter; and
- Reporting on the compliance with Principle 4 and its recommendations.

The ASX Listing Rule 12.7 requires companies listed on the ASX Top 500 to comply with the ASX CGC recommendations concerning the composition, operation and responsibility of audit committees by 1 January 2005 (Australian Stock Exchange Corporate Governance Council 2003). However, the ASX CGC Implementation Review Group (IRG) recognized that the additional costs of having an effective audit committee might be more than the benefits of such committee especially for small firms (The Australian Stock Exchange Corporate Governance Council Implementation Review Group 2004).

As a result, the IRG suggested that while the ASX Top 500 are still required to establish a formal audit committee, only the ASX Top 300 need to establish an effective audit committee that complies with all the recommendations of the ASX CGC (Australian Stock Exchange Corporate Governance Council Implementation Review Group 2004).

On the other hand, all the ASX Non-Top 300 are required to report if they have an audit committee or not and if not to answer why? The disclosure regarding the audit committee and other corporate governance mechanisms should be reported in a special section in the annual report called corporate governance report (Australian Stock Exchange Corporate Governance Council 2003).

In summary, the Australia audit committee framework is sourced only from listing rules and codes of best practices and guidelines due to the absence of any legal requirements regarding audit committees.

2.2.5 Audit committees in Saudi Arabia

Despite the fact that Saudi Arabia has never experienced any corporate collapses, worldwide collapses (e.g., Enron 2001) and the poor performance of a number of Saudi companies in the early 90s had lead to increased concerns regarding corporate governance in Saudi Arabia. The first step that was taken to address these concerns

was the Royal Consent in 1991 for the establishment of the Saudi Organization of Certified Public Accountants (SOCPA) to handle the regulation of the auditing and accountancy profession.

Recognizing the importance of audit committees as a major tool to increase confidence in financial statements the Minister of Commerce issued a resolution in January 1994 (Saudi Ministry of Commerce 1994), mandating all public companies to establish audit committees.

The resolution for the establishment of audit committee in S.A. comprised guidance to control the selection of their members. These guidelines are:

1) The member should be a shareholder of at least 20 shares and the number of the members should be odd and not less than three;

2) The member should not be a member of the executive board of directors or handle a technical, managerial or consultancy work;

3) The member should have a good command of financial and accounting practices and standards, preferably having appropriate qualifications in this field; and

4) The member should not have a direct or indirect interest in the transactions and contracts of the company.

Ultimately the general assembly of shareholders (the annual general meeting) of the company has responsibility for the selection of the members of the audit committee. The audit committee has the responsibility for nominating the external auditor to carry out the external audit and for receiving reports from the auditor. The audit committee should nominate five audit firms from those licensed to carry out such work in Saudi Arabia. The nominated audit firms are then asked to submit proposals and on the basis of these, the audit committee recommends one or more than one firm where appropriate.

This recommendation will then be taken by the directors to the general assembly, which has the ultimate responsibility for appointing the external auditor, determining the audit fee and the tenure of office. Subject to the requirements in the resolution, if

only one audit firm is appointed, then the audit committee does not recommence the nomination process until three years after the audit firm commenced the audit. When more than one audit firm is appointed, the nomination process does not recommence until five years after the audit firms commenced their audit (Saudi Ministry of Commerce, 1994).

Following various cases of the misinterpretation of the resolution by many corporations (such as the level of a good command of financial and accounting practices, the appropriate qualifications and other duties and authorities of audit committees), critics such as Abulkhair (1995); Arrubaish (1995); and Shabani (1995) have published their views in the Saudi print media.

In Saudi banks, the matter is further slightly complicated as there are two regulatory bodies that exercise control, namely, the Ministry of Commerce and the Saudi Arabian Monetary Agency (Al-Moataz 2003). In 1994, Saudi Arabian Monetary Agency (SAMA) issued rules for banks in Saudi Arabia for organising audit committees (Saudi Arabian Monetary Agency 1994). In the Saudi Arabian Monetary Agency's rules (1994: 3) regarding audit committees, the board of directors should appoint one of its members as a chairman of the audit committee for a minimum of three years and his independence from the executive and the management is of utmost importance for his effectiveness. In addition, the chairman of an audit committee is the one who ultimately determines its effectiveness and success, because he normally sets its tone, agenda and style. For this reason, the selection of the chairman of the audit committee must conform to the following criteria:

1. He should not be the chairman of the board.
2. He should not be related to the other members of the board or have any financial relationship with them.
3. He should not have any relationship with the senior management of the bank.

Membership of audit committees should range between three and five members and the majority of the members are required to attend each meeting. An audit committee may include qualified members from the board, ex-board members and outsiders. However, the committee must be composed mostly of outsiders who are not board

members, senior managers, officers, employees, major customers or agents of the bank or its affiliates.

The number of meetings an audit committee should hold is determined by the size and nature of the bank and the scope of the committee's activities. For a committee with normal activities, there should be at least four meetings each year. This should include an annual meeting with the board of directors. The frequency of the committee's meetings with external auditors will depend on its needs and the requests from them. The meetings with external auditors should not be in the minimum requirements of four meetings in a year (Saudi Arabian Monetary Agency 1994: 3-4).

It can be seen from the previous rules that the requirements for the audit committees and its membership and other responsibilities that are mentioned in the SAMA rules are significantly different from the resolution of Ministry of Commerce 1994, which did not explain in detail how these committees would be established. It should be noted that Al-Twaijry et al (2002) held some interviews in 1998 with academics and external and internal auditors to examine the role of audit committees in the Saudi Arabian corporate sector. The interviewees expressed concerns about the terms of reference of audit committees and the scope of work undertaken. The independence and expertise of audit committee members were called into question. The interviewees were of the opinion that there was a clear need for the Ministry of Commerce to issue further regulations in order to improve the effectiveness of audit committees in Saudi corporations. However, the members of audit committees have not participated in these interviews.

In 2002, the Internal Audit Committee (IAC), which was one of the SOCPA committees, reviewed the SMC best practices and recommendations aimed to enhance audit committee effectiveness in the light of the criticisms for such best practices and recommendations and in the light of the recent developments in a number of countries in general and the US in particular (Saudi Organization of Certified Public Accountants 2003). On 11 March 2003, this committee announced its first draft of the new best practices and recommendations to improve the effectiveness of audit committees in public companies. Unlike the SMC best practices and recommendations regarding audit committees, the new best practices and

recommendations are very clear and comprehensive. The most important best practices and recommendations in this first draft were as follows.

- All public companies are required to establish audit committees;
- The audit committee should have at least four members all of whom must be independent directors;
- The audit committee should meet at least four times per year;
- The chairperson of the audit committee must not be a member of the board of directors;
- The audit committee should have at least one expert who has at least bachelor degree in accounting or finance; and
- The audit committee should have a formal charter.

The IAC sent this first draft to academics, external auditors, internal auditors and other interested parties to comment on these new best practices and recommendations. However, up to this point, no changes have been made on the first draft and it is not clear if such best practices and recommendations will be adopted by the SSEC or SMC or not.

In summary, the audit committee framework in Saudi Arabia is a combination of statute and codes of best practice and guidelines as such framework lacks any listing rules by the SSEC regarding the establishment or the structures of audit committees.

2.3 Summary

In this chapter, a number of alternative definitions of an audit committee, which have been used in the audit committee literature, was offered. In addition, the development of audit committees over time in five different countries including Australia and Saudi Arabia were reviewed and discussed with detail.

CHAPTER 3:

LITERATURE REVIEW

3.1 Introduction

Audit committee literature has experienced a rapid growth in the recent years as a result of the rising concerns about corporate governance and the emphasis on the importance of audit committees to enhance the quality of financial reporting (DeZoort et al. 2002)

Audit committee literature could be described as diverse literature as it investigates a variety of issues relating to audit committees. In addition, such literature is expansive indicating that although much research has been conducted in this area, there are still many future research opportunities related to audit committee that need to be investigated (Spira 2002). Moreover, most of the studies that have been conducted in the area of audit committees used American data and, as a result, audit committee literature could be described as a U.S. based literature (Spira 2002).

This chapter has two sections. The first section reviews the general audit committee literature. It covers two streams of research, namely, audit committee formation and audit committee effectiveness (ACE). While, the first stream of research has focused on the purposes of the audit committee and has investigated the factors (incentives) that affect the formation of such committees, the second stream of research has focused on the fundamental determinants of ACE.

In the second section, a brief review of audit committee roles is presented and then this section is divided into two parts to provide a comprehensive review of audit committee literature related to audit quality and the protection of auditor independence. The first part reviews audit quality literature and identifies the determinants of such quality. In addition, a number of studies that investigated the influence of ACE and different audit committee characteristics on audit quality is comprehensively presented, discussed and critiqued. Moreover, gaps in the literature in this area are identified and three research questions related to audit committees and auditor selection are stated in this part.

The second part reviews auditor independence literature and identifies the threats that could impair such independence. Moreover, the provision of non-audit services literature related to auditor independence is reviewed. Finally, the studies that examine the impact of ACE and audit committee characteristics on the NAS purchases are discussed and critiqued in detail. Moreover, gaps in the literature in this area are identified and three research questions related to audit committee and NAS purchases are stated in this part.

3.2 General Review

3.2.1 Audit Committee Formation

As discussed in the previous chapter, audit committee development in most countries has been driven by concerns about the credibility of financial reporting as a result of the high profile corporate collapses. The US context provides great opportunity for exploring the reasons for the establishment of audit committees because they have a longer history of development than elsewhere (Spira 1999).

Pomeranz (1977) argued that the popularity of audit committees is due not only to the fact that they protect shareholders' interests, but also because they help guide management and enhance corporate credibility. In addition, the author highlighted the important role of audit committees in the selection and protection of external auditors. Finally, the author emphasised that the first step in forming an audit committee is to draw up a charter broadly expressing its objectives.

Cobb (1993) investigated the purposes of the audit committee in the US during the 1980s and found some disagreement among commentators regarding such purposes. However, the author was able to identify four main objectives for the formation of such committees, namely, reduction of board liability, establishing links between the external auditor and the board, the reduction of illegal activity and the prevention of fraudulent financial reporting.

The Treadway Report (Treadway Commission 1987) had ranked the reduction of illegal activity and the prevention of fraudulent financial reporting as the primary roles of the audit committee.

In addition, Spangler and Braiotta (1990) found that the reduction of illegal activity and the prevention of fraudulent financial reporting were described by the audit committee members and those working with them as the primary roles of audit committees.

However, a number of studies has also been conducted in other countries such as the UK, New Zealand, Australia, Saudi Arabia and Malaysia to explore the purposes of the audit committee.

Marrian (1988) conducted a survey to investigate the reasons for the formation of audit committees in the UK. The results of this survey revealed that financial collapses and the following of fashion were the most important reasons for such formation.

In addition, Collier (1992) conducted a more detailed survey to examine the incentives for the formation of the audit committee in UK firms. This study provided the following list of reasons for establishment of an audit committee ranked in order starting with the most frequent ones.

1. Good corporate practice
2. Strengthen the role and effectiveness of non-executive directors
3. Help directors in discharging their statutory responsibilities regarding the financial reporting
4. Protect and enhance the independence of internal auditors
5. Help the auditors in the reporting of any serious weaknesses in the control system or management
6. Improve communications between the board and both internal and external auditors
7. Increase the public confidence in the credibility and objectivity of the financial reports
8. Assist management to discharge its responsibilities to prevent fraud and errors

9. Increase the confidence of investment analysts in the credibility and objectivity of the financial reports
10. Provide an opportunity for negotiation between management and auditors
11. Possibility of legislative pressure

Despite the fact that the report of the Cadbury Committee (Cadbury Committee 1992) provided an outline of audit committee structure and a range of duties for such committees, it did not provide explicit statements regarding the purposes of the audit committee (Ezzamel and Watson 1997).

Moreover, Bradbury (1990) suggested that audit committees in New Zealand are established to increase the credibility of audited financial statements, to help boards of directors in meeting their responsibilities and to enhance auditor independence. Guthrie and Turnbull (1995) argued that audit committees in Australia were developed not only to protect investors by increasing the credibility of the financial reports, but also to protect non-executive directors on the board from being misled by management.

In Saudi Arabia, the development of audit committees was driven by concerns about the gap between the external auditor and auditee and the auditing problems of large, public companies (Al-Moataz 2003). Al-Twaijry et al (2002) indicated that the role of the audit committee and the scope of its work vary widely across Saudi public companies because of the different interpretations of the guidelines provided by Ministerial Resolve 903, which lacked clarity. Teoh and Lim (1996) also indicated that the establishment of audit committees in Malaysia was a response to corporate scandals.

On the other hand, a number of studies has described audit committee formation as a mechanism to reduce agency costs (Turley and Zaman 2004). These studies have used the agency framework to identify the incentives of the voluntary formation of audit committees (Eichenseher and Shields 1985; Pincus et al. 1989; Collier 1993; Bradbury 1990; Willekens et al. 2004). For example, using a random sample of National Association of Securities Dealers Automated Quotes (NASDAQ) over-the-counter companies, Pincus et al. (1989) identified a number of different factors that

had direct impact on the voluntary formation of such committees. Those factors were managerial ownership, firm size, leverage, audit firm size, proportion of outside directors and participation in the National Market System.

In addition, Collier (1993) found that while there was no association between company size and the formation of an audit committee, leverage and management ownership were very important determinants of the formation of audit committees.

However, using a sample of 135 firms listed on the New Zealand Stock Exchange, Bradbury (1990) analysed the incentives for voluntary formation of audit committees. The results of this study indicated that while agency costs variables and audit firm size had no associations with audit committee formation, the number of directors on the board and intercorporate ownership were found to be important determinants of voluntary audit committees.

Willekens et al (2004) investigated the associations between the voluntary formation of audit committees and some factors that could influence such formation using data from Belgian listed companies. They found that while the proportion of independent directors on the board and the size of the external audit firm were positively associated with the voluntary formation of audit committees, agency costs and board size were not related to the voluntary formation of such committees.

Eichenseher and Shields (1985) suggested that the increase in audit committee formation in the US during the late 1970s could be explained by the increase in director liability as a result of the Foreign Corrupt Practices Act (FCPA) of 1977. However, this legal protection may not be a universal explanation of the audit committee formation as it is influenced by the legal context, which differs from country to country (Turley and Zaman 2004).

In summary, despite the fact that audit committee literature has provided a long list of purposes (reasons) for audit committee formation, most of the studies in this area consider providing credible financial reports as the primary purpose or responsibility of such committee. In addition, examining the incentives of the audit committee formation has produced mixed and inconclusive results.

3.2.2 Audit Committees Effectiveness (ACE)

Most of the ACE literature has focused on one or more of the fundamental determinants of ACE, namely, composition, authority, resources and diligence. These four fundamental determinants have been used frequently in the literature to evaluate ACE in different contexts. DeZoort et al. (2002) provided a comprehensive summary of the empirical ACE literature by dividing such literature into four streams of research, which represent four fundamental determinants of ACE.

3.2.2.1 Composition

Buckby et al (1996) investigated the association between the composition of the audit committee and ACE using survey responses from the audit committee chairperson, non-executive director and internal audit manger of a sample of Australian listed companies. The results of this study indicated that audit committee independence, expertise and financial literacy were all important determinants of ACE.

Vafeas (2001) examined audit committee composition in terms of independence and experience (expertise) and tried to identify the determinants of audit committee appointments. The results of this study indicate that while the likelihood of audit committee appointment increases with the degree of outside directors' independence, such likelihood decreases with compensation committee membership, other committee membership and the length of board tenure. However, audit committee appointments were not related to equity holdings and the number of other directorships.

Vafeas (2001) highlighted the need to examine the influence of audit committee composition not only in terms of independence and expertise, but also in terms of financial literacy, on audit committee performance and the quality of the financial reports.

Prior literature has investigated the impact of audit committee independence, expertise and literacy on the effectiveness of audit committees in different contexts using different research methods.

3.2.2.1.1 Independence

A number of independence studies (e.g., Scarbrough et al. 1998; Abbott and Parker 2000; Archambeault and DeZoort 2001; Raghunandan et al. 2001; Chen et al 2005) focused on the impact of independent audit committees on the audit function.

Abbott and Parker (2000) found that firms with independent audit committees were more likely to select industry-specialist external auditors. This may reflect the desire of such audit committees to reduce their members' reputational losses, which, in turn, will enhance audit quality.

Chen et al. (2005) examined the relationship between independent audit committees and audit quality using the ASX Top 500 (at the time of testing the list contained 510 firms) in 2000. They found that the ASX Top 500 companies with high percentages of non-executive directors on their audit committees were more likely to hire a specialist (high quality) auditor compared to these with low percentages of non-executive directors on their audit committees.

In addition, Archambeault and DeZoort (2001) examined the association between audit committee independence and suspicious auditor switches[1]. They found that companies with a suspicious audit change had a smaller percentage of independent directors on the audit committee compared to these with a non-suspicious auditor change.

Moreover, both Scarbrough et al. (1998) and Raghunandan et al. (2001) used surveys to examine the influence of audit committee independence on the relationships between audit committee members and internal auditors. The results of these studies indicate that independent audit committees were more likely to have stronger relationships with internal auditors compared to dependent audit committees.

Other studies highlight the impact of audit committee independence on the quality of financial reporting and earnings management. Abbott et al. (2002) found that

[1] Suspicious auditor switches means changing auditors after disclosure of a reportable event, after receiving a modified audit opinion (Archambeault and DeZoort 2001)

companies with independent audit committees were less likely to be sanctioned by the SEC for fraudulent or misleading financial reporting.

Similarly, Beasley et al. (2000) found companies that committed fraud had less independent audit committees compared to their counterparts that did not commit fraud. In addition, McMullen and Raghunandan (1996) found that companies with reporting problems were less likely to have independent audit committees.

Klein (2002a) found that audit committee independence was negatively associated with abnormal accruals and that reductions in audit committee independence were associated with large increases in abnormal accruals.

Bedard et al. (2004) investigated the association between different audit committee characteristics and earnings management. They found that aggressive earnings management is negatively associated with the presence of an independent audit committee.

Other studies relate audit committee independence to governance and company variables. Beasley and Salterio (2001) found that voluntary increases in the number of outside audit committee members were associated with board size, board independence, and the separation of the CEO and board chair roles. In addition, Klein (2002b) found that audit committee independence was positively associated with board size and board independence and negatively associated with growth opportunities and firms with accounting losses.

It should be noted that the above independence literature has focused solely on inside and outside directors when determining audit committee independence. However, Vicknair et al. (1993) examined the level of grey directors, who are not insiders but still have ties to management or the corporation, on the audit committees of a sample of NYSE firms. They found that about a third of the members of the audit committees were grey directors.

The results of this study highlighted the potential grey director issue in audit committee independence and a number of studies has included grey directors in their analysis of audit committee independence. For example, Carcello and Neal (2000) examined the association between audit committee independence and the likelihood

of receiving a going concern opinion using a sample of financially distressed companies. They found that companies with a high percentage of grey directors on the audit committee were less likely to receive a going concern opinion compared to those with a low percentage of grey directors on the audit committee.

In addition, Vafeas (2001) used a relatively broad approach to defining grey directors in his study of audit committee appointments. Using an independence measure that screened directors who were consultants, bank officers, lawyers, relatives of management, or otherwise had any economic link to the company, he found that new audit committee appointees were more independent than a control group of non-audit committee directors.

3.2.2.1.2 Member Expertise

The audit committee composition literature regarding audit committee expertise was dominated by survey and archival studies (e.g., Beasley and Salterio 2001; DeZoort 1997; GAO, 1991; Kalbers 1992a, 1992b; Lee and Stone 1997).

From the survey literature, a number of studies focused on audit committee members' perceptions of their own expertise. For example, the General Accounting Office (1991) revealed that approximately half of the 40 surveyed audit committee chairs from large US banks perceived their audit committee as lacking the presence of any expert in accounting, auditing and law.

In addition, DeZoort (1997) found that audit committee members believed that all audit committee members should have sufficient expertise in oversight areas related to accounting, auditing and the law.

Other studies investigated the perception of internal and external auditors about audit committee member expertise. For example, Kalbers (1992a, 1992b) surveyed external auditors and internal auditors and found both groups had significantly lower perceptions of audit committee members' expertise than those of audit committee members.

Raghunandan et al. (2001) surveyed chief internal auditors and found that audit committees with at least one member possessing an accounting or finance background

were more likely to have longer meetings with their chief internal auditor, to provide private access to him or her and to review internal audit proposals and results.

On the other hand, the archival literature addresses a wide variety of research questions regarding audit committee expertise (McMullen and Raghunandan 1996; Lee and Stone 1997; Archambeault and DeZoort 2001; Beasley and Salterio 2001).

McMullen and Raghunandan (1996) found that companies with financial reporting problems were less likely to have members who have a Certified Public Accountant (CPA) on their audit committees.

Bedard et al. (2004) found that aggressive earnings management is negatively associated with the financial and governance expertise of audit committee members.

Lee and Stone (1997) studied 100 US multinational companies and described a mismatch between audit committees' stated responsibilities and the levels of instrumental experience (defined as skills related to accounting, auditing and control issues) among members.

Moreover, Archambeault and DeZoort (2001) found that companies with suspicious auditor switches had fewer experts on their audit committees compared to these with non-suspicious audit switches.

DeFond et al. (2005) investigated the market reaction to the appointment of directors with financial expertise to the audit committee. They found a positive market reaction to the appointment of directors with financial expertise to the audit committee.

Furthermore, Beasley and Salterio (2001) studied Canadian boards and found that voluntary increases in audit committee members' collective financial reporting and audit committee knowledge and experience were related to board size, proportion of outsiders on the board, and separation of board chair and CEO/president.

Despite the difficulty in accessing audit committee member expertise, a number of experimental researches regarding audit committee expertise was conducted. For example, DeZoort (1998) asked a sample of 87-audit committee members to complete an internal control assessment task to investigate the influence of audit committee members' expertise on the quality of the their assessment. The results of this study

indicate that expert audit committee members made better assessment more like criterion group auditor compared to less expert audit committee members.

In addition, DeZoort and Salterio (2001) conducted an experiment to examine the association between audit committee expertise and the ability of such committees to resolve auditor and management disputes. They found that audit committee expertise was positively associated with audit committee member support for an auditor in substance disputes.

McDaniel et al. (2002) conducted an experiment using audit firm managers and executive MBA graduates to examine the influence of expertise on the assessment of financial reporting quality. They found that experts made better assessment of financial reporting quality compared to non-experts. They concluded that efforts to enhance audit committee financial expertise might influence audit committees' assessments of financial reporting quality.

3.2.2.1.3 Member Financial Literacy

Financial literacy has received less attention in the audit committee composition literature than member independence and expertise. Little research has been conducted in this area (Vafeas 2001).

One possible explanation may be the lack of benchmarks for member financial literacy. Such benchmarks are necessary to facilitate the measurement of such a variable in order to investigate its impact on ACE. Moreover, most of the member expertise literature has mixed this variable with the member financial literacy variable. It is important to distinguish these two variables and determine the possible impact of each variable on the ACE.

McDaniel et al. (2002) conducted an experiment using audit firm managers and executive MBA graduates to assess differences in the way financial experts and financial literates evaluate financial reporting quality. They found that experts tended to focus more on common, less-important issues, while literates focused more on less-rare, significant issues.

Song and Windram (2000) found that UK companies with an audit committee with a higher level of financial literacy are less likely to have financial reporting problems.

In summary, audit committee composition literature has focused on independence and expertise with less attention given to financial literacy. In addition, this review has shown evidence that member independence and expertise are perceived to be critical components of ACE. They are associated with factors including audit committees engaging higher quality auditors, interacting more with internal auditors, protecting the external auditor from client pressure and a reduced incidence of financial reporting problems.

3.2.2.2 Authority

The audit committee receives its authority from the full board of directors, corporation laws and exchange listing requirements (DeZoort et al. 2002). Authority could be described as a function of the responsibilities and influence of the audit committee.

Audit committee authority literature focused on audit committee oversight duties and was dominated by the use of the survey method. This literature indicates that there is a wide variation of responsibilities that could be performed by the audit committee and highlights the importance of the audit committee charter in helping audit committee members to understand their specific responsibilities (Kalbers and Fogarty 1993; Coopers and Lybrand 1995). For example, Coopers and Lybrand (1995) investigated the scope of audit committee responsibilities over the last 20 years. They found that audit committee responsibilities had experienced a rapid growth indicating that audit committees perform a wide range of duties.

DeZoort (1997) conducted a survey to determine the most important oversight responsibilities of the audit committee. The results of this study indicate that audit committee members ranked financial statement review, internal auditor assessment and external auditor evaluation as the most important oversight responsibilities.

Moreover, Lee and Stone (1997) concluded that there is a mismatch between stated audit committee responsibilities and the level of audit committee member experience (i.e., skills in accounting, auditing and control issues).

Haka and Chalos (1990) conducted a survey to examine the perceptions of audit committee chairs, management, external auditors and internal auditors about agency conflict. They found evidence that agency conflicts exist between audit committees

and management in areas related to financial disclosure and discretionary accounting procedures. However, the perceptions of audit committee chairs regarding issues affecting accounting choices were different from these of internal and external auditors.

In addition, Kalbers and Fogarty (1993) used the power theory to conduct a survey using audit committee members from 90 corporations to investigate the relationships between audit committee characteristics and ACE. The results of their analysis indicated that effectiveness included oversight of financial reporting, external auditors and internal control. Audit committee power within the organization came from a combination of written authority and the clear support of top management.

Finally, Bedard et al. (2004) concluded that aggressive earnings management is negatively associated with the presence of a clear mandate defining the responsibilities of the audit committee.

In summary, audit committee responsibilities are diverse and appear to be expanding, which makes it very hard for audit committee members to understand all these responsibilities especially in the absence of an audit committee charter. In addition, oversight of financial reporting, auditing and controls were the most important audit committee oversight responsibilities.

3.2.2.3 Resources

The audit committee should be allowed to get access to all the necessary resources that could be needed for such a committee to perform its responsibilities effectively. Audit committee resources literature has focused on the role that both internal and external auditors could play to support audit committees and on the size of the audit committee as an important determinant of ACE (DeZoort et al. 2002).

A number of studies (Cohen and Hanno 2000; Knapp 1987 and 1991; Schroeder et al. 1986) highlighted the important role that external auditors could play in enhancing the ACE. For example, Knapp (1987) conducted a study to identify the factors that could influence the likelihood that audit committees will support auditors in their disputes with management. The results of this study indicate that firms with an audit

committee were more likely to support the auditor in auditor-management disputes compared with those with a non-Big 8 auditor.

More recently, Cohen and Hanno (2000) found that external auditors made less favourable audit planning judgments in cases where the corporate governance structure included an audit committee that lacked technical experience and regular access to internal and external auditors without top management present.

DeZoort et al. (2000) concluded that internal audit directors believed structured communications programs between internal auditors and audit committees could improve the quality of corporate governance.

Few studies have examined the impact of audit committee size on the ACE in different contexts. Archambeault and DeZoort (2001) investigated the impact of audit committee size on suspicious auditor switching. They found a negative association between audit committee size and suspicious auditor switching.

Felo et al (2003) found a positive association between audit committee size and financial reporting quality. These studies provided support for the use of audit committee size as a proxy for the available audit committee resources.

In summary, the audit committee resources literature highlighted the important impact of the support of external and internal auditors to audit committee on ACE. In addition, this literature provided evidence that audit committee size was an important determinant of ACE.

3.2.2.4 Diligence

Audit committee diligence means the willingness of audit committee members to discharge their responsibilities and duties. Kalbers and Fogarty (1993) argued that audit committee diligence is the most important determinant of ACE. Because actual audit committee diligence cannot be measured directly, audit committee diligence literature was dominated by the use of the number of audit committee meetings per year as a proxy for such diligence to investigate the impact of such diligence on the ACE in different contexts (DeZoort et al. 2002). However, a few studies also consider other proxies for diligence such as voluntary audit committee disclosures.

A number of researchers has focused on financial reporting quality. McMullen and Raghunandan (1996) and Song and Windram (2000) found that companies with reporting problems had less frequent audit committee meetings.

Beasley et al. (2000) examined the association between the number of audit committee meetings and the likelihood of having fraud financial reports in the technology and health-care industries. The results of their study indicate that there was a negative relationship between the number of meetings and the likelihood of fraud. Their study indicated that while fraud companies generally held one meeting per year, non-fraud companies met two or three times each year. However, the number of audit committee meetings in both groups of companies is still less than the four meetings per year that was recommended by the Blue Robin Committee (BRC 1999).

Abbott et al. (2000) indicated that firms with audit committees that met at least twice per year were less likely to be sanctioned by the SEC for financial reporting problems. Finally, Abbott et al. (2002) found a significant and negative association between the audit committees, which met at least four times per year, and the occurrence of financial reporting restatement.

Other studies link the number of meetings with external auditor selection. Abbott and Parker (2000) investigated the association between audit committee characteristics and the selection of a high quality auditor using US data. The results of their study indicate that firms with audit committees that met at least twice per year were not more likely to use a specialist auditor.

In addition, Archambeault and DeZoort (2001) concluded that companies with an audit committee that met more frequently were less likely to commit a suspicious auditor switch compared to companies with an audit committee that met less frequently.

However, Abbott et al. (2003) investigated the association between active audit committees (meet at least 4 times a year) and the NAS purchases. They found that companies with audit committees that met at least four times a year were more likely to have a lower NAS ratio compared to these with audit committees that met less than

four times a year. In other words, companies with an active audit committee were more likely to limit NAS purchases compared to those with inactive audit committee.

Despite the fact that audit committee diligence literature is dominated by using audit committee meetings as a proxy for diligence to examine ACE in different contexts, such literature has also been extended to consider interactions with other audit committee and company variables.

For example, Menon and Williams (1994) found a positive association between the number of audit committee meetings and the percentage of outside directors, firm size, and monitoring complexity. In addition, Collier and Gregory (1999) have reached the same conclusion using two measures of audit committee activity, namely, number and duration of audit committee meetings in their study of U.K. companies. They found that while the presence of a dominant CEO and the inclusion of insiders on the audit committee were negatively related to the level of activity, leverage and the presence of a Big 6 auditor were positively associated with the level of activity.

On the other hand, a few studies have used different proxies for diligence. Kalbers and Fogarty (1993) surveyed chief financial officers, chief internal auditors and external audit partners to examine their perceptions of audit committee diligence. They defined diligence as the level of preparation, care, independence and level of activity of the audit committee chair and other members. They found a significant positive relationship between diligence and perceived ACE.

Turpin and DeZoort (1998) have used voluntary disclosure of audit committee reports as a proxy for audit committee diligence. They found that the voluntary disclosure of audit committee reports is positively associated with company size, proportion of outside directors, leverage and listing on a major stock exchange. However, their results concluded that management (not audit committee) is more likely to drive the decision for such voluntary audit committee disclosure.

Carcello et al. (2002) examined voluntary audit committee disclosures under the new disclosure requirements implemented in 2001 by the SEC and the securities exchanges such as NYSE. They found voluntary disclosure of audit committee activities to be more common for depository institutions, larger companies, NYSE-listed companies, and companies with more independent audit committees.

In summary, while audit committee diligence literature has been dominated by the use of the number of audit committee meetings as a proxy for diligence to evaluate ACE in different contexts, a few studies have used alternative proxies such as the voluntary disclosure of audit committee reports. In addition, a number of studies has investigated the association between some agency and corporate governance variables, and the number of audit committee meetings.

In conclusion, the ACE literature has been dominated by US studies, and by the perception-based approach method (survey method) and focused on one or two determinants of ACE. It is important to examine the ACE in other countries such as Australia and Saudi Arabia, which have very limited research in this area and compare the results with those of the US to highlight the impact of different institutional requirements, market developments and cultural and economic differences on ACE.

Moreover, the perception-based method is often subject to academic criticism. Response rates are notoriously low, leading to potential non-response bias (Ramsay 2001). Further, the theoretical setting lacks many elements and pressures of reality. Finally, the results of such research can be driven by the characteristics of the subjects (Gul 1990).

The new disclosure requirements regarding audit committees by the SEC and Australian ASX provide unique, public data, which could be used to evaluate the impact of the new recommendations regarding audit committees on their effectiveness. The use of the archival research method will reduce the lack of objectivity associated with the survey research method as mentioned above and will also make the results more generalizable.

3.3 Roles of Audit Committees

Audit committees provide a focus and means for a fuller view and analysis of the matters relating to auditing, internal controls and financial reporting. Wolnizer (1995) summarised the functional audit committee recommendations of corporate governance commissions and committees in the US, UK, Canada and Australia. He

demonstrated that audit committees are expected to perform almost exclusively in the technical areas of auditing, internal control and financial reporting.

Verschoor (1993) studied the functions of audit committees disclosed by some of the largest US firms. He concluded that audit committees operated in the technical areas of external auditing, internal control assessment and financial reporting.

Despite the fact that there is a wide range of audit committee responsibilities and duties, this study is focused on the audit committee's role in auditor selection and protection of auditor's independence because they are the primary responsibilities of audit committee (Birkett 1986; Braiotta 1994; SMC 1994; Blue Robin Committee 1999; Ramsay 2001; the Australian Stock Exchange Corporate Governance Council 2003). Moreover, audit committee members have incentives to protect their reputational capital by assuming significant responsibility for the engagement of the audit firm and the protection of its independence (Fama and Jensen 1983).

The following two sections review in detail the literature related to two primary responsibilities of audit committee that have been mentioned above.

3.3.1 Auditor Selection

This section is focused on the audit committee's role in the auditor selection process. It has two parts. In the first part, a comprehensive summary of the literature on the relationship between audit quality and auditor selection is provided. It identifies three different, but related, sources of demand for audit quality and provides a list of variables that have been identified as determinants of auditor selection. The second part reviews in detail the literature of the association between the audit committee and the auditor selection process and identifies gaps that will be addressed in this study.

3.3.1.1 Audit Quality and Auditor Selection

DeAngelo (1981) defined audit quality as the likelihood that financial statement errors or omissions will be detected (Competence) and reported (Independence). DeAngelo further argued that auditors would specialize in supplying different levels of quality. This indicates that if a firm wishes to change audit quality it must also change auditors. The idea of product differentiation in the market for audits was supported by a number of studies (e.g., Francis and Wilson 1988; Firth and Smith 1992).

Audit quality literature has investigated the impact of different factors on the demand for different levels of audit quality using a number of proxies to surrogate such quality, because it cannot be observed directly (Francis and Wilson 1988; DeFond 1992; Beasley and Petroni 2001).

Beattie and Fearnley (1998) reviewed audit quality literature and identified three primary sources of demand for audit quality, namely, agency costs demand, information demand and insurance demand.

3.3.1.1.1 Agency Costs Demand

Agency costs arise from the separation of management (agent) from owners (principals) because they have different incentive structures. Shareholders attempt to encourage management to take actions on their behalf. However, they cannot observe management's actions. Managers may therefore consume firm resources and/or make decisions that are not in the best interests of the shareholders.

Watts and Zimmerman (1986) concluded that agency costs have lead to the development of institutional arrangements such as auditing and management compensation agreements to reduce such costs. Moreover, Jensen and Meckling (1976) suggested that the use of auditing could mitigate agency costs by providing credible financial reports.

In addition, a number of studies has investigated the impact of different agency costs on the auditor selection process (e.g., Francis and Wilson 1988; DeFond 1992; Beasley and Petroni 2001)

Francis and Wilson (1988) examined the association between agency costs and the demand for different audit quality levels. The results indicated that size of the firm, management ownership and leverage were very important determinants of the auditor selection process.

In addition, DeFond (1992) explored the association between changes in auditor quality and changes in agency costs around the time of the auditor change. The author concluded that leverage, management ownership and size of short-term accruals are associated with changes in audit quality.

Moreover, Beasley and Petroni (2001) investigated the role of outside members of the board of directors in the selection of external auditor for property-liability insurance companies. They found firm size to be a very important determinant of such selection and an association between board composition and the selection of a specialist external auditor. However, they did not find any association between board composition and the selection of both non-specialist and non-Big 6 external auditors. This indicated the importance of specialization in insurance companies.

3.3.1.1.2 Information Demand

Information (financing) demand is derived from the desires' of other third parties to protect themselves from financial losses by insuring the presence of information asymmetry between them and management (Abbott and Parker 2000). As a result, management may use the selection of high quality auditors to indicate the quality of management's representations regarding financial performance to help in obtaining the needed finance (Abbott and Parker 2000). In addition, Dopuch and Simunic (1982) argued that the information demand of audit quality is closely related to agency demand.

A number of studies has investigated the influence of different variables related to information demand on audit quality. For example, Francis and Wilson (1988) found that the issue of public securities played an important role in the selection of external auditors. They noted that a firm might change to a high quality external auditor before issuing new securities to increase the chance that it will get the required finance. In addition, Johnson and Lys (1990) found new acquisitions to be associated with the selection of a high quality auditor.

3.3.1.1.3 Insurance Demand

Insurance demand is derived from investors' desires to protect themselves from financial losses via the auditor's professional liability exposure. Wallace (1987) and Chow et al. (1988) have contended that audits provide investors with a form of insurance. If an investor purchases securities on the basis of audited financial statements and subsequently sustains losses, which can be attributed to audit failure, the law provides recourse for the investor against the auditor.

DeAngelo (1981) argued that big audit firms provide investors with more insurance because such auditors are viewed as having deep pockets, which enable them to compensate investors in case something goes wrong.

Craswell et al. (1995) suggested that specialist auditors among the Big 8 are viewed as providing extra insurance to investors. This extra insurance is a product of two components, namely, size and specialization. The size indicates that auditors with deep pockets have the ability to compensate investors in case of financial losses. The specialization indicates that specialist auditors are less likely to fail to discover and report any breaches in the financial statements.

This explains the use of both size and specialization of auditors as proxies for audit quality in prior literature (DeAngelo 1981; Craswell et al. 1995; Abbott and Parker 2000)

3.3.1.2 Audit Committee and Auditor Selection

Fama (1980) and Fama and Jensen (1983) highlighted the important role of the board of directors in keeping an eye on the activities of management to insure that it will act in the best interest of the shareholders. Outside directors are generally high-reputation members of the business community who view the directorate as a means of further developing their reputations as experts in decision control (Fama and Jensen 1983). Outside directors bear reputational risks (and potential monetary losses) similar to those of insiders, but receive far less direct compensation (Romano 1989)

Most of the previous studies, which have examined the role of audit committees in the auditor choice process, have focused on the impact of the mere presence of an audit committee on auditor selection (e.g., Pearson and Ryans 1982; Lynn 1985; Kunitake 1983; Cottel and Rankin 1988). The results of such studies revealed relatively little impact of the mere presence of such committees on the selection process. For example, Pearson and Ryans (1982) investigated the likelihood that management may encourage audit committees to participate in the selection of the external auditor. They found that management generally welcomed its audit committee to engage in the auditor choice.

In addition, Lynn (1985) found that respondents from companies with an audit committee focused more on the prestige and size of the audit firm compared to these without an audit committee. However, the results of this study indicate that audit committees did not significantly influence the audit selection process because firms with an audit committee were more likely to rely on the recommendations of the executive directors when hiring an external auditor compared to these without an audit committee.

Kunitake (1983) investigated whether companies with an audit committee tend to choose a Big Eight auditor over Non-Big Eight using a sample of 607 companies mostly listed on the AMEX. The results of this study revealed that there were no statistically significant differences in auditor changes between firms with an audit committee and those without an audit committee.

Using 128 AMEX companies, Eicheneher and Shields (1985) conducted a study to examine the association between having an audit committee and auditor changes between 1973 and 1980. They found that companies with an audit committee were more likely to switch to Big Eight compared to these without an audit committee.

A study of companies listed over-the-counter on the NASDAQ by Cottel and Rankin (1989) found no significant evidence that audit committees cause a displacement of small-sized auditors towards the Big Eight. They stressed that while their data revealed some movement towards Big Eight auditors among NSADAQ-listed companies, the existence of an audit committee does not explain the displacement.

In summary, studies that tried to investigate the impact of the mere presence of the audit committee on auditor choice have produced mixed results. Therefore, the mere presence of the audit committee does not necessarily translate into an effective monitoring body (Sommer 1991; Abbott and Parker 2000). This highlights the importance of different audit committee characteristics in evaluating audit committee effectiveness in performing its duties.

Menon and Williams (1994) examined the association between the percentage of non-executive directors and audit committee composition and activity. They found that while there was a negative association between the proportion of non-executive directors on the board and the percentage of insider directors on the audit committee

board, there was a positive relationship between the percentage of non-executive directors on the board and the number of meeting held by the audit committee. These findings indicate that non-executive directors have incentives to establish an active, independent audit committee to reduce their liability concerns.

Formation of an effective audit committee may help mitigate outside director liability in two ways. First, Reinstein et al. (1984) hypothesized that non-executive directors on the board might be able to show accomplishment of their responsibilities and duties by stating that they relied upon audit committee representations regarding the adequacy of the firm's financial reporting. This indicates that non-executive directors on the board may successfully shift risk to audit committee members (Reinstein et al. 1984).

Second, Abbott and Parker (2000) argued that the independence and integrity of monitoring might be enhanced by having internal and external auditors report to a sub-set of the board consisting solely of outside directors. Regardless of the number of outside directors, the full board typically includes the CEO and perhaps other officers of the company whose performance may be questioned by the auditors. Adequate attention can be paid to the board functions of reviewing financial-reporting policies and coordinating with auditors only if a sub-set of the board is charged with these responsibilities (Merchant 1987).

Hun-Tong and Terence (2003) conducted an experiment to investigate the impact of ACE on auditors' judgements in an auditor-client negotiation context. They found that the presence of an effective audit committee influence auditors' judgements and help them to resist their clients pressure to concede to the client's preferred position.

In the rest of this part, two studies that investigated the influences of different audit committee characteristics on the auditor selection process will be discussed in detail and critiqued in order to identify the gaps and form the first three research questions.

First, Abbott and Parker (2000) examined the relationships between audit committee characteristics and the auditor selection process. They hypothesized that companies with an effective audit committee were more likely to hire a high quality auditor (specialist auditor). The results of this study indicated that there was a positive

association between an effective audit committee and the selection of a specialist auditor.

However, they used only two of the audit committee characteristics, namely, independence and activity and compounded them into a single variable called effectiveness. Thus, they failed to establish individual relationships between the two characteristics and the auditor selection process to identify which audit committee characteristic contributes the most to audit quality.

Moreover, they posited that the audit committee would be independent if all its members were non-executive directors ignoring the possibility of having grey directors (affiliated directors) among the non-executive directors. Abbott et al (2003) argued that grey directors are less likely to resist management pressures to act in its own interest instead of the shareholders' interest than the independent directors.

In addition, the Blue Robin Committee (1999) recommended that an audit committee should meet at least 4 times a year to be able to fulfil its responsibilities and duties. However, it used two audit committee meetings as the criterion in determining the active audit committee and did not provide any justification for such selection.

Finally, they used data from 1994, which might not reflect the current situation of the audit committee today, which has experienced dramatic changes in the last few years.

Second, Chen et al. (2005) conducted a study using 458 companies of the ASX Top 500 in 2000 to investigate the association between the composition of the audit committee and the audit quality. However, they used only three audit committee characteristics, namely, independence, expertise and activity. They found that audit committee independence was the only audit committee characteristic that had a positive association with the selection of a specialist auditor.

In addition, they considered an audit committee to be independent if all its members were non-executive directors ignoring the possibility of having grey directors (affiliated directors) among the non-executive directors, which might lead to misleading conclusions. Finally, they did not investigate the influence of having an effective audit committee on the auditor selection process.

It is clear from the above discussion that both studies have used the percentage of non-executive directors as a measure of audit committee independence, which might result in misleading conclusions. In addition, they used only two or three of the audit committee characteristics to indicate the presence of an effective audit committee. Finally, these two studies lack the use of benchmarks in order to evaluate their local best practices and recommendations regarding audit committees.

Therefore, the following three research questions regarding audit quality are still not addressed.

- What is the influence of having an effective audit committee, which meets all the audit committee characteristics best practice and recommendations, on audit quality?
- Which audit committee characteristic is the most important determinant of audit quality?
- Are the ASX CGC and SMC best practices and recommendations regarding audit committee efficient in the context of the auditor selection process?

3.3.2 Auditor independence

This section is focused on the audit committee's role in protecting auditor independence. It has two parts. In the first part, a conclusive summary of the non-audit services (NAS) impairment to auditor independence literature is provided. The second part reviews the literature that relates the audit committee to the protection of auditor independence.

3.3.2.1 Non-audit Services and Auditor Independence

Despite the fact that there is a number of factors, which could compromise auditor independence such as NAS, audit fees, tenure and employment relationship, this part will focus only on the impact of NAS on auditor independence. There is uncertainty about how close the relationship between the auditor and the management of the audit client can be without creating, in fact or in perception, a mutuality of interest that could impair the auditor's independence (Sutton 1997). As the scope of NAS performed for the client by the audit firm broadens, the relationship between

management and auditor becomes closer. Researches have debated the impact of the provision of NAS on auditor independence.

Theorists generally hypothesize that the provision of NAS to audit clients poses a threat to auditor independence. These arguments are based broadly on notions of economic dependency and mutuality of interest (Wines 1994).

However, advocates of NAS list a number of benefits that could be obtained by the auditors and their clients from providing such services. Providing NAS can reduce total costs, increase technical competence and motivate more intense competition (Arrunada 1999). In addition, advocates of NAS argue that NAS does not necessarily impair auditor independence, and can improve the professional judgment of auditors (Arrunada 1999).

Mikol and Standish (1998) argue that in the absence of restrictions, auditors have incentives to create a competitive advantage by developing concentrations of multiple-service expertise. The benefits, which could be obtained from the economies of scope and increased client awareness, can reduce the costs of the audit firm, and, in turn, the fees charged to the client for service provision (Mikol and Standish 1998).

The association between audit fee and NAS is important due to its potential to impact on auditor independence. The link between management and auditor has been analytically documented to increase with the provision of NAS.

For example, Beck et al. (1988) argued that providing NAS would result in cost savings that may be distributed between the audit firm and the client. These cost savings, which represent increased future economic benefits in the client, create incentives for the auditor to resolve disputes in the client's best interest (Davis et al. 1993).

Studies that tried to investigate the impact of NAS purchases on auditor independence have produced mixed results. For example, Wines (1994) studied financial statements to investigate the relationships between their content and the level of NAS purchases. He found companies that did not receive a qualified opinion were associated with higher level of NAS purchases indicating that the auditor independence in appearance might be compromised by the high level of NAS purchases.

Gul et al. (2006) conducted a study to investigate the impact of NAS purchases on auditor independence in appearance by examining the market perceptions in term of the earning-returns model. They found that NAS purchases influence the market perceptions in term of the earning-returns model, which indicates that there is a negative relationship between NAS purchases and auditor independence in appearance.

The results of Wines (1994) were consistent with earlier studies by Simunic (1984) and Palmrose (1986). This stream of research was based on the notion that auditors prioritize their own economic benefits over independence (Barnes and Huan 1993).

In addition, Simunic (1984) investigated the association between audit fees and NAS purchases. He found a positive association between audit fees and the magnitude of NAS purchases. Moreover, Palmrose (1986) examined the same issue and found the same positive association between NAS and audit fees.

However, using a survey methodology, Abdel-Khalik (1990) argued that such positive relationship does not exist. The author concluded that the level of NAS purchases has no impact on the audit fees. Parkash and Venable (1993) stated that the inconsistencies between the results of these could be attributed to methodological faults such as survey response bias and inconsistent NAS definition.

The existence of a positive relationship between audit fees and NAS purchases increases concerns because where the benefits of cost savings are retained by the auditor; the auditor becomes more dependent on the client, posing a threat to independence (Parkash and Venable 1993).

In light of the above inconsistencies, Barkess and Simnett (1994) tested the relationship between audit fees and NAS purchases using a large Australian sample from 1986 to 1990. In each year, between 371 and 466 of the Top 500 listed companies were drawn into the sample, with a total of 2,094 observations. Using regression analysis, the authors found a positive relationship between audit fees and NAS purchases and found results consistent with the earlier studies by Simunic (1984) and Palmrose (1986).

The existence of a positive relationship between NAS fees and audit fees has also been documented in the UK. For example, Ezzamel et al. (1996) found that there was a positive association between NAS purchases and audit fees.

A study by Frankel et al. (2001) provided empirical evidence on the influence of NAS purchases on auditor independence. They investigated the market reaction of disclosing NAS fees after the introduction of the new US disclosure requirement by the SEC that requires all listed companies to disclose both audit and NAS fees. The results of this study indicated that there was a significant negative market reaction with respect to firms with the highest unexpected NAS fees.

Moreover, the authors found that companies with high levels of NAS fees were more likely to meet or beat earnings benchmarks compared to these companies with low levels of NAS fees. The authors concluded that the magnitude of NAS could threaten auditor independence. However, although the number of observations was large, the small sample period of four months may limit the ability to generalize these results.

Barkess and Simnett (1994) investigated the relationship between the magnitude of NAS fees and the issuance of qualified audit reports. They found that there was no association between the magnitude of NAS fees and the probability of receiving a qualified audit report.

Barkess and Simnett (1994) examined the association between the stability of auditor tenure and the magnitude of NAS fees. They concluded that there was no relationship between the level of NAS fees and auditor tenure.

Craswell (1999) investigated the influence of the level of NAS fees on the nature of the audit opinion using Australian data for 1984, 1987 and 1994. The author found that there was no association between audit opinion and the level of NAS fees indicating that the level of NAS fees might not create a threat to auditor independence.

DeFond et al. (2002) investigated the relationship between NAS purchases and the issuance of a going concern opinion to examine the influence of NAS purchases on auditor independence. They found no evidence that NAS purchases impair auditor

independence and concluded that the recent SEC regulations based on concerns that NAS purchases impair auditor independence, are unfounded.

Ashbaugh et al. (2003) examined the influence of NAS purchases on auditor independence. They found no evidence that NAS purchases impair auditor independence.

On the other hand, many other studies have examined the perceptions of external parties to determine the impact of NAS provision on auditor independence. For example, Pany and Reckers (1983) investigated the perceptions of shareholders and financial analysts regarding the relationships between the perceived threats to auditor independence and different types of NAS. They found that the perceived threats to auditor independence vary with the type of NAS indicating that different types of NAS might pose different level of threats to auditor independence.

However, these results were countered by those of Glezen and Millar (1985). They compared auditor approval voting by stockholders before and after the SEC issued ASR No 250. They concluded that the magnitude of NAS fees did not threaten the appearance of auditor independence.

The mixed results found in the literature make it difficult to draw conclusions from these sources regarding the influence of the magnitude of NAS fees on auditor independence. Some theorists use this lack of conclusive evidence to conclude that the available empirical evidence does not support the argument that auditor independence is harmed by providing NAS (Arrunada 1999). Carmichael and Swieringa (1968) argued that although the potential impairment of independence exists, this does not necessarily imply that it can, or will, occur. Others concluded that attention should be given to the evidence that does imply impairment to auditor independence.

In summary, regardless of the eventuality of an actual impairment to independence in fact, damage to independence in appearance has been documented (e.g. Shockley 1982). Thus, it is very important to investigate the role of audit committees in controlling NAS purchases to ensure that such services will not impair auditor independence, which is very important to ensure high quality audit.

3.3.2.2 Audit Committee and Auditor Independence

The literature on audit committees and auditor independence provides support that audit committees undertake actions to protect auditor independence which will reduce their reputational and litigation-related losses. For example, Carcello and Neal (2000) found that financially distressed firms with independent audit committees were more likely to receive a going-concern qualification.

In addition, Carcello and Neal (2003) found audit firms, which issued initial going-concern reports, were less likely to be terminated when the audit committee is composed entirely of independent directors. These researchers suggest that different audit committee characteristics critically impact ACE in performing their functions and responsibilities (Abbott et al. 2003).

Abbott et al. (2003) examined the relationship between two audit committee characteristics, namely, independence and activity, and the relative magnitude of NAS purchases. They found that firms with independent and active audit committees had a lower ratio of NAS fees paid to the incumbent auditors relative to audit fees.

However, they compounded only two of the audit committee characteristics (independence and activity) into a single variable called audit committee effectiveness ignoring the influence of the rest of audit committee characteristics on ACE and ultimately on the NAS purchases. In addition, they did not investigate which of the two audit committee characteristics contributes more to the control of NAS purchases.

Moreover, they used 2001 as their test period, which was the first financial year after the SEC required all listed companies to disclose their audit and NAS fees. This indicates that limiting NAS purchases might be a result of management's desires to send a positive message to the external users of the financial reports that management acts in the best interest of the shareholders and other third parties and not because of the audit committee efforts to control such purchases. In other words, the results of this study might be driven by the new disclosure requirement by the SEC and not by the presence of an effective audit committee.

In Australia, all listed companies were required to disclose their audit and NAS fees early in the 70's (Clift 1982), which makes Australia a perfect place to examine the influence of having an effective audit committee and the magnitude of NAS fees.

Therefore, the following three research questions regarding NAS purchases are still not addressed.

- What is the influence of having an effective audit committee, which meets all the audit committee characteristics best practice and recommendation, on the magnitude of NAS purchases?
- Which audit committee characteristic is the most important determinant of the magnitude of NAS purchases?
- Are the ASX CGC best practices and recommendations regarding audit committee efficient in the context of NAS purchases?

3.4 Summary

The focus on the audit committee as an important mechanism to ensure high quality financial reports has lead to a quick expansion in audit committee literature. Audit committee literature could be described as varied, open and U.S. based.

This chapter has two sections. While two general streams of research known as audit committee formation and audit committee effectiveness (ACE) were reviewed and discussed in detail in Section 1, a comprehensive review of audit committee literature related to audit quality and the protection of auditor independence was presented and analysed in Section 2.

Section 2 has two main parts. In Part 1, audit quality literature and the determinants of such quality were presented. In addition, gaps in the literature in this area are identified and the first three research questions regarding auditor selection are stated.

On the other hand, auditor independence literature were discussed and presented in Part 2. In addition, the studies that examine the impact of ACE and audit committee characteristics on the NAS purchases are discussed and critiqued in detail. Moreover, gaps in the literature in this area are identified and the second three research questions regarding NAS purchases are stated.

CHAPTER 4: THEORETICAL FRAMEWORK

4.1 Introduction

In the last few years following the collapse of giant firms worldwide, more attention has been given to enhance audit committee effectiveness as an important means to ensure high quality financial reports. This chapter has three sections. In the first section, the differences in audit committee frameworks and market developments between Australia and Saudi Arabia are reviewed and illustrated.

The second section has two parts. Part 1 summaries audit committee theories and identifies the strengths and weaknesses of such theories. The second part develops the framework and model for this study and summarizes them in Figure 4.1. In the third section, the hypotheses of this study will be developed and stated.

4.2 Australia and Saudi Arabia Compared

Although the BRC, ASX CGC and SMC recommendations aimed at improving audit committee effectiveness (ACE) are quite similar in their requirements and their aims, differences in audit committee frameworks and market developments still exist between Australia and Saudi Arabia.

4.2.1 Audit Committee Framework

Australia's audit committee framework is sourced from a combination of statute, listing rules and industry and professional bodies' codes of practice, standards and guidelines. There is no legal requirement at present for a company or its board of directors to form an audit committee. However, the Corporations Law Economic Reform Program 9 (CLERP 9) proposals place a strong emphasis on reinforcing the Australian principle-based approach to addressing governance matters and on achieving a balance between regulation and co-regulation (Commonwealth Treasury 2002). CLERP 9 proposes mandatory audit committees for the top 500 listed companies. Other companies will be able to apply the principles to suit their

individual circumstances. Strong support has been articulated for the ASX CGC to develop best practice standards for audit committees.

On March 2003, ASX CGC issued 10 principles aimed at enhancing corporate governance in Australia (Australian Stock Exchange Corporate Governance Council 2003). Principle 4 has focused on audit committee establishment and structure. It provides recommendations and guidelines to improve ACE. Although complying with such principles and recommendations is not compulsory, all companies are required to report any departure from ASX CGC recommendations and explain why they did not comply?

The ASX Listing Rules (Australian Stock Exchange Corporate Governance Council 2003) require that companies listed on the ASX Top 500 must comply with the CGC recommendations regarding the composition, operation and responsibilities of their audit committees by 1 January 2005. However, Australian Stock Exchange Corporate Governance Council Implementation Review Group Implementation (ASX CGC IRG) recognized that the additional costs of having an effective audit committee might be more than the benefits of such committee especially for small firms (Australian Stock Exchange Corporate Governance Council Implementation Review Group 2004).

As a result, the IRG suggested while the ASX Top 500 are required to establish a formal audit committee, only the ASX Top 300 need to establish an effective audit committee that complies with all the recommendations of the ASX CGC (Australian Stock Exchange Corporate Governance Council Implementation Review Group 2004). This indicates that in Australia only partial mandating of the establishment of an audit committee is taken place for Australian listed companies.

On the other hand, all companies listed on the ASX and not included in the ASX Top 300 are required to report if they have an audit committee or not and if not to explain why? The disclosure regarding the audit committee and other corporate governance mechanisms should be reported in a special section in the annual report called corporate governance report (Australian Stock Exchange Corporate Governance Council 2003).

Such new disclosure requirements by the ASX provide a unique set of information that has never been available before. This information could be used to investigate not only the ACE, but also the effectiveness of other corporate governance mechanisms such as board of directors and internal audit.

On the other hand, Saudi's audit committee framework is sourced only from statute and professional bodies' codes of practice, standards and guidelines. SMC is responsible for developing and up-dating the Corporations Law in Saudi Arabia, which should be consistent with Islamic rules.

In 1994, SMC issued its first regulation regarding audit committees known as Act 931 (Saudi Ministry of Commerce 1994). This Act required all public companies to form an audit committee and provided a set of recommendations and guidelines regarding the composition, operation and responsibilities of the audit committee. However, these recommendations were not compulsory.

Moreover, the Saudi financial market (Tadawul 2003) does not have any listing rules regarding audit committees. Most recently, the Saudi Organization for Certified Public Accountants (SOCPA) issued its first draft regarding the recommendations and guidelines aimed at enhancing the role of audit committees in corporate governance (Saudi Organization for Certified Public Accountants 2003), but it is not clear yet when the final draft will be available or who will adopt such recommendations (SMC or SSM).

Unlike US companies where audit committees have the sole authority to appoint or replace auditors, in Australia and Saudi Arabia, it is the shareholders at members' meetings that have the sole authority to appoint or replace auditors. In other words, the role of the audit committee in Australia and Saudi Arabia is only to recommend auditors, but not to appoint or replace them.

In summary, it is clear that there are differences in audit committee frameworks between the two countries. While Australian's audit committee framework is sourced from statute, listing rules and codes of best practices and guidelines, the audit committee framework in Saudi Arabia is a combination of statute and codes of best practice and guidelines as such framework lacks any listing rules by the SSM

regarding the establishment or the structures of audit committees. These differences justify the choice of the two countries to conduct this study.

4.2.2 Market Development

The ASX was formed in 1987 by legislation of the Australian Parliament, which enabled the amalgamation of six independent stock exchanges that formerly operated in the State capital cities (Australian Stock Exchange 1987). Each of those exchanges had a history of share trading dating back to the 19th century.

The ASX capitalization has increased from $198 billon to $1.2 trillion in the period between 1992 and 2006 (Australian Stock Exchange 2006). It is a developed market and is considered as one of the primary markets worldwide. In addition, ASX is a unified market, which means that it is a comprehensive, national market administered by a single agency (Australian Stock Exchange 1987).

On the other hand, the history of the Saudi Stock Market (SSM) could be traced to the 1930s when the first public firm, the Arab Automobile Company, was established in 1934. The SSM began to emerge in the late 1970s when the number of public companies increased considerably. However, due to the lack of trading regulation at the time, stock trading was fairly limited through the early 1980s when oil prices were increasing, which, in turn, resulted in an increase in both volume of trading and market capitalization.

In 1985, the Saudi government placed all stock trading under the supervision and control of the Saudi Arabian Monetary Agency (SAMA) and discontinued the existing broker-based stock trading system. The government then authorized the domestic commercial banks to act as brokers in order to protect the market against the adverse effects of speculation and to help it develop and mature. This was also done so that the stock market could develop in a manner that would contribute to national development and was consistent with its policy of greater private sector participation.

The SSM has been listed in a database supervised by the International Finance Corporation (IFC). This supervision indicates the IFC's recognition of the importance of the SSM, which occupies an advanced position amongst new markets in many

important indicators, including market value, the daily average of shares value, and the price percentage of the annual profit.

In 2001, Tadawul, the second generation of the electronic trading system, was launched replacing the IFC. Although the new trading system has facilitated the trading process, nothing much has been done to enhance the regulations and listing rules to reduce the risks associated with the SSM.

As a result, the Saudi Stock Exchange Commission (SSEC) was formed on July 2003 by the Saudi Council of Ministers (SCM) to review and update the regulations and listing rules of the SSM (Saudi Council of Ministers 2003). However, it is expected that this revision and updating process will take time before it will be completed and changes will be made.

Equity market growth between 1990 and 2006, the number of transactions, volume and value traded increased dramatically. Market capitalization has increased by 189% to reach AU$ 120 billion and the all share index has increased by 157%. However, the SSM is still considered as a developing market for the following reasons.

- It lacks a complete set of regulations and listing rules that protect investors and provide them with quality financial reports.
- Even though it has more than 70 years of history, it is considered as a new market in comparison to the American and Australian markets.
- It is still an unofficial market. However, following the establishment of the SSEC, it is expected that this market will become an official market in the near future.
- It has a very small size with only 73 listed companies and a capitalization of AU$ 120 billion.

There is some evidence that supports the classification of the SSM as a developing market. First, although there plenty of investment chances exist in the SSM, very limited foreigner capital is involved in this market due to the high risk associated with developing markets. Second, the late establishment of the SSEC indicates the need for reviewing and updating the SSM regulations and listing rules to reduce the high risk associated with the uncertainty and to attract foreign capital.

In summary, even though recommendations regarding the audit committee are similar in Australia and Saudi Arabia, it is expected that such differences in audit committee frameworks and market developments between the two countries may affect the efficacy of such recommendations and ultimately impact ACE. While the efficacy of BRC recommendations has been supported by a number of researchers as mentioned before, the efficacy of the ASX CGC and SMC recommendations is still unknown. Therefore, the following interesting question will be highlighted.

"Do different audit committee frameworks and market developments affect audit committee effectiveness?

However, in this thesis, the possible causes of difference have been noted but not tested because of the difficulty of measuring such factors and including them in the regression analysis.

4.3 Audit Committee Theories

Although most of the studies that have examined audit committee formation and effectiveness have used the agency theory framework, other theories have been used to evaluate ACE. In this part, the agency theory and three other theories, namely, institutional theory, actor-network theory and power theory are discussed briefly.

4.3.1 Agency Theory

The separation of management from ownership in the modern corporation provides an ideal context for the operation of agency theory. Shareholders act as the principal with interests in deriving maximum utility from the actions of the agent (management). Conflicts arise because of the separation of ownership and management and the inability of principals to observe the actions of the agent (Jensen and Meckling 1976).

Principals and agents have economic incentives to invest in various information systems and control mechanisms to reduce agency costs associated with information asymmetry (Jensen and Meckling1976 and Fama and Jensen 1983). These control mechanisms might offer maximum gains for all parties since the agent would otherwise bear agency costs that occur when principals discount the value of the firm, based on the likelihood of adverse selection, shirking and moral hazard (Alchian and Demsetz 1972 and Jensen and Meckling 1976).

Management may use various means to indicate to others the quality of the information they are providing. Demands for monitoring may result in external audits (d Anderson et al. 1993), the use of outside directors (Fama 1980 and Anderson et al. 1993) and audit committees (Pincus et al. 1989 and Bradbury 1990). The use of audit committees can be considered an important part of the decision control system for internal monitoring by boards of directors (Fama 1980 and Fama and Jensen 1983).

Using an agency theory framework, prior research, which investigated the relationships between the formation of audit committees and different agency costs, has produced mixed results (e.g., Pincus et al 1989; Bradbury 1990) and has failed to systematically evaluate the activities or effectiveness of such committees (Kalbers and Fogarty 1993). Therefore, the formation of an audit committee does not necessarily translate into an effective monitoring body (Sommer 1991 and Abbott et al 2002).

4.3.2 Institutional Theory

Institutional theory suggests that organizational structures in such an environment become symbolic displays of conformity and social accountability (Meyer and Rowan 1977). In other words, internal operating processes loosely coupled with the observable structures accomplish the real work of the organization. As a result, organizations with the appropriate structures in place avoid deep investigations of their operating core by external parties (Meyer and Rowan 1977).

Organizations are subject to rules and regulations to which they must conform to ensure their legitimacy, have access to resources and ensure their survival (DiMaggio and Powell 1983). However, these rules and regulations do not necessarily ensure that organizations will continue to operate efficiently (Meyer and Rowan 1977).

DiMaggio and Powell (1983) suggested that institutional pressures would drive organizations to adopt similar characteristics through the desire to organize themselves in a manner that is similar to other organizations in the same environment. They argued that a process of isomorphism could take place in three ways, namely, coercive isomorphism, mimetic isomorphism and normative isomorphism.

In the context of establishing audit committees within organizations, coercive isomorphism includes pressures exerted to establish audit committees by regulators or

stock exchanges (SEC, NYSE, ASX and SMC). As a consequence, an increasing number of organizations have established audit committees.

DiMaggio and Powell (1983) argued that mimetic isomorphism is a process of change initiated internally by the organization. Mimetic change will occur when organizations perceive that audit committees will contribute to the corporate governance structures within these organizations.

Normative isomorphism emanates from the professionalism of involved individuals. Accountants and auditors, through their professional bodies such as the American Institute of Certified Public Accountants (AICPA) and the Institute of Internal Auditors (IIA), have pushed for the creation of audit committees and guidelines for their activities.

Fogarty (1996) concluded that the key attribute of institutional theory lies in its ability to highlight the distinction between what organizations actually accomplish and what their structures suggest to the external environment. This indicates that this theory is very useful for researchers who aim to compare the best practice for audit committees with the actual performance for such committees.

The institutional theory suggests that audit committee effectiveness is more attributable to internal factors such as topics covered by the audit committee than to external factors such as agency variables (Kalbers and Fogarty 1998). As a result, researchers (e.g., Kalbers and Fogarty 1998) who have used institutional theory argued that publicly available information is of limited use in getting at the reality of the audit committee as one of the most important corporate governance mechanisms and its effectiveness.

Kalbers and Fogarty (1998) used both agency theory and institutional theory to investigate ACE. They argued that the use of agency theory alone could not differentiate qualitative degrees of the audit committee as a corporate control mechanism. Moreover, they found that ACE is more attributable to internal factors than to external factors such as agency variables. However, they did not examine or name specific internal factors in their study. Instead, they considered the failure to establish relationships between ACE and agency variables as an indicator of the great impact that internal factors could play in ACE.

Kalbers and Fogarty's study (1998) suggests that neither theory alone is as useful as their synthesis. As a result, they suggested the use of both theories in any attempt to evaluate ACE, but they did not specify a theoretical framework that could link the two theories together.

4.3.3 Actor-Network Theory

The ideas underlying actor-network theory (ANT) were initially developed by a group of French sociologists (Spira 1999). Law (1992) argued that ANT is a form of sociological analysis concerned with the mechanics of power. The theory suggests that society, organizations, agents and mechanics are effects generated in patterned networks of diverse materials (Law 1992).

These networks are not always visible in social interaction. This allows a network to be represented by a single actor (Spira 1999). This representation of the network by a single actor is known as the translation process (Callon 1986). Ezzamel (1994: 218) described translation as:

> *"...the process through which an agency enrols other agencies in order to forge alliances in situation of organisational struggles and conflicts. The process of translation specifically refers to how agents transform phenomena into resources and resources into networks of power which seek to form alliances and coalitions, to engineer antagonism and to constitute interests".*

ANT focuses on the generation of power and influence within and between networks. Spira (1999) argued that ANT offers a richer picture than other theoretical frameworks used in audit committee literature because ANT recognises the instability and disintegration of networks and enables researchers to examine the complex relationships among audit committee participants.

Studies that have used ANT as a theoretical framework to investigate accounting issues were selective (e.g., Ezzamel 1994). Spira (1999) used ANT to offer a possible explanation for the repaid increase in the popularity of audit committees by examining the roles of the audit committee through the stories of audit committee participants. He examined the ceremonial performance of the audit committee meetings and assumed that such performance serves as a network resource and in the end

establishes company legitimacy through reassuring resource provided by the demonstration of concern for high standards of corporate governance.

Due to the confidentiality issues associated with the direct observation of an actor in any network, studies that have utilized ANT to evaluate ACE used the perception-based approach. However, the use of such method is often subject to academic criticism as mentioned before.

4.3.4 Power Theory

Weber (1968) defined power as the ability to act successfully even against the resistance of others. Although this definition is only one of many found in the literature, it indicates the situations in which one social actor prevails over others. Power often is described as an implicit element in the control of organizational action (Pfeffer 1982). Components of organizations, such as audit committees, must possess power to discharge their responsibilities.

French and Raven (1959) developed a typology of power that approaches the construct by classification and illustration. In their original work, they identified five power types: reward, coercive, legitimate, expert and referent. Mintzberg (1983) combined reward and coercive powers in one type of power called sanctionary. He described it as control over resources. Raven (1974) subsequently added information power to their list. There have been many attempts to define and classify types of power, which indicates the importance of the typology of power (Kalbers and Fogarty 1993). Although complete agreement does not exist, there is significant consensus that power represents control over resources (reward and coercive), control over information and its content (information), personal attributes (expert and referent) and formal mandates (legitimate).

In the context of audit committees, Kalbers and Fogarty (1993) identified six types of power that could affect ACE. Legitimate power results from the fact that an audit committee is established through delegations of responsibility from the corporate board of directors. However, this board of directors is charged with ultimate accountability for corporate management.

Despite the fact that the work of the audit committee may be reviewed by the board of directors, the audit committee still holds important decision-making authority. Sanctionary power results from the ability of the audit committee in making decisions that can have impacts on rewards and punishments to other parties such as corporate officers, the internal auditors and external auditors.

Because audit committee members are most often outside directors, they are dependent on management, internal auditors, and external auditors for information. As a result, the success of such committee depends on the institutional support that it will get from all the three parties. Decisions made by the audit committee are rationally influenced by the members' ability to obtain information and to use it in a way most likely to accomplish audit committee objectives (information power).

Because audit committees are composed of individuals, the personal attributes of members cannot be ignored. Members skilled in areas such as accounting, finance and corporate relations could be expected to contribute to the effectiveness of such committees and ultimately contribute to ACE (expert power).

Referent power indicates that audit committee members with personalities capable of influencing others are likely to make a difference and will contribute to ACE. Finally, the desire to do the work of the audit committee with a high level of involvement and concern could be an important factor in determining ACE (will power).

Kalbers and Fogarty (1993) investigated the contribution of the power of audit committees in 90 US firms. They proposed that audit committee effectiveness is perceived as a function of the types and extent of audit committee power. They classified the six types of power into two categories, namely, institutional powers (legitimate, sanctionary and information) and personal powers (expert, referent and will). They found that formal, written authority and observable support from management played the most important roles in ACE (institutional powers). In addition, their results revealed that the will power (diligence) has the most impact on ACE among the personal powers.

4.4 Theoretical Framework

ACE has been defined in different ways and in different contexts. For example, Kalbers and Fogarty (1993:27) defined it as*" the competency with which the audit committee carries out its specified oversight responsibilities".* On the other hand, Rittenberg and Nair (1993:3) stated that*" an effective audit committee is the one that fulfils its responsibilities"*.

Moreover*,* the National Association of Corporate Directors (NACD) (2000) defined it as a committee that can add value to the board of directors and the firm. It is clear from such definitions that an effective audit committee is the one that can perform its roles and duties effectively and will ultimately add value to both the board of directors and its firm.

However, none of these definitions states which factors could contribute to ACE. As mentioned in section 3-2-2, prior literature has identified four fundamental determinants of ACE, namely, composition, authority, resource and diligence. Therefore, for the purpose of this study, an effective audit committee is defined as a committee that has specific composition, authority, resources and diligence to ensure reliable financial reports, internal controls and risk management.

Roles and responsibilities of audit committees have developed over the years with the influence of the recommendations of the Treadway Commission, BRC, Cadbury Committee, ASX CGC and SOCPA aimed to enhance ACE. Rezaee and Farmer (1994) identified three important developments in the roles of audit committees over time. Prior to the mid 1970s the primary function of the audit committee was to enhance the external financial reporting process by improving the effectiveness and efficiency of the audit function. Since the mid 1970s the potential for audit committees to play a broad corporate governance role has been recognised. Nowadays, although the roles normally performed by audit committees vary in accordance with the charter granted to them by the board of directors, such roles can be classified into three groups:

1. financial reporting process;
2. internal auditors responsibilities and the external auditors' activities; and

3. corporate governance responsibilities.

However, audit committees may face an overload of duties due to the increase in their responsibilities, which could adversely affect their effectiveness (Felo et al. 2003). As a result, it is important to identify the primary roles of such committees and to evaluate ACE in performing such roles.

This study is focused on the audit committee's roles in auditor selection and protection of auditor independence because of two reasons. First, a number of researchers, regulators and professional bodies (e.g., Birkett 1986, Braiotta 1994,SMC 1994, Blue Robin Committee 1999, Ramsay 2001, Australian Stock Exchange Corporate Governance Council 2003) has considered the nomination and selection of external auditors and the protection of their independence to be the primary responsibilities of the audit committee. For example, Saudi Ministry of Commerce (1994) stated that the primary role of the audit committee is to nominate external auditors and to determine the scope and the fees of the audit function. In addition, SMC recommended that the recommendations made by the audit committee regarding the engagement of the external auditors should be given heavy weight in the selection process.

Moreover, Ramsay (2001) highlighted the important role that the audit committee should play in the engagement of the external auditors and the protection of their independence. This report argued that the audit committee should be used to control non-audit services provided by the incumbent auditors to ensure the independence of such auditors.

Further, the recommendations of BRC and ASX CGC have considered the engagement of external auditors and the protection of their independence to be the major duties of the audit committees (Blue Robin Committee 1999 and Australian Stock Exchange Corporate Governance Council 2003).

Finally, the collapse of Enron in 2001 has lead the US Congress to pass its first legislation, *Sarbanes-Oxley Act 2002*, aimed at improving corporate governance. This Act requires that the audit committee of a public company be directly responsible for the appointment, compensation, and oversight of the work of any registered public accounting firm employed by that company (Sarbanes-Oxley Act 2002).

Second, independent audit committee members have incentives to protect their reputational capital by assuming significant responsibility for the engagement of the audit firm and the protection of its independence (Fama and Jensen 1983). An independent director is an outside director who does not have strong psychological and/or economic dependence on firm management (Baysinger and Butler 1985). Independent audit committee members are generally high-reputation members of the business community who view the directorate as a means to develop their reputations as experts in decision control.

In addition, independent directors bear reputational risks and potential monetary losses similar to those of non-independent directors, but receive far less direct compensation (Romano 1989). Sahlman (1990) indicated that directors might suffer both reputational and monetary damage from board service. Sclafane (1997) noted that 43 percent of the federal securities suits filed in 1996 alleged accounting irregularities.

As a result, independent audit committees are more likely to confront management, rather than agree with them all of the time in issues relating to the engagement of external auditors and the protection of their independence. This strong commitment in such issues will help to ensure high quality financial reports and ultimately reduce the probability of any reputational damage and litigation losses for independent audit committee members, which could result from any financial failures.

Prior literature has identified different factors that might adversely influence auditor independence such as audit and non-audit services fees and employment relationships (Ramsay 2001). However, this study is focused only on the role of the audit committee in controlling non-audit services (NAS) in order to protect the independence of incumbent auditors because of two reasons, namely, the increased debate of the influence of NAS on auditor's independence following the collapses of giant companies and the dramatic increase of the ratio of NAS fees to the total audit fees over the last three decades.

First, there is an increasing debate regarding the impact of NAS on the independence of auditors in the last few years following the financial failures of giant companies worldwide (e.g., Enron, WorldCom and HIH). Even though prior literature has failed

to provide evidence of a negative impact of NAS on auditor's independence, the perceived threat of such services on the independence of auditors provides an audit committee with incentives to control NAS purchases (Abbott et al. 2003).

This perceived threat has lead some regulators, academics and professional bodies to prohibit NAS or to ask for active control for such services. For example, in Saudi Arabia that has never experienced any financial failure for any of its listed companies, SMC prohibits the incumbent auditors from providing any kind of NAS to their clients (Saudi Ministry of Commerce 1980). This may give a strong indication that some of the corporation failures might be attributed to high ratio of NAS to the total audit fees.

In Australia, although Corporation Law does not prohibit any types of NAS, it requires firms to disclose both audit and NAS fees and supports the immediate application of Professional Statement F1. Professional Statement F1 is a new international harmonised standard for professional independence, which was approved, by both CPA Australia and the Institute of Chartered Accountants in Australia (ICAA) in May 2002 (Australian Accounting Research Foundation 2002).

F1 classifies NAS into three groups, namely, allowed services, restricted services and prohibited services (Australian Accounting Research Foundation 2002). Restricted services are those services that may be provided in circumstances when there are appropriate safeguards to ensure an acceptable level of auditor's independence. In contrast, prohibited services are those that lack the existence of such safeguards (CPA Australia and ICAA 2002). It should be noted that F1 has been superseded by the issuance from the Accounting Professional and Ethical Standards Board APESB in 2006.

In the US, SEC (2000) proposed that NAS should be restricted. However, in the final rules, the SEC prohibited certain types of NAS and required SEC registrants to publicly disclose audit and NAS fees paid to their auditors in 2000 (Abbott et al. 2003). In addition, *Sarbanes-Oxley Act* (2002) prohibited 8 specific types of NAS that the auditor cannot perform. Moreover, this Act stated that the incumbent auditor might perform other NAS if these services were approved by the audit committee. However, such approval should be disclosed in the firm's periodic reports.

Second, the ratio of NAS to the total audit fees has experienced a dramatic increase over the last three decades (Sharma and Sidhu 2001).

Using the agency theory framework is not enough to evaluate audit committee effectiveness and to explain variations in audit committee characteristics because it assumes that the audit committee is a function of management's desire to signal its intention to increase the visibility of its actions (Kalbers and Fogarty 1993). In addition, the agency framework assumes the ability of management to manipulate the audit committee (Abbott and Parker 2000).

Independent, qualified audit committee members have incentives to confront management, rather than agree with them all of the time (Abbott and Parker 2000). Therefore, once the audit committee is composed of independent, qualified members, the ability of management to manipulate such committee is at least reduced if not eliminated. This indicates that one of the important assumptions of agency theory is violated and makes it fall short to explain variations in audit committee characteristics. However, the agency theory framework is very important in examining ACE because such effectiveness will result in reduction of the agency costs and information asymmetry.

Moreover, the presence of an audit committee with independent, qualified directors, who have the will to act in the interest of shareholders, is not enough to ensure that such committee will perform its primary duties effectively. An audit committee needs to have authority and resources to discharge its duties effectively.

The power literature has shown the lack of perfect agreement among researchers. Such lack could be attributed to differences in terminology, disciplines or contexts in which power has been investigated (Kalbers and Fogarty 1993). In order to apply the power theory in the context of audit committees, it is important to reassess and rename power categories.

For the purpose of this study, power is classified into six different categories. Independence power arises from the ability of independent audit committee members to confront management rather than agree with them (referent) and to make decisions that could influence rewards and punishments to other parties such as executives and external auditors (sanctionary). Institutional support power (information power) arises

from the availability of resources to the audit committee. In this study, the number of audit committee members, which has been used in the audit committee literature (Archambeault and DeZoort 2001), will be used to proxy for the information power.

Diligence power (will power) indicates the audit committee's will to act in the interests of shareholders. Prior audit committee literature has used the number of audit committee meetings as a proxy for diligence (Abbott and Parker 2000). Authority power (legitimate power) results from the existence of an adequate written authority for the audit committee (audit committee charter). Expertise power (expert power) arises from the notion that the presence of skilled members in areas such as accounting and finance, could be expected to contribute to ACE. Financial literacy power (literate power) arises from the notion that the presence of audit committee members who are financially literate could enhance ACE because they will be able to understand financial reports and ultimately take actions to ensure having high quality reports.

Therefore, this study will use both agency and power theories as an underpinning framework in order to evaluate ACE in the context of auditor selection and the magnitude of NAS purchases. Figure 4.1 presents the model that will be used in this study to test its hypotheses.

4.5 Hypotheses Development

Although actual audit committee effectiveness cannot be observed directly (Kalbers and Fogarty 1993), audit quality has been used in prior literature to infer audit committee effectiveness in the monitoring of external audit (e.g., Reinstein 1980; Braiotta 1986; Castellano et al. 1989; Kalbers and Fogarty 1993).

DeAngelo (1981) defined audit quality as the likelihood that financial statement errors or omissions will be detected and reported. This definition indicates that audit quality has two important components, namely, competence and independence. Competence refers to the capability of external auditors to discover financial statement errors or omissions. On the other hand, independence refers to the probability that external auditors will report a discovered breach in the financial reports.

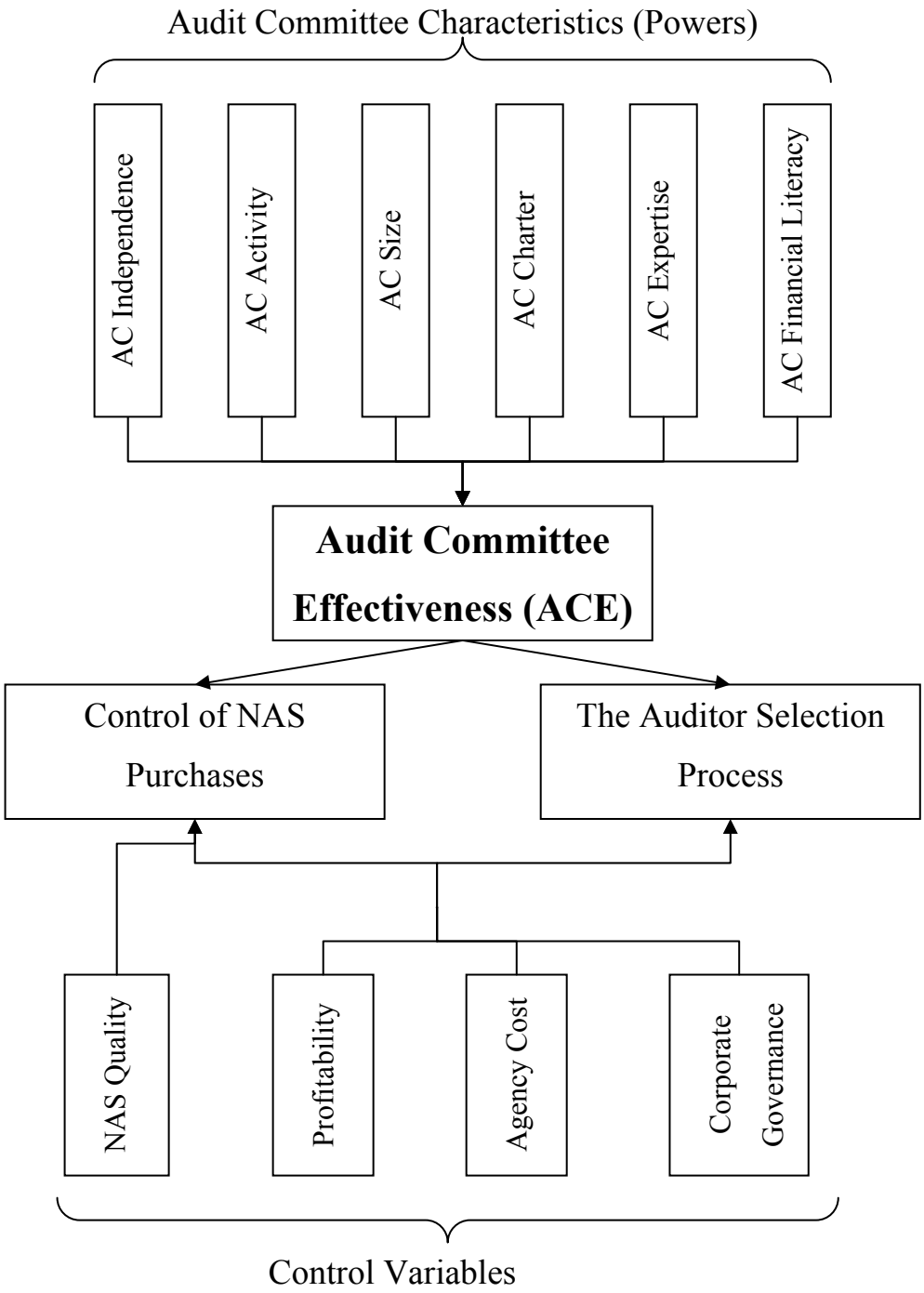
Both size and specialization have been used as proxies for audit quality. DeAngelo (1981) found that larger audit firms have more incentives to detect and report financial misstatements because a larger client base reduces dependence on a single auditee. On the other hand, Craswell et al. (1995) asserted that specialist auditors are able to earn quasi-specific rents on investments in brand name, knowledge and training. These rents provide specialist auditors with incentives to maintain their quality reputation.

In the presence of such quality differences, prior literature has identified two reasons why management may prefer not to employ a high quality auditor. First, management may prefer to select a compliant auditor, who would allow management enough flexibility to attain earnings goals, while having sufficient credibility to allow management to appear to be a good warden of the shareholders' investment (Williams

1988). A high quality auditor may be less compliant to management's wishes due to a high level of expertise or to a high reputational investment.

Second, management may prefer not to select high quality auditors to avoid paying any fee premium that is required by such auditors to compensate them for their investments in brand name, knowledge and training (Abbott and Parker 2000). By doing such, management reduces the cost of the audit process and as a result may increase its own compensations especially when its compensations depend on financial performance measures such as net income. Moreover, management may argue that such selection was made to save shareholders' money and that the saving benefits from such decision will offset any costs that may result for the selection of a low quality auditor.

Figure 1: the relationships between ACE and audit committee characteristics and both Audit Quality and the magnitude of NAS Purchases.



Despite the fact that the engagement of a high quality auditor can ensure a high quality audit and produce reliable financial reports, it is important to protect the incumbent auditor's independence throughout the audit period. Unlike auditor's competence, which could be maintained throughout the audit period by ensuring the utilization of the same audit team, auditor independence could change at any time by the presence of any of the factors that could negatively affect the incumbent auditor's independence such as NAS.

On the other hand, management may prefer to seek NAS from their incumbent auditors for two reasons. First, management may desire to attain cost savings associated with the use of the incumbent auditor to provide NAS. Beck et al. (1988) argued that knowledge spillovers, resulting from providing joint services (audit and NAS) by the incumbent auditors, would create cost savings, which accumulate to the incumbent auditors as economic rents.

However, in a competitive market, the incumbent auditors are motivated to share a portion of the cost savings with their clients to prevent them seeking NAS from competitors. Therefore, management's decision with respect to NAS purchases will involve a trade-off between the relative discount that they will get from using the incumbent auditor to provide such services and the costs associated with the external perception of lower auditor independence.

Second, management may purchase NAS from the incumbent auditor to create additional economic pressure that could result in a more compliant auditor who would allow management enough flexibility to reach their earning goals (William 1988). Levitt (2000), a previous chairman of the SEC, expressed his fears about the possible, negative impact of NAS on auditor independence. He said that:

> *" Consulting and other services shorten the distance between the auditor and management and that independence if not in fact, then certainly in appearance becomes a more elusive proposition."*

Prior literature has supported the notion that an audit committee with specific characteristics undertakes actions to ensure the engagement of high quality auditors and the protection of their independence to reduce the probability of the audit

committee director reputational and litigation-related losses. For example, Abbott and Parker (2000) argued that audit committee characteristics and not only its formation are related to the auditor selection process. They found that firms with an audit committee, which comprises solely outside directors and meets twice a year, are more likely to hire an industry-specialist auditor. However, that study has a number of limitations that has been demonstrated in Section 3.3.1.2.

In addition, Carcello and Neal (2000) found that financially distressed firms with independent audit committees are more likely to receive a going concern qualified audit report. Carcello and Neal (2003) concluded that audit firms which issue initial going concern audit reports are less likely to be terminated when the audit committees are independent.

Moreover, Baysinger and Butler (1985) argued that an effective audit committee, which is independent from management, is likely to be more willing to confront management on a variety of issues, including NAS purchases. Abbott et al. (2003) found that firms with an audit committee, which is composed of independent directors and meets four times a year, are more likely to have a lower ratio of NAS fees to the total audit fees. Although such study provided evidence that effective audit committees undertake actions to protect auditor independence by limiting the NAS purchases, it has a few limitations that have been identified in Chapter 3.

Finally, given that the two primary audit committee roles are selecting/retaining the external auditor and ensuring the independence of the incumbent auditor, the results of the above studies suggest that different audit committee characteristics critically influence the way that such a committee performs its roles.

Therefore, in this study, it is proposed that companies with an effective audit committee are more likely to hire a high quality auditor compared to these with a non-effective audit committee. In addition, it is hypothesized that companies with an effective audit committee are more likely to have a lower magnitude of NAS purchases compared to those with a non-effective audit committee.

An audit committee is considered effective if it is independent, literate, active, has at least three members, has at least one expert and has a written charter. As a result, the following two hypotheses will be examined in this study.

Firms with an effective audit committee are more likely to select high quality external auditors compared to those with a non-effective audit committee.

Firms with an effective audit committee are more likely to have a lower ratio of NAS paid to the incumbent auditor, relative to total audit fees compared to those with a non-effective audit committee.

While both the ASX CGC and SMC recommendations will be used as benchmarks for audit committee effectiveness to investigate its relationships with audit quality in Australia and Saudi Arabia, respectively, only the ASX CGC recommendations will be used as benchmarks for audit committee effectiveness to investigate its relationships with NAS purchases in Australia because of the prohibition of NAS being provided by the incumbent auditors to their clients in Saudi Arabia (SMC 1980).

In other words, one of the objectives of this study is to examine the efficacy of the ASX CGC and SMC recommendations in the context of auditor selection and NAS purchases whenever it is applicable and to provide recommendations that could enhance ACE in both countries.

However, because complying with such recommendations is costly, especially for small firms, which have limited resources (ASX CGC 2003), it is important to determine which audit committee characteristics have more impact on the auditor selection process and the NAS purchase decision.

Therefore, in addition to the two general hypotheses, the relationships between individual audit committee characteristics and both auditor selection and the NAS purchases will be investigated as follows.

4.5.1 Independence

Independent audit committee members have two motivations to select a high quality auditor and to limit the NAS purchases to ensure an acceptable level of auditor independence. First, the selection of a high quality auditor and the limitation of NAS purchases will help audit committee members to build and maintain their reputations

as decision experts by assuring the detection and reporting of any breaches in the financial reports (Fama and Jensen 1983).

The second motivation is to reduce the litigation concerns. Even though the audit committee members may be effectively shielded from personal financial liability by insurance or indemnification, they face costs given the time involved in mounting a defence (Sahlman 1990). Sori and Karbhari (2006) found that auditor independence would be safeguarded by the presence of independent audit committee. Therefore, the following hypotheses will be examined.

Firms with an independent audit committee are more likely to select high quality external auditors compared to those with a non-independent audit committee.

Firms with an independent audit committee are more likely to have a lower ratio of NAS paid to the incumbent auditor, relative to total audit fees compared to those with a non-independent audit committee.

4.5.2 Size

The number of audit committee members could be used as an indication or proxy for the amount of resources available for such committee. Most recommendations (e.g., the BRC, ASX CGC, SMC) suggested that the minimum number of audit committee members should be three members.

If an audit committee has only one member, it will be easy for management to put pressure on him to convince him to support management rather than auditors on any dispute. However, convincing a number of people with different backgrounds will be a hard task. If an audit committee has only two members, it will be hard to get a majority decision, as there are only two members.

Archambeault and DeZoort (2001) investigated the impact of audit committee size on suspicious auditor switching. They found a negative association between audit committee size and suspicious auditor switching. In addition, Felo et al (2003) found a positive association between audit committee size and financial reporting quality. Therefore, the following hypotheses will be examined.

Firms with a high number of audit committee members are more likely to select high quality external auditors compared to those with a small number of audit committee members.

Firms with a high number of audit committee members are more likely to have a lower ratio of NAS paid to the incumbent auditor, relative to total audit fees compared to those with a small number of audit committee members.

4.5.3 Activity

The number of audit committee meetings has been used frequently in audit committee literature to surrogate for diligence (willing to act). McMullen and Raghunandan (1996) and Song and Windram (2000) found that companies with reporting problems had less frequent audit committee meetings. In addition, Beasley et al. (2000) examined the association between the number of audit committee meetings and the likelihood of having fraud financial reports in the technology and health care industries. The results of their study indicate that there was a negative relationship between the number of meetings and the likelihood of fraud.

While Abbott and Parker (2000) failed to detect any association between the number of audit committee meetings and the selection of a specialist auditor, Abbott et al. (2003) concluded that companies with an audit committee that met at least four times a year were more likely to have a lower magnitude of NAS purchases compared to these with an audit committee that met less than four times. A possible explanation for not finding any association between the number of meetings and audit quality could be attributed to the use of only two meetings instead of four meetings.

Therefore, it is proposed in this study that the more frequently the audit committee meets, the more such committee will perform its duties effectively and the following hypotheses will be tested.

Firms with a high number of audit committee meetings are more likely to select a high quality external auditor compared to those with a low number of audit committee meetings.

Firms with a high number of audit committee meetings have a lower ratio of NAS paid to the incumbent auditor, relative to total audit fees compared to those with a low number of audit committee meetings.

4.5.4 Charter

Authority could be described as a function of the responsibilities and influence of the audit committee. Audit committee authority literature indicates that there is a wide variation of responsibilities that could be performed by the audit committee and highlights the importance of the audit committee charter in helping audit committee members understanding their specific responsibilities (Kalbers and Fogarty 1993; Coopers and Lybrand 1995).

In addition, audit committee members could be sued if anything goes wrong if they failed to discharge their duties that have been stated in the audit committee charter. Therefore, the following hypotheses will be tested.

Firms with an audit committee with a written charter are more likely to select a high quality external auditor compared to those without a written charter.

Firms with an audit committee with a written charter have a lower ratio of NAS paid to the incumbent auditor, relative to total audit fees compared to those without a written charter.

4.5.5 Expertise

It is expected that the audit committee members' skills play an important role in the way that they discharge their duties (Kalbers and Fogarty 1993). Knapp (1987) found that auditors might discount the audit committee's oversight role if they believe that the audit committee does not possesses the knowledge necessary to understand technical auditing and financial reporting matters.

McMullen and Raghunandan (1996) found that companies with financial reporting problems were less likely to have members who have a Certified Public Accountant (CPA) on their audit committees. In addition, Archambeault and DeZoort (2001) found that companies with suspicious auditor switches had fewer experts on their

audit committees compared to those with non-suspicious audit switches. Moreover, Carcello (2006) concluded that firms that have financial experts in their audit committees were more likely to reduce earnings management.

The above studies indicate that an audit committee with at least one expert has the ability to take actions to ensure high quality audit and to protect auditor's independence. Therefore, the following hypotheses will be tested.

Firms with an audit committee with at least one expert are more likely to select a high quality external auditor compared to those without any expert.

Firms with an audit committee with at least one expert have a lower ratio of NAS paid to the incumbent auditor, relative to total audit fees compared to those without any expert.

4.5.6 Financial Literacy

Literate audit committees are better equipped to understand financial reports, auditor judgements and disputes between management and the external auditors (DeZoort 1998). Song and Windram (2000) found that UK companies with an audit committee with a higher level of financial literacy are less likely to have financial reporting problems. Weil (2005) found a positive relationship between audit committee financial literacy and stock market return.

The above results indicate that literate audit committees have the ability and the incentives to take action to ensure high quality financial reports. Therefore, the following hypotheses will be tested.

Firms with a literate audit committee are more likely to select a high quality external auditor compared to those with a non-literate audit committee.

Firms with a literate audit committee with at least one expert have a lower ratio of NAS paid to the incumbent auditor, relative to total audit fees compared to those with a non-literate audit committee.

4.6 Summary

In this chapter, differences between Australia and Saudi Arabia in terms of audit committee frameworks and market developments were reviewed and discussed in detail. In addition, four different theories that have been used in the literature to examine different issues related to audit committee were presented and analyzed. Then the theoretical framework of this study was developed in the light of these different theories. Finally, 14 different hypotheses were developed and stated in order to answer the seven research questions.

CHAPTER 5: METHODOLOGY

5.1 Introduction

Conducting a research project requires the development of an appropriate research approach and the adoption of data collection techniques. The quality of the collected data determines the quality of the findings of the research (Gill and Johnson 2000).

The use of a particular methodology for a research project depends on the scope, purpose and target population of the study as well as the resources available to the researcher. Therefore, it is fundamental that in order for researchers to achieve their research objectives, they have to adopt the right methodology and select the right data collection techniques through which they can collect the required data within their available resources (Gill and Johnson 2000).

In this chapter, a brief review of research approaches and data collection techniques are presented. In addition, the research approach, the data collection techniques and the research design that will be used in this study are discussed in detail. This includes sample selection, test period, variables (dependent, independent and control variables) and regression.

5.2 Brief Review of Research Approaches and Methods

In social science, there are two general research approaches that are widely recognized, namely, quantitative and qualitative approaches.

5.2.1 Quantitative Approach

The quantitative approach is an inquiry into an identified problem, based on testing a theory (deductive), measured with numbers and analyzed using statistical techniques. The goal of this approach is to determine whether the predictive generalizations of a theory hold true (Frankfort-Nachmias and Nachmias 1996).

Because quantitative research is deductive, researchers deal directly with the operationalisation, manipulation, prediction and testing of empirical variables.

Therefore, quantitative research places great emphasis on methodology, procedure and statistical measures of validity (Frankfort-Nachmias and Nachmias 1996).

Consequently, quantitative research should be organised to show a clear progression from theory to operationalisation of concepts; from choice of methodology and procedures to the data collected; and from statistical tests to findings and ultimately conclusions (Frankfort-Nachmias and Nachmias, 1996).

There are four general types of quantitative methods (Smith 2003).

1. *Experimental Method*: Experimental research is characterized by random assignment of subjects to experimental conditions and the use of experimental controls.
2. *Quasi-Experimental Method*: Quasi-experimental researches share almost all the features of experimental designs except that they involve non-randomized assignment of subjects to experimental conditions.
3. *Survey Method*: Surveys include cross-sectional and longitudinal studies using questionnaires or interviews for data collection with the intent of estimating the characteristics of a large population of interest based on a smaller sample from that population.
4. *Archival* Method: Archival research is based on historical (secondary) data and uses cross-sectional or/and time-series data to investigate a problem.

5.2.2 Qualitative Approach

The qualitative approach is a process of inquiry with the goal of understanding a social or human problem from multiple perspectives and conducted in a natural setting with a goal of building a complex and holistic picture of the phenomenon of interest. Quantitative data are all data that are collected in numerical form (Hussey and Hussey 1997). One of the main advantages of a quantitative approach to data collection is the relative ease and speed with which the research can be conducted.

On the other hand, qualitative research is inductive in nature. Qualitative researchers use field research methods, primary case studies and participant observation within natural settings. The report will present much descriptive material and should also show how the observations prompted the researcher to analyse and isolate variables

(induction) and how, in turn, these variables may be developed into a theory (Frankfort-Nachmias and Nachmias, 1996). Qualitative data are concerned with qualities and non-numerical characteristics.

Qualitative data collection methods can be expensive and time consuming, although it can be argued that qualitative data in business research provides a more real basis for analysis and interpretation. Moreover, a qualitative approach presents problems relating to rigour and subjectivity (Hussey and Hussey, 1997).

There are three general types of qualitative methods (Mason 1996).

1. *Case Studies*: In a case study the researcher explores a single entity or phenomenon bounded by time and activity (e.g., a program, event, institution, or social group) and collects detailed information through a variety of data collection procedures over a sustained period of time. The case study is a descriptive record of an individual's experiences and/or behaviors kept by an outside observer.

2. *Ethnographic Studies*: In ethnographic research the researcher studies an intact cultural group in a natural setting over a specific period of time. A cultural group can be any group of individuals who share a common social experience, location, or other social characteristic of interest -- this could range from an ethnographic study of rape victims in crisis shelters, to children in foster care, to a study of a cultural group in Africa.

3. *Phenomenological Studies*: In a phenomenological study, human experiences are examined through the detailed description of the people being studied -- the goal is to understand the 'lived experience' of the individuals being studied. This approach involves researching a small group of people intensively over a long period of time.

5.3 Brief Review of Data Collection Techniques

Searching for data can be a time-consuming and expensive activity, so it is essential that researchers quickly develop the skills necessary to locate and use data sources effectively (Smith 2003). In terms of nature, data could be classified into two categories: primary data and secondary data. Primary data refer to information that is

developed or gathered by the researcher specifically for the research project at hand. Primary data may be obtained using different data collection techniques including surveys, interviews, focus groups and observations.

Where the needed data do not exist, the researcher will have no choice but to obtain those data directly. Although it may be more costly than using already existing data, collecting new data has distinct advantages. Greater control can be achieved over the measures that are used, as well as over the procedures and staff employed to collect the data. The reliability and validity of these data may thereby be increased.

On the other hand, secondary data refer to information that has previously been gathered by someone other than the researcher and/or for some other purpose than the research project at hand. In other words, secondary data are existing, publicly available data. Secondary data may be obtained using archival records technique. These records could include literature, databases, public press, journals and newspapers.

The most important advantage of secondary data is it is often inexpensive or even provided free to the researcher (Patzer 1995). Another advantage is that secondary data require a relatively short collection time (Patzer 1995). The disadvantage, however, is that there may not be a perfect fit between what the researcher is trying to measure and the purposes for which the data were collected (Patzer 1995).

To choose the most appropriate data collection technique, the researcher should assess the relative advantages and disadvantages of data collection techniques and clarify the nature of the trade-offs that are faced in such choice. The researcher's inputs into the decision should include the availability of needed data, the level of resources that may be dedicated to collecting data, the constraints on time available to collect them and the amount of confidence that the researcher needs to have in the results.

5.4 The Research Approach in This Study

This study uses the quantitative approach because its goal is to determine whether the predictive generalizations of the power theory in the context of the audit committee hold true. Therefore, this study is organised to show a clear progression from theory

to operationalisation of variables, from choice of methodology and procedures to the data collected and from statistical tests to findings and, ultimately, conclusions.

5.4.1 Research Methods

The archival research method will be used in the Australian context because the nature of the required data to conduct this study on Australian listed companies indicates that such data are publicly available (secondary data). The decision to rely on secondary data sources was made for the following reasons.

- Data availability. Given that the data required to conduct this study are publicly available, it was not considered necessary to generate new data for this specific research study.
- Audit committees should be perceived as effective. The perception of effectiveness is influenced by audit committee characteristics. The availability of data within the public domain to evaluate audit committees is therefore required.
- Unlike using primary data, which is characterized as being time-consuming and expensive, using secondary data is a more time- and cost- efficient decision.

On the other hand, a combination of two research methods, namely, the archival and survey research methods is used in the Saudi Arabian context because the nature of the required data to conduct this study on Saudi listed companies highlights the need of both primary and secondary data as the main data sources. While data regarding external auditors, board of directors and agency cost variables for Saudi listed companies are publicly available, data regarding different audit committee characteristics for Saudi listed companies are not available within the public domain.

Despite the fact that there are different data collection techniques (e.g., mail-questionnaire, E-mail questionnaire, interviews and internet) that have been used in the survey literature, mail-questionnaire (questionnaire hereafter) and interview techniques have been dominant in such literature (Smith 2003).

The survey literature has identified a number of advantages and disadvantages associated with the use of the two data collection techniques (e.g., Oppenheim, 2000 and Smith, 2003).

Table 5.1 provides a brief summary of the advantages and disadvantages of both mail-questionnaire and interview techniques.

Table 5-1 Advantages and disadvantages of questionnaire and interviews techniques

Technique	Advantages	Disadvantages
Questionnaire	* Less expensive to conduct * Bigger sample sizes are possible * Bias is not a problem	* Poor response rate * Only certain types of person respond to a questionnaire which may introduce a certain amount of bias
Interviews	*Higher response rate * Explanation can be given to misunderstood questions * More information may be gained during the interview	* Possibility of the introduction of bias * Response rate may be low * Time consuming and costly

To choose between the two techniques, the researcher assessed their relative advantages and disadvantages and the trade-offs involved in such decision. As a result, the questionnaire was adopted to collect primary data regarding different audit committee characteristics. The reasons for using a questionnaire in this research, which are also consistent with the views of Foddy (1999) and Oppenheim (2000), are:

1- it is the most common method of data collection in survey research because it assures the anonymity of respondents and enables them to respond more freely and at their convenience. This has a positive effect on the credibility of the research since the data gathered are believed to be representative of the respondents' knowledge of the subject;

2- it is suitable for an individual researcher who has limited resources in terms of time and financial resources; and

3- it can be distributed to large numbers of respondents and a wider range of respondents gives greater credibility to the data collected.

5.4.2 Questionnaire (Research Technique)

The questionnaire is a technique for collecting data. It is the most frequently used method in the social science field (Easterby-Smith et al 2002). It is a highly structured method of collecting specific information as a response to highly directed questions. It is simply a list of questions that take the form of closed-ended or/and open-ended questions. Questionnaires tend to be used to explore attitudes and opinions about certain issues and to obtain data that are not available within the public domain. Therefore, the primary purpose of the questionnaire in this study was to collect data regarding different audit committee characteristics in Saudi listed companies using the SMC recommendations and guidelines as benchmarks.

5.4.2.1 Procedures of the questionnaire survey

During the planning stage of this study, it was essential to investigate the availability of the required data to conduct this study in Australia and Saudi Arabia. This investigation revealed that only data regarding different audit committee characteristics in Saudi listed companies are not publicly available. Therefore, it was important to conduct a questionnaire survey to collect such data because this method is generally found to be the best technique to collect data from a large group of respondents in a short time and provides the opportunity for the respondents to give frank and precise answers.

In this study, audit committee members in Saudi listed companies were the key informants because one of the aims of this study is to collect data regarding different audit committee characteristics.

5.4.2.1.1 Questionnaire Design

Saunders et al. (2000) described conducting a questionnaire as the process of translating concepts into measurable variables. The questionnaire was designed and developed by the researcher after a review of the SMC recommendations and guidelines aimed at improving the role of audit committees as means to enhance corporate governance in Saudi public companies. The aim of the questionnaire was to collect the data necessary to evaluate different audit committee characteristics using the SMC recommendations and guidelines as benchmarks.

In the design of the questionnaire attention was paid to the guidelines set out by Bourque and Fielder (1995), in particular in terms of the number of questions, the range of response categories, and the clarity of the instruction given. Bourque and Fielder (1995) suggested that, in order to help the potential respondents to fill out the questionnaire without need for assistance, the questions must be as easy as possible, short and precise. Bourque and Fielder (1995, p. 17) stated that the questions on self-administered questionnaires must be closed-ended ones. All the questions were closed-ended and encouraged the identification of a specific response from a selection given but in a number of questions there was scope for an answer outside the range given.

Bourque and Fielder (1995) identified a number of benefits of incorporating different styles of questions into the questionnaire. One is that it provides the questionnaire with the necessary flexibility. Another is that it avoids undue uniformity in the questionnaire and attracts the respondent's attention. Therefore, different styles of questions were used in the questionnaire, namely, yes/no style; 4 points scale style and tick one or more of a list style.

The first draft consisted of 18 questions and was classified into two sections. While the first section involved general questions regarding audit committees, the second section sought specific data regarding audit committee members. This first draft was then discussed with the researcher's main supervisor and co-supervisor and a number of comments and suggestions were made.

As a result, these comments and suggestions yielded the revised questionnaire, which consisted of 16 questions. A third optional section was added for participants who wish to receive a summary of the results of this study. The revised questionnaire was then translated, pilot tested, edited and distributed.

Originally, the questionnaire was constructed in English. Because the general language of the target population was Arabic, the questionnaire had to be translated into their language. The purpose of the Arabic version of the questionnaire was to permit respondents with little or no knowledge of English to participate in the survey. This was a very important stage in this study since any mistakes in translation could change the meaning and context of the questionnaire. A translation firm produced an

official translation of the questionnaire. Then, the researcher made the necessary corrections to the terminology. To ensure the accuracy of the translation, the translated questionnaire was given to two specialists in the Arabic language and a number of the researcher's colleagues.

5.4.2.1.2 Pilot Study (Pre-Testing)

Social science researchers emphasize the importance of conducting a pilot study to establish that the proposed questionnaire is understandable and clear to the members of the target population. For example, Salant and Dillman (1994) argued that although pre-testing a questionnaire is time-consuming, it is absolutely essential to ensure a quality questionnaire.

In addition, Alreck and Settle (1995) stated that even well trained and highly experienced researchers could find some changes that would improve the performance of the questionnaire by conducting a pilot study.

In order to conduct the pilot study, the revised questionnaires were sent to four accounting academics in Saudi Universities, two of whom are specialised in audit committees, four audit committee members in Saudi listed companies, four Saudi Ph.D. students and four Saudi master students who are studying accounting in Australia.

Table 5.2 below shows the response rate of the pilot study that was conducted before the main survey study.

Table 5-2 Pilot Study Response Rates

Piloting Parties	Sent	Response	Response Rate
Academics	4	2	50%
Audit Committee Members	4	2	50%
Ph.D.'s Students	4	4	100%
Master's Students	4	4	100%

All questionnaires used to conduct the pilot study had a cover letter explaining the nature and objectives of the research and the procedures that will be undertaken to ensure confidentiality. The participants were asked to comment on the questionnaire in terms of clarity and design. In all, sixteen questionnaires were sent out, of which

twelve were returned. The researcher received many useful comments and suggestions from conducting the pilot study. In the light of these comments and suggestions a number of changes and corrections was made. This stage yielded a pilot-tested questionnaire that consisted of 15 questions.

Then, this pilot tested questionnaire was sent to two specialists in statistics in Saudi Arabia to check the types of statistical tests that might be done for interpretation and analysis. Few comments and suggestions were received from the two specialists because they stated that this questionnaire seems to be very simple and straightforward. The aim of this pilot test was to assess whether the research instrument was valid and reliable. Validity and reliability will be discussed in details in section 5.4.2.2.

After taking into account these comments and suggestions, the final version of the questionnaire was ready to be distributed by mail to audit committee members via the contact persons in all Saudi listed companies.

5.4.2.1.3 Questionnaire Structure

The final questionnaire was divided into three sections. The first section has 9 general questions regarding audit committees. The second section has 5 specific questions regarding audit committee members. The last section has an optional question for participants if they are willing to get a summary of the results of this study via the E-mail.

The final questionnaire consists of 15 questions 14 of which related to different audit committee characteristics and used the SMC recommendations and guidelines as benchmarks for such characteristics.

Table 5.3 classifies the questionnaire's questions according to the six different audit committee characteristics that have been identified in Chapter 4 (the full questionnaire is attached as Appendix 1 for the English version and Appendix 2 for the Arabic version).

Table 5-3 Questions classified according to different audit committee characteristics

AC Characteristics	Total Number of Questions	Question Numbers
Independence	6	Q2, Q4, Q5, Q7, Q13, Q14
Size	1	Q1
Activity	1	Q3
Charter	1	Q6
Expertise	2	Q8, Q10
Financial Literacy	3	Q9, Q11, Q12

In addition, Table 5.4 categorises the questions according to their styles.

Table 5-4 Classification of questionnaire's questions in term of question's style

Style of the question	Yes / No	4 Points Scale	Tick One Or more of a List
Number of Questions	6	6	3
Percentage of Total	40%	40%	20%

Bourque and Fielder (1995) argued that motivation is very important when using the self-administered questionnaire to collect data. Therefore, in order to establish the credentials of the researcher and to encourage responses two covering letters were attached to the final questionnaire. The first one is known as the Plain Language Statement. In this form, the researcher provides participants (audit committee members) with specific details regarding the research project and addresses a number of issues of particular concerns for participants such as confidentiality.

The second one is from the head of the Accounting Department at Al-Qaseem University, Saudi Arabia stating the general purpose and objectives of the research and encouraging the respondents' cooperation. The original signature of the head of the Accounting Department along with the official college stamp was placed on official college paper and attached to every questionnaire. Such a letter is very important in the Saudi business environment for two reasons. First, according to cultural expectations, it is difficult to obtain information without a formal letter (Al-Twijri 2001). Second, as some of the information to be obtained was considered to be confidential, it was expected that this information could not be given without a formal request from a Saudi higher educational organization.

5.4.2.1.4 Preliminary Contacts

Bourque and Fielder (1995) noted preliminary contact with the potential respondent ahead of sending the actual questionnaire could increase the response rate. Given the particular nature of the Saudi business culture it was considered essential to make such preliminary contact. Each Saudi listed company has a contact person. In this stage, preliminary contacts were made with all the contact persons via telephone calls and/or e-mails. This preliminary contact also served to establish whether or not the company had an audit committee and the number of audit committee members if it exists. The results of this preliminary contact are as follows.

- The total listed companies in the Saudi Stock Market (SSM) were 71 at 31/12/2003.
- 68 listed companies (96%) have an existing audit committee and therefore 3 companies (4%) do not have such committee.
- 10 companies (15%) required a letter from the researcher to the company's manager to get his or her permission to distribute the questionnaires to the audit committee members.
- 15 companies (22%) preferred sending their questionnaires by fax instead of mailing them.
- In term of the number of the audit committee members, 11 listed companies (16%) have 2 audit committee members, 54 listed companies (80%) have 3 audit committee members and 3 listed companies (4%) have 4 audit committee members.
- In terms of the questionnaire's language, only 10 audit committee members (5%) preferred the English version of the questionnaire.
- For each company that has an existing audit committee, the percentage of non-executive directors on the board and the percentage of non-executive directors on the audit committee were obtained from the contact person.

5.4.2.1.5 Distribution, Response and Follow –Up

A letter and a number of questionnaires which matched the number of the audit committee members (with the two covering letters) with a self-addressed stamped

return envelope were mailed to the contact person in each Saudi listed company. In the letter, the contact person was asked to distribute the questionnaires to audit committee members, to encourage them to complete the questionnaire and to collect and return the completed questionnaires.

As the population of interest consisted of all audit committee members in Saudi listed companies, a total of 190 questionnaires were sent to audit committee members in the 66 Saudi listed companies, which have an existing audit committee via the contact persons in these companies. This would eliminate any sample bias that could result from selecting a sample of the population of interests.

Despite the fact that there were 68 Saudi companies with an audit committee at the end of 31 December 2003, the questionnaire was sent only for 66 companies as the Saudi Electricity and Saudi Telecommunication were the only company in each sector, which make them inappropriate to examine the association between audit committee and the selection of a specialist quality auditor because there will be only one auditor for each sector which does not meet the minimum requirements of having more than one company for each industry or sector in order to identify a specialist for such industry or sector .

The total number of the completed questionnaires, which were received after one month from sending them and before the follow-up, reached 80 questionnaires. This represents approximately a 42% response rate.

Follow-up technique is one of the most effective ways to increase the response rate. It is used either to check if the respondents received the instrument or to remind them to complete and return it. In recent years, researchers have greatly improved the response rate to data collection in mail surveys by using the follow-up technique (e.g., Dillman 2000, Al-Motuz 2003).

The follow-up technique includes sending a reminder letter or a postcard to respondents who have not replied within the period that has been given for them to reply. In addition, the follow-up technique includes telephone calls, faxes, e-mails and field visits to respondents who have not replied.

In this study, all these follow-up procedures were used to increase the response rate. These procedures increased the completed questionnaires, which were received after two months from sending them by 21 (11%) questionnaires. As a result, a total number of 91 questionnaires were received at the end of the data collection period. As a result, the final response rate reached approximately 53%, which is considered to be satisfactory in social research. DeZoort et al (2002) received 27% as a response rate in their studies after two requests among audit committee members in the USA and they consider this rate is normal.

5.4.2.2 Reliability and Validity

There is a great concern about reliability and validity in any research project. Reliability is concerned with the consistency of the results obtained on repeated trails. This is reflected when the same respondent is re-examined with the same test on different occasions or with different sets of equivalent items (Reda 1992).

Since it is often impossible to arrange for people to be tested on the same question on two occasions to assess reliability, an alternative method is to look at the consistency of a person's response on an item at the same point in time and the degree of agreement for which the measurement is obtained (De Vaus 1996).

This approach will provide a measurement of the overall reliability of the scale and the index. This measurement is known as " Cronbach's Alpha" in statistics. All scores of the coefficient alpha are ranges between 0 and 1. The higher the coefficient, the more reliable the scale. As a rule of thumb, alpha should be at least 0.7, which is deemed the minimum scale considered reliable (De Vaus 1996).

For the purpose of this study, the researcher decided to use Cronbach's Alpha to test the reliability of the survey. This test could be done using the Statistics Programme for Social Sciences (SPSS) computer package. The results of this test revealed that Cronbach's Alpha was approximately 0.76, which is higher than the minimum scale that could be considered reliable.

Validity is one of the aspects, which the researcher wished to measure. The validity of a measure depends on how the researcher defines the concept to be measured (De

Vaus 1996). If a test measures what it intends to measure, it will be considered as a valid measure.

In order to get reliable results, it is necessary to use a reliable and valid questionnaire for the collection of data (Reda 1992). In this study, the validity of the questionnaire was insured via several practical professionals and experienced academicians who participated in the pilot study as discussed earlier in this chapter.

5.4.3 Sample Selection

In order to evaluate the impact of different audit committee characteristics on the auditor selection process and NAS purchase decision (only in Australia), it was necessary to choose the test periods, to determine the populations of interest, to select random samples where applicable and to find out data sources.

In any study, it is essential to determine the test period, to define clearly the population of interest and to seek to ensure that the sample selected provides an accurate representation of that population (Weisberg and Bowen 1977)

5.4.3.1 Australia

The financial year 2004 was selected as the test period for Australian listed companies. This selection was made because of the following reasons.

- The new CGC recommendations were finalized and released on 31 March 2003, so it was necessary to give listed companies one year (more than 9 months for some companies) to comply with the new ASX CGC recommendations regarding audit committees.
- Although the CGC recommendations regarding audit committees were released on 31 March 2003, these recommendations will not become compulsory for companies within the S&P/ASX 300 index[2] before 1 January 2005. This means that during the financial year 2004, all ASX listed

[2] The S&P/ASX 300 index contains the largest 300 listed companies, changes over time and does not necessary contains 300 all the time.

companies (including the Top 300) were not required to comply with such recommendation. However, listed companies need to explain any departure of these recommendations.

As the ASX listed companies change over time, it was necessary to select a specific date during the 2004 financial year to determine the list of the ASX companies that will be the initial population for this study. Therefore, 30 June 2004 was chosen because most of the ASX listed companies have 30 June as the end of their financial year.

The researcher contacted the ASX to obtain an official list of all the ASX listed companies on 30 June 2004 through E-mail. The ASX people were very helpful and they sent back the official list on Excel file to the researcher's E-mail. There were 1639 companies in the official list that has been received.

Despite the fact that during 2004 the GCG recommendations were not compulsory for all the ASX listed companies, these recommendations became compulsory for companies within the S&P/ASX 300 index only on 1 January 2005. This might affect the degree and time of compliance of the listed companies with the CGC during the test period. As a result and for additional and sensitivity tests analysis, it was essential to divide the initial population into two sub-populations.

The first sub-population included companies within the S&P/ASX 300 index. A list of this index was obtained on 30 June 2004 from *Standard & Poor's (S&P) Database*. At that date, there were 303 companies in the index. The second sub-population consisted of the rest of ASX listed companies, which were not listed in the S&P/ASX 300 index (1336 companies).

Then each of these sub-populations was reduced for one or more of the following reasons.

- The unavailability of data for companies due to delisting, suspension or having missing data.
- The use of specialization as one of the proxies for audit quality requires that only listed companies that fall in one of the 24 industrial classifications will be included in the population. This means that all the

listed companies that are described as having GICS (Global Industry Classification Standard) Sector Code Not Applicable will be excluded.

- Given the nature of this study which aims to evaluate the ACE in the context of auditor selection and NAS, it was necessary to reduce the population to include only these listed companies that have an audit committee for the full financial year.
- As this study aims to explore the ACE in the context of auditor selection and NAS, Telstra, which was audited by Auditor General, was excluded from the first sub-population because this auditor is assigned by the government which owns a majority of Telstra shares (lack of free auditor selection process).

These reductions resulted in the final first and second sub-populations of 297 and 753, respectively. Table 5-5 shows the number of companies in the initial two sub-populations, the reduction made and the final two sub-populations.

Table 5-5 the initial and final two sub-populations

	ASX Top 300	ASX Non-Top 300
Initial Population	303	1336
- Suspended, delisted or not available	4	66
	299	1270
- GICS Code not Available	-	84
	299	1186
- Companies without an Audit Committee	1	433
	298	753
-Telstra	1	-
Final Population	297	753

Then a sample of 100 companies was randomly selected from 297 companies within the ASX Top 300 (ASXT sample). In addition, another sample of 200 companies was randomly selected from the 753 companies within the ASX Non-Top 300 (ASXNT sample). Then these two samples were added together to form the full Australian sample (ASX sample).

The ASX companies are classified into 10 sectors, 24 industry groups, 65 different industries and 146 sub-industries (ASX 2005). However, most of the Australian studies that investigated variety of issues had used the ASX classification into industry groups. Therefore, Table 5.6 presents the ASX, ASXT and ASXNT classified by the ASX 4-digit industry group categories.

Table 5-6 the Three Australian Samples Classified by the ASX 4-digit industry group categories

ASX Code	Industry Groups	ASX	ASXT	ASXNT
1010	Energy	13	6	7
1510	Materials	56	20	36
2010	Capital Goods	19	7	12
2020	Commercial Services & Supplies	17	4	13
2030	Transportation	11	3	8
2510	Automobile & Components	5	2	3
2520	Consumer Durables & Apparel	5	2	3
2530	Consumer Services	14	3	11
2540	Media	9	5	4
2550	Retailing	8	4	4
3010	Food & staples Retailing	2	1	1
3020	Food, Beverage & Tobacco	14	4	10
3030	Household & Personal Products	0	0	0
3510	Health Care Equipment & Services	23	6	17
3520	Pharmaceuticals & Biotechnology	15	4	11
4010	Banks	5	3	2
4020	Diversified Financials	28	3	25
4030	Insurance	4	2	2
4040	Real Estate	15	10	5
4510	Software & Services	17	6	11
4520	Technology Hardware & Equipment	8	2	6
4530	Semiconductors Equipment	0	0	0
5010	Telecommunications	10	1	9
5510	Utilities	2	2	0
	Total	***300***	***100***	***200***

It should be noted that the number of companies that belong to Household & Personal Products and Semiconductors & Semiconductor Equipment were 1 and 2 companies, respectively. These very small numbers of companies along with the small value of the total audit fees for these two-industry groups have lead the researcher to exclude companies within these two-industry groups.

As mentioned in the methodology section, all the required data to conduct this study in Australia were available within the public domain. The sources of these data are The *CONNECT 4 Database*, *ASX Database*, *Data Analysis Database* and companies' websites.

5.4.3.2 Saudi Arabia

The SMC recommendations to enhance ACE have been there since 1994. However, some amendments have been made to these recommendations in the period from 1997 to 1999.

In addition, a survey must be conducted (time constraint) in 2004 to obtain data regarding different audit committee characteristics. In this survey, audit committee members will be asked to provide data about themselves and their audit committees for the financial year ended on 31 December 2003.

Moreover, as this study compares ACE in Australia and Saudi Arabia, it is important to have the same testing period for both countries or at least very close to avoid any impact of having two completely different test periods. Further, the majority of the Saudi listed companies use 31 December as their financial year-end. As a result, the financial year ended in 31/12/2003 will be used as the testing period for Saudi listed companies.

The initial population in Saudi Arabia was all the Saudi listed companies on 31 December 2003 obtained from the *Tadawul Database.* In order for a Saudi listed company to be included in this study, it has to meet three criteria:

1. has an existing audit committee;
2. has available data regarding different audit committee characteristics obtained using the questionnaire; and
3. does not belong to the electricity and telecommunication sectors, as both of these sectors have only one company, which make them inappropriate to model audit quality.

As the purpose of the questionnaire is to collect data regarding different audit committee characteristics in Saudi listed companies, a listed company will be included in the analysis if at least one of its audit committee members has completed the questionnaire. Despite the fact that 91 questionnaires were received (53%) from the audit committee members in the Saudi listed companies, these 91 questionnaires present only 44 listed companies. As a result, the full Saudi Sample consisted of only

44 companies, which present approximately 62% of the Saudi listed companies at the end of 2003.

The SSM classified the listed companies into 7 different sectors. Table 5.7 shows the SSM sample classified into five different sectors, as the other two sectors were excluded from the analysis as discussed early in this section.

Table 5-7 the SSM sample classified into five different sectors

Sectors	SSM
Banks	4
Industrial	17
Cement	5
Services	13
Agriculture	5
Total	***44***

In the Saudi Arabian context, different data sources were used, namely, *Tadawul Database*, public press, *SMC website*, companies websites and the completed questionnaires.

5.4.4 Research Design

This section is divided into two parts. In the first part, the association between ACE and auditor selection will be examined using regression analysis. In addition, the determinants of audit quality among the different audit committee characteristics will be investigated in this part to identify the most important determinant of audit quality. This part will be conducted on Australian and Saudi listed companies.

In the second part, the relationships between ACE and NAS purchases will be examined using regression analysis. In addition, the determinants of NAS purchases among the different audit committee characteristics will be investigated in this part to identify the most important determinant of audit quality. This part will be conducted only in Australia because the Saudi Corporation law prohibits providing NAS by the incumbent auditors to their clients.

Finally, the ASX CGC and SMC best practices and recommendations will be used in this study as benchmarks for the different audit committee characteristics in the ASX and Saudi listed companies.

5.4.4.1 Audit Committee Characteristics and Auditor Selection

5.4.4.1.1 Audit Quality (Dependent Variable)

Prior literature of auditor selection (choice) suggested that audittees demand different levels of audit quality and auditors vary in quality levels (e.g., DeAngelo 1981 and Craswell et al. 1995). As was discussed in Section 4.5, audit quality cannot be observed directly. However, prior literature has used a number of proxies to surrogate for audit quality.

First, DeAngelo (1981) argued that big audit firms have two reasons to provide higher quality audit. First, they have large client bases, which will reduce their dependence on a single client (auditee). Second, they have more to lose in terms of quasi-rents from a great number of clients by failing to report discovered breaches in a particular client's financial reports.

In addition, Klein and Leffler (1981) found that the higher observed Big 8 audit fees in competitive markets were consistent with positive returns to Big 8 in brand name reputation for higher quality audits. The findings of these studies support the notion that the audit market perceives quality differences between big audit firms and non-big audit firms. As a result, a number of studies has used audit firm size as a proxy for auditor quality in investigating variety of issues (e.g., Beatty 1989, Menon and Williams 1991 and Reynolds and Francis 2000).

The use of audit firm size as a proxy for audit quality does not account for the differences in audit quality between specialist-Big 4 and Non-specialist-Big 4 and between the second tier and the small audit firms. Moreover, although the collapse of Enron has lead many writers and researchers to question the use of size as a proxy for audit quality, audit quality literature continues to use such proxy (Watkins et al. 2004).

Second, the last two decades have experienced dramatic change in firms' size, complexity and industry specialization. This change provided audit firms with incentives to specialize in specific industries to differentiate themselves from their competitors. Gramling and Stone (1998) argued that industry-specialist auditors should provide higher quality audits for one or more of the following reasons.

1. They have better audit technologies;
2. They have lower costs through economies-of-scale; and
3. They have superior knowledge due to economies-of-knowledge

In addition, behavioural literature has revealed that there was a relationship between the industry knowledge of the auditors and their quality in performing audit tasks. For example, Johnson et al. (1991) concluded that industry-relevant experience improved the probability of detecting fraudulent income reporting. Moreover, Solomon et al. (1998) found that industry specific knowledge influenced auditors' performance in completing industry-specific audit tasks.

Archival and survey studies also support that specialist auditors offer higher quality audit. For instance, O'Keefe et al (1994) found that industry-specialist auditors increased audit quality as measured by the auditor's degree of compliance with GAAS. Further, Shockley and Holt (1983) concluded that auditors with largest market shares (specialist) were perceived as higher quality suppliers (a survey study).

Finally, Craswell et al. (1995) and DeFond et al. (2000) concluded that specialist Big 8 auditors (Big 6) earn a premium over non-specialist Big 8 auditors (Big 6). This premium is consistent with a quality differences between the two groups. However, these two studies failed to detect any industry-specialist auditor within second tier and small audit firms. In other words, these studies concluded that specialization exists only among the Big 8 (Big 6).

As a result of the evidence provided by the specialization literature, most recent research has used auditor's specialization as a proxy for audit quality to examine diversity of issues (e.g., Abbott and Parker 2000; Houghton et al. 2002; Chen et al. 2005).

However, the lack of a clear-cut definition for the term "specialist auditor" has produced different measures (methods), which could be used to identify industry-specialist auditors (Houghton et al., 2002).

Prior literature has identified three primary methods for identifying specialist auditors (Abbott and Parker 2000). Craswell et al. (1995) (hereafter AQ_Craswell) defined an

industry-specialist auditor as an auditor who earns 10% or more of the total audit fees in this industry.

Palmrose (1986) (hereafter AQ_Palmrose) identified an industry-specialist auditor as the auditor who audits the highest share of the total industry sales revenue (an industry leader). In addition, any other auditor auditing industry sales revenue within 15 percent of the total sales revenues audited by the industry leader is also considered a specialist auditor.

Dopuch and Simunic (1982), Eichenseher and Danos (1981) and Cullinan 1998) used continuous market share data (hereafter AQ_Continuous) relating to client (auditee) sales to identify industry-specialist auditors.

Unlike the AQ_Craswell and AQ_Palmrose methods, which use a dichotomous (dummy) variable with a value of 1 for those firms employing specialist auditors and 0 otherwise, AQ_Continuous uses the percentage of client (auditee) sales audited in each industry to indicate the degree of specialization of the client's auditor.

The AQ_Craswell and AQ_Palmrose methods have been critiqued for the use of arbitrary market share percentages in determining who is an industry-specialist auditor and for not accounting for the differences in audit quality among the Non-specialist-Big 4, second tier and small auditors (Abbott and Parker 2000).

Third, Beasley and Petroni (1998) used a proxy that combined the size and specialization proxies to examine the association between board independence and audit quality for the insurance industry in US. This proxy has three levels of auditor's quality, namely, specialist-Big audit firms, non-specialist-Big audit firms and non-Big audit firms.

Despite the fact that the use of the three levels of quality proxy would detect the differences in audit quality among specialist-Big 4, Non-specialist-Big 4 and the rest of audit firms, it failed to detect such differences between the second tier and small auditors. In addition, the use of an arbitrary market share percentage continues to be problematical, as the AQ_Continuous method of specialization cannot be used with this proxy. Moreover, this proxy has been used rarely in the literature (Abbott and Parker 2000). As a result, this proxy will not be used in this study.

In summary, despite the fact that there is a number of proxies and methods that have been used in the literature to proxy for audit quality, only the AQ_Continuous method would be used in this study to conduct the main regression analysis to model audit quality. The decision to use that method was made because it overcomes the disadvantages associated with other proxies and methods such as the arbitrary selection of the cut-off points or ignoring the differences between different levels of audit quality.

However, auditor size proxy and, AQ_Craswell and AQ_Palmrose methods are used to conduct sensitivity tests to illustrate the impact of using different proxies or specialization methods on results of the main analysis.

In order to examine the association between ACE and auditor quality and the determinants of audit quality among the different audit committee characteristics, the following two regression models, which have been used in the prior literature to model the auditor selection process (e.g., Abbott and Parker 2000 and Beasley and Petroni 2001) would be used in Australia and Saudi Arabia.

Regression 1A

$$\textbf{AUD\_QUAL} = \alpha + \boldsymbol{\beta 1\ ACE} + \beta 2\ BO\_IND + \beta 3\ IN\_OWN + \beta 4\ LEVERAGE + \beta 5\ NEW\_FUND + \beta 6\ BUS\_SEG + \beta 7\ ROA + \beta 8\ LN\_SALE + \beta 9\ FOR\_SALE + C$$

Regression 1B

$$\textbf{AUD\_QUAL} = \alpha + \boldsymbol{\beta 1\ AC\_IND} + \boldsymbol{\beta 2\ AC\_SIZE} + \boldsymbol{\beta 3\ AC\_ACT} + \boldsymbol{\beta 4\ AC\_CHAR} + \boldsymbol{\beta 5\ AC\_EXP} + \boldsymbol{\beta 6\ AC\_LIT} + \beta 2\ BO\_IND + \beta 3\ IN\_OWN + \beta 4\ LEVERAGE + \beta 5\ NEW\_FUND + \beta 6\ BUS\_SEG + \beta 7\ ROA + \beta 8\ LN\_SALE + \beta 9\ FOR\_SALE + C$$

Where:

AUD_QUAL is the dependent variable and it represents the audit quality. It is important to recognize that the above regressions present general regressions to model

the auditor selection process. However, specific regressions that will be used will depend on the nature of the dependent variable AUD_QUAL (audit quality).

Table 5.8 summarizes the natural and the values of the dependent variable and the regressions that will be used for the different proxies and methods that have been discussed in details earlier in this section.

Table 5-8 Proxies, methods and regressions used to model audit quality

Proxies and Methods	AUD_QUAL Natural	Type of Regression	AUD_QUAL Values
Continuos Methods	Ratio	Linear	% Of auditor's share in the total audit fees in the firm's industry
Craswell Method	Ordinal	Logistic	Dummy variable equals 1 if the auditor is specialist and 0 otherwise
Palmrose Method	Ordinal	Logistic	Dummy variable equals 1 if the auditor is specialist and 0 otherwise
Size Proxy	Ordinal	Logistic	Dummy variable equals 1 if the auditor is a Big-4 and 0 otherwise

5.4.4.1.2 Test Variables

ACE is the only test variable in Regression 1 and it represents audit committee effectiveness. This variable is a dummy variable, which takes 1 if a firm has an effective audit committee and 0 otherwise. In order for a company to have an effective audit committee it has to be independent, active and financially literate and have at least three members on the committee, charter and at least one expert.

The results of this independent variable will provide an answer for the first research question in this study, which was stated in Chapter 3.

"Is there an association between ACE and audit quality?"

In order to identify the determinant of audit quality among different audit committee characteristics, it is important to break the test variable, ACE, into six different test variables as shown in Regression 2.

Therefore, instead of having only one test variable (ACE) in Regression 1, there will be six test variables in Regression 2. These variables are as follows.

AC_IND refers to audit committee independence. The ASX CGC (2003, 19) defined an independent director as:

> *"An independent director is independent of management and free of any business or other relationships that could materially interfere with – or could reasonably be perceived to materially interfere with – the exercise of their unfettered and independent judgement"*

On the other hand, the SMC (1994) defined an independent director as a non-executive director who has no direct or indirect interests in the transactions and contracts of the company. Although the ASX CGC definition seems more comprehensive, they are very similar.

The independence of the audit committee from management will be measured by classifying audit committee members as independent directors or non-independent directors. In the light of the ASX CGC and SMC definition of independent directors, a non-independent director is an inside director or a non-executive director who:

- was an executive director within the last three years;
- is a substantial shareholder in the company;
- is related to an executive of the company; or
- is a major supplier, customer or consultant to the company.

The required information to evaluate audit committee members' independence in ASX listed companies was taken primarily from the annual reports, which could be accessed via *Connect 4, Data Analysis and ASX databases*. It should be noted that the related-party notes were examined in order to determine if an audit committee member is independent or not.

On the other hand, the independence of audit committee members in Saudi listed companies will be assessed using the answers of Q2, Q3, Q4, Q7, Q13 and Q14 obtained from the completed questionnaires.

After the assessment of the audit committee members' independence is made, the independent variable AC_IND equals 1 if the audit committee complies with the ASX CGC and SMC recommendations for an independent audit committee, and 0 otherwise (dummy variable).

AC_SIZE refers to the number of the audit committee members. Both the CGC and SMC recommend that the audit committee should consist of at least three members. The number of the audit committee members is very straightforward and could be known easily from the Corporate Governance Section in the annual report of the ASX listed companies and from the answer to Q1 in the completed questionnaires.

The independent variable AC_SIZE equals the number of audit committee members and it is expected to have a positive association with auditor quality.

AC_ACT refers to the number of meetings that have been held during the test period. While ASX CGC did not recommend a specific number of meetings as a minimum; instead they recommend that the audit committee should meet adequately to discharge its responsibilities effectively. The SMC stated that an audit committee should meet at least three times a year.

With respect to the best practice on the frequency of audit committee meetings, Blue Robin Report (1999), Ramsay (2001) and Saudi Association of Certified Public Accountants (2003) recommended that the audit committee should meet annually at least four times to discharge its role effectively.

However, it is expected that an audit committee with only one meeting will not be as effective as another audit committee with three meetings. Therefore, the independent variable AC_ACT equals the number of meetings held by the audit committee during the test period.

The number of audit committee meetings in the ASX listed companies is available within the Corporate Governance Section in the annual report. On the other hand, this number in Saudi listed companies is obtained from the answer of Q3 in the completed questionnaires.

AC_CHAR refers to the existence of an audit committee charter. The ASX CGC (2003) recommended that the audit committee should have a formal charter. In

addition, this charter should clearly set out the audit committee's role and responsibilities, composition, structure and membership requirements.

Despite the fact that the SMC did not recommend anything regarding having an audit committee charter, audit committee members in the Saudi listed companies were asked if they do have such charter or not. The independent variable AC_CHAR is a dummy variable, which takes 1 if the audit committee has a charter and 0 otherwise.

AC_EXP refers to the expertise of the audit committee members. The ASX CGC (2003) defined an expert audit committee member as an audit committee member who is a qualified accountant or other professional with experience of financial and accounting matters and recommended that at least one of the audit committee members should be expert.

On the other hand, the SMC (1994) did not provide any definition or recommendations regarding audit committee expertise. However, the SOCPA (2003) required Saudi public companies to have at least one expert in their audit committees. Therefore, this study will consider audit committee members to possess such expertise if they are qualified accountants, certified public accountants or a chief financial officer.

The required data to assess audit committee members' expertise in the ASX listed companies are available within the annual reports. While such data in Saudi listed companies will be obtained from the answers of Q8 and Q10 in the completed questionnaires. The independent variable AC_EXP equals 1 if at least one member of the audit committee was an expert and 0 otherwise (dummy variable).

AC_LIT refers to audit committee financial literacy. The ASX CGC (2003) defined financial literacy as the ability to read and understand financial statements and required that all audit committee members should be financially literate. On the other hand, the SMC (1994) defined financial literacy as having a good command of financial and accounting practices and required that all audit committee members should be financially literate.

While it is clear that there is a similarity in the definition and the requirements between the ASX CGC and SMC, it is obvious that there is no direct measure to

assess such financial literacy. As a result, proxies should be used to provide indirect measurement for such variable.

For the purpose of this study, an audit committee member is considered as being financially literate if he or she is:

- a member of a recognized professional body;
- having banking or investment management experience;
- holding or having held the position of Chief Executive Officer; or
- having directorial memberships in more than one company in different industries.

The dependent variable AC_LIT equals 1 if all the audit committee members are financially literate and 0 otherwise.

Finally, the results of the six different audit committee characteristics will provide an answer to the second research question that has been mentioned in Chapter 3.

"Which audit committee characteristic is the most important determinant of audit quality?"

5.4.4.1.3 Control Variables

Prior literature on auditor selection has identified a number of variables that influence the auditor selection process. These factors could be classified into four groups, namely, corporate governance, agency, finance and profitability variables.

The first group includes corporate governance variables. For example, Jensen (1982) and Leddy (1982) argued that the board of directors is important in the auditor-choice decision. In addition, Beasley and Petroni (2001) investigated the association between the board composition and the auditor selection. They found that firms with a high percentage of outside directors on the board were more likely to be associated with higher quality auditors than firms with a lower percentage of outside directors on the boards.

The second group includes agency variables. For example, Chow (1982), Simunic and Stein (1987) and Francis and Wilson (1988) examined the association between

different agency costs and the selection of auditors using U.S and Canadian data. They found positive relationships between agency costs, such as client size, diffusion of ownership and leverage (debts) and the quality of auditors.

Similarly, Firth and Smith (1992) tested the association between two agency variables, namely, management ownership and leverage, and the quality of auditor using companies seeking a stock market listing on the New Zealand Stock Exchange. They concluded that the lower the percentage of management ownership, the greater the demand for high quality auditors (Big 8) and the higher the leverage, the greater the demand for high quality auditors.

The third group includes finance and information-needs variables. For example, DeFond (1992) and Johnson and Lys (1990) examined the relationship between the acquisition of new funds and the auditor quality. The authors argued that specialist auditors (high quality auditors) provide more credibility that is especially valuable to companies around the time of debt and equity issuance. Their results indicated that firms that need new funds are more likely to select specialist auditors.

In addition, Eichenseher (1985) examined the impact of foreign operations on the domestic auditor selections of the USA firms. The author found that firms with substantial foreign operations were more likely to select a Big 8 auditor than a non-Big 8 auditor. Specifically, the results of this study revealed that for both manufacturing and non-manufacturing firms, the tendency to employ non-Big 8 auditors declined when the firm has at least 10% of its assets outside the USA.

Moreover, Simon (1997) and Abbott and Parker (2000) argued that firm's complexity influences the auditor selection process and, therefore, they used it as a control variable in their regressions. The results of their studies indicated that there was a positive relationship between the complexity of the firms and auditor quality.

The final group includes auditee profitability variables. For example, Johnson and Lys (1990) and Abbott and Parker (2000) argued that more profitable firms are more likely to pay the fee premium associated with high quality auditors simply because such firms have deeper pockets than less profitable firms.

Consistent with prior literature, the above four-groups variables were included in the regression to overcome their effects on the auditor selection process and were operationalized as follows.

- **OUTSIDER** refers to the percentage of non-executive directors on the board; equals the number of non-executive directors on the board divided by the total number of directors on the board and is expected to have a positive relationship with auditor quality.

- **IN_OWN** refers to the management ownership; equals the percentage share ownership that management have in the company and is expected to have a negative association with auditor quality.
- **LEVERAGE** refers to the company's debt; equals the ratio of total debt to total assets as measured at the end of the test period and is expected to have a positive association with auditor quality.
- **NEW_FUND** refers to the firm's acquisition of new funds; equals the total of new debt and equity issuances divided by the total as for the end of the testing period and is expected to have a positive relationship with auditor quality.
- **BUS_SEG** refers to the complexity of the firm's operations; equals the number of business segments during the testing period and is expected to have a positive relationship with auditor quality.
- **ROA** refers to the profitability of the firm; equals net income divided by the total assets at the end of the testing period and is expected to have a positive association with auditor quality.
- **SIZE** refers to the size of the firm; equals the natural log of total sales and is expected to have a positive association with the auditor quality.
- **FOR_SALE** refers to the percentage of the firm's foreign sales; equals foreign sales divided by total sales at the end of the testing period and is expected to have a positive relationship with auditor quality.

Table 5-9 shows the description of the variables in Model 1 that will be used as a reference for all the variables in the tables in the remaining chapters.

Table 5-9 Description of the variables in Model 1

Variable Name	Description
***Dependent Variable*:**	
AQ	The market share of the company's auditor in audit fees in the company's industry.
***Test Variables*:**	
ACE	Audit committee effectiveness. Coded 1 if the audit committee meets all the six audit committee characteristics criterion; 0 otherwise.
AC_IND	Audit committee independence. Coded 1 if the audit committee has a majority of independent directors; 0 otherwise.
AC_SIZE	The number of the members of the audit committee.
AC_ACT	The number of meetings of the audit committee per year.
AC_CHAR	Audit committee charter. Coded 1 if the audit committee has a charter; 0 otherwise.
AC_EXP	Audit committee expertise. Coded 1 if the audit committee has at least one expert; 0 otherwise.
AC_LIT	Audit committee literacy. Coded 1 if all the audit committee members are financially literate; 0 otherwise.
***Control Variables*:**	
OUTSIDER	Percentage of the board members who are non-employee directors.
IN_OWN	The cumulative percentage of voting control held by managers and directors.
LEVERAGE	Ratio of total long-term debt/total assets.
NEW_FUND	the total of new debt and equity issuances divided by the total assets
BUS_SEG	The number of business segments.
ROA	Return on assets.
SIZE	Natural log of total assets
FOR_SALE	The market share of the company's auditor in the NAS fees in the company's industry.

5.4.4.2 Audit Committee Characteristics and Non-Audit Services

5.4.4.2.1 Non-Audit Services

Non-audit services (NAS), also known as management consultancy services, can be described as the engagement of an outside firm or individual to provide recommendations to a firm's management and/or to be charged with planning and implementing some course of action for corporate management (Firth 1997).

Abdel-khalik (1990) argued that it is difficult to structure an empirically testable model of the determinants of NAS purchases. He identified two reasons that caused the difficulty in testing the determinants of NAS purchases. The first reason is related to the problem of explaining the selection between external and internal consultants. In some instances, external consultants may provide higher quality services at lower costs than do internal employees. The second reason is attributed to the difficulty of observing factors that might influence NAS purchases.

However, a number of attempts has been made in the prior literature to form a model that could explain the variation in NAS purchase decisions. As a result, a number of studies has used quite similar regression models to investigate the determinants of NAS purchase decisions (e.g., Palmrose 1986, Parkash and Venable 1993, Barkess and Simnett 1994, Firth 1997, Abbott et al. 2003).

Consistent with these studies, two multivariate regressions were used in this study to examine the association between the percentages of NAS and the independent (test) variables.

However, it should be noted that these regressions would be used only to model NAS purchases in Australian listed companies because the Saudi Corporation law prohibits providing NAS by the incumbent auditors to their clients.

Regression 2A

$$\textbf{NAS\_RATIO} = \alpha + \boldsymbol{\beta 1}\ \boldsymbol{ACE} + \beta 2\ \text{BO\_IND} + \beta 3\ \text{IN\_OWN} + \beta 4\ \text{LEVERAGE} + \beta 5\ \text{ROA} + \beta 7\ \text{LN\_SALE} + \beta 8\ \text{SH\_BLK} + \beta 9\ \text{FOR\_SALE} + C$$

Regression 2B

$$\textbf{NAS\_RATIO} = \alpha + \boldsymbol{\beta 1\ AC\_IND} + \boldsymbol{\beta 2\ AC\_SIZE} + \boldsymbol{\beta 3\ AC\_ACT} + \boldsymbol{\beta 4\ AC\_CHAR} + \boldsymbol{\beta 5\ AC\_EXP} + \boldsymbol{\beta 6\ AC\_LIT} + \beta 2\ BO\_IND + \beta 3\ IN\_OWN + \beta 4\ LEVERAGE + \beta 5\ ROA + \beta 7\ LN\_SALE + \beta 8\ SH\_BLK + \beta 9\ FOR\_SALE + C$$

Where:

NAS_RATIO is the dependent variable; refers to the ratio of non-audit service fees to audit fees and equals the total NAS fees including information technology fees (IT fees) divided by the total audit fees.

5.4.4.2.2 Test Variables

ACE is the only test variable in Regression 3 and it represents audit committee effectiveness. This variable is a dummy variable, which takes 1 if a firm has an effective audit committee and 0 otherwise. In order for a company to have an effective audit committee it has to be independent, active and financially literate and has at least three members on the board, charter and at least one expert.

The results of ACE will provide an answer for the fourth research question that has been stated in Section 3.3.2.2.

"Is there an association between ACE and the magnitude of NAS purchases?"

In addition, in order to identify the determinant of NAS purchases among the different audit committee characteristics, it is important to break the test variable, ACE, into six different test variables as shown in Regression 4.

The same six audit committee characteristics that have been stated in section 6.4.4.1.2 present the test variables. These variables are operationalized using ASX CGC recommendations and guidelines as benchmarks as follows.

- **AC_IND** refers to audit committee independence; equals 1 if the audit committee has a majority of independent directors and 0 otherwise (dummy variable) and is expected to have a negative association with NAS ratio.
- **AC_SIZE** refers to the total number of audit committee members on its board; equals 1 if the number of the audit committee members is three or more and 0 otherwise and is expected to have a negative association with the NAS ratio.
- **AC_ACT** refers to audit committee activity; equals the number of meetings held by the audit committee during the test period and is expected to have a negative association with NAS ratio.
- **AC_CHAR** refers to the existence of an audit committee charter; equals 1 if the audit committee has a charter and 0 otherwise (dummy variable) and is expected to have a negative association with NAS ratio.
- **AC_EXP** refers to audit committee expertise; equals 1 if at least one member of the audit committee was an expert and 0 otherwise (dummy variable) and is expected to have a negative association with the NAS ratio.
- **AC_LIT** refers to the audit committee financial literacy; equals 1 if all the members of the audit committee are financially literate and 0 otherwise and is expected to have a negative association with the NAS ratio.

Finally, the results of six different audit committee characteristics will answer the fifth research question that has been identified in Section 3.3.2.2.

"Which audit committee characteristic is the most important determinant of the magnitude of NAS purchases?"

5.4.4.2.3 Control Variables

Prior literature has identified a number of variables that could affect NAS purchases (e.g., Palmrose 1986, DeFond 1992, Parkash and Venable 1993, Firth 1997 and Abbott et al. 2003). These variables could be classified into the following four different groups: corporate governance, agency, profitability and NAS quality variables.

5.4.4.2.3.1 Corporate Governance Variables

Beasley (1996) investigated the association between board composition and the occurrence of fraud. The results of this study revealed that there was a negative relationship between the percentage of outside directors on the board and the incidence of fraud. This indicates that outside directors have more incentives to limit NAS purchases, which could reduce the independence of auditors and lead to the occurrence of fraud. In addition, Houghton et al. (2002) found a negative relationship between the percentage of outside directors on the board and the NAS purchases.

5.4.4.2.3.2 Agency costs variables

Parkash and Venable (1993) and Firth (1997) argued that high agency-cost firms need independent audits to reassure investors and creditors; however, NAS purchases increase the economic independence of the auditor on the clients and may impair the independence of auditor in fact or in appearance. Therefore, these studies examined the association between agency-cost variables and the NAS purchases. Their results concluded that both management ownership and share ownership of the largest stockholders were positively related to the relative level of NAS fees and that leverage was negatively related to the relative level of NAS fees.

However, Bushee and Noe (2000) argued that a higher percentage of block-holdings might lead to lower NAS purchases because they cannot get access to inside information, which increase the demand for higher quality auditors. Moreover, large firms demand more NAS because they have a broader range of activities and complicated systems. Palmrose (1986) found a positive association between the size of the firms and the NAS purchases. However, DeFond (1992) argued that large companies might have greater agency costs than small ones do and therefore a company's size might limit the purchase of NAS.

5.4.4.2.3.3 Profitability variable

Parkash and Venable (1993) examined the influence of the profitability of the firms and the NAS purchases. They found that higher levels of profitability of the firms were associated with higher level of NAS fees ratio.

5.4.4.2.3.4 NAS quality variable

Abbott et al. (2003) found that big audit firms (Big 5) were more likely to be associated with higher NAS purchases. Their results indicate that Big 5 audit firms provide higher quality NAS. However, Parkash and Venable (1993) suggested the use of industry-specialist auditors instead of the size of auditors to proxy for NAS quality.

In addition, Houghton and Ikin (2001) found that NAS-specialist auditors were associated with higher NAS purchases. They defined a NAS-industry-specialist auditor as an auditor who has 15% or more of the total NAS provided by all auditors in that industry.

However, it should be noted that the 15% is arbitrary percentage, which could lead to misclassification of auditors as specialist in providing NAS. To avoid the occurrence of such misclassification, the continuous measure of NAS specialization should be used.

Consistent with prior literature, the above four-groups of variables were included in the regression to isolate their expected effects on the level of NAS fees ratio to audit fees and were operationalized as follows.

- **OUTSIDER** refers to the percentage of non-executive directors on the board; equals the number of non-executive directors on the board divided by the total number of directors on the board and is expected to have a negative relationship with the level of NAS purchases.

- **IN_OWN** refers to the management ownership; equals the percentage share ownership that management have in the company and is expected to have a positive relationship with the level of NAS ratio.
- **LEVERAGE** refers to the company's debt; equals the ratio of total debt to total assets as measured at the end of the test period and is expected to have a negative relationship with the level of NAS ratio.
- **ROA** refers to the profitability of the firm; equals net income divided by the total assets at the end of the testing period and is expected to have a positive relationship with the level of NAS ratio.

- **SIZE** refers to the size of the firm; equals the natural log of total sales and is expected to have a positive relationship with the level of NAS purchases.
- **SH_BLK** refers to the number of block-holdings in the firm; equals the number of shareholders who own at least 5% of the total shares and is expected to have a positive relationship with the level of NAS ratio.
- **NAS_SP** refers to the degree of specialization in providing NAS; equals the auditor's market share of NAS fees in the total NAS fees for the firm's industry and is expected to have a positive relationship with the level of NAS ratio.

Table 5-10 shows the description of the variables in Model 2 that will be used as a reference for all the variables in the tables in the remaining chapters.

5.5 Summary

Selecting the right research methodology and data collection techniques is a very critical stage in conducting any research project to insure that the researchers will achieve their goals. This chapter reviewed and discussed in general different research approaches and data collection techniques. In addition, the research method, data collection techniques and research design were presented and discussed in detail.

Table 5-9 Description of the variables in Model 1

Variable Name	Description
***Dependent Variable*:**	
NAS	The ratio of total non-audit services fees to total audit fees.
***Test Variables*:**	
ACE	Audit committee effectiveness. Coded 1 if the audit committee meets all the six audit committee characteristics criterion; 0 otherwise.
AC_IND	Audit committee independence. Coded 1 if the audit committee has a majority of independent directors; 0 otherwise.
AC_SIZE	The number of the members of the audit committee.
AC_ACT	The number of meetings of the audit committee per year.
AC_CHAR	Audit committee charter. Coded 1 if the audit committee has a charter; 0 otherwise.
AC_EXP	Audit committee expertise. Coded 1 if the audit committee has at least one expert; 0 otherwise.
AC_LIT	Audit committee literacy. Coded 1 if all the audit committee members are financially literate; 0 otherwise.
***Control Variables*:**	
OUTSIDER	Percentage of the board members who are non-employee directors.
IN_OWN	The cumulative percentage of voting control held by managers and directors.
LEVERAGE	Ratio of total long-term debt/total assets
ROA	Return on assets.
SIZE	Natural log of total assets for fiscal 2004.
SH_BLK	The number of shareholders who own 5% or more
NAS_SP	The market share of the company's auditor in the NAS fees in the company's industry

CHAPTER 6: DESCRIPTIVE DATA ANALYSIS

6.1 Introduction

Hussey and Hussey (1997: 187) defined statistics as " a body of methods and theory that is applied to quantitative data when making decisions in the face of uncertainty". In terms of analysing quantitative data, statistics could be classified into two categories, namely, descriptive statistics and inferential statistics. While descriptive statistics are used to summarise or present quantitative data, inferential statistics are used to draw a conclusion from a sample of quantitative data and then generalize it to the population (Hussey and Hussey 1997).

The aim of this chapter is to present a descriptive statistical analysis for the collected data for the Australian and Saudi samples. This chapter has three sections in addition to a summary for the most important findings regarding the data analysis.

In section 1 there is a brief discussion of the descriptive statistics and the main groups of techniques that could be used to present such descriptive statistics. In the second section the statistical software programs that have been used in entering, coding and producing a variety of descriptive statistics and the procedures that have been used to ensure data-entry validity are described. Finally, the third section presents, interprets, discusses and compares the descriptive statistics for the Australian and Saudi samples.

6.2 Descriptive statistics review

Hussey and Hussey (1997) pointed out that the term descriptive statistics could be misleading as it indicates that it is only concerned with describing data, while it is also valuable for summarizing and presenting the data in tables, charts, graphs and other diagrammatic forms. As a result, Hussey and Hussey (1997) suggested the use of the term exploratory data analysis instead of the term descriptive statistics to reflect the whole picture of the usefulness of this type of analysis. However, as descriptive statistics is the most commonly used term in the literature, this term will be used in this study with caution.

Descriptive statistics provide descriptions for the data in a sample in terms of the shape (frequency tables), the central tendency (mean and mode), the dispersion (max-min, standard deviation, variance, range, interquartile range and box plots) and the changeability (simple index numbers, deflation data and weighted index numbers)(Hussey and Hussey 1997). The above definition of descriptive statistics named four groups of techniques that could be used to provide a clear picture about the descriptive data analysis for any sample.

It should be noted that frequency tables would be only presented for nominal or ordinal variables, as it is worthless to present such tables for scale variables because of the large number of values that these variables could take. Some exceptions may apply for some scale variables because they only take few values or because such variables could be converted into nominal or ordinal variables to express the importance of a specific value. A frequency distribution table demonstrates the frequency data, usually in size order (Hussey and Hussey 1997).

In addition, it is important to recognize that not all the central tendency measures have the same weight in terms of their importance and meaningfulness for the different types of data. While the mean is a very important measure for central tendency for ratio and interval data (scale variables), the mean has very little value for data that are nominal or ordinal (nominal and ordinal variables). On the other hand, while the mode is a very important description of the central tendency for data that are nominal or ordinal, it has very little value for ratio and interval data.

Moreover, although there is a number of measures for dispersion, only three measures, namely, max-min, standard deviation and variance, will be presented, interpreted and discussed for ratio and interval data (scale variables). The range, interquartile range and box plots are not presented in this chapter because they are affected by extreme values. In addition, dispersion measures are of little value for nominal and ordinal data as the mean for such data is worthless and does not add much value for the data analysis.

Finally, despite the fact that measures of change represent a very important descriptive statistic, it does not apply to this research, as it does not use any series data, which are required to perform such analysis.

In summary, while the mean, max-min, standard deviation and variance will be presented, interpreted, discussed and compared in detail for ratio and interval data (scale variables), only frequency tables and the mode will be demonstrated, interpreted, examined and contrasted in detail for nominal and ordinal data (nominal and ordinal variables).

6.3 Software Programs and Data Entry Validity Procedures

Excel software has been used to enter and code the data that have been collected from a variety of sources, which have been discussed in detail in Chapter 5. Then these data were exported from Excel to the Statistical Package for Social Science (SPSS) to produce the descriptive statistics. The SPSS is a software system for data analysis (Norusis 1998). The system version used in this research were Microsoft Office 2000 SR-1 Professional and SPSM 12.0.1 for Windows licensed to Victoria University at the time.

There were two procedures that have been used to ensure data entry validity. First, the researcher entered the data for each sample into two different Excel files and then a comparison was made between the two files to ensure that they were identical. Second, both Excel and SPSM were used to produce the descriptive statistics for each sample and a comparison was made between the results to ensure that they were the same.

6.4 Descriptive Statistics for the Australian and Saudi Samples

In this section, the descriptive data analysis will be presented and interpreted for the SSM and ASX samples not only for the variables of interest, but also for the other variables (related and alternative variables).

Each of the variables of interest and the related variables will be demonstrated for the four samples. These variables will be presented in the following order:

- dependent variables and their related variables;
- independent variables and their related variables; and
- control variables and their related and alternative variables.

Finally, comparisons will be made to highlight the differences and the similarities among the SSM and ASX and explanations will be provided for any differences whenever it is applicable.

6.4.1 Dependent Variables

6.4.1.1 Audit Quality

As mentioned in Chapter 4, audit quality cannot be observed or measured directly. Therefore, two different proxies that have been used frequently in the audit quality literature will be used as surrogates for such quality. These proxies are size and specialization.

6.4.1.1.1 Auditor Size

Prior to the collapse of Enron Corp., there were five big audit firms, namely, Deloitte & Touche (DT), Ernst & Young (EY), KPMG (KP), PricewaterhouseCoopers (PW) and Arthur Andersen (AA). However, such collapse caused the fall of Enron's giant auditor, Arthur Andersen, which decreased the Big 5 to Big 4.

Table 6-1 shows the frequencies and the modes for two samples using auditor size as a proxy for audit quality.

Table 6-1 The Frequencies Using Auditor Size as a Proxy for Audit Quality

		SSM	ASX
Frequency	**Non-Big**	24	108
	Big 4	20	192
	Total	44	300
Frequency Percentage	**Non-Big 4**	0.55	0.36
	Big 4	0.45	0.64
	Total	1.00	1.00

While 45% of the SSM companies hired a Big 4 auditor, 64% of the ASX companies employed a Big 4 auditor. It is easy to recognize that the SSM and ASX are completely different in terms of their frequencies and modes. While hiring a non-Big 4 is dominant for companies within the SSM, the use of a Big 4 is overriding for firms within the ASX.

One explanation for such difference is the size of the capital market in terms of the number of companies listed in such market and its total capitalization. This explanation is supported by the results of the study by Abbott and Parker (2000) using US data. They found that 95% of their sample firms were audited by a Big 5 auditor. It is clear that the percentage of firms audited by Big 4 (Big 5) auditors increases with the number of companies in the market and the market capitalization (45.5% in Saudi, 64% in Australia and 95% in US).

6.4.1.1.2 Auditor Specialization

The following three different methods will be used to identify specialist auditors.

1. AQ_Continuous;
2. AQ_Craswell; and
3. AQ_Palmrose.

6.4.1.1.2.1 AQ_Continuous

AQ_Continuous indicates the degree of specialization of the company's auditor in a specific industry (sector). AQ_Continuous could take values from 0 to 1.

Table 6-2 summarizes the descriptive statistics for AQ_Continuous for the two samples and reveals the following.

Table 6-2 Descriptive Statistics Using AQ_Continuous as a Proxy for Audit Quality

	SSM	ASX
Minimum	.0	0
Maximum	.82	.67
Mean	.25	.17
S. Deviation	.271	.176

The minimum for the two samples approximately equals 0 (0.0008) indicating that there were auditors who earned less than 1% of the total audit fees for a specific industry (sector).

However, the maximum for the SSM, which equals 0.82, is higher than that for the ASX, which equals 0.67. This could be explained by the small number of companies

in each sector in Saudi Arabia, which will make it easier for specialist auditors to be dominant in their sectors (industries).

Moreover, while on average (the mean) the degree of specialization for SSM equals 0.25, such average for the ASX is 0.17. It is clear that the average degree of specialization depends on the size and the number of the companies in each market and this could explain the differences between the means in the two samples.

Finally, the spread of data around its mean for SSM, which equals 0.271, is higher than that for the ASX, which equals 0.176.

6.4.1.1.2.2 AQ_Craswell

Most of the prior literature has used 10% or 20% as cut-off points in determining the specialist auditors (Craswell et al. 1994; Abbott and Parker 2000; Chen et al. 2005) when using the AQ_Craswell method. However, such cut-off points are arbitrary and as a result, it is hard to justify the use of one cut-off point over the others other than being used more frequently in the literature.

In this study, three different cut-off points will be used to investigate the impact of the arbitrary selection of such cut-off points on the determination of specialist auditors and on the regression analysis. These cut-points are 10%, 20% and 30%.

In order to determine the specialist auditors in each industry (sector) under AQ_Craswell method, the following steps are required.

- Calculate the total audit fees (sales) for each industry (sector). For example, the total audit fees for the capital goods industry for the ASX were $14,938,857.
- Calculate the total audit fees (sales) for each auditor in this specific industry (sector). For example, the total audit fees for PW in the capital goods industry was $1,922,632.
- Divide the total audit fees (sales) for each auditor on the total of the audit fees (sales) of the industry (sector). For example, PW earned approximately 13% of the total audit fees for the capital goods industry.

- Finally, comparing the percentage earned by each auditor in the industry with each of the three cut-off points will determine who are the specialist auditors in this industry. For example, while PW is considered as a specialist in the capital goods industry using the main criteria (10%), PW is not a specialist using 20% and 30% cut-off points.

Table 6-3 presents the specialist auditors in the ASX industries using AQ_Craswell at three different cut-off-off points.

Table 6-3 Specialist Auditors in the ASX Industries Using AQ_Craswell at Three Different Cut-off Points

Industry	Craswell 10%	Craswell 20%	Craswell 30%
Automobile	DT, EY, PM	DT, PM	PM
Banks	EY, PM, PW	EY, PM	PM
Capital Goods	DT, EY, PM, PW	EY, PM	PM
Commercial Services	DT, PW	DT, PW	PW
Consumer Durables	DT, EY, PW	EY, PW	PW
Diversified Financials	EY, PM, PW	PM, PW	PM, PW
Energy	EY, PM	EY, PM	EY, PM
Food & staples	EY, PW	DT, EY, PW	EY, PW
Food Beverage	DT, EY, PM, PW	EY, PM, PW	PW
Health Care Equipment	DT, EY, PM, PW	PM	PM
Consumer Services	EY, PW	EY, PW	EY, PW
Insurance	EY, PM, PW	DT, EY, PW	PW
Materials	DT, EY, PM, PW	EY, PM	PM
Media	EY, PM	EY	EY
Pharmaceuticals	EY, PM, PW	EY	EY
Real Estate	EY, PM, PW	EY, PM, PW	EY, PM
Retailing	EY, PM, PW	EY	EY
Software & Services	EY, PW	EY, PW	PW
Technology Hardware	DT, EY, PM, PW	EY, PW	PW
Telecommunication	EY, PM, PW	PM, PW	PM, PW
Transportation	DT, PM, PW	PM, PW	PM
Utilities	DT, EY, PM	DT, PM	PM

Table 6-3 reveals the following important findings.

- Despite the fact that ASX has 23 different industries, only 22 industries were shown in the Table, as the one that was remaining had only two companies and their data were not available.
- The three different cut-off points yielded completely different conclusions regarding the determination of the specialist auditors in 22 (90%) industries. For example, for the pharmaceutical industry, while DT, EY and PW were specialists using the 10% cut-off point, only EY was determined to be a specialist using 20% or 30% as cut-off points.
- The three cut-off points produced similar results regarding specialization for two (10%) industries. For example, in the energy industry, both EY and PM were considered as specialists regardless of what criterion was used.
- For all the industries, specialization only existed among the Big 4. In other words, none of the second tier or small audit firms was considered as a specialist in any industry. This is consistent with the results of the majority of the specialization studies, which concluded that specialization exists only among the Big 4 auditors (Craswell et al. 1995).

Table 6-4 presents the specialist auditors in the SSM sectors using AQ_Craswell at three different cut-off-off points.

Table 6-4 Specialist Auditors in the SSM Sectors Using AQ_Craswell at Three Different Cut-off Points

Sector	Craswell 10%	Craswell 20%	Craswell 30%
Bank	DT, EY, PM, PW	DT, EY, PW	DT, EY, PW
Industrial	EY, PW	EY	EY
Cement	DT, PM, NB*	DT, PM, NB	DT
Services	DT, PM, PW, NB	PM, NB	None
Agriculture	NB	NB	NB

* NB indicates that there is at least one non-Big audit firm that is a specialist in the specified sector.

On the other hand, Table 6-4 provides the following important conclusions about the specialization in the Saudi sectors.

- Despite the fact that there were seven sectors in the SSM, Table 7-4 shows the results of specialization only for five sectors as the other two sectors had only one firm each and because there were no respondents from the two companies in these sectors.

- The three different cut-off points resulted in completely different findings regarding the determination of the specialist auditors. For example, in the services sector, DT, PM, PW and NB were considered as specialists using the 10%, only PM and NB were specialists using the 20% and none was considered as a specialist using 30%.

- Specialization existed not only among the Big 4, but also among other second tier and small audit firms. This was evident in three sectors: cement, services, and agriculture sectors. This could be explained by the results of a few studies in the specialization literature, which found that specialization exists even among small audit firms (DeFond et al 2000).

- None of the Big 4 provided any audit services for the agriculture sector. A possible explanation is that all firms in this sector have very low net incomes or losses, so they cannot afford pay any premium for any of the Big 4.

It is clear from Tables 6-3 and 6-4 that Australian and Saudi markets have different classifications for their companies. While the ASX classifies companies into different industries, the Saudi market (SSM) uses sectors as a base for its classification. This should not be a problem, as the aim of this study is not comparing specific or individual industries or sectors in the two countries. Moreover, each market should be examined independently from the other and then the comparison should be made in accordance with the results for the whole market and not for individual industries or sectors.

Table 6-5 presents the frequencies for the two samples using all the three cut-off points.

Table 6-5 Frequencies Using AQ_Craswell for all the three cut-off points for the SSM and ASX

		SSM			ASX		
		10%	***20%***	***30%***	***10%***	***20%***	***30%***
Frequency	**Non- Specialist**	20	23	32	138	190	224
	Specialist	24	21	12	162	110	76
	Total	44	44	44	300	300	300
Frequency Percentage	**Non- Specialist**	0.45	0.52	0.73	0.46	0.63	0.75
	Specialist	0.55	0.48	0.27	0.54	0.37	0.25
	Total	1.00	1.00	1.00	1.00	1.00	1.00

The percentages of SSM companies, which hired a specialist auditor using the 10%, 20% and 30% cut-off points, were 0.55, 0.48 and 0.27, respectively. On the other hand, the percentages of ASX companies, which engaged with a specialist auditor using the 10%, 20% and 30% cut-off points, were 0.54, 0.37 and 0.25, respectively.

It is clear that the percentage of the SSM companies with a specialist auditor was higher compared to the percentage of the ASX companies with a specialist auditor for each of the three cut-off points. One possible explanation could be that specialization within the SSM exists not only among the Big 4, but also among the second and small tier audit firms.

In addition, despite the fact that specialization within the SSM and ASX was affected by changing the cut-off points, it was clear that changes in the ASX were clearer and bigger than those in the SSM. A possible explanation for such differences is that unlike Australian industries, where all the Big 4 auditors provide audit services for most of the industries, some of the Saudi sectors lack the presence of two or more of the Big 4 auditors. For example, while the banks sector was the only one where all the Big 4 auditors provided audit services, none of the Big 4 auditors provided any audit services for the agriculture sector.

6.4.1.1.2.3 AQ_Palmrose

Most of the prior literature has used 15% as a cut-off point in deciding the specialist auditors (Abbott and Parker 2000) under the AQ_Palmrose method. However, the selection of the cut point-off point is still arbitrary and not justified. Therefore, the 5%, 15% and 25% cut-off points will be used in this study to examine the influence of using different cut-off points on the results of the determination of specialists and ultimately on the results of the regression analysis.

In order to determine the specialist auditors in each industry (sector) under the AQ_Palmrose method, the following steps are required.

- Calculate the total audit fees (sales) for each industry (sector).
- Calculate the total audit fees (sales) for each auditor in this specific industry (sector).
- Divide the total audit fees (sales) for each auditor on the total of the audit fees (sales) of the industry (sector).
- Determine the leader auditor of the industry who earned the largest audit fees (sales) from the total audit fees (sales) for the industry. For example, KPMG earned approximately 35% of the total audit fees for the capital goods industry and, as a result, KPMG is the leader auditor in this industry.
- Multiply the percentage earned by the leader auditor by one of the cut-off points depending on what cut-off point is used and the result will provide a criteria in the determination of specialists under AQ_Palmrose Method. For example, if the 15% cut-off point will be used, the criterion will equal approximately 5% (35%*15%).
- Finally, compare the criterion from the previous step with the percentage of each auditor in the total audit fees (sales) of the industry and any auditor who had a percentage that is equal to or more than the criterion percentage will be considered as a specialist in the industry in addition, of course, to the industry leader. For example, in addition to KPMG as a leader, all the other Big 4

auditors were considered as specialists in the capital goods industry as each of them earned more than the 5% criterion.

Table 6-6 presents the specialist auditors in the ASX industries using AQ_Palmrose's three different cut-off-off points.

Table 6-6 Specialist Auditors in the ASX Industries Using AQ_Palmrose's Three Different Cut-off Points

Industry	Palmrose 5%	Palmrose 15%	Palmrose 25%
Automobile	DT, EY, PM	DT, EY, PM	DT, EY, PM
Banks	EY, PM, PW	EY, PM, PW	EY, PM, PW
Capital Goods	DT, EY, PM, PW	DT, EY, PM, PW	DT, EY, PM, PW
Commercial Services	DT, PW, NB	DT, PW	DT, PW
Consumer Durables	DT, EY, PW, NB	DT, EY, PW	EY, PW
Diversified Financials	DT, EY, PM, PW, NB	EY, PM, PW	EY, PM, PW
Energy	DT, EY, PM, PW	DT, EY, PM, PW	EY, PM
Food & staples	DT, EY, PM, PW	DT, EY, PW	EY, PW
Food Beverage	DT, EY, PM, PW	DT, EY, PM, PW	DT, EY, PM, PW
Health Care Equipment	DT, EY, PM, PW, NB	DT, EY, PM, PW	EY, PM
Hotels Restaurants	EY, PM, PW, NB	EY, PW	EY, PW
Insurance	DT, EY, PM, PW	DT, EY, PM, PW	EY, PM, PW
Materials	DT, EY, PM, PW	DT, EY, PM, PW	EY, PM, PW
Media	EY, PM, PW	EY	EY
Pharmaceuticals	DT, EY, PM, PW	EY, PM, PW	EY
Real Estate	DT, EY, PM, PW	EY, PM, PW	EY, PM, PW
Retailing	DT, EY, PM, PW, NB	DT, EY, PM, PW	EY, PM, PW
Software & Services	DT, EY, PM, PW, NB	DT, EY, PM, PW	EY, PM, PW
Technology Hardware	DT, EY, PM, PW, NB	DT, EY, PM, PW	DT, EY, PM, PW
Telecommunication	DT, EY, PM, PW, NB	EY, PM, PW	EY, PM, PW
Transportation	DT, EY, PM, PW	DT, PM, PW	PM, PW
Utilities	DT, EY, PM, PW	DT, EY, PM, PW	DT, EY, PM

* NB indicates that there is at least one non-Big audit firm that is a specialist in the specified industry.

Table 6-6 provides the following important findings.

- The three different cut-off points yielded completely different conclusions regarding the determination of the specialist auditors in 19 industries (approximately 83% of the total of 22 industries). For example, for the

pharmaceutical industry all the Big 4 auditors were specialists using the 5% cut-off point, EY, PM and PW were all specialists using the 15% cut-off point and only EY was determined to be a specialist using 25% as cut-off points.

- The three cut-off points produced similar results regarding specialization for only three (17%) industries. For example, in the bank industry, EY, PM and PW were considered as specialists regardless of what criterion was used.

With the exception of the use of 5% cut-off point, specialization only existed among the Big 4 for all the different industries. In other words, none of the second tier or small audit firms was considered as a specialist in any industry.

Table 6-7 presents the specialist auditors in the SSM sectors using AQ_Palmrose's three different cut-off-off points.

Table 6-7 Specialist Auditors in the SSM Sectors Using AQ_Palmrose's Three Different Cut-off Points

Sector	Palmrose 5%	Palmrose 15%	Palmrose 25%
Bank	DT, EY, PM, PW	DT, EY, PM, PW	DT, EY, PW
Industrial	EY	EY	EY
Cement	DT, PM, NB	DT, PM, NB	DT, PM, NB
Services	DT, PM, PW, NB	DT, PM, PW, NB	DT, PM, PW, NB
Agriculture	NB	NB	NB

* NB indicates that there is at least one non-Big audit firm that is a specialist in the specified sector.

Table 6-7 provides the following important conclusions about specialization in the Saudi sectors.

- The three different cut-off points resulted in completely different findings regarding the determination of the specialist auditors for four sectors. For example, in the bank sector, whilst all the Big 4 auditors were specialists using the 15% criterion, DT, EY and PW were determined to be specialists using the 20% or 25% criterion.

- The three different cut-off points provided similar conclusions regarding specialization in one sector. EY was the only specialist in the industrial sector regardless of the criterion used.

- Specialization existed not only among the Big 4, but also among other second tier and small audit firms. This was evident in only four sectors: cement, services, agriculture and electricity sectors. This again could be explained by the results of a few studies in the specialization literature, which found that specialization exists even among small audit firms (DeFond et al 2000).
- None of the Big 4 provided any audit services for the agriculture sector. A possible explanation is that all firms in this sector had very low net incomes or losses, so they cannot afford to pay any premium for any of the Big 4 auditor.

Table 6-8 presents the frequencies for the two samples using all the three cut-off points.

Table 6-8 Frequencies Using AQ_Palmrose for all the Three Cut-off Points for the SSM and ASX

		SSM			ASX		
		5%	***15%***	***25%***	***5%***	***15%***	***25%***
Frequency	**Non- Specialist**	14	20	32	80	136	224
	Specialist	30	24	12	220	164	76
	Total	44	44	44	300	300	300
Frequency Percentage	**Non- Specialist**	0.32	0.45	0.73	0.27	0.45	0.75
	Specialist	0.68	0.55	0.27	0.73	0.55	0.25
	Total	1.00	1.00	1.00	1.00	1.00	1.00

The percentages of SSM companies, which hired a specialist auditor using the 5%, 15% and 25% cut-off points, were 0.68, 0.55 and 0.27, respectively. On the other hand, the percentages of ASX companies, which engaged a specialist auditor using the 5%, 150% and 25% cut-off points, were 0.73, 0.55 and 0.25, respectively. It is clear that the percentage of companies with a specialist auditor decreases with the increase of the cut-off point.

In summary, changing the arbitrary cut-off point influenced the determination of specialist auditors in the Australian and Saudi markets when using the AQ_Craswell and AQ_Palmrose methods. This provides support for the writer's decision that AQ_Continuous method is superior to the previous two methods, as it does not require any arbitrary selection of a cut-off point.

6.4.1.2 Non-audit Services Fees Ratio (NAS_RATIO)

As discussed in Chapter 4, investigating the association between the NAS ratio and audit committee effectiveness will be applied only on Australian samples, as Saudi Corporation law prohibits providing NAS by the incumbent auditors to their clients.

The calculation of this dependent variable could be done easily by dividing NAS fees on the sum of the NAS fees and the audit fees. Therefore, it seems very important to present not only the descriptive statistics for the NAS ratio, but also the descriptive statistics for NAS and audit fees.

Table 6-9 presents descriptive statistics for NAS ratio and, NAS and audit fees for the ASX sample.

Table 6-9 Descriptive Statistics for NAS_RATIO, NAS Fees and Audit Fees for the ASX Sample.

	NAS Fees	Audit Fees	NAS Ratio
Minimum	$0	$2,463	0.00
Maximum	$7,060,334	$10,133,000	0.89
Mean	$291,978	$528,165	0.39
S. Deviation	$728,233	$1,325,401	0.21

Table 6-9 provides the following findings.

- While the minimum NAS ratio was 0, which means that there was at least one company that did not purchase any NAS, the maximum NAS ratio was 0.89 indicating that there was at least one company with NAS fees being more than audit fees.
- The average NAS ratio for the ASX was 0.39 indicating that the ASX companies on average purchase less NAS than audit services. Finally, the spread of data around the mean for the ASX was 0.21.
- The minimum NAS fees was 0 indicating that there was at least one company that did not pay any NAS fees.
- The minimum audit fees was only $2,463 indicating that there was at least one company that paid less than $2,500 as audit fees.

- While the maximum NAS fees was $7,060,334, the maximum audit fees was $10,133,000.
- While the average NAS fees was $291,978, on average the ASX companies paid $528,165 as audit fees indicating that on average the ASX companies paid more for audit services than NAS.
- Finally, whilst the spread of values around the mean for NAS fees was $728,233, the same spread for audit fees was $1,325,401.

6.4.2 Test Variables

6.4.2.1 Audit Committee Effectiveness

Table 6-10 presents the frequencies for audit committee effectiveness (ACE) for the SSM and ASX samples.

Table 6-10 Frequencies for Audit Committee Effectiveness for the SSM and ASX Samples

		SSM	ASX
Frequency	Not Effective	32	159
	Effective	12	141
	Total	44	300
Frequency Percentage	Not Effective	0.73	0.53
	Effective	0.27	0.47
	Total	1.00	1.00

For the SSM, while there were only 12 (27%) companies with effective audit committees, 32 (73%) companies had ineffective audit committees. This indicates that the majority of Saudi companies failed to establish an effective audit committee.

On the other hand, for the ASX, whilst there were 141 (47%) companies with effective audit committees, 159 (53%) companies had ineffective audit committees. This indicates that more than half of Australian (within ASX) companies failed to establish an effective audit committee.

It was clear that Australian companies were in a better position in terms of their compliance with the ASX CGC best practices compared to the compliance of Saudi companies with the SMC best practice regarding ACE.

A possible explanation for such difference is that while Australian companies are required to disclose their compliance with the ASX CGC best practices, these requirements do not exist in the Saudi market. Moreover, the mode for the SSM and ASX was 0 indicating that having an ineffective audit committee was the event that occurred most for both samples.

Despite the fact that audit committee effectiveness is the main test variable in this study, this variable was broken into 6 test variables (6 audit committee characteristics) in order to determine which factors have more impact on the dependent variables. These six test variables were as follows.

6.4.2.2 Audit Committee Independence

Table 6-11 presents the frequencies and the modes for audit committee independence (ACI) for the two samples.

Table 6-11 Frequencies for Audit Committee Independence for the SSM and ASX

		SSM	ASX
Frequency	Non-Independent	28	115
	Independent	16	185
	Total	44	300
Frequency Percentage	Non-Independent	0.63	0.38
	Independent	0.37	0.62
	Total	1.00	1.00

For the SSM, while there were only 16 (37%) companies with independent audit committees, 28 (63%) companies failed to maintain an independent audit committee. This indicates that the majority of Saudi companies failed to comply with the independence requirements set by the SMC.

On the other hand, for the ASX, whilst there were 185 (62%) companies with independent audit committees, 115 (38%) companies failed to sustain an independent audit committee. This indicates that most Australian companies (within the ASX) complied with the independence requirements set by the ASX CGC.

It was clear that Australian companies were in a better position in terms of their compliance with the ASX CGC best practices regarding audit committee

independence compared to the compliance of Saudi companies with the SMC best practices regarding such independence.

Moreover, while the mode for the SSM was 0 indicating that having a non-independent audit committee was the event that occurred most, the mode for the ASX was 1 indicating that having independent audit committee was the dominant event.

Table 6-12 presents the frequency and frequency percentage for the independence status of the audit committee members (insider, grey and independent).

Table 6-12 Frequencies for Audit Committee Independence for the SSM and ASX

		SSM	ASX
Frequency	**Insider**	17	100
	Grey	25	210
	Independent	85	580
	Total	127	890
Frequency Percentage	**Insider**	0.13	0.11
	Grey	0.20	0.24
	Independent	0.67	0.65
	Total	1.00	1.00

For the SSM, there were 85 (67%) independent directors, 25 (20%) grey directors and 17 (13%) insider directors indicating that the majority of the audit committees members are independent directors.

For the ASX, there were 580 (65%) independent directors, 210 (24%) grey directors and 100 (11%) insider directors indicating that the majority of the audit committees members are independent directors.

6.4.2.3 Audit Committee Size

Table 6-13 summarizes the descriptive statistics for audit committee size (AC_SIZE) for the SSM and ASX samples and reveals the following.

Table 6-13 Descriptive Statistics for Audit Committee Size for the SSM and ASX Samples

	SSM	ASX
Minimum	2	1
Maximum	4	6
Mean	2.9	3
S. Deviation	.44	.79

While the minimum AC_SIZE for the SSM was two members, the same minimum was only one member for the ASX. On the other hand, whilst the maximum AC_SIZE for the SSM was only 4 members the same maximum was 6 members for the ASX.

Moreover, while on average the SSM companies had 2.9 audit committee members, the average number of audit committee members was 3 for the ASX. As a result, it could be concluded that on average the number of members of the audit committee for the two samples was approximately three members. This indicates that on average the SSM and ASX companies complied with their local best practices regarding the size of the audit committee. Finally, while the spread of data around the mean for SSM was 0.44, the same spread for the ASX was 0.79.

It is important to highlight the number and the percentage of companies that complied with their local best practices regarding the audit committee size. Therefore, Table 6-14 presents the frequencies for the SSM and ASX samples for the audit committee minimum size (ACMS).

Table 6-14 Frequencies for Audit Committee Minimum Size for the SSM and ASX Samples

		SSM	ASX
Frequency	**Less than 3**	7	76
	3 or More	37	224
	Total	44	300
Frequency Percentage	**Less than 3**	0.16	0.25
	3 or More	0.84	0.75
	Total	1.00	1.00

For the SSM, while there were 37 (84%) companies having an audit committee with three or more members, only 7 (16%) companies failed to comply with the minimum

size requirement of 3 members by the SMC. This indicates that the majority of Saudi companies complied with such requirement.

For the ASX, while there were 224 (75%) companies having an audit committee with three or more members, only 76 (25%) companies failed to comply with the minimum size requirement of 3 members by the ASX CGC. This indicates that the majority of Australian companies complied with such requirement.

It was clear that Saudi companies were in a better position in terms of the compliance with their local best practices regarding the size of the audit committee compared to the compliance of Australian companies with their local best practices regarding such size.

Finally, it is clear from the above discussion and from Table 6-14 that the event that occurred the most for the two samples was having an audit committee with three or more members.

6.4.2.4 Audit Committee Activity

Table 6-15 summarizes the descriptive statistics for audit committee activity (AC_ACT) measured by the number of meetings for the SSM and ASX samples and reveals the following.

Table 6-15 Descriptive Statistics for the Number of Audit Committee Meetings for the SSM and ASX Samples

	SSM	ASX
Minimum	2	0
Maximum	7	15
Mean	3.3	3.7
S. Deviation	1.3	2.1

While the minimum number of audit committee meetings for the SSM was two meetings indicating that there was at least one company with an audit committee that held only two meetings, the same minimum for the ASX was zero meeting indicating that there was at least one company, which established an audit committee, but there were no meetings for such committee.

Whilst the maximum number of audit committee meetings for the SSM was only 7 audit committee meetings, the same maximum for the ASX was 15. This indicates that some Australian companies were more active compared to their Saudi counterparts.

Moreover, while the average number of audit committee meetings for the SSM was 3.3, on average the ASX companies held 3.7 audit committee meetings. This indicates that on average the ASX companies were more active compared to their Saudi counterparts.

On the other hand, while the ASX CGC did not specify any minimum regarding the number of audit committee meetings, the SMC recommended a minimum of 3 audit committee meetings. The Blue Robin Committee (1999) recommended that the audit committee should meet at least four times a year to perform its duties effectively.

Although, the SSM companies complied with their local best practices, both the SSM and ASX companies failed to comply with the Blue Robin Committee recommendations regarding the minimum number of audit committee meetings. Finally, while the spread of data around the mean for SSM was 0.44, the same spread for the ASX was 0.79.

It is important to highlight the number and the percentage of companies that complied with the minimum number of audit committee meetings (ACMNM) as set by their local best practices or the Blue Robin Committee if the local best practices did not identify such minimum.

Table 6-16 presents the frequencies for the audit committee minimum activity for the SSM and ASX samples.

For the SSM, while there were 29 (66%) companies with an audit committee that held three or more meetings, only 15 (34%) companies failed to comply with the ACMNM requirement of 3 meetings set by the SMC. This indicates that the majority of Saudi companies complied with such requirement.

Table 6-16 Frequencies for Audit Committee Minimum Activity for the SSM and ASX Samples

		SSM	ASX
Frequency	Not complying	15	138
	Complying	29	162
	Total	44	300
Frequency Percentage	Not complying	0.34	0.46
	Complying	0.66	0.54
	Total	1.00	1.00

For the ASX, while there were 162 (54%) companies with an audit committee that held four or more meetings, only 138(46%) companies failed to comply with the Blue Robin Committee (1999) regarding the ACMNM. This indicates that more than half of the ASX companies complied with such requirement.

It was clear that Saudi companies were in a better position in terms of the compliance with SMC best practices regarding ACMNM compared to the compliance of Australian companies with the Blue Robin Committee (1999) recommendations regarding ACMNM.

Finally, the mode for the SSM and ASX was 1 indicating that the event that occurred most was having an audit committee that held a number of meetings equal or more than the best practices.

6.4.2.5 Audit Committee Charter

Table 6-17 presents the frequencies for audit committee charter (ACC) for the SSM and ASX samples.

Table 6-17 Frequencies for Audit Committee Charter for the SSM and ASX Samples

		SSM	ASX
Frequency	Without Charter	14	47
	With Charter	30	253
	Total	44	300
Frequency Percentage	Without Charter	0.32	0.16
	With Charter	0.68	0.84
	Total	1.00	1.00

For the SSM, while there were 30 (68%) companies that had a written charter for their audit committees, only 14 (32%) companies did not have such charter. This indicates that the majority of Saudi companies had audit committees with a written charter.

For the ASX, whilst there were 253 (84%) companies that had a written charter for their audit committees, only 47 (16%) companies did not have such charter. This indicates that most Australian companies (within ASX) complied with having a written charter as recommended by the ASX CGC.

Despite the fact that most of the companies in SSM and ASX had written charters for their audit committees, it was clear that Australian companies were in a better position in terms of their compliance with the ASX CGC best practices regarding having a written audit committee charter compared to the compliance of Saudi companies with the SMC best practices regarding having such charter. Finally, it is clear that the mode for the SSM and ASX was 1 indicating that having an audit committee with a written charter was the dominant event for both samples.

6.4.2.6 Audit Committee Expertise

Table 6-18 presents the frequencies for audit committee expertise (ACX) for the SSM and ASX samples.

Table 6-18 Frequencies for Audit Committee Expertise for the SSM and ASX Samples

		SSM	ASX
Frequency	**No Expert**	5	26
	At least One Expert	39	274
	Total	44	300
Frequency Percentage	**No Expert**	0.11	0.09
	At least One Expert	0.89	0.91
	Total	1.00	1.00

For the SSM, while there were 39 (89%) companies with at least one expert on the audit committee, only 5 (11%) companies had no experts on such committee. This indicates that the majority of Saudi companies complied with the expertise requirements set by the SMC.

For the ASX, whilst there were 274 (91%) companies with at least one expert on the audit committee, only 26 (9%) companies had no experts on such committee. This indicates that the majority of the ASX companies complied with the expertise requirement set by the ASX CGC.

It was clear that Australian companies were in a better position in terms of their compliance with the ASX CGC best practices regarding audit committee expertise compared to the compliance of Saudi companies with the SMC best practices regarding the same mater. Finally, it is clear that having an audit committee with at least one expert was the dominant event for both samples.

6.4.2.7 Audit Committee Literacy

Table 6-19 presented the frequencies for audit committee literacy (AC_LIT) for the SSM and ASX samples.

Table 6-19 Frequencies for Audit Committee Literacy for the SSM and ASX Samples

		SSM	ASX
Frequency	Not Literate	2	3
	Literate	42	297
	Total	44	300
Frequency Percentage	Not Literate	0.05	0.01
	Literate	0.95	0.99
	Total	1.00	1.00

For the SSM, while there were 42 (approximately 95%) companies with a literate audit committee, only 2 (approximately 5%) companies failed to maintain such committee. This indicates that the majority of Saudi companies complied with the literacy requirements set by the SMC.

For the ASX, whilst there were 297 (99%) companies with a literate audit committee, only 3 (1%) companies failed to maintain such committee. This indicates that the majority of the ASX companies complied with the literacy requirement set by the ASX CGC.

It was clear that Australian companies were in a better position in terms of their compliance with the ASX CGC best practices regarding audit committee literacy

compared to the compliance of Saudi companies with the SMC best practices regarding the same matter. Finally, the mode for the SSM and ASX was 1 indicating that the event that occurred the most was having a literate audit committee.

In summary, it could be concluded from the discussions regarding the test variables that the ASX companies were in a better position in terms of their compliance with the ASX CGC best practices compared to the compliance of Saudi companies with Saudi guidelines. This could be attributed to the lack of any disclosure requirements regarding audit committees by the SMC or SSM. While for ASX companies such requirements exists and they are compulsory.

6.4.3 Control Variables

6.4.3.1 Board Composition

Despite the fact that the percentage of non-executive directors on the board will be used as a control variable to isolate the influence of the structure of the boards of directors on both the auditor selection process and NAS purchases, not only the descriptive statistics for such variable will be presented and discussed, but also the descriptive statistics for other variables that were related to the structure of the board of directors or that could be used as alternative control variables for the percentage of non-executive directors.

Table 6-20 presents the descriptive statistics for percentage of non-executive directors (OUTSIDER) for the SSM and ASX Samples.

Table 6-20 Descriptive Statistics for the Percentage of Non-executive directors For the SSM and ASX

	SSM	ASX
Minimum	0.29	0.17
Maximum	0.86	1
Mean	0.55	0.72
S. Deviation	0.19	0.17

While the minimum OUTSIDER for the SSM was 0.29, the same minimum for the ASX was only 0.17. This indicates that Saudi companies were in a better position in term of the minimum OUTSIDER compared to the Australian companies.

On the other hand, whilst the maximum OUTSIDER for the ASX was 1, the same maximum for the SSM was only 0.86. As a result, Australian companies were in a better position in term of the maximum OUTSIDER.

Although the ASX CGC and the SMC did not recommend any minimum or maximum for the percentage of non-executive directors on the board, ASX CGC did recommend that the majority of the board of directors should be independent, which implies that at least the majority of the board should be non-executive directors. Consequently, it is expected that on average the ASX companies would have a higher percentage of non-executive directors than that for Saudi companies.

While the average percentage of non-executive directors for the SSM was 0.55, on average the percentage for the ASX was 0.72 indicating that the ASX companies had a higher percentage of non-executive directors as it was expected.

On the other hand, Table 6-21 demonstrates the descriptive statistics for the total number of directors on the board (TDB) and the total number of non-executive directors on the board (TNDB) for the SSM and ASX Samples.

While the minimum number of directors for the SSM and ASX were 5 and 2 directors, respectively, the maximum number of board of directors for the SSM and ASX were 12 and 14 directors, respectively.

Table 6-21 Descriptive Statistics for Total Number of Directors and Total Number of Non-executive directors for the SSM and ASX

	SSM		ASX	
	TDB	***TNDB***	***TDB***	***TNDB***
Minimum	5	3	2	1
Maximum	12	8	14	12
Mean	8.3	5.3	6.1	4.5
S. Deviation	1.7	1.6	2.2	2.2

On the other hand, whilst the minimum number of non-executive directors on the board for the ASX and SSM were 1 and 3 directors, respectively, the maximum number of board of directors for the SSM and ASX were 8 and 12 directors, respectively.

Moreover, while on average the total number of directors for the SSM was 8.3 directors, the same average for the ASX was only 6.1 directors. On the other hand, whilst on average the number of non-executive directors on the board for the SSM was 5.3 directors, the same average for the ASX was only 4.5 directors.

This gives an indication that Saudi companies utilized larger boards and more non-executive directors compared to their Australian counterparts. One possible explanation could be that Saudi companies on average were bigger in terms of the size compared to their Australian counterparts. Another explanation could be that Saudi companies had more resources to attract a high number of directors to their boards compared to their Australian counterparts.

While the spread of data around the mean for the SSM was 1.7, the same spread for the ASX was 2.2 indicating that the volatilities of the total number of board of directors for the SSM companies was less than that for their Australian counterparts.

Table 6-22 shows the descriptive statistics for the total number of independent directors (TID) on the board and the percentage of independent directors (BOR_IND) on the board for only the ASX sample, as these data were not available for the Saudi sample.

Table 6-22 Descriptive Statistics for Total Number and Percentage of Independent directors on the Board for the ASX

	TID	***BOR_IND***
Minimum	0	0
Maximum	11	1
Mean	3.2	0.49
S. Deviation	2.2	0.24

While the minimum number of independent directors on the board was 0 indicating that there was at least one company that had no independent directors on its board, the maximum number of independent directors on the board was 11 directors.

Moreover, whilst the minimum percentage of independent directors on the board was 0 indicating that there was at least one company that had zero percentage of

independent directors on its board, the maximum percentage of independent directors on the board was 0.92.

In addition, whilst on average the number of independent directors on the board was 3.2, the ASX companies on average had 0.49 independent directors on their boards of directors indicating that the ASX companies on average did not meet the majority of independent directors on the board requirement as set by the ASX CGC. Finally, the spread of data around the mean for TID and BOR_IND were 2.2 and 0.24, respectively.

On the other hand, it is important to know the number and the percentage of companies that complied with having a majority of independent directors on the board as recommended by the ASX CGC.

Table 6-23 presents the frequencies for the minimum percentage of independent directors (M_BOR_IND) on the board for the ASX sample.

While 156 (52%) companies failed to comply with having a majority of independent directors on the board as recommended by the ASX CGC, 144 (48%) companies complied with such recommendation.

Table 6-23 Frequencies for the Minimum Percentage of Independent Directors on the Board for the ASX

		M_BOR_IND
Frequency	Not Majority	156
	Majority	144
	Total	300
Frequency Percentage	Not Majority	0.52
	Majority	0.48
	Total	1.00

Finally, the mode for the ASX was 0 indicating that the event that occurred most was having a majority of non-independent directors on the board.

6.4.3.2 Management Ownership

Table 6-24 presents the descriptive statistics of the percentage of management ownership (IN_OWN) only for the ASX sample because data were not publicly available for such variable for the Saudi companies.

Table 6-24 Descriptive Statistics of management ownership for the ASX

	IN_OWN
Minimum	0.005
Maximum	0.90
Mean	0.11
S. Deviation	0.18

The minimum percentage of management ownership was approximately 0.005 indicating that there was at least one company where the management own less than 1%.

On the other hand, the maximum percentage of management ownership was 0.90 indicating that there was at least one company where management owned the majority of its shares.

Moreover, on average the management owned only 0.11 of the shares in the ASX companies. Finally, the spread of data around the mean was 0.18.

6.4.3.3 Leverage

Table 6-25 presents the descriptive statistics of percentage of leverage (LEVERAGE) for the SSM and ASX samples.

Table 6-25 Descriptive Statistics of the Percentage of Leverage for the SSM and ASX

	SSM	ASX
Minimum	0.01	0.005
Maximum	0.92	5.4
Mean	0.36	0.44
S. Deviation	0.26	0.42

While the minimum percentage of leverage for the SSM was 0.01, such minimum for the ASX was 0.005 indicating that such minimum was very much the same for the two samples.

Moreover, whilst the maximum percentage of leverage for the SSM was 0.92, such maximum was 5.4 for the ASX indicating that there was a big difference between the two samples regarding such percentage.

Moreover, the average percentages of leverage for the SSM and ASX were approximately 0.36 and 0.44 respectively. This indicates that the ASX companies had higher leverage percentage compared to their Saudi counterparts.

Finally, the spread of data around the mean for the SSM and ASX were 0.26 and 0.42 indicating that the volatility of leverage percentage for the Saudi companies was less than that for the ASX companies.

6.4.3.4 New Funds

Table 6-26 presents the descriptive statistics of the percentage of new funds (NEW_FUND) for the SSM and ASX samples.

Table 6-26 Descriptive Statistics of the Percentage of New Funds for the SSM and ASX

	SSM	ASX
Minimum	0	0.03
Maximum	0.42	1.80
Mean	0.02	0.26
S. Deviation	0.09	0.34

While the minimum percentage of new funds for the SSM was approximately 0.002, such minimum for the ASX was 0.03 indicating that the ASX companies had a higher minimum compared to the SSM companies.

Moreover, whilst the maximum percentage of new funds for the SSM was 0.42, such maximum was 1.80 indicating that there was a big difference between the two samples regarding such percentage and that the ASX companies had a higher maximum compared to the SSM companies.

Moreover, the average percentages of new funds for the SSM and ASX were approximately 0.02 and 0.26, respectively indicating that on average the ASX companies were expected to grow faster than their Saudi counterparts because the ASX companies were able to attract more new funds compared to their Saudi counterparts.

Finally, the spread of data around the mean for the SSM and ASX were 0.09 and 0.34 indicating that the volatility of new funds percentage for the Saudi companies was less than that for the ASX companies.

6.4.3.5 Business Segments

Table 6-27 presents the descriptive statistics of the number of business segments (BUS_SEG) for the SSM and ASX samples.

Table 6-27 Descriptive Statistics of the Number of Business Segments for the SSM and ASX

	SSM	ASX
Minimum	1	1
Maximum	7	6
Mean	2.52	2.22
S. Deviation	1.35	1.49

The minimum number of business segments for both samples was one business segment indicating that there was at least one company in each market that operates as a single business segment.

In addition, the maximum number of business segments for the SSM and ASX were 7 and 6 respectively indicating that there were companies in both samples that have complicated operational environments and that there was at least one Saudi firm that had more complicated operations compared to its Australian counterparts.

Moreover, on average the SSM companies (2.52) had higher number of business segments than their Australian counterparts (2.22) indicating that on average the SSM companies had more complicated operations compared to the ASX companies.

Finally, the spread of data around the mean for the SSM and ASX were 1.35 and 1.49 respectively indicating that the volatility of the number of business segments for the Saudi companies was less than that for the ASX companies.

6.4.3.6 Return on Total Assets

Table 6-28 presents the descriptive statistics of the return on total assets (ROA) for the SSM and ASX samples.

Table 6-28 Descriptive Statistics of the Return on Total Assets for the SSM and ASX

	SSM	ASX
Minimum	-0.08	-2.04
Maximum	0.26	0.86
Mean	0.06	-0.03
S. Deviation	0.08	0.31

The minimum ROA for the SSM and ASX were –0.08 and –2.04, respectively, indicating that there was at least one Saudi company that reported better ROA compared to its Australian counterpart.

In addition, the maximum ROA for the SSM and ASX were 0.26 and 0.86, respectively, indicating that there was at least one Australian company that reported higher ROA than its Saudi counterpart.

Moreover, on average the SSM companies (0.06) were more profitable than their Australian counterparts (-0.03). Finally, the spread of data around the mean for the SSM and ASX were 0.08 and 0.31 respectively indicating that the volatility of ROA for the Saudi companies was less than that for the ASX companies.

6.4.3.7 Size of the Firm

Despite the fact that the logarithm of sales (SIZE) is the control variable that will be used in the regression to isolate the influence of size differences, it is not appropriate to present the descriptive statistics for such variable as such statistics are meaningless. As a result, the descriptive statistics for sales (SALES) that add value to the analysis will be demonstrated and discussed.

Table 6-29 presents the descriptive statistics of the sales for the SSM and ASX samples. All figures are in Australian dollars using an exchange rate of 0.3560 (OANDA 2005), which was the exchange rate between the Saudi Riyal and Australian Dollar on 31 December 2003 (1 SAR = 0.3560 AUD).

Table 6-29 Descriptive Statistics of Sales for the SSM and ASX

	SSM	ASX
Minimum	$0	$0
Maximum	$16,654,536,180	$33,616,000,000
Mean	$573,497,496	$921,430,935
S. Deviation	$2,499,268,863	$2,843,073,881

Both the SSM and ASX had the same minimum of sales, which equals $0 indicating that there was at least one company in each market that did not make any sales from its operational activities.

In addition, the maximum sales for the SSM and ASX were $16,654,536,180 and $33,616,000,000, respectively, indicating that there was at least one Australian company that sold more from its operational activities compared to its Saudi counterpart.

Moreover, on average the sales of the ASX companies were higher than for their Saudi counterparts. This indicates that ASX companies on average were larger in size than Saudi companies. Finally, the spread of data around the mean for the SSM and ASX were $2,499,268,863 and $2,843,073, respectively. This indicates that the volatility of the Sales for the Saudi companies was less than that the ASX companies.

6.4.3.8 Foreign Sales

Table 6-30 presents the descriptive statistics of the percentage of foreign sales (FOR_SALE) for the SSM and ASX samples.

The minimum percentage of foreign sales for the SSM and ASX samples was 0 indicating that there was at least one company in each market that had no international activities.

Table 6-30 Descriptive Statistics of the Percentage of Foreign Sales for the SSM and ASX

	SSM	ASX
Minimum	0	0
Maximum	0.25	1
Mean	0.05	0.16
S. Deviation	0.06	0.25

In addition, the maximum percentage of foreign sales for the SSM and ASX samples were 0.25 and 1.00, respectively, indicating that there was at least one ASX company that did not have any local activities.

Moreover, on average the percentages of foreign sales for the SSM and ASX samples were 0.05 and 0.16, respectively, indicating that on average the ASX companies had higher international operations than their Saudi counterparts.

Finally, the spread of data around the mean for the SSM and ASX were 0.06 and 0.25, respectively, indicating the volatility of the FOR_SALE for the Saudi companies was less than that the ASX companies.

The number of geographical segments (G_SEG) is an alternative measure of the complexity of the company and, as a result, it is important to present the descriptive statistics for such variable.

Table 6-31 presents the descriptive statistics of the number of geographical segments for the SSM and ASX samples.

Table 6-31 Descriptive Statistics of the Number of Geographical Segments for the SSM and ASX

	SSM	ASX
Minimum	1	1
Maximum	6	5
Mean	2.18	1.91
S. Deviation	1.13	1.22

The minimum number of geographical segments for both samples was one geographical segment indicating that there was at least one company in each market that operates in a single geographical segment.

In addition, the maximum number of geographical segments for the SSM and ASX were 6 and 5, respectively, indicating that there were companies in both samples that have complicated operational environments and that there was at least one Saudi firm that had more complicated operations compared to its Australian counterparts.

Moreover, on average the SSM companies (2.18) had a higher number of geographical segments than their Australian counterparts (1.91) indicating that on average the SSM companies had more complicated operations than their Australian counterparts.

Finally, the spread of data around the mean for the SSM and ASX were 1.35 and 1.49, respectively, indicating that the volatility of the number of business segments for the Saudi companies was less than that for the ASX companies.

6.4.3.9 Number of Shareholders Blocks

As mentioned in Chapter 5, the number of shareholders blocks equals the number of major shareholders who own 5% or more. Table 6-32 presents the descriptive statistics of the number of shareholder blocks (SH_BLK) for only the Australian samples as such control variable will be used only to isolate the influence of the concentration of ownership on the NAS purchases.

Table 6-32 Descriptive Statistics of the Number of Shareholders Blocks for the ASX

	SH_BLK
Minimum	0
Maximum	11
Mean	2.68
S. Deviation	1.66

The minimum number of shareholders blocks for the ASX was 0 indicating that there was at least one company that did not have any major shareholders. In addition, the maximum number of shareholders blocks for the ASX was 11 blocks indicating that there was at least one company that had 11 major shareholders

Moreover, the average number of shareholders blocks for the ASX was 2.68 indicating that on average the ASX companies had more than two major shareholders.

Finally, the spread of data around the mean for the number of shareholders blocks was 1.66.

6.4.3.10 NAS Specialization

As mentioned in Chapter 5, despite the fact that there are three different methods to identify NAS specialization (NAS_SP), namely, Continuous, Craswell and Palmrose, the Continuous method will be used in the main analysis, as it does not require any arbitrary selection of a cut-off point.

However, the descriptive statistics will be presented and discussed for all the three methods because the other two methods will be used to perform a sensitivity test to examine the influence of using alternative methods on the results of the regression analysis.

It should be noted that NAS specialization descriptive statistics are presented and discussed only for the ASX sample as such control variable is used only to isolate the influence of the NAS specialization on the NAS purchases, which is not applicable in the Saudi context.

Table 6-33 presents the descriptive statistics of the NAS specialization using Continuous method for the ASX sample.

Table 6-33 Descriptive Statistics of the NAS specialization Using Continuous Method for the ASX

	NAS_SP
Minimum	0
Maximum	0.83
Mean	0.17
S. Deviation	0.19

The minimum of the NAS_SP for the ASX sample was 0 indicating that there was at least one company that hired an auditor who did not provide any NAS for the company's industry.

In addition, the maximum of the NAS_SP for the ASX was 0.83 indicating that there was at least one company that hired an auditor who was dominant in providing NAS for the company's industry.

Moreover, on average the ASX companies hired an auditor who provided at least 0.17 of the total NAS of the company's industry. Finally, the spread of data around the mean for NAS specialization was 0.19.

Table 6-34 presents the frequencies of the NAS specialization using Craswell and Palmrose methods for the ASX sample.

Table 6-34 Frequencies of the NAS specialization Using Craswell and Palmrose Methods for the ASX Sample

		Craswell 20%	Palmrose 15%
Frequency	**Non-Specialist**	180	142
	Specialist	120	158
	Total	300	300
Frequency Percentage	**Non-Specialist**	0.60	0.47
	Specialist	0.40	0.53
	Total	1.00	1.00

When using the Craswell method, while 180 (0.60) companies hired a non-NAS specialist auditor, 120 (0.40) companies employed a NAS specialist auditor indicating that most of the ASX companies engaged with a non-NAS specialist under this method.

However, using the Palmrose method reveals that whilst 142 (0.47) companies utilized a non-NAS specialist auditor, 158 (0.53) companies engaged with a NAS specialist auditor indicating that most of the ASX companies employed a NAS specialist under this method.

6.5 Summary

A brief discussion about the descriptive statistics and the main groups of techniques used to present such descriptive statistics was provided. In addition, data were analysed using Microsoft Excel and SPSS. Moreover, a number of procedures that have been used to ensure data entry validity was illustrated.

Furthermore, where applicable, descriptive statistics (frequencies, minimum, maximum, means, modes and standard deviations) were used in analysing and

presenting the results not only for the variables of interest, but also for other variables that were related or alternatives for any of the variables of interest.

The following observations can be made from the results presented in this chapter.

- Saudi companies were less likely to hire a high quality auditor (Big 4 or Specialist) compared to their Australian counterparts.
- The arbitrary selection of the cut-off points associated with the use of the AQ_Craswell and AQ_Palmrose methods produced completely different results regarding the determination of specialist auditors and, as a result, AQ_Continuous method is superior to the former two methods.
- Saudi companies were less likely to have an effective audit committee compared to their Australian counterparts.
- Saudi companies were less likely to have an independent audit committee compared to their Australian counterparts.
- Saudi companies were in a better position in complying with their local best practices set by the SMC regarding the size of the audit committee and the minimum number of meetings for such committee compared to their Australian counterparts in complying with their local best practices if such practices exist or the American best practices otherwise.
- The ASX companies were more likely to have an audit committee with a charter compared to the Saudi companies.
- The ASX companies were more likely to have an audit committee that had at least one expert on its board compared to the Saudi companies.
- The ASX companies were more likely to have a literate audit committee compared to the Saudi companies.
- For most of the control variables the ASX companies were in a better position compared to the Saudi companies

CHAPTER 7: EMPIRICAL ANALYSIS

7.1 Introduction

This chapter is divided into two sections. While the first section presents univariate analysis, multivariate analysis is used to test the hypotheses of this study in section 2.

The univariate analysis section has two parts. In the first part, the correlation analysis is conducted for the SSM and ASX samples and a conclusion about the presence of multicollinearity, which might affect regression analysis, is made. In Part 2, the t-test of two-independent samples (equality of means analysis) is performed to provide information regarding the differences in means between two independent groups in order to identify if such differences occurred only by chance.

The multivariate analysis section also has two parts. Whilst the first part uses regression analysis to model audit quality and NAS purchases, the second part provides an additional test to examine the influence of having different compliance requirements regarding the ASX CGC best practices and recommendations related to audit committees.

Finally, despite the fact that there is a number of proxies and methods that could be used to surrogate for audit quality, the AQ_Continuous method is the only proxy for audit quality that will be used in this chapter because it overcomes most of the disadvantages associated with the other proxies or methods such as the arbitrary selection of a cut-off point. However, with the exception of the three levels proxy, which was used rarely in the literature, the results of using the other alternative proxies and methods will be presented in Chapter 8 as sensitivity tests.

7.2 Univariate Analysis

7.2.1 Correlation Analysis

Correlation is used to investigate the strength and the sign of the relationship between two or more variables. Correlation coefficients can range from –1 to +1. The value of

–1 represents a perfect negative correlation while a value of +1 represents a perfect positive correlation. A value of 0 represents a lack of correlation.

Correlation analysis is a very important statistical test when using linear regression because one of the assumptions for such regressions is not to have multicollinearity among the test variables. Multicollinearity indicates the presence of perfect or exact linear relationship among some or all the test variables (Gujarati 1995).

When there is prefect multicollinearity, the regression coefficients of the test variables will be indeterminate and their standard errors will be infinite. On the other hand, when the multicollinearity is less than prefect, the regression coefficients cannot be estimated accurately as a result of the large standard errors associated with such multicollinearity (Gujarati 1995).

In most cases, there are more than two variables that need to be checked for correlation. As a result, correlation coefficients are presented in a matrix, which illustrates the direction and the magnitude of the association between each two variables. In addition, it is important to examine the significance of each correlation (relationship) to ensure that this correlation does not occur by chance as a result of the sampling error.

The null hypothesis will be that no relationship exists between the two variables. SPSS will produce the correlations matrix that reveals not only the value and the direction of the relationships among the test variables, but also the results of the significance tests for such relationships.

Table 7.1 demonstrates the correlation matrix for the SSM sample and reveals the following.

- The highest correlation between ACE and audit committee characteristics (SACC) was that between ACE and audit committee size (AC_SIZE) indicating that AC_SIZE was the most important determinant of ACE.
- The lowest correlation between ACE and SACC was that between ACE and audit committee literacy (AC_LIT) indicating that AC_LIT contributes the least to ACE.

Table 7-1 Correlations Matrix for the Saudi (SSM) Sample

Variables	ACE	AC_IND	AC_SIZE	AC_ACT	AC_CHAR	AC_EXP	AC_LIT	OUTSIDER	LEVERAGE	NEW_FUND	BUS_SEG	ROA	SIZE	FOR_SALE
ACE	1.00													
AC_IND	0.39**	1.00												
AC_SIZE	0.81**	0.41**	1.00											
AC_ACT	0.52**	0.46**	0.33*	1.00										
AC_CHAR	0.42**	0.38*	0.21	0.35**	1.00									
AC_EXP	0.22	0.23	0.27	0.21	0.37*	1.00								
AC_LIT	0.13	0.19	0.16	0.07	0.09	0.27	1.00							
OUTSIDER	0.33*	0.46**	0.22	0.34*	0.42**	0.23	0.26	1.00						
LEVERAGE	0.32*	0.41**	0.26	0.45**	0.19	0.04	0.06	0.52**	1.00					
NEW_FUND	-0.10	0.08	0.08	-0.07	-0.09	0.11	0.07	-0.02	-0.16	1.00				
BUS_SEG	0.37*	0.41**	0.30*	0.16*	0.30*	0.25	0.25	0.73**	0.38**	0.10	1.00			
ROA	0.06	-0.10	0.14	-0.17	-0.09	0.03	0.00	0.03	-0.27	0.05	-0.11	1.00		
SIZE	-0.06	0.20	-0.02	0.03	0.08	0.02	0.03	0.37*	0.43**	0.00	0.24	0.29	1.00	
FOR_SALE	0.29	0.37*	0.21	0.19**	0.38**	0.26	0.16	0.77**	0.27	-0.02	0.62**	0.09	0.37*	1.00

** and * indicate that the correlation is significant at 0.01 and 0.05 levels respectively (2-tailed).

- As was expected all the correlations between ACE and SACC were positive.
- With the exception of audit committee expertise (AC_EXP) and AC_LIT, all the correlations between ACE and SACC were significant.
- While the highest correlation between ACE and the control variables was that between ACE and BUS_SEG (0.37), the lowest correlation between ACE and the control variables was that between ACE and ROA (0.13).
- In relation to the correlations between ACE and the control variables, only the OUTSIDER, LEVERAGE and BUS_SEG were significant.
- Multicollinearity does not exist among the test variable as all the correlations were less than + or - 0.80 with the exception of the correlation between ACE and audit committee size (0.81), which will not be a problem as these two variables will not be used in the same regression.

Table 7.2 presents the correlation matrix for the ASX sample and reveals the following.

- The highest correlation between ACE and ACCS was that between ACE and audit committee independence (AC_IND) indicating that AC_IND was the most important determinant of ACE.
- The lowest correlation between ACE and ACCS was that between ACE and audit committee literacy (AC_LIT) indicating that AC_LIT contributes the least to ACE.
- As was expected all the correlations between ACE and ACCS were positive.
- With the exception of AC_LIT, all the correlations between ACE and ACCS were significant.
- The highest correlation between ACE and control variables was that between ACE and SIZE.

Table 7-2 Correlations Matrix for the Australian (ASX) Sample

Variables	ACE	AC_IND	AC_SIZE	AC_ACT	AC_CHAR	AC_EXP	AC_LIT	OUTSIDER	IN_OWN	LEVERAGE	NEW_FUND	BUS_SEG	ROA	SIZE	FOR_SALE	SH_BLK	NAS_SP
ACE	1.00																
AC_IND	0.74**	1.00															
AC_SIZE	0.41**	0.28**	1.00														
AC_ACT	0.67**	0.46**	0.34**	1.00													
AC_CHAR	0.41**	0.47**	0.17**	0.30**	1.00												
AC_EXP	0.27**	0.27**	0.15**	0.24**	0.10	1.00											
AC_LIT	0.09	0.13*	-0.13*	0.05	-0.04	0.09	1.00										
OUTSIDER	0.44	0.40	0.34	0.27	0.25	0.15	0.05	1.00									
IN_OWN	-0.32**	-0.22**	-0.19**	-0.25**	-0.16**	-0.14*	0.02	-0.43	1.00								
LEVERAGE	0.13*	0.04	0.12*	0.16**	-0.05	0.05	0.03	0.09	0.06	1.00							
NEW_FUN	-0.26**	-0.22**	-0.19**	-0.27**	-0.17**	0.08	-0.08	-0.13*	0.01	0.12*	1.00						
BUS_SEG	0.38**	0.25**	0.29**	0.44**	0.18**	0.09	0.04	0.22**	-0.21**	0.15**	-0.20**	1.00					
ROA	0.29**	0.25**	0.23**	0.24**	0.23**	0.03	0.14*	0.08	-0.02	-0.13*	-0.41**	0.14*	1.00				
SIZE	0.54**	0.47**	0.37*8	0.54**	0.29**	0.27**	0.09	0.25	-0.24**	0.27**	-0.40**	0.53**	0.40**	1.00			
FOR_SALE	0.26**	0.20**	0.11	0.24**	0.14*	0.05	0.03	0.11*	-0.02	0.16**	-0.12*	0.19**	0.07	0.27**	1.00		
SH_BLK	-0.18**	-0.11	-0.10	-0.16**	-0.01	-0.10	0.02	-0.16	0.09	-0.06	N/A	N/A	0.03	-0.16**	N/A	1.00	
NAS_SP	0.43**	0.37**	0.29**	0.36**	0.23**	0.11	-0.04	0.17	-0.24**	0.05	N/A	N/A	0.14*	0.40**	N/A	-0.20**	1.00

** and * indicate that the correlation is significant at 0.01 and 0.05 levels respectively (2-tailed).

- The lowest correlation between the ACE and the control variables was that between the ACE and LEVERAGE.
- In relation to the correlations between ACE and control variables, the OUTSIDER was insignificant, the LEVERAGE was significant at 0.05 and the rest of the control variables were significant.
- Multicollinearity does not exist among the test variables as all the correlations were less than + or - 0.80.

7.2.2 Equality of Means Analysis

Equality of means analysis is the simplest form of statistical test, which aims to determine if the two sample or two group means are significantly different from one another, or that such differences could be attributed to chance such as sampling errors (Gujarati 1995). The term "independent samples or groups" means that the samples or groups were randomly selected from a population (Gujarati 1995). In other words, the samples or groups were not repeated measures or matching.

Despite the fact that the t-test could be conducted with or without equal variance assumptions, with the SPSS, there is no need to guess about the equal (homogeneity) variances assumption. The SPSS will automatically run the homogeneity of variance test, known as Levene's Test. This test uses the F-stat to examine if the variances are equal or not.

7.2.2.1 Audit Quality (AQ_Continuous)

As the dependent variable under this method is not a dummy variable, it is important to determine a cut-off point to identify two groups for such dependent variables. Again the arbitrary selection of such cut-off point will be problematical.

Although different cut-off points could be used to identify the two groups such as the 10%, which was used by Craswell et al. (1994), it is argued in this study that the mean of the dependent variable should be used as a cut-off point. As a result, the means of the dependent variable for the SSM and ASX, which equal 0.25 and 0.17, respectively, will be used to perform the equality of mean analysis for audit quality.

Table 7-3 presents the means of the two groups; the differences in means between the two groups and the results of Levene's Test and t-test for two independent groups for the SSM sample using AQ_Continuous.

Table 7-3 Equality of Means Using AQ_Continuous for the SSM

Variable Name	Mean For Firms With >= .25	Mean For Firms With < .25	Difference	Equality Of Variances F-Stat	Equality Of Means T-Stat
ACE	0.40	0.21	0.19	5.38*	1.27
AC_IND	0.40	0.34	0.06	0.42	0.35
AC_SIZE	3.13	2.76	0.37	3.22	2.88***
AC_ACT	4.53	3.07	1.46	1.93	2.93***
AC_CHAR	0.87	0.59	0.28	23.48*	2.16**
AC_EXP	1.00	0.83	0.17	19.04*	2.42**
AC_LIT	1.00	0.93	0.07	4.95*	1.44
OUTSIDER	0.73	0.60	0.13	0.00	3.79***
LEVERAGE	0.57	0.25	0.33	5.34*	4.35***
NEW_FUND	0.01	0.03	-0.02	2.42	-0.66
BUS_SEG	3.20	2.17	1.03	0.35	2.53**
ROA	0.06	0.06	0.00	0.12	-0.19
SIZE	20.36	17.89	2.47	0.40	2.46**
FOR_SALE	0.09	0.03	0.06	1.20	3.31***

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

While AC_IND, AC_SIZE and AC_ACT were the only test variables that have equal variances, LEVERAGE was the only control variable that has unequal variances.

While 40 percent of firms that hire an auditor with equal or more than 0.25 market share have effective audit committees, only 21 percent of firms that use an auditor with less than 0.25 market share have similar committees.

Forty percent of firms that hire an auditor with equal or more than 0.25 market share have independent audit committees; 34 percent of firms using an auditor with less than 0.25 market share have similar committees.

Whilst firms that hire an auditor with equal or more than 0.25 market share have audit committees with 3.13 members on average, firms that use an auditor with less than 0.25 market share have audit committees with 2.76 members on average.

While firms that hire an auditor with equal or more than 0.25 market share have audit committees that meet on average 4.53 times per year, firms that use an auditor with less than 0.25 market share have audit committees that meet on average 3.07 times per year.

Eighty seven percent of firms that hire an auditor with equal or more than 0.25 market share have audit committee charters; 59 percent of firms using an auditor with less than 0.25 market share have similar committees.

Whilst 100 percent of firms that hire an auditor with equal or more than 0.25 market share have audit committees with at least one expert, 83 percent of firms that use an auditor with less than 0.25 market share have similar committees.

One hundred percent of firms that hire an auditor with equal or more than 0.25 market share have literate audit committees; 93 percent of firms that use an auditor with less than 0.25 market share have similar committees.

While ACE, AC_IND and AC_LIT are insignificant indicating that these test variables have equal means and that the differences in means between the two groups occurred by chance, the rest of the test variables are significant indicating that these test variables have unequal means and that the differences in means between the two groups did not occur by chance.

With the exception of NEW_FUND and ROA, the rest of the control variables are significant indicating that these variables have unequal means between the two groups and that such differences in means did not occur by chance.

Table 7.4 presents the means of the two groups; the differences in means between the two groups and the results of Levene's Test and t-test for two independent groups for the ASX sample using AQ_Continuous.

With the exception of AC_SIZE, AC_ACT and LEVERAGE, the rest of the test variables are significant indicating that such variables have unequal variances.

Eighty-six percent of firms that hire an auditor with equal or more than 0.17 market share have effective audit committees; 24 percent of firms using an auditor with less than 0.17 market share have similar committees.

Table 7-4 Equality of Means Using AQ_Continuous for the ASX

Variable Name	Mean For Firms With >= .17	Mean For Firms With < .17	Difference	Equality Of Variances F-Stat	Equality Of Means T-Stat
ACE	0.86	0.24	0.62	18.25*	13.56***
AC_IND	0.94	0.43	0.51	478.18*	11.95***
AC_SIZE	3.31	2.76	0.55	0.99	6.19***
AC_ACT	4.81	2.96	1.85	0.28	8.33***
AC_CHAR	0.99	0.76	0.24	258.64*	7.21***
AC_EXP	0.99	0.87	0.12	75.03*	4.70***
AC_LIT	1.00	0.98	0.02	7.46*	1.74*
OUTSIDER	0.79	0.68	0.10	15.44*	5.73***
IN_OWN	0.04	0.15	-0.11	42.22*	-6.11***
LEVERAGE	0.51	0.40	0.10	2.52	2.10**
NEW_FUND	0.18	0.31	-0.14	19.44*	-3.69***
BUS_SEG	2.74	1.90	0.84	13.73*	4.62***
ROA	0.04	-0.08	0.12	21.34*	3.81***
SIZE	19.81	16.34	3.47	10.39*	11.25***
FOR_SALE	0.21	0.13	0.08	7.47*	2.76***

. ***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

While 94 percent of firms that hire an auditor with equal or more than 0.17 market share have independent audit committees, only 43 percent of firms using an auditor with less than 0.17 market share have similar committees.

Whilst firms that hire an auditor with equal or more than 0.17 market share have audit committees with 3.31 members on average, firms that use an auditor with less than 0.17 market share have audit committees with 2.76 members on average.

While firms that hire an auditor with equal or more than 0.17 market share have audit committees that meet on average 4.81 times per year, firms that use an auditor with less than 0.17 market share have audit committees that meet on average 2.96 times per year.

Ninety-nine percent of firms that hire an auditor with equal or more than 0.17 market share have audit committee charters; 76 percent of firms using an auditor with less than 0.17 market share have similar committees.

Whilst 99 percent of firms that hire an auditor with equal or more than 0.17 market share have audit committees with at least one expert, 87 percent of firms that use an auditor with less than 0.17 market share have similar committees.

One hundred percent of firms that hire an auditor with equal or more than 0.17 market share have literate audit committees; 98 percent of firms that use an auditor with less than 0.17 market share have similar committees.

All the test and control variables are significant indicating that these variables have unequal means and that the differences in means between the two groups for these variables did not occur by chance.

In summary, the t-test for two-independent groups reveals that with the exception of audit committee effectiveness, independence and literacy for the SSM sample, all the test variables for the SSM and ASX samples had unequal means between firms with specialist auditors and firms with non-specialist auditors indicating that the differences in means between the two groups did not occur by chance.

These findings provide useful information, as audit committee effectiveness, independence and literacy for the SSM will not be significant in determining audit quality when running the regression because the differences in means between the two groups for these variables occurred only by chance.

7.2.2.2 Non-Audit Services Fees Ratio (NAS Fees Ratio)

As this dependent variable is not a dummy, it is important to determine a cut-off point to identify two groups for such dependent variables. As a result, the mean of the NAS ratio for the ASX, which equals 0.39, will be used as the cut-off point.

Table 7.5 presents the means of the two groups; the differences in means between the two groups and the results of Levene's Test and t-test for two independent groups using NAS ratio for the ASX sample.

Table 7-5 Equality of Means Using NAS Ratio for the ASX

Variable Name	Mean For Firms With >= .39	Mean For Firms With < .39	Difference	Equality Of Variances F-Stat	Equality Of Means T-Stat
ACE	0.27	0.67	-0.40	4.65*	-7.54***
AC_IND	0.48	0.75	-0.27	50.17*	-4.96***
AC_SIZE	2.86	3.07	-0.21	1.09	-2.34**
AC_ACT	3.01	4.31	-1.30	0.22	-5.75***
AC_CHAR	0.76	0.93	-0.16	76.84*	-4.02***
AC_EXP	0.89	0.94	-0.05	10.68*	-1.61
AC_LIT	0.99	0.99	-0.01	1.29	-0.57
OUTSIDER	0.73	0.72	0.01	1.04	0.51
IN_OWN	0.15	0.08	0.07	19.12*	3.61***
LEVERAGE	0.42	0.47	-0.05	0.50	-1.07
ROA	-0.07	0.01	-0.07	3.71	-2.08**
SIZE	17.09	18.19	-1.10	0.62	-2.91***
SH_BLK	2.69	2.67	0.02	0.63	0.09
NAS_SP	0.16	0.19	-0.03	0.34	-1.35

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

AC_SIZE, AC_ACT and AC_LIT are the only test variables that are insignificant indicating that these variables have equal variances.

IN_OWN is the only control variable that is significant indicating that such variable has unequal variances.

While 27 percent of firms with a NAS ratio equal or more than 0.39 have effective audit committees, 67 percent of firms with a NAS ratio less than 0.39 have similar committees.

Forty-eight percent of firms with a NAS ratio equal or more than 0.39 have independent audit committees; 75 percent of firms with a NAS ratio less than 0.39 have similar committees.

Whilst firms with a NAS ratio equal or more than 0.39 have audit committees with 2.86 members on average, firms with a NAS ratio less than 0.39 have audit committees with 3.07 members on average.

While firms with a NAS ratio equal or more than 0.39 have audit committees that meet on average 3.01 times per year, firms with a NAS ratio less than 0.39 have audit committees that meet on average 4.31 times per year.

Seventy-six percent of firms with a NAS ratio equal or more than 0.39 have audit committee charters; 93 percent of firms with a NAS ratio less than 0.39 have similar committees.

Whilst 89 percent of firms with a NAS ratio equal or more than 0.39 have audit committees with at least one expert, 94 percent of firms with a NAS ratio less than 0.39 have similar committees.

One hundred percent of firms with a NAS ratio equal or more than 0.39 have literate audit committees; 98 percent of firms with a NAS ratio less than have similar committees.

In summary, with the exception of audit committee expertise and literacy, all the test variables had unequal means indicating that the differences in means between the two groups for these variables did not occur by chance. These findings provide useful information, as audit committee expertise and literacy will not be significant in determining NAS purchases when running the regression.

7.3 Multivariate Analysis

The main objectives of this study are as follows:

1) examining the association between the audit committee effectiveness (ACE) and audit quality (auditor selection) for the ASX and SSM samples;

2) determining which audit committee characteristic contributes the most to audit quality for the ASX and SSM samples;

3) investigating the association between ACE and NAS purchases only for the ASX sample as providing such services by the incumbent auditor is not allowed for Saudi listed companies;

4) determining which audit committee characteristic contributes the most to limiting and controlling NAS purchases for the ASX sample; and

5) evaluating the effectiveness of the ASX CGC and SSMC best practices and recommendations regarding audit committees by using such best practices and recommendation as benchmarks for determining the effectiveness of the audit committees and their different characteristics; and

The multivariate analysis is divided into two parts. The first part, main regression analysis, uses four regressions to achieve the first four objectives of this study. An additional test will be conducted to examine the influence of having different compliance requirements regarding audit committee between the two-sub samples of the ASX (ASX Top 300 Vs. ASX Non-Top 300) in Part 2.

7.3.1 Main Regression Analysis

The main regression analysis is divided into two parts. While the first part uses two regressions to model audit quality, another two regressions are used in Part 2 to model NAS purchases.

7.3.1.1 Audit Quality (AQ_Continuous)

As the dependent variable using the AQ_Continuous is a continuous (scale) variable then the linear regression must be used to model audit quality. As mentioned in Chapter 4 the following hypotheses will be tested for the SSM and ASX samples:

H1: There is a significant positive relationship between ACE and the selection of a quality auditor.

H2: There is a significant positive relationship between audit committee independence and the selection of a quality auditor.

H3: There is a significant positive relationship between the size of the audit committee and the selection of a quality auditor.

H4: There is a significant positive relationship between the number of meetings of the audit committee and the selection of a quality auditor.

H5: There is a significant positive relationship between the existence of an audit committee charter and the selection of a quality auditor.

H6: There is a significant positive relationship between audit committee expertise and the selection of a quality auditor.

H7: There is a significant positive relationship between audit committee literacy and the selection of a quality auditor.

7.3.1.1.1 Audit Committee Effectiveness

Table 7.6 presents the results of the linear regression using AQ_Continuous as the dependent variable and the ACE as the only test variable for the SSM and ASX sample.

Table 7-6 The Results of the Linear Regression Using AQ_Continuous and ACE for the SSM and ASX samples

Variable Name	Exp. Sign	SSM			ASX		
		Coefficient	t-stat	VIFs	Coefficient	t-stat	VIFs
Intercept		-0.33	-1.81		-0.17	-2.46	
ACE	+	-0.07	-1.11	1.514	0.17	8.67***	1.746
OUTSIDER	+	0.73	2.88***	2.550	-0.00	-0.08	1.426
IN_OWN	-	N/A	N/A	N/A	-0.12	-2.54***	1.368
LEVERAGE	+	0.39	2.64***	2.425	-0.01	-0.25	1.277
NEW_FUND	+	-0.24	-0.86	1.251	-0.00	-0.04	1.387
BUS_SEG	+	0.03	1.18	2.345	-0.01	-1.79*	1.446
ROA	+	-0.03	-0.08	1.651	-0.03	-1.12	1.428
SIZE	+	-0.00	-0.10	2.038	0.02	4.93***	2.313
FOR_SALE	+	0.11	0.18	1.940	0.05	1.64*	1.121
Sample Size			44			300	
Model F-stat			12.60			32.05	
R2 Square			0.68			0.48	
White t-stat			N/A			96	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

The overall models are significant for the SSM and ASX samples with F-stats equalling 12.60 and 32.05, respectively, indicating that at least one of the test variables is significant.

The variable of interest, ACE, is significant for the ASX sample with the same predicted sign indicating that such variable was positively associated with the

selection of a specialist auditor (H1 was supported). In other words, the ASX companies with an effective audit committee were more likely to hire a specialist auditor compared to these with an ineffective audit committee.

The results on ACE for the ASX sample are consistent with those found by Abbott and Parker (2000). However, it should be noted that Abbott and Parker (2000) used a different definition for ACE as they considered an audit committee to be effective if its all members were non-executive directors and met twice a year.

On the other hand, the variable of interest, ACE, for the SSM sample is insignificant indicating that the SSM companies with an effective audit committee were not more likely to hire a specialist auditor compared to these with an ineffective audit committee (H1 was not supported).

A possible explanation for the differences in the results between the SSM and ASX listed firms could be attributed to the differences in the audit committee framework between the two countries due to the lack of any disclosure or listing requirements regarding audit committee for the SSM listed companies.

Another explanation could be attributed to the small size of the SSM sample that might cause the lack of variability in the sample. In addition, the limitations associated with the Saudi collected data (these limitations will be discussed in detail in Chapter 9) such as the use of audit committee members' perceptions to collect data about different audit committee characteristics, might provide explanations for such difference in the results between the two samples for ACE.

IN_OWN is significant for the ASX sample with the same predicted sign indicating that the ASX companies with a high percentage of management ownership were less likely to hire a specialist auditor compared to those with a low percentage of management ownership. The results on IN_OWN are consistent with those found by Francis and Wilson (1988) and Firth and Smith (1992). It should be noted that IN_OWN was not available for the SSM sample as such data were not publicly available for Saudi listed companies.

BUS_SEG is significant for the ASX sample with opposite sign to the prediction indicating that the ASX companies with a large number of business segments were less likely to hire a specialist auditor compared to those with low number of business segments. A possible explanation for such unexpected results is that firms with a large number of business segments have very small business segments or that these business segments are very closely related to each other, which does not require a specialist auditor. It should be noted that other alternative measures of complexity would be used in Chapter 8 as sensitivity tests.

SIZE is significant for the ASX sample with the same predicted signs indicating that the ASX large companies were more likely to hire a specialist auditor. The results on SIZE are consistent with those found by Francis and Wilson (1988) and Firth and Smith (1992).

FOR_SALE is significant for the ASX sample with the same predicted sign indicating that the ASX companies with a high percentage of foreign sales were more likely to hire a specialist auditor compared to those with a low percentage of foreigner sales. The results on FOR_SALE are consistent with those found by Eichenseher (1985), Simon (1997) and Abbott and Parker (2000). The rest of the control variables are insignificant for the ASX sample indicating that there were no relationships between these variables and the selection of a specialist auditor.

On the other hand, OUTSIDER is significant for the SSM sample with the same predicted sign indicating that the SSM companies with a high percentage of non-executive directors on the board were more likely to hire a specialist auditor compared to those with a low percentage of non-executive directors on the board. The results on OUTSIDER are consistent with those found by Beasley and Petroni (2001).

LEVERAGE is significant for the SSM sample with the same predicted sign indicating that the SSM companies with a high percentage of leverage were more likely to hire a specialist auditor compared to those with a low percentage of leverage. The results on LEVERAGE are consistent with those found by Firth and Smith (1992). The rest of the control variables are insignificant for the SSM with indicating

that there were no relationships between these variables and the selection of a specialist auditor.

It is clear from the results of the control variables for the SMM and ASX samples that the determinants of audit quality are completely different. While OUTSIDER and LEVERAGE were the only control variables that influence the auditor selection process for the SSM sample, IN_OWN, SIZE and FOR_SALE were important determinants of audit quality for the ASX sample. Again these differences could be attributed to the lack of variability among these variables for the SSM sample due to the small sample.

It is important in any regression analysis to test for muticollinearity and heteroscedasticity. The variance inflation factors (VIFs) is the most common test to detect the presence of multicollinearity. Table 7-6 shows that multicollinearity does not present a problem in the regression for both samples because all the VIFs values are less than 4 (The rule of thumb is that when the VIFs value > 4, the independent variable should be dropped from the analysis due to multicollinearity).

On the other hand the White test is used to detect heteroscedasticity for large samples. As a result, the White test will be used with the ASX sample. In this test, the white t-statistics is calculated and then compared with the critical value of the chi-square distribution with P degrees of freedom and at (P is the number of repressors in the regression, not including the constant). If the white-corrected t-statistics is larger than the critical value then the null hypothesis can not be rejected and homoscedasticity could be assumed indicating that heteroscedasticity does not present a problem in the regression.

Table 7-6 shows that The White-corrected t-statistics equals 96 (R^2*N = 0.32*300). This value is larger than the critical value with P degree of freedom (P = 53) at 0.05, which equals approximately 71 indicating that heteroscedasticity is not a problem in this regression.

The Park test will be used with the SSM. In this test, the squared residuals is regressed on the independent variables and if all the independent variables have significant b

coefficients, then the researcher concludes that heteroscedasticity is not a problem in the regression.

Table 7-7 shows the regression of squared residuals on the independent variable to perform Park test to detect heteroscedasticity.

Table 7-7 The Results of the Linear Regression Using squared residuals as the dependent variable for the SSM (Parker test)

Variable Name	Coefficient	t-stat	Significance
Intercept	.004	.122	.904
ACE	-.008	-.809	.424
OUTSIDER	-.003	-.060	.953
LEVERAGE	.019	.889	.380
NEW_FUND	.033	.709	.483
BUS_SEG	.003	.744	.462
ROA	-.075	-1.326	.194
SIZE	.000	.187	.853
FOR_SALE	.007	.090	.929
Model F-stat	1.16		
R2 Square	0.21		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively (2-tailed).

Table 7-7 shows that none of the b coefficients for the independent variables are significant at 0.01, 0.05 or 0.10 indicating that homoscedasticity could be assumed and that heteroscedasticity is not a problem in this regression.

Finally, the R squares equal 0.68 and 0.48 respectively indicating that while the regression model for the SSM explains 68% of the variation in the dependent variable, the regression model for the ASX explains only 48% of the variation in the dependent variable.

7.3.1.1.2 Audit Committee Characteristics

Table 7.8 presents the results of the linear regressions using AQ_Continuous as the dependent variable and the ACCS as the test variables for the SSM and ASX samples.

Table 7-8 The Results of the Linear Regression Using AQ_Continuous and ACCS for the SSM and ASX

Variable Name	Exp. Sign	SSM			ASX		
		Coefficient	t-stat	VIFs	Coefficient	t-stat	VIFs
Intercept		-0.42	-1.72		-0.33	-3.04	
AC_IND	+	-0.12	-1.97*	1.586	0.11	5.08***	1.820
AC_SIZE	+	-0.00	-0.04	1.744	0.02	2.17**	1.374
AC_ACT	+	0.02	1.20	1.653	0.01	2.48***	1.725
AC_CHAR	+	-0.04	-0.67	1.507	0.03	1.09	1.365
AC_EXP	+	0.12	1.50	1.442	-0.01	-0.25	1.215
AC_LIT	+	-0.02	-0.20	1.137	0.09	1.12	1.111
OUTSIDER	+	0.63	2.32*	2.800	-0.01	-0.25	1.520
IN_OWN	-	N/A	N/A	N/A	-0.16	-3.22***	1.372
LEVERAGE	+	0.38	2.48*	2.795	0.01	0.28	1.328
NEW_FUND	+	-0.20	-0.74	1.360	-0.00	-0.07	1.470
BUS_SEG	+	0.04	1.49	2.480	-0.01	-1.42	1.530
ROA	+	0.09	0.24	1.736	-0.03	-0.97	1.471
SIZE	+	-0.00	-0.03	1.992	0.01	3.89***	2.629
FOR_SALE	+	0.09	0.15	2.094	0.06	1.98**	1.117
Sample Size		44			300		
Model F-stat		8.30			18.76		
R2 Square		0.69			.45		
White t-stat		N/A			150		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

The overall models are significant for the SSM and ASX samples with F-stats equalling 8.30 and 18.76, respectively, indicating that at least one of the test variables is significant in both models.

The variable of interest, AC_IND, is significant for the ASX sample with the same expected sign indicating that there was a positive association between audit committee independence and the selection of a specialist auditor (H2 is supported). In other words, the ASX companies with an independent audit committee were more likely to hire a specialist auditor compared to these with a non-independent audit committee.

The variable of interest, AC_IND, is significant for the SSM sample with the same expected sign indicating that there was a positive association between audit committee

independence and the selection of a specialist auditor (H2 is supported). In other words, the SSM companies with an independent audit committee were more likely to hire a specialist auditor compared to these with a non-independent audit committee.

While the results on AC_IND are consistent with those found by Chen et al. (2005), such results are not consistent with those found by Abbott and Parker (2000). One possible explanation for such mixed results could be attributed to differences in the definition of audit committee independence. While both studies used the term "non-executive directors" to determine audit committee independence, this study used the term "independent directors" to determine audit committee independence.

AC_SIZE is significant for the ASX sample with the same expected sign indicating that there was a positive association between audit committee size and the selection of a specialist auditor (H3 is supported). In other words, the ASX companies with a large number of audit committee members were more likely to hire a specialist auditor compared to those with a small number of audit committee members. It should be noted that this variable has not been investigated in auditor selection literature in its relation to audit quality.

On the other hand, the variable of interest, AC_SIZE, is insignificant for the SSM sample indicating that there was no association between audit committee size and audit quality (H3 is not supported).

AC_ACT is significant at for the ASX sample with the same expected sign indicating that there was a positive association between audit committee activity and the selection of a specialist auditor (H4 is supported). In other words, the ASX companies with an audit committee that meets more frequently were more likely to hire a specialist auditor compared to these with an audit committee that meets less frequently.

The results on AC_ACT are contradictory with those found by Abbott and Parker (2000) and Chen et al. (2005). Different variable specification or measurement could provide an explanation for such contradictory results. For example, while Abbott and Parker (2000) used a dummy variable to measure AC_ACT and considered an audit committee to be active if it met twice a year, this study used the number of meetings

(scale variable) to measure audit committee activity. Another possible explanation could be the lack of variability in this variable. Chen et al. (2005) indicated that 83% of companies in their sample met at least twice a year.

On the other hand, the variable of interest, AC_ACT, is insignificant for the SSM sample indicating that there was no association between audit committee size and audit quality (H4 is not supported).

The variable of interest, AC_CHAR, is insignificant for the SSM and ASX samples indicating that there was no association between audit committee charter and audit quality (H12 is not supported). In other words, the SSM and ASX companies that have an audit committee with charter were not more likely to hire a specialist auditor compared to those that have an audit committee without charter.

The variable of interest, AC_EXP, is insignificant for the SSM and ASX samples indicating that there was no association between audit committee expertise and audit quality (H13 is not supported). In other words, the SSM and ASX companies that have an audit committee with at least one expert were not more likely to hire a specialist auditor compared to these that have an audit committee without an expert.

The variable of interest, AC_LIT, is insignificant for the SSM and ASX samples indicating that there was no association between audit committee literacy and audit quality (H14 is not supported). In other words, the SSM and ASX companies that have a literate audit committee were not more likely to hire a specialist auditor compared to these that have a non-literate audit committee.

It should be noted that the lack of significance in AC_CHAR, AC_EXP and AC_LIT for the SSM and ASX samples could be explained by insufficient variability in the sample data. For example, 95% of the firms within the SSM sample and 99% of the firms within the ASX sample had a literate audit committee.

Despite the fact that AC_IND, AC_SIZE and AC_ACT are important determinants of audit quality for the ASX, it is important to examine which one contributes the most to audit quality. This could be done by examining the coefficient of each of these variables. As the coefficients of AC_IND, AC_SIZE and AC_ACT are 0.11, 0.02 and

0.01, respectively, it is clear that AC_IND contributed the most to audit quality because it had the largest coefficient among the three variables.

Again a possible explanation for the differences in the results between the SSM and ASX listed firms could be attributed to the differences in the audit committee framework between the two countries due to the lack of any disclosure or listing requirements regarding audit committee in for the SSM listed companies.

Another explanation could be attributed to the small size of the SSM sample that might cause the lack of variability in the sample. In addition, the limitations associated with the Saudi collected data such as the use of audit committee members' perceptions to collect data about different audit committee characteristics, might provide an explanation for such difference in the results between the two samples for different audit committee characteristics.

IN_OWN is significant for the ASX sample with the same predicted sign indicating that the ASX companies with a high percentage of management ownership were less likely to hire a specialist auditor compared to those with a low percentage of management ownership. The results on IN_OWN are consistent with those found by Francis and Wilson (1988) and Firth and Smith (1992).

SIZE is significant for the ASX sample with the same predicted signs indicating that the ASX large companies were more likely to hire a specialist auditor. The results on SIZE are consistent with those found by Francis and Wilson (1988) and Firth and Smith (1992).

FOR_SALE is significant for the ASX sample with the same predicted sign indicating that the ASX companies with a high percentage of foreign sales were more likely to hire a specialist auditor compared to those with a low percentage of foreign sales. The results on FOR_SALE are consistent with those found by Eichenseher (1985), Simon (1997) and Abbott and Parker (2000). The rest of the control variables are insignificant for the ASX indicating that there were no relationships between these variables and the selection of a specialist auditor.

OUTSIDER is significant for the SSM sample with the same predicted sign indicating that the SSM companies with a high percentage of non-executive directors on the board were more likely to hire a specialist auditor compared to these with a low percentage of independent directors on the board. The results on OUTSIDER are consistent with those found by Beasley and Petroni (2001).

LEVERAGE is significant for the SSM sample with the same predicted sign indicating that the SSM companies with a high percentage of leverage were more likely to hire a specialist auditor compared to these with a low percentage of non-executive directors on the board. The results on LEVERAGE are consistent with those found by Firth and Smith (1992).

The rest of the control variables are insignificant for the SSM sample indicating that there were no relationships between these variables and the selection of a specialist auditor. Again it is clear from the results that the control variables for the SMM and ASX samples have produced mixed results. Again these differences could be attributed to the lack of variability among these variables for the SSM sample due to the small sample.

As the ASX sample includes companies that are audited by Big 4 and Non-Big 4. It is important to include Big 4 as a control variable and re-run the regressions for Australian data. The results of re-running the regressions are similar to those for the original regressions indicating that the results were not driven by size of the audit firm.

Table 7-8 shows that multicollinearity does not present a problem in the regression for both samples because all the VIFs values are less than 4.

Table 7-8 shows that the White t-statistics for the ASX sample equals 150 (0.50*300) and it is larger than the critical value with P degree of freedom at 0.05 (P=115), which equals, indicating that heteroscedasticity is not a problem in this regression.

Table 7-9 shows the regression of squared residuals on the independent variables to perform Park test to detect heteroscedasticity.

Table 7-9 The Results of the Linear Regression Using squared residuals as the dependent variable for the SSM (Parker test)

Variable Name	Coefficient	t-stat	Significance
Intercept	-0.01	-0.44	0.67
AC_IND	0.00	0.67	0.51
AC_SIZE	-0.01	-0.72	0.48
AC_ACT	0.00	-0.64	0.52
AC_CHAR	0.00	-0.10	0.92
AC_EXP	-0.01	-0.98	0.33
AC_LIT	0.01	0.87	0.39
OUTSIDER	0.06	1.55	0.13
LEVERAGE	0.00	0.23	0.82
NEW_FUND	0.12	1.40	0.15
BUS_SEG	0.00	-0.50	0.62
ROA	-0.09	-1.18	0.20
SIZE	0.00	0.55	0.59
FOR_SALE	0.02	0.33	0.75
Model F-stat	1.39		
R2 Square	0.38		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively (2-tailed).

Table 7-9 shows that none of the b coefficients for the independent variables are significant at 0.01, 0.05 or 0.10 indicating that homoscedasticity could be assumed and that heteroscedasticity is not a problem in this regression.

Finally, the R squares equal 0.69 and 0.45, respectively, indicating that while the regression model for the SSM explains 69% of the variation in the dependent variable, the regression model for the ASX explains only 45% of the variations in the dependent variable.

7.3.1.2 NAS Purchases

As the NAS_RATIO is a continuous dependent variable, the linear regression must be used to model the NAS purchases. In addition, in order to determine which audit committee characteristic contributes the most to controlling and limiting NAS purchases, not only the association between ACE and NAS purchases will be

examined, but also the relationships between the ACCS and NAS purchases. As a result, the following hypotheses will be tested for the ASX sample.

H8: There is a significant negative relationship between ACE and the NAS ratio

H9: There is a significant negative relationship between audit committee independence and NAS ratio.

H10: There is a significant negative relationship between the size of the audit committee and the NAS ratio.

H11: There is a significant negative relationship between the number of meetings of the audit committee and the NAS ratio.

H12: There is a significant negative relationship between the existence of an audit committee charter and the NAS ratio.

H13: There is a significant negative relationship between audit committee expertise and the NAS ratio.

H14: There is a significant negative relationship between audit committee literacy and the NAS ratio.

7.3.1.2.1 Audit Committee Effectiveness

Table 7.10 presents the results of the linear regression using the relative magnitude of NAS purchases (NAS ratio) as the dependent variable and the ACE as the only test variable for the ASX sample.

The overall model is significant with the F-stats equalling 14.89 indicating that at least one of the test variables is significant.

The variable of interest, ACE, is significant with the same predicted sign indicating that there was a negative association between the ACE and the NAS ratio (H8 was supported). In other words, companies with an effective audit committee were more likely to have lower NAS ratios compared to those with an ineffective audit committee. The results of ACE are consistent with those found by Abbott et al (2003).

Table 7-10 The Results of the Linear Regression Using NAS Ratio and ACE for the ASX

Variable Name	Exp. Sign	Coefficient	T-Stat	VIFs
Intercept		0.39	5.01	
ACE	-	-0.23	-8.46***	1.81
OUTSIDER	-	0.00	-0.21	1.43
IN_OWN	+	0.16	2.56***	1.34
LEVERAGE	-	-0.02	-0.66	1.22
ROA	+	-0.02	-0.53	1.36
SIZE	+	0.00	0.73	1.88
SH_BLK	+	0.00	-0.46	1.08
NAS_SP	+	0.17	2.63***	1.33
Sample Size	300			
Model F-stat	14.89***			
Adjusted R2	0.27			
White t-statistics	147			

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

IN_OWN is significant with the same predicted sign indicating that companies with a high percentage of management ownership were less likely to have a lower NAS ratio compared to these with a low percentage of management ownership. The results on IN_OWN are consistent with those found by Parkash and Venable (1993) and Firth (1997).

NAS_SP is significant with the same predicted sign indicating that there was a positive association between NAS_SP and NAS ratio. In other words, companies with a high specialist auditor were more likely to have a higher NAS ratio compared to these with a low specialist auditor. The results on NAS_SP are consistent with those found by Houghton and Ikin (2001).

The rest of the control variables are insignificant indicating that there were no relationships between these variables and NAS ratio.

Table 7-10 shows that multicollinearity does not present a problem in the regression because all the VIFs values are less than 4.

Table 7-10 shows that the White-corrected t-statistics equals 147 (0.49*300) and it is larger than the critical value with P degree of freedom at 0.05 (P=42), which equals approximately 58, indicating that heteroscedasticity is not a problem in this regression.

Finally, the R square equals 0.27 indicating that this model explains 27% of the variations in the dependent variable.

7.3.1.2.2 Audit Committee Characteristics

Table 7.11 presents the results of the linear regression using the NAS ratio as the dependent variable and the ACCS as the test variables for the ASX sample.

Table 7-11 The Results of the Linear Regression Using NAS Ratio and ACCS for the ASX

Variable Name	Exp. Sign	Coefficient	T-Stat	VIFs
Intercept		0.44	2.88	
AC_IND	-	-0.11	3.81***	1.86
AC_SIZE	-	-0.02	-1.15	1.38
AC_ACT	-	-0.02	3.58***	1.64
AC_CHAR	-	-0.01	-0.36	1.37
AC_EXP	-	0.05	1.25	1.15
AC_LIT	-	0.01	0.11	1.11
OUTSIDER	-	0.01	0.09	1.53
IN_OWN	+	0.21	3.24***	1.35
LEVERAGE	-	-0.03	-0.92	1.25
ROA	+	-0.03	-0.79	1.41
SIZE	+	0.00	0.74	2.13
SH_BLK	+	0.00	0.06	1.09
NAS_SP	+	0.15	2.25**	1.36
Sample Size	300			
Model F-stat	14.89***			
Adjusted R2	0.27			
White t-statistics	147			

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

The overall model is significant with F-stats equalling 6.54 indicating that at least one of the test variables is significant. The variable of interest, AC_IND is significant with

the same expected sign indicating that there was a negative association between audit committee independence and NAS ratio (H9 is supported). In other words, companies with an independent audit committee were more likely to have a lower NAS ratio compared to those with a dependent audit committee. The results on AC_IND are consistent with those found by Abbott et al. (2003).

The variable of interest, AC_SIZE is insignificant indicating that there was no association between audit committee size and NAS ratio (H10 is not supported). In other words, the ASX companies with a large number of audit committee members were not more likely to have a lower NAS ratio compared to these with a small number of audit committee members.

The variable of interest, AC_ACT is significant with the same expected sign indicating that there was a negative association between audit committee activity and NAS ratio (H11 is supported). In other words, companies with an audit committee that meets more frequently were more likely to have a lower NAS ratio compared to those with an audit committee that meets less frequently. The results on AC_ACT are consistent with those found by Abbott et al. (2003).

The variable of interest, AC_CHAR, is insignificant at 0.10 with the same predicted sign indicating that there was no association between audit committee charter and NAS ratio (H12 is not supported). In other words, the ASX companies that have an audit committee with a charter were not more likely to have a lower NAS ratio compared to those that have an audit committee without a charter.

The variable of interest, AC_EXP, is insignificant indicating that there was no association between audit committee expertise and NAS ratio (H13 is not supported). In other words, audit committee expertise was not an important determinant of NAS purchases. The results on AC_EXP are consistent with those found by Abbott et al. (2003).

The variable of interest, AC_LIT, is insignificant indicating that there was no association between audit committee literacy and NAS ratio (H14 is not supported). In other words, audit committee literacy was not an important determinant of audit quality.

Again the lack of significance in AC_CHAR, AC_EXP and AC_LIT could be attributed to inadequate variability in the sample data. For example, 91% of the firms within the ASX sample had at least one audit committee member who is considered to be an expert.

As the coefficients of AC_IND and AC_ACT are 0.11 and 0.02, respectively, it is clear that AC_IND contributed the most to limiting and controlling NAS purchases because it had the larger coefficient compared to audit committee activity.

For the control variable, IN_OWN is significant with the same predicted sign indicating that companies with a high percentage of management ownership were less likely to have a lower NAS ratio compared to these with a low percentage of management ownership. The results on IN_OWN are consistent with those found by Parkash and Venable (1993) and Firth (1997).

NAS_SP is significant with the same predicted sign indicating that there was a positive association between NAS_SP and NAS ratio. In other words, companies with a high specialist auditor were more likely to have a lower NAS ratio compared to these with a low specialist auditor. The results on NAS_SP are consistent with those found by Houghton and Ikin (2001).

The rest of the control variables are insignificant indicating that there were no relationships between these variables and NAS ratio.

Table 7-11 shows that multicollinearity does not present a problem in the regression because all the VIFs values are less than 4.

Table 7-11 shows that the White-corrected t-statistics equals 180 (0.60*300) and it is larger than the critical value with P degree of freedom at 0.05 (P=100), which equals approximately 124, indicating that heteroscedasticity is not a problem in this regression.

Finally, the adjusted R square equals 0.27 indicating that this model explains 27% of the variations in the dependent variable.

7.4 Additional Test

When the ASX Corporate Governance Council (CGC) announced the principles of best practices and recommendations to strengthen the corporate governance for the ASX companies on 31 March 2003 (ASX CGC 2003), it was stated that while the ASX Top 500 companies have to comply with the principle of best practices and recommendations regarding audit committee by 1 January 2005, the rest of the ASX companies are not required to apply such practices and recommendations; instead they have to report any departure from such principles and recommendations.

However, the ASX CGC Implementation Review Group (IRG) recognized that the additional costs of having an effective audit committee might be more than the benefits of such committee especially for small firms (ASX CGC IRG 2004). As a result, the IRG suggested while the ASX Top 500 are required to establish a formal audit committee, only the ASX Top 300 need to establish an effective audit committee that complies with all the recommendations of the ASX CGC (ASX CGC IRG 2004).

Therefore, it is important to examine the impact of having different compliance requirements on the regression analysis for the ASX Top 300 and ASX Non-Top 300 companies (two-sub samples).

7.4.1 Audit Quality

7.4.1.1 Audit Committee Effectiveness

Table 7.12 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACE as the only test variable for the ASXT and ASXNT samples.

The overall models were significant for the ASXT and ASXNT samples with F-stats of 7.04 and 18.55, respectively, indicating that at least one of the test variables is significant.

Table 7-12 The Results of the Linear Regression Using AQ_Continuous and ACE for the ASXT and ASXNT

Variable Name	Exp. Sign	ASXT		ASXNT	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		-0.0063	-0.03	-0.1301	-1.84
ACE	+	0.1521	4.03***	0.1789	7.92***
OUTSIDER	+	-0.0967	-0.70	0.0129	0.24
IN_OWN	-	-0.3303	-1.74*	-0.0646	-1.35
LEVERAGE	+	0.0282	0.30	-0.0024	-0.13
NEW_FUND	+	-0.0319	-0.45	-0.0052	-0.20
SEG_NUM	+	-0.0137	-1.35	-0.0101	-1.22
ROA	+	-0.0105	-0.11	-0.0349	-1.25
SIZE	+	0.0131	1.03	0.0126	3.51***
FOR_SALE	+	0.1325	2.32**	-0.0020	-0.06
Sample Size		100		200	
Model F-stat		7.04		18.55	
Adjusted R2		.41		.44	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

The variable of interest, ACE, is significant for both sub-samples indicating that there was a positive association between ACE and the selection of a specialist auditor (H1 was supported). In other words, the ASX Top 300 and Non-Top 300 companies with an effective audit committee were more likely to hire a specialist auditor compared to these with an ineffective audit committee. The results on ACE for the two-sub samples provided evidence that having different compliance requirements did not influence the effectiveness of the audit committee in seeking the engagement of a specialist auditor

For the control variables, IN_OWN and FOR_SALE were significant for the ASXT sample with the same predicted signs indicating that the ASXT companies with a low percentage of management ownership and a high percentage of foreign sales were more likely to engage a specialist auditor compared to those with a high percentage of management ownership and a low percentage of foreign sales.

On the other hand, SIZE was the only control variable that was significant for the ASXNT sample with the same expected sign indicating that the ASXNT large

companies were more likely to hire a specialist auditor compared to the ASXNT small companies.

The rest of the control variables for the ASXT and ASXNT samples were insignificant indicating that there were no relationships between these variables and the selection of a specialist auditor. In other words, none of these variables was a determinant of audit quality.

It is clear that the results of the control variables for the ASXT and ASXNT are different. A possible explanation for such differences could be attributed to insufficient variability in some of these variables. Another explanation could be attributed to the differences in size of firms within the two-sub populations.

7.4.1.2 Audit Committee Characteristics

Table 7-13 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACCS as the test variables for the ASXT and ASXNT samples.

The overall models were significant for the ASXT and ASXNT samples with F-stats of 5.29 and 9.82, respectively, indicating that at least one test variable is significant.

The variable of interest, AC_IND, is significant for both sub-samples with the same predicted sign indicating that there was a positive association between audit committee independence and the selection of a specialist auditor (H2 was supported). In other words, the ASX Top 300 and Non-Top 300 companies with an independent audit committee were more likely to employ a specialist auditor compared to those with a non-independent audit committee.

While the variable of interest, AC_ACT, is insignificant for the ASXT indicating that the number of audit committee meetings was not a determinant of audit quality (H4 was not supported for the ASXT), the same variable is significant for the ASXNT with the same expected sign indicating that the ASX Non-Top 300 companies with a large number of audit committee meetings were more likely to utilize a specialist

auditor compared to those with a small number of audit committee meetings (H4 was supported for the ASXNT).

Table 7-13 The Results of the Linear Regression Using AQ_Continuous and ACCS for the ASXT and ASXNT

Variable Name	Exp. Sign	ASXT		ASXNT	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		0.1642	0.56	-0.3300	-2.92
AC_IND	+	0.1712	4.07***	0.0810	3.29**
AC_SIZE	+	0.0293	1.33	0.0202	1.55
AC_ACT	+	0.0093	1.21	0.0175	2.68**
AC_CHAR	+	-0.1152	-0.96	0.0294	1.18
AC_EXP	+	-0.0808	-0.97	0.0041	0.13
AC_LIT	+	N/A	N/A	0.0876	1.13
OUTSIDER	+	-0.1143	-0.82	0.0227	0.38
IN_OWN	-	-0.4483	-2.19**	-0.0993	-1.94*
LEVERAGE	+	0.0674	0.71	0.0021	0.10
NEW_FUND	+	-0.0097	-0.14	-0.0061	-0.21
BUS_SEG	+	-0.0152	-1.36	-0.0042	-0.49
ROA	+	0.0559	0.55	-0.0318	-1.06
SIZE	+	0.0048	0.37	0.0116	2.89**
FOR_SALE	+	0.1639	2.86***	0.0086	0.23
Model F-stat			5.29		9.82
Adjusted R2			.44		.38

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

A possible explanation for such difference between the two-sub samples could be that the majority of the Top 300 companies (73%) had held more than 4 audit committee meetings, which indicates the lack of variability in the number of audit committee meetings.

The rest of the test variables (AC_SIZE, AC_CHAR, AC_EXP and AC_LIT) are insignificant indicating that none of these variables was a determinant of audit quality for both sub-samples (H3, H5, H6 and H7 were not supported). It should be noted that the lack of significance in AC_CHAR, AC_EXP and AC_LIT could be explained by inadequate variability in the sample data.

As the coefficients of AC_IND and AC_ACT for the ASXNT sample are approximately 0.08 and 0.02, respectively, it is clear that AC_IND contributed more to limiting and controlling NAS purchases because it had the larger coefficient compared to audit committee activity.

It is clear from the above discussion that having different compliance requirements between the two-sub samples has very limited influence on the determinants of audit quality among the six-different audit committee characteristics (ACCS) because the results of the regression analysis for the two sub-sample are very much similar. While audit committee independence was the only determinant of audit quality among ACCS for the ASXT sample, both audit committee independence and activity were determinants of audit quality for the ASXNT. However, audit committee independence was the most important determinant of audit quality among ACCS for both sub-samples.

For the control variable, while IN_OWN and FOR_SALE were the only determinants of audit quality for the ASXT sample, IN_OWN and SIZE were the only determinant of audit quality for the ASXNT sample.

Again such differences in the results of the control variables between the two-sub samples could be explained by the differences in size of firms within these two-sub samples or by the lack of variability in these variables.

7.4.2 NAS Purchases

7.4.2.1 Audit Committee Effectiveness

Table 7-14 presents the results of the linear regression using the NAS ratio as the dependent variable and the ACE as the only test variable for the ASXT and ASXNT samples.

The overall models were significant for the ASXT and ASXNT samples with F-stats equal to 4.90 and 9.83, respectively, indicating that there is at least one test variable that is significant.

Table 7-14 The Results of the Linear Regression Using NAS Ratio and ACE for the ASXT and ASXNT

Variable Name	Exp. Sign	ASXT		ASXNT	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		0.46	1.80	0.34	3.09
ACE	-	-0.17	3.56***	-0.25	7.12***
OUTSIDER	-	-0.21	-1.22	0.05	0.63
IN_OWN	+	0.20	0.87	0.14	1.92*
LEVERAGE	-	-0.06	-0.52	-0.02	-0.64
ROA	+	0.02	0.19	-0.02	-0.47
SIZE	+	0.00	0.20	0.01	1.48
SH_BLK	-	0.01	0.71	-0.01	-0.76
NAS_SP	+	0.34	3.36***	0.08	0.97
Model F-stat			4.90		9.83
Adjusted R2			0.24		0.26

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

The variable of interest, ACE, was significant for both the ASXT and ASXNT samples indicating that there was a positive association between the ACE and the selection of a specialist auditor (H1 was supported). In other words, ACE was an important determinant of NAS purchases. The results on ACE for the two-sub samples provided evidence that having different compliance requirements did not influence the effectiveness of the audit committee in controlling and limiting NAS purchases.

While NAS_SP was the only control variable that was significant for the ASXT sample with the same predicted signs indicating that the degree of NAS specialization was an important determinant of NAS purchases, IN_OWN was the only control variable that was significant for the ASXNT sample indicating that the ASXNT companies with a high percentage of management ownership were more likely to have a lower NAS ratio.

The rest of the control variables for the ASXT and ASXNT samples were insignificant indicating that there were no relationships between these variables and

the selection of a specialist auditor. In other words, none of these variables were determinants of audit quality.

It is clear that the results of the control variables for the ASXT and ASXNT are different. A possible explanation for such differences could be attributed to insufficient variability in some of these variables. Another explanation could be attributed to the differences in size of firms within the two-sub samples.

7.4.2.2 Audit Committee Characteristics

Table 7-15 presents the results of the linear regression using the NAS ratio as the dependent variable and ACCS as the test variables for the ASXT and ASXNT samples.

Table 7-15 The Results of the Linear Regression Using NAS ratio and ACCS for the ASXT and ASXNT

Variable Name	Exp. Sign	ASXT		ASXNT	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		0.33	0.89	0.46	2.78
AC_IND	-	-0.17	-3.05***	-0.06	-1.68*
AC_SIZE	-	-0.02	-0.86	-0.01	-0.31
AC_ACT	-	0.01	0.52	-0.05	5.13***
AC_CHAR	-	0.09	0.57	0.01	0.19
AC_EXP	-	0.09	0.88	0.03	0.63
AC_LIT	-	N/A	N/A	0.01	0.09
OUTSIDER%	-	-0.23	-1.26	-0.04	-0.46
IN_OWN	+	0.28	1.03	0.15	1.95*
LEVERAGE	-	-0.11	-0.92	-0.01	-0.46
ROA	+	-0.06	-0.44	-0.04	-0.82
SIZE	+	0.00	0.32	0.01	1.40
SH_BLK	-	0.02	1.45	0.00	-0.38
NAS_SP	+	0.36	3.12***	0.03	0.38
Model F-stat			2.97		5.16
Adjusted R2			0.19		0.21

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

The overall models were significant for ASXT and ASXNT samples with F-stats equal 2.97 and 5.16, respectively, indicating that there is at least one test variable that is significant.

The variable of interest, AC_IND, is significant for the ASXT and ASXNT samples with the same predicted sign indicating that there was a negative association between audit committee independence and the magnitude of NAS purchases (H2 was supported). In other words, audit committee independence was an important determinant of NAS purchases for both sub-samples.

While the variable of interest, AC_ACT, is insignificant for the ASXT sample indicating that the ASXT companies with a large number of audit committee meetings were not more likely to have lower NAS ratio compared to those with a small number of audit committee meetings, the same variable is significant for the ASXNT sample indicating that the number of audit committee meetings was an important determinant of NAS purchases.

Again, a possible explanation for such difference between the two-sub samples could be that the majority of the Top 300 companies (73%) had held more than 4 audit committee meetings, which indicates the lack of variability in the number of audit committee meetings.

The variables of interest, AC_SIZE, AC_CHAR, AC_EXP and AC_LIT, are insignificant for both samples indicating that there were no relationships between these variables and the selection of a specialist auditor. In other words, these variables were not determinants of audit quality.

Again, the insufficient variability in these variables could explain the lack of significance for such variables. For example, the percentage of companies with at least one expert for the ASXT and ASXNT samples were 96% and 89% respectively.

For the control variable, while FOR_SALE was the only determinant of audit quality for the ASXT sample, IN_OWN was the only determinant of audit quality for the ASXNT sample.

Again such differences in the results of the control variables between the two-sub samples could be explained by the differences in size of firms within these two-sub samples or by the lack of variability in these variables.

7.5 Summary

In this chapter, univariate and multivariate analysis were presented and discussed. The univariate analysis that has been discussed in this chapter included correlation and equality of means analysis. Correlation analysis revealed multicollinearity did not impose any threats for running the linear regressions for the SSM and ASX.

On the other hand, equality of means analysis provided very useful information regarding the nature of the differences in means between two groups (occurred by chance or not). This analysis revealed that all the variables that had equal means between two groups, where the differences in means occurred only by chance, would never be significant determinant of audit quality or NAS purchase when running the regression analysis.

Multivariate analysis was divided into two parts. The first part presented the main regression analysis that has been used to test the hypotheses of this study. The results of the main regression analysis revealed that ACE was an important determinant of audit quality and NAS purchases for the ASX sample. This provides evidence that the ASX companies with effective audit committees take actions to ensure high quality financial reports by selecting a specialist auditor and limiting NAS purchases that might have a negative impact on auditor independence.

In addition, for the ASX sample, while audit committee independence, size and activity were all determinants of audit quality, audit committee independence and activity were determinants of the magnitude of NAS purchases. However, audit committee independence was the most important determinant of both audit quality and the magnitude of NAS purchases for the ASX sample.

On the other hand, the results of the regression analysis for the SSM sample indicated that there was no association between audit committee effectiveness or any of the six-different audit committee characteristics and the selection of a specialist auditor.

The differences in results between the SSM and ASX samples could be attributed to the differences in audit committee framework, the small Saudi sample or the limitations associated with the Saudi collected data.

The second part of the multivariate analysis examined the impact of having different compliance requirements for the ASX Top 300 and Non-Top 300 samples. The results of this part indicated that the ASX Top 300 and Non-Top 300 companies with an effective audit committee were more likely to hire a specialist auditor and to have lower NAS ratio.

Finally, while audit committee independence was the only determinant of audit quality and NAS purchases among ACCS for the ASXT sample, both audit committee independence and activity were determinants of audit quality and NAS purchases among ACCS for the ASXNT sample. The lack of significance in AC_ACT for the ASXT sample could be explained by insufficient variability of this variable as most of the ASX Top 300 companies had held more than 4 audit committee meetings a year.

CHAPTER 8: SENSISTIVITY TESTS

8.1 Introduction

In this chapter, a number of sensitivity tests will be discussed and performed to examine the impact of changing a number of factors on the results of the main regression analysis in Chapter 7.

These factors include sample specification, different periods of time to comply, alternative proxies for audit quality, alternative methods for identifying auditor specialization, omitting a variable, additional variables and alternative measures of some of the control variables.

8.2 Reduced Samples

Firms that belong to the financial sector have special structures that might influence the results of the main regression analysis (Abbott and Parker 2000). Therefore, firms that belong to the financial sector were excluded from the SSM and ASX to ensure that the results of the regression analysis in Chapter 7 were not driven by the special structure of the firms within this sector.

For the SSM, banks were excluded to produce the reduced SSM sample. On the other hand, the following four industries were excluded from the ASX sample to obtain the reduced ASX sample.

1. Banks
2. Diversified Financials
3. Insurances
4. Real Estate Trusts

8.2.1 Audit Quality

8.2.1.1 Audit Committee Effectiveness

Table 8-1 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACE as the independent variable for the RSM and RASX.

Table 8-1 The Results of the Linear Regression Using AQ_Continuous and ACE for the RSM and RASX

Variable Name	Exp. Sign	RSSM		RASX	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		-0.35	-1.77	-0.17	-2.34
ACE	+	-0.07	-0.97	0.16	7.51***
OUTSIDER	+	0.81	2.86***	0.00	-0.04
IN_OWN	-	N/A	N/A	-0.11	-2.09**
LEVERAGE	+	0.36	1.92*	-0.02	-0.87
NEW_FUND	+	-0.24	-0.83	0.01	0.47
BUS_SEG	+	0.03	1.01	-0.01	-2.20**
ROA	+	-0.04	-0.11	-0.02	-0.79
SIZE	+	0.00	-0.11	0.02	4.86***
FOR_SALE	+	-0.04	-0.05	0.05	1.46
Sample Size		40		254	
Model F-stat		9.26***		24.12***	
Adjusted R2		0.63		0.45	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-1 reveals that the results for the reduced samples are very similar to those for the full samples indicating that the results of the regression analysis for the full samples were not driven by the special structures associated with firms within the financial sector.

8.2.1.2 Audit Committee Characteristics

Table 8-2 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACCS as the independent variable for the reduced SSM and ASX samples.

Table 8-2 reveals that the results of the regression analysis for the reduced SSM sample are very similar to those for the SSM sample indicating that the results of the regression analysis for the SSM sample were not driven by the special structures associated with firms within the bank sector.

Table 8-2 The Results of the Linear Regression Using AQ_Continuous and ACCS for the RSM and RASX

Variable Name	Exp. Sign	RSSM		RASX	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		-0.60	-2.14	-0.34	-2.93
AC_IND	+	-0.12	-1.85*	0.10	4.36***
AC_SIZE	+	0.03	0.40	0.02	1.88*
AC_ACT	+	0.04	1.59	0.01	1.60
AC_CHAR	+	-0.05	-0.84	0.03	1.11
AC_EXP	+	0.13	1.48	-0.01	-0.33
AC_LIT	+	-0.04	-0.30	0.09	1.11
OUTSIDER	+	0.76	2.58**	-0.01	-0.22
IN_OWN	-	N/A	N/A	-0.15	-2.77***
LEVERAGE	+	0.36	1.82*	0.00	-0.15
NEW_FUND	+	-0.24	-0.82	0.01	0.28
BUS_SEG	+	0.04	1.37	-0.01	-1.35
ROA	+	0.09	0.23	-0.02	-0.77
SIZE	+	0.00	0.11	0.02	3.85***
FOR_SALE	+	-0.38	-0.52	0.06	1.84*
Sample Size		40		254	
Model F-stat		6.55***		13.59***	
Adjusted R2		0.65		0.41	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

On the other hand, with the exception of AC_ACT, which was insignificant for the reduced ASX indicating that there was no association between AC_ACT and the selection of a specialist auditor, the results of the regression analysis for the RASX sample are very similar to those for the ASX sample indicating that the results of only AC_ACT for the ASX were driven by the special structures associated with firms within the financial sector.

In summary, with the exception of AC_ACT, the results of the reduced SSM and ASX samples were very similar to the results of the SSM and ASX samples indicating that the results of the main regression analysis for modelling audit quality were not driven by the inclusion of firms within the financial sector.

8.2.2 NAS Purchases

8.2.2.1 Audit Committee Effectiveness

Table 8-3 presents the results of the linear regression using NAS ratio as the dependent variable, ACE as the only independent variable for the reduced ASX sample.

Table 8-3 The Results of the Linear Regression Using NAS ratio and ACE for the Reduced ASX

Variable Name	Exp. Sign	RASX	
		Coefficient	t-stat
Intercept		0.41	4.15
ACE	-	-0.22	-7.43***
OUTSIDER	-	-0.06	-0.78
IN_OWN	+	0.14	1.94*
LEVERAGE	-	-0.02	-0.59
ROA	+	-0.03	-0.72
SIZE	+	0.01	1.21
SH_BLK	+	0.00	-0.23
NAS_SP	+	0.19	2.72***
Sample Size	254		
Model F-stat	12.22***		
Adjusted R2	0.29		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-3 reveals that the results for the reduced ASX sample are very similar to those for the ASX sample indicating that the results of the regression analysis for the ASX sample were not driven by the special structures associated with firms within the financial sector.

8.2.2.2 Audit Committee Characteristics

Table 8-4 presents the results of the linear regression using NAS ratio as the dependent variable, ACCS as the independent variables and BOR_IND as a control variable for the ASX sample.

Table 8-4 The Results of the Linear Regression Using NAS ratio and ACCS and for the Reduced ASX

Variable Name	Exp. Sign	RASX	
		Coefficient	t-stat
Intercept		0.48	2.98
AC_IND	-	-0.10	-3.15***
AC_SIZE	-	-0.01	-0.82
AC_ACT	-	-0.02	-3.09***
AC_CHAR	-	-0.01	-0.31
AC_EXP	-	0.04	0.80
AC_LIT	-	0.03	0.22
OUTSIDER	-	-0.10	-1.17
IN_OWN	+	0.18	2.33**
LEVERAGE	-	-0.03	-0.97
ROA	+	-0.04	-0.91
SIZE	+	0.01	1.03
SH_BLK	+	0.00	0.15
NAS_SP	+	0.17	2.29**
Sample Size	254		
Model F-stat	5.30***		
Adjusted R2	0.22		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-4 shows that the results for the reduced ASX sample are very similar to those for the ASX sample indicating that the results of the regression analysis for the ASX sample were not driven by the special structures associated with firms within the financial sector.

In summary, the results of the reduced ASX sample were very similar to the results of the ASX sample indicating that the results of the main regression analysis for modelling NAS purchases were not driven by the inclusion of firms within the financial sector.

8.3 Different Periods of Time to Comply

The ASX CGC announced the principles of best practices and recommendations of corporate governance on 31 March 2003 and required the ASX companies to report the degree of compliance with such principles and recommendations. In addition, the

ASX sample includes companies with different financial year-end with most companies having 30 June as the end of their financial year. Moreover, the test period for the ASX sample was 2004 financial year and the reasons for selecting such test period were discussed in detail in Chapter 5.

Therefore, while the ASX companies with 30 June as their financial year-end have one year and three months to comply with the ASX recommendations, the ASX companies with 31 December as their financial year-end have one year and nine months to comply with such recommendations.

As a result, it is important to investigate the impact of having different times of compliance on the regression analysis. This could be done by excluding all companies with financial year-end other than 30 June from the ASX sample and then run the regression analysis.

It should be noted that such problem does not exist in the SSM sample, as the SMC recommendations were announced in 1994 and that all companies within the SSM sample have 31 December as their financial year-end.

8.3.1 Audit quality

8.3.1.1 Audit Committee Effectiveness

Table 8-5 presents the results of the linear regression using AQ_Continuous as the dependent variable, ACE as the only independent variable for the ASX June sample.

Table 8-5 reveals that the variable of interest, ACE, and four of the control variables, namely, IN_OWN, BUS_SEG, SIZE and FOR_SALE were significant indicating that the results remain robust when companies, which have financial year end other than 30 June, were excluded.

Table 8-5 The Results of the Linear Regression Using AQ_Continuous, ACE, for the ASX June

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.15	-2.10
ACE	-	0.17	8.29***
OUTSIDER	-	0.03	0.49
IN_OWN	+	-0.11	-2.30**
LEVERAGE	-	-0.01	-0.31
NEW_FUND	+	0.00	-0.03
BUS_SEG	+	-0.01	-1.70*
ROA	- +	-0.02	-0.66
SIZE	+	0.01	4.03***
FOR_SALE	-	0.09	2.23**
Sample Size	238		
Model F-stat	26.13***		
Adjusted R2	0.49		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

8.3.1.2 Audit Committee Characteristics

Table 8-6 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACCS as the independent variables for the ASX June sample.

Table 8-6 reveals that three independent variables, namely, AC_IND, AC_SIZE and AC_ACT and four of the control variables, namely, IN_OWN, BUS_SEG, SIZE and FOR_SALE were all significant indicating that the results remain robust when including only companies with 30 June as the end of their financial year

Table 8-6 The Results of the Linear Regression Using AQ_Continuous and ACCS for the ASX June

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.36	-3.26
AC_IND	+	0.09	4.30***
AC_SIZE	+	0.03	2.89***
AC_ACT	+	0.01	2.11**
AC_CHAR	+	0.03	1.31
AC_EXP	+	0.02	0.62
AC_LIT	+	0.10	1.34
OUTSIDER	+	0.02	0.34
IN_OWN	-	-0.15	-2.98***
LEVERAGE	+	0.00	0.00
NEW_FUND	+	0.00	-0.12
BUS_SEG	+	-0.01	-1.28
ROA	+	-0.02	-0.53
SIZE	+	0.01	2.85***
FOR_SALE	+	0.09	2.25**
Sample Size	238		
Model F-stat	15.32***		
Adjusted R2	0.46		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

8.3.2 NAS Purchases

8.3.2.1 Audit Committee Effectiveness

Table 8-7 presents the results of the linear regression using NAS ratio as the dependent variable, ACE as the only independent variable for the ASX June sample.

Table 8-7 reveals that the variable of interest, ACE, and two of the control variables, namely, IN_OWN and NAS_SP were significant indicating that the results remain robust when companies, which have financial year end other than 30 June, were excluded.

Table 8-7 The Results of the Linear Regression Using NAS ratio and ACE for the ASX June

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		0.43	4.52
ACE	-	-0.23	-7.57***
OUTSIDER	-	0.00	-0.03
IN_OWN	+	0.16	2.34**
LEVERAGE	-	-0.02	-0.60
ROA	+	-0.03	-0.79
SIZE	+	0.00	0.35
SH_BLK	+	0.00	-0.71
NAS_SP	+	0.19	2.71***
Sample Size	238		
Model F-stat	12.56***		
Adjusted R2	0.28		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively (2-tailed).

8.3.2.2 Audit Committee Characteristics

Table 8-8 presents the results of the linear regression using NAS ratio as the dependent variable, ACCS as the independent variables and BOR_IND as a control variable for the June ASX sample.

Table 8-8 reveals that AC_IND, AC_ACT, IN_OWN and NAS_SP were all significant indicating that the results remain robust when including only companies with 30 June as the end of their financial year.

In summary, the differences in the periods of time to comply have no impact on the results of the regression analysis; as such results remain robust regardless of the inclusion or exclusion of companies that have other than 30 June as the end of their financial year.

Table 8-8 The Results of the Linear Regression Using NAS ratio and ACCS and for the ASX June

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		0.47	3.01
AC_IND	-	-0.10	-3.12***
AC_SIZE	-	-0.01	-0.39
AC_ACT	-	-0.03	-3.42***
AC_CHAR	-	-0.01	-0.27
AC_EXP	-	0.02	0.40
AC_LIT	-	0.04	0.35
OUTSIDER	-	-0.06	-0.66
IN_OWN	+	0.20	2.71***
LEVERAGE	-	-0.02	-0.78
ROA	+	-0.05	-1.23
SIZE	+	0.00	0.55
SH_BLK	+	0.00	-0.39
NAS_SP	+	0.15	2.04**
Sample Size	238		
Model F-stat	5.45***		
Adjusted R2	0.20		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

8.4 Alternative Proxy for Audit Quality

Despite the fact that the use of auditor size as a proxy for audit quality has been critiqued following the collapse of Enron, audit quality literature continues to use such proxy with caution (Watkins et al. 2004). Therefore, it is important to investigate the impact of using such proxy on the results of the main regression analysis. As the dependent variable using auditor size is a dummy variable then the logistic regression must be used to model audit quality.

8.4.1 Audit Committee Effectiveness

Table 8-9 presents the results of the logistic regressions using audit size as the dependent variable and the ACE as the only independent variable for the SSM and ASX sample.

Table 8-9 The Results of the Logistic Regression Using Auditor Size for the SSM and ASX

Variable Name	Exp. Sign	SSM		ASX	
		Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-1266.62	0.00	-7.23	16.27
ACE	+	363.65	0.00	2.23	22.66***
OUTSIDER	+	2072.77	0.00	2.07	3.69*
IN_OWN	-	N/A	N/A	-2.53	6.91***
LEVERAGE	+	-38.24	0.00	-0.66	1.30
NEW_FUND	+	-414.38	0.00	-0.70	1.42
BUS_SEG	+	-67.51	0.00	-0.14	0.86
ROA	+	-1892.52	0.00	-0.53	0.92
SIZE	+	18.39	0.00	0.38	15.03***
FOR_SALE	+	-404.19	0.00	1.63	3.41*
Sample Size		44		300	
Chi-square statistic		60.18		176.22	
Cox-Snell R square		0.75		0.44	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

For the SSM sample, while OUTSIDER and LEVERAGE were the only test variables that had positive relationships with the selection of a high quality auditor using AQ_Continuous method as a proxy of audit quality, none of the test variables was a determinant of audit quality using auditor size.

On the other hand, the results for the ASX sample were very much the same regardless of which proxy has been used indicating that ASX companies with an effective audit committee were more likely to hire a high quality auditor (a specialist or a Big 4 auditor).

8.4.2 Audit Committee Characteristics

Table 8-10 presents the results of the logistic regressions using audit size as the dependent variable and the ACCS as the independent variables for the SSM and ASX sample.

For the SSM sample, with the exception of OUTSIDER and LEVERAGE, the results for the rest of the test variables remained robust regardless of which proxy has been used.

Table 8-10 The Results of the Logistic Regression Using Auditor Size and ACCS for the SSM and ASX

Variable Name	Exp. Sign	SSM		ASX	
		Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-119.82	0.00	-28.17	0.00
AC_IND	+	80.11	0.00	1.81	19.47***
AC_SIZE	+	-40.49	0.00	0.19	0.51
AC_ACT	+	-9.87	0.00	0.11	0.72
AC_CHAR	+	4.43	0.00	0.57	1.39
AC_EXP	+	14.21	0.00	-0.52	0.80
AC_LIT	+	-56.08	0.00	20.55	0.00
OUTSIDER	+	450.74	0.00	1.75	2.25
IN_OWN	-	N/A	N/A	-3.19	9.89***
LEVERAGE	+	-71.91	0.00	-0.24	0.19
NEW_FUND	+	-9.22	0.00	-0.84	1.65
BUS_SEG	+	-8.28	0.00	-0.03	0.03
ROA	+	-245.16	0.00	-0.61	0.89
SIZE	+	4.94	0.00	0.34	10.24***
FOR_SALE	+	95.36	0.00	1.47	2.838
Sample Size		44		300	
Chi-square statistic		60.63		187.55	
Cox-Snell R square		0.75		0.47	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

On the other hand, while AC_IND, AC_SIZE and AC_ACT were all determinants of audit quality using AQ_Continuous method, AC_ IND was the only determinant of audit quality using auditor size. However, AC_IND was still the most important determinant of audit quality regardless of which proxy has been used.

8.5 Alternative Methods for Identifying Specialist Auditors

The arbitrary selection of a cut-off point is the most important disadvantage associated with the use of AQ_Craswell and AQ_Palmrose methods as proxies for audit quality. Therefore, it is necessary to examine the influence of using different specialization methods and different cut-off points on the main regression analysis in Chapter 7.

8.5.1 AQ_Craswell

The results of using the 10%, 20% and 30% cut-off points under AQ_Craswell method will be presented in this part.

8.5.1.1 Audit Committee Effectiveness

Table 8-11 presents the results of the logistic regression using AQ_Craswell 10%, 20% and 30% as the dependent variable and ACE as the independent variable for the SSM.

Table 8-11 The Results of the Logistic Regression Using AQ_Craswell (10%, 20% and 30%) and ACE for the SSM

Variable Name	Exp. Sign	10%		20%		30%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-579.15	0.00	-10.96	2.83	-14.88	1.56
ACE	+	-42.30	0.00	-2.44	1.43	-1.13	0.29
OUTSIDER	+	278.84	0.00	12.14	2.34	10.82	1.53
LEVERAGE	+	-19.55	0.00	4.00	1.11	7.90	2.34
NEW_FUND	+	-533.64	0.00	-43.76	2.02	-38.11	1.22
BUS_SEG	+	48.04	0.00	1.46	2.56	1.87	1.41
ROA	+	193.17	0.00	7.55	0.70	1.51	0.01
SIZE	+	14.84	0.00	-0.17	0.33	-0.18	0.21
FOR_SALE	+	38.60	0.00	23.80	2.88*	23.83	3.08*
Sample Size		254		44		44	
Chi-square		60.91		37.60		33.96	
Cox-Snell R		0.75		0.0.58		0.54	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-11 reveals that with the exception of FOR_SALE, which was the only independent variable that was significant using AQ_Craswell (20% and 30%), the use of different cut-off points under AQ_Craswell method generated similar results for the rest of the independent variables.

Table 8-12 presents the results of the logistic regression using AQ_Craswell 10%, 20% and 30% as the dependent variable and ACE as the independent variable for the ASX.

Table 8-12 The Results of the Logistic Regression Using AQ_Craswell (10%, 20% and 30%) and ACE for the ASX

Variable Name	Exp. Sign	10%		20%		30%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-12.44	24.45	-9.57	21.94	-9.13	23.67
ACE	+	3.07	33.63***	2.44	32.14***	2.31	19.12***
OUTSIDER	+	3.46	8.40***	-0.73	0.34	1.61	2.71*
IN_OWN	-	-2.62	5.53**	-2.74	4.64*	-1.44	1.21
LEVERAGE	+	0.19	0.08	-0.45	0.44	-0.71	0.98
NEW_FUND	+	-0.81	0.82	0.11	0.02	0.73	0.99
BUS_SEG	+	-0.15	0.68	-0.32	5.86***	-0.35	7.35***
ROA	+	-0.49	0.33	-1.13	2.51	-1.06	1.81
SIZE	+	0.59	17.40***	0.51	22.21***	0.36	10.87***
FOR_SALE	+	1.29	1.95	-0.50	0.57	0.45	0.52
Sample Size		300		300		300	
Chi-square		269.18		173.88		112.20	
Cox-Snell R		0.59		0.44		0.31	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-12 reveals that despite the fact that the use of different cut-off points under AQ_Craswell method generated similar results for ACE, such use has produced mixed results for OUTSIDER, IN_OWN and BUS_SEG. For example, OUTSIDER was only significant when using the 10% and 30% cut-off points.

8.5.1.2 Audit Committee Characteristics

Table 8-13 presents the results of the logistic regression using AQ_Craswell 10%, 20% and 30% as the dependent variable and ACCS as the independent variables for the SSM.

Table 8-13 indicates that the use of different cut-off points under AQ_Craswell method generated similar results, as none of the independent variables was significant.

Table 8-13 The Results of the Logistic Regression Using AQ_Craswell (10%, 20% and 30%) and ACCS for the SSM

Variable Name	Exp. Sign	10%		20%		30%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-288.34	0.00	-611.11	0.00	-5232.33	0.00
AC_IND	+	-29.44	0.00	-519.02	0.00	-410.25	0.00
AC_SIZE	+	20.69	0.00	53.65	0.00	417.39	0.00
AC_ACT	+	2.19	0.00	123.35	0.00	153.01	0.00
AC_CHAR	+	20.48	0.00	-39.02	0.00	-38.86	0.00
AC_EXP	+	-13.36	0.00	-48.58	0.00	-286.00	0.00
AC_LIT	+	17.57	0.00	26.43	0.00	37.62	0.00
OUTSIDER	+	169.36	0.00	371.22	0.00	2572.62	0.00
LEVERAGE	+	-12.82	0.00	213.77	0.00	16.98	0.00
NEW_FUND	+	-240.42	0.00	-564.11	0.00	1918.24	0.00
BUS_SEG	+	19.77	0.00	161.22	0.00	-15.12	0.00
ROA	+	158.54	0.00	1326.51	0.00	1783.44	0.00
SIZE	+	3.38	0.00	-29.89	0.00	102.74	0.00
FOR_SALE	+	-98.00	0.00	492.67	0.00	-1728.89	0.00
Sample Size		44		44		44	
Chi-square		60.91		60.18		51.56	
Cox-Snell R		0.75		0.75		0.69	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-14 presents the results of the logistic regression using AQ_Craswell 10%, 20% and 30% as the dependent variable and ACCS as the independent variables for the ASX.

Table 8-14 shows that the use of different cut-off points under AQ_Craswell method has produced mixed results for some of the independent variables.

For example, while AC_ACT was significant when using the 10% cut-off points, such variable was insignificant with the use of the 20% and 30% cut-off points.

Table 8-14 The Results of the Logistic Regression Using AQ_Craswell (10%, 20% and 30% and ACCS for the ASX

Variable Name	Exp. Sign	10%		20%		30%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-32.0056	0.00	-31.36	0.00	-28.93	0.00
AC_IND	+	2.0792	17.48***	1.86	11.55***	2.43	8.48***
AC_SIZE	+	0.1938	0.43	0.67	5.98***	0.62	4.83**
AC_ACT	+	0.3960	7.66***	0.13	1.73	0.12	1.48
AC_CHAR	+	1.0322	1.86	1.51	1.81	0.31	0.07
AC_EXP	+	0.5567	0.41	0.57	0.24	-0.63	0.29
AC_LIT	+	19.5582	0.00	19.09	0.00	18.26	0.00
OUTSIDER	+	-0.1723	0.02	-1.29	0.99	1.43	2.01
IN_OWN	-	-3.3154	8.46***	-3.23	5.97***	-2.01	2.20
LEVERAGE	+	0.5534	1.01	0.22	0.12	-0.27	0.15
NEW_FUND	+	-0.6352	0.58	-0.11	0.02	0.65	0.75
BUS_SEG	+	0.0321	0.03	-0.27	4.10**	-0.35	6.95***
ROA	+	-0.1010	0.01	-1.14	2.13	-0.88	1.03
SIZE	+	0.4643	12.98***	0.42	14.97***	0.30	7.89***
FOR_SALE	+	1.0074	1.32	-0.31	0.24	0.70	1.30
Sample Size		300		300		300	
Chi-square		246.42		162.90		112.88	
Cox-Snell R		0.56		0.42		0.31	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

8.5.2 AQ_Palmrose

The results of using the 5%, 15% and 25% cut-off points under AQ_Palmrose method will be presented in this part.

8.5.2.1 Audit Committee Effectiveness

Table 8-15 presents the results of the logistic regression using AQ_Palmrose 5%, 15% and 25% as the dependent variable and ACE as the independent variable for the SSM.

Table 8-15 reveals that LEVERAGE and NEW_FUND were the only independent variables that were affected by the use of different cut-off points under AQ_Palmrose method.

Table 8-15 The Results of the Logistic Regression Using AQ_Palmrose (10%, 15% and 25%) and ACE for the SSM

Variable Name	Exp. Sign	5%		15%		30%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-29.55	4.93	-18.92	3.46	-27.15	1.83
ACF	+	-2.20	1.01	-1.73	0.72	-2.54	0.26
OUTSIDER	+	29.14	5.07**	16.55	3.71**	18.03	3.28*
LEVERAGE	+	-0.95	0.06	1.08	0.10	5.01	0.90
NEW_FUND	+	-5.41	0.15	-34.32	2.44	-92.76	3.74*
BUS_SEG	+	0.23	0.09	1.07	2.02	3.88	3.85*
ROA	+	-3.64	0.12	7.94	0.62	21.71	1.97
SIZE	+	0.73	2.21	0.32	0.66	0.17	0.06
FOR_SALE	+	-3.27	0.02	1.01	0.00	5.48	0.07
Sample Size		44		44		44	
Chi-square		35.15		36.42		46.65	
Cox-Snell R		0.55		0.56		0.66	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-16 presents the results of the logistic regression using AQ_Palmrose 5%, 15% and 25% as the dependent variable and ACE as the independent variable for the ASX.

Table 8-16 The Results of the Logistic Regression Using AQ_Palmrose (5%, 15% and 25%) and ACE for the ASX

Variable Name	Exp. Sign	5%		15%		30%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-3.26	5.54	-7.75	15.85	-9.37	25.05
ACF	+	2.45	16.08***	2.20	22.74***	1.95	23.34***
OUTSIDER	+	-0.30	0.13	5.08	19.12***	3.06	9.86***
IN_OWN	-	-2.13	5.46**	-2.96	7.87***	-1.25	1.70
LEVERAGE	+	0.28	0.49	-0.07	0.01	0.02	0.00
NEW_FUND	+	-1.06	3.87**	-0.95	1.56	-0.95	1.62
BUS_SEG	+	-0.04	0.06	-0.33	3.51*	-0.42	7.55***
ROA	+	0.29	0.29	0.56	0.46	-0.41	0.28
SIZE	+	0.26	9.02***	0.33	8.29***	0.44	16.19***
FOR_SALE	+	0.62	0.48	2.07	5.23**	1.21	2.61
Sample Size		300		300		300	
Chi-square		133.85		237.86		200.76	
Cox-Snell R		0.36		0.55		0.49	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively (2-tailed).

Table 8-16 indicates that the use of different cut-off points under AQ_Palmose method has produced different results for some of the control variables.

OUTSIDER, IN_OWN, BUS_SEG, SIZE and FOR_SALE were all the control variables that were affected by the use of different cut-off points.

8.5.2.2 Audit Committee Characteristics

Table 8-17 presents the results of the logistic regression using AQ_Palmrose 5%, 15% and 25% as the dependent variable and ACCS as the independent variables for the SSM.

Table 8-17 The Results of the Logistic Regression Using AQ_Palmrose (5%, 15% and 25%) and ACCS for the SSM

Variable Name	Exp. Sign	5%		15%		25%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-443.68	0.00	-1260.31	0.00	-437.02	0.00
AC_IND	+	28.90	0.00	-122.74	0.00	-48.85	0.00
AC_SIZE	+	-16.94	0.00	-103.70	0.00	-6.82	0.00
AC_ACT	+	14.68	0.00	118.90	0.00	43.98	0.00
AC_CHAR	+	28.50	0.00	56.28	0.00	43.75	0.00
AC_EXP	+	-77.70	0.00	-74.83	0.00	-18.30	0.00
AC_LIT	+	-83.36	0.00	181.25	0.00	69.98	0.00
OUTSIDER	+	277.77	0.00	405.85	0.00	69.91	0.00
LEVERAGE	+	-0.97	0.00	519.69	0.00	351.06	0.00
NEW_FUND	+	16.86	0.00	-3580.15	0.00	-2095.60	0.00
BUS_SEG	+	23.33	0.00	174.02	0.00	94.58	0.00
ROA	+	71.39	0.00	1812.13	0.00	899.93	0.00
SIZE	+	20.21	0.00	14.52	0.00	-6.91	0.00
FOR_SALE	+	-408.11	0.00	-2153.86	0.00	-715.18	0.00
Sample Size		44		44		44	
Chi-square		55.04		60.63		60.91	
Cox-Snell R		0.71		0.75		0.75	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-17 reveals that the use of different cut-off points under AQ_Palmrose method generated similar results, as all the independent variables were not significant regardless of which cut-off point would be used.

Table 8-18 presents the results of the logistic regression using AQ_Palmrose 5%, 15% and 25% as the dependent variable and ACCS as the independent variables for the ASX.

Table 8-18 The Results of the Logistic Regression Using AQ_Palmrose (5%, 15% and 25%) and ACCS for the ASX

Variable Name	Exp. Sign	5%		15%		25%	
		Coefficient	Wald X2	Coefficient	Wald X2	Coefficient	Wald X2
Intercept		-5.02	5.03	-28.81	0.00	-30.13	0.00
AC_IND	+	1.11	5.76**	0.99	4.31**	0.81	3.04*
AC_SIZE	+	0.12	0.23	0.22	0.61	0.30	1.39
AC_ACT	+	0.30	4.77**	0.36	7.40***	0.24	4.78**
AC_CHAR	+	0.63	2.00	2.34	4.64**	1.23	2.13
AC_EXP	+	-0.11	0.04	-0.10	0.02	0.74	0.69
AC_LIT	+	1.02	0.42	18.88	0.00	18.88	0.00
OUTSIDER	+	-1.05	1.07	4.76	13.95***	2.99	8.35***
IN_OWN	-	-2.50	7.65***	-3.03	7.81***	-1.42	2.11
LEVERAGE	+	0.45	1.29	0.24	0.15	0.40	0.57
NEW_FUND	+	-1.00	3.21*	-1.02	1.68	-1.14	2.34
BUS_SEG	+	0.02	0.01	-0.21	1.58	-0.31	4.80**
ROA	+	0.35	0.38	0.52	0.30	-0.40	0.23
SIZE	+	0.22	6.26***	0.23	3.98**	0.35	10.71***
FOR_SALE	+	0.47	0.28	1.90	3.90**	1.08	2.22
Sample Size		300		300		300	
Chi-square		128.89		224.90		197.85	
Cox-Snell R		0.35		0.56		0.48	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-18 shows that the use of different cut-off points under AQ_Palmrose method has produced mixed results for some test and control variables. For example, while AC_CHAR was significant when using the 15% cut-off point, such variable was not significant with the use of the 5% and 25% cut-off points.

In summary, the use different cut-off points under AQ_Craswell and AQ_Palmrose methods has produced different results for some of the independent variables. This provides support for the researcher's decision to use AQ_Continuous method in identifying specialist auditors in the main analysis as it was clear that different cut-off points have produced different results, which might lead to misleading conclusions.

8.6 Alternative Measure for the Composition of the Board

In this study, although the percentage of non-executive directors on the board was used to control for the composition of the board, it is argued that the percentage of independent directors on the board will have more influence on the auditor selection process and NAS purchases than the percentage of outside directors.

This argument was supported by Abbott et al (2003), who classified outside directors into independent and grey directors. He argued that grey directors are less likely to resist management pressures to act in its own interest instead of the shareholders interest than the independent directors.

In addition, the ASX CGC recognized the importance of independent directors on the board in strengthening the corporate governance in the ASX companies and recommended that at least the majority of the board of directors should be independent.

It should be noted that the decision to use the percentage of non-executive directors in the main analysis was made because such percentage was used more frequently in the literature and because data that are required to identify independent directors for Saudi listed companies were not publicly available.

The results of the regression analysis in Chapter 7 indicated that the percentage of non-executive directors was not a determinant of audit quality (using AQ_Continuous) or NAS purchases. Therefore, it is important to examine the impact of using the percentage of independent directors on the board (BOR_IND) on both audit quality and NAS purchases.

8.6.1 Audit quality

8.6.1.1 Audit Committee Effectiveness

Table 8-19 presents the results of the linear regression using AQ_Continuous as the dependent variable, ACE as the only independent variable and BOR_IND as a control variable for the ASX sample.

Table 8-19 The Results of the Linear Regression Using AQ_Continuous, ACE, and BOR_IND for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.18	-3.39
ACE	+	0.14	6.91***
BOR_IND	+	0.11	2.89***
IN_OWN	-	-0.11	-2.49***
LEVERAGE	+	0.00	-0.07
NEW_FUND	+	0.00	-0.17
BUS_SEG	+	-0.01	-1.88*
ROA	+	-0.03	-1.06
SIZE	+	0.01	4.46***
FOR_SALE	+	0.05	1.64*
Sample Size	300		
Model F-stat	30.90***		
Adjusted R2	0.50		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-19 reveals that BOR_IND is significant at 0.01 with the same predicted sign indicating that there is a positive association between the percentage of independent directors on the board and the selection of a specialist auditor. In other words, the ASX companies with a high percentage of independent directors on the board were more likely to hire a specialist auditor compared to these with a low percentage of independent directors on the board.

However, the results of the variable of interest, ACE, and the rest of the control variables remained the same as those when the percentage of non-executive directors on the board has been used.

8.6.1.2 Audit Committee Characteristics

Table 8-20 presents the results of the linear regression using AQ_Continuous as the dependent variable, ACCS as the independent variables and BOR_IND as a control variable for the ASX sample.

Table 8-20 The Results of the Linear Regression Using AQ_Continuous, ACCS and BOR_IND for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.33	-3.18
AC_IND	+	0.08	3.58***
AC_SIZE	+	0.02	1.88*
AC_ACT	+	0.01	2.36**
AC_CHAR	+	0.02	0.74
AC_EXP	+	-0.01	-0.18
AC_LIT	+	0.08	0.97
BOR_IND	+	0.10	2.28**
IN_OWN	-	-0.14	-3.12***
LEVERAGE	+	0.01	0.28
NEW_FUND	+	0.00	-0.15
BUS_SEG	+	-0.01	-1.58
ROA	+	-0.03	-0.88
SIZE	+	0.01	3.75***
FOR_SALE	+	0.06	1.96**
Sample Size	300		
Model F-stat	19.46***		
Adjusted R2	0.49		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-20 reveals that BOR_IND is significant at 0.05 with the same predicted sign indicating that there is a positive association between the percentage of independent directors on the board and the selection of a specialist auditor. In other words, the ASX companies with a high percentage of independent directors on the board were more likely to hire a specialist auditor compared to these with a low percentage of independent directors on the board.

However, the results of the independent variables and the rest of the control variables remained the same as those when the percentage of non-executive directors on the board has been used.

In summary, the use of the percentage of independent directors indicates that the composition of the board of directors is an important determinant of audit quality. This is consistent with Abbott et al (2003) who argued that grey directors are less

likely to resist management pressures to act in its own interest instead of the shareholders interest than the independent directors.

8.6.2 NAS Purchases

8.6.2.1 Audit Committee Effectiveness

Table 8-21 presents the results of the linear regression using NAS ratio as the dependent variable, ACE as the only independent variable and BOR_IND as a control variable for the ASX sample.

Table 8-21 The Results of the Linear Regression Using NAS ratio, ACE, and BOR_IND for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		0.39	5.01
ACE	-	-0.23	-8.46***
BOR_IND	-	0.04	0.93
IN_OWN	+	0.16	2.56***
LEVERAGE	-	-0.02	-0.66
ROA	+	-0.02	-0.53
SIZE	+	0.00	0.73
SH_BLK	+	0.00	-0.46
NAS_SP	+	0.17	2.63***
Sample Size	300		
Model F-stat	14.89***		
Adjusted R2	0.27		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-21 reveals that the results of the variable of interest, ACE, and the control variables remained the same as those when the percentage of non-executive directors on the board has been used.

8.6.2.2 Audit Committee Characteristics

Table 8-22 presents the results of the linear regression using NAS ratio as the dependent variable, ACCS as the independent variables and BOR_IND as a control variable for the ASX sample.

Table 8-22 The Results of the Linear Regression Using NAS ratio, ACCS and BOR_IND for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		0.43	2.85
AC_IND	-	-0.11	-3.75***
AC_SIZE	-	-0.02	-1.15
AC_ACT	-	-0.02	-3.49***
AC_CHAR	-	-0.01	-0.36
AC_EXP	-	0.05	1.22
AC_LIT	-	0.01	0.13
BOR_IND	-	0.04	0.95
IN_OWN	+	0.21	3.24***
LEVERAGE	-	-0.03	-0.99
ROA	+	-0.04	-0.85
SIZE	+	0.00	0.73
SH_BLK	+	0.00	0.00
NAS_SP	+	0.15	2.22**
Sample Size	300		
Model F-stat	6.54***		
Adjusted R2	0.19		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-22 indicates that the results of the independent (ACCS) and control variables remained robust regardless of the measure that has been used for board composition.

In summary, the composition of the board of directors was not a determinant of NAS purchases regardless of the percentage that has been used to measure the board composition. This indicates that the board of directors does not play any role in limiting NAS purchases, which might be evidence that such boards rely on the audit committee in controlling NAS purchases.

8.7 Omitting A Control Variable (IN_OWN)

Data on management ownership were not publicly available for the SSM sample and, as a result, the regression analysis to model audit quality was conducted without the inclusion of IN_OWN as a control variable.

Hypothesis-testing procedures are likely to provide misleading conclusions about the statistical significance of the estimated coefficients if any important independent or control variable is omitted from the regression (Gujarati 1995). Therefore, it is important to conduct the regression analysis to model audit quality without IN_OWN as a control variable on the ASX sample to ensure that omitting such variable does not influence the results of the regression analysis to model audit quality for the SSM sample.

8.7.1 Audit Committee Effectiveness

Table 8-23 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACE as the independent variable without IN_OWN as a control variable for the ASX.

Table 8-23 The Results of the Linear Regression Using AQ_Continuous and ACE without IN_OWN for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.24	-3.94
ACE	-	0.17	8.94***
OUTSIDER	-	0.04	0.85
LEVERAGE	-	-0.02	-0.80
NEW_FUND	+	0.01	0.32
BUS_SEG	+	-0.01	-1.66*
ROA	+	-0.04	-1.40
SIZE	+	0.02	5.42***
FOR_SALE	-	0.04	1.44
Sample Size	300		
Model F-stat	34.60***		
Adjusted R2	0.47		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-23 reveals that the variable of interest, ACE, is significant at 0.01 with the same predicted sign indicating that the ASX companies with an effective audit committee were more likely to hire a specialist auditor compared to those with an ineffective audit committee.

In addition, BUS_SEG and SIZE are the only control variables that are significant at .10 and 0.01, respectively, indicating that there were associations between these variables and the selection of a specialist auditor.

8.7.2 Audit Committee Characteristics

Table 8-24 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACCS as the independent variables without IN_OWN for the ASX sample.

Table 8-24 The Results of the Linear Regression Using AQ_Continuous and ACCS without IN_OWN for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.43	-4.02
AC_IND	+	0.10	4.87***
AC_SIZE	+	0.02	2.14**
AC_ACT	+	0.01	2.82***
AC_CHAR	+	0.03	1.11
AC_EXP	+	-0.01	-0.27
AC_LIT	+	0.08	0.98
OUTSIDER	+	0.05	1.01
LEVERAGE	+	-0.01	-0.42
NEW_FUND	+	0.01	0.40
BUS_SEG	+	-0.01	-1.30
ROA	+	-0.04	-1.26
SIZE	+	0.02	4.48***
FOR_SALE	+	0.06	1.74*
Sample Size	300		
Model F-stat	18.79***		
Adjusted R2	0.44		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-24 reveals that AC_IND, AC_SIZE and AC_ACT are significant indicating that there were positive relationships between these independent variables and the selection of a specialist auditor.

In addition, BUS_SEG and SIZE are the only control variables that are significant indicating that there were associations between these variables and the selection of a specialist auditor.

In summary, the results of the regression analysis to model audit quality for the ASX sample remained robust regardless of the inclusion or exclusion of IN_OWN as a control variable. This implies that the results of the regression analysis to model audit quality for the SSM sample were not driven by the exclusion of management ownership as a control variable.

8.8 An Additional Control Variable

Chen et al. (2005) posited that the magnitude of NAS purchases had a positive relationship with the selection of a specialist auditor. However, this variable was not included in the main regression analysis because it has not been used frequently in the literature and because data for such variable were not publicly available for the SSM sample, as Saudi companies are not allowed to purchase NAS from their incumbent auditors. Therefore, it is important to examine the impact of adding such control variable on the results of the main regression analysis to model audit quality only for the ASX sample.

8.8.1 Audit Committee Effectiveness

Table 8-25 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACE as the independent variable with the additional control variable NAS_RATIO for the ASX sample.

Table 8-25 demonstrates that with the exception of BUS_SEG, which was not significant, adding NAS_RATIO, as a control variable did not influence the results of the main regression analysis.

NAS_RATIO was significant with the same predicted sign indicating that the ASX companies with high NAS ratio were more likely to engage a specialist auditor compared to those with low NAS ratio.

Table 8-25 The Results of the Linear Regression Using AQ_Continuous and ACE with the Additional Control Variable NAS_RATIO for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.21	-3.03
ACE	+	0.17	8.70***
OUTSIDER	+	0.00	-0.03
IN_OWN	-	-0.12	-2.46**
LEVERAGE	+	-0.01	-0.39
NEW_FUND	+	0.00	-0.12
BUS_SEG	+	-0.01	-1.59
ROA	+	-0.03	-1.21
SIZE	+	0.02	5.11***
FOR_SALE	+	0.06	1.82*
NAS_RATIO	+	0.08	2.33**
Sample Size	300		
Model F-stat	29.83***		
Adjusted R2	0.51		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

8.8.2 Audit Committee Characteristics

Table 8-26 presents the results of the linear regression using AQ_Continuous as the dependent variable and ACCS as the independent variables without IN_OWN for the ASX sample.

Table 8-26 shows that the results of the main regression analysis to model audit quality were not affected by adding NAS_RATIO as a control variable.

However, NAS_RATIO was insignificant indicating that there was no association between NAS ratio and the selection of a specialist auditor.

In summary, adding the control variable, NAS_RATIO, has very little impact on the results of the main regression to model audit quality. In addition, while NAS_RATIO was significant when using ACE as the only independent variable, the same variable was insignificant when using the six different audit committees as the independent variables.

Table 8-26 The Results of the Linear Regression Using AQ_Continuous and ACCS with the Additional Control Variable NAS_RATIO for the ASX

Variable Name	Exp. Sign	ASX	
		Coefficient	t-stat
Intercept		-0.35	-3.23
AC_IND	+	0.10	4.86***
AC_SIZE	+	0.02	2.09**
AC_ACT	+	0.01	2.57***
AC_CHAR	+	0.03	1.09
AC_EXP	+	-0.01	-0.24
AC_LIT	+	0.08	0.98
OUTSIDER	+	-0.01	-0.15
IN_OWN	-	-0.15	-3.14***
LEVERAGE	+	0.00	0.17
NEW_FUND	+	0.00	-0.11
BUS_SEG	+	-0.01	-1.31
ROA	+	-0.03	-0.99
SIZE	+	0.01	4.02***
FOR_SALE	+	0.07	2.10**
NAS_RATIO	+	0.06	1.52
Sample Size	300		
Model F-stat	17.74***		
Adjusted R2	0.48		

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

8.9 Alternative Measures of NAS Specialization

NAS_Continuous method was used to identify NAS-specialist auditors in the main regression analysis to model NAS purchases in order to isolate the impact of hiring a NAS specialist auditor on the NAS purchases. However, there are two other methods that could be used to identify NAS-specialist auditors, namely, NAS_Craswell and NAS_Palmrose.

Despite the fact that these two methods are critiqued for the arbitrary selection of the cut-off points, it is important to investigate the impact of using such alternative methods of identifying NAS specialist auditors on the main regression analysis to model NAS purchases.

8.9.1 NAS_Craswell

When using this method, NAS_SP is a dummy variable that take 1 if the auditor of a company earns equal or more than the cut-off point of the total NAS fees for the industry of the company and 0 otherwise. The 10%, 20% and 30% cut-off points were used to examine the influence of using different cut-off points on the results of the regression analysis.

8.9.1.1 Audit Committee Effectiveness

Table 8-27 presents the results of the linear regression using NAS ratio as the dependent variable, ACE as the only independent variable and NAS_Craswell method at three different cut-off points for the ASX sample.

Table 8-27 The Results of the Linear Regression Using NAS ratio, ACE and NAS_Craswell method at three different cut-off points for the ASX

Variable Name	Exp. Sign	10%		20%		30%	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Intercept	-	0.41	4.44	0.40	4.33	0.41	4.36
ACE	-	-0.23***	-7.95	-0.22***	-7.77	-0.22***	-7.91
OUTSIDER	-	-0.01	-0.18	-0.01	-0.10	-0.01	-0.07
IN_OWN	+	0.16**	2.35	0.15**	2.23	0.15**	2.17
LEVERAGE	-	-0.02	-0.65	-0.02	-0.62	-0.02	-0.64
ROA	+	-0.02	-0.54	-0.02	-0.51	-0.02	-0.54
SIZE	+	0.00	0.90	0.00	1.05	0.00	1.05
SH_BLK	+	0.00	-0.69	0.00	-0.57	0.00	-0.54
NAS_SP	+	0.05**	2.03	0.04	1.45	0.05*	1.90
Sample Size		300		300		300	
Model F-stat		14.24***		13.90***		14.16***	
R Square		0.28		0.28		0.28	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-27 reveals that with the exception of NAS_SP, the results of the regression analysis to model NAS purchases using NAS_Craswell method at three different cut-off points were very similar to those using NAS_Continuous.

While NAS_SP using NAS_Craswell 10% and 30% was significant at 0.05 and 0.10 respectively, the same variable was insignificant using NAS_Craswell 20%.

8.9.1.2 Audit Committee Characteristics

Table 8-28 presents the results of the linear regression using NAS ratio as the dependent variable, ACCS as the independent variables and NAS_Craswell method at three different cut-off points for the ASX sample.

Table 8-28 The Results of the Linear Regression Using NAS Ratio, ACCS and NAS_Craswell Method at three different cut-off points for the ASX

Variable Name	Exp. Sign	10%		20%		30%	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Intercept		0.48	3.09	0.47	3.06	0.48	3.08
AC_IND		-0.11***	-3.41	-0.10***	-3.30	-0.10***	-3.39
AC_SIZE		-0.01	-0.81	-0.01	-0.79	-0.01	-0.92
AC_ACT		-0.02***	-3.52	-0.02***	-3.46	-0.02***	-3.52
AC_CHAR		-0.01	-0.30	-0.01	-0.27	-0.01	-0.22
AC_EXP		0.05	1.16	0.05	1.16	0.05	1.24
AC_LIT		0.02	0.13	0.01	0.10	0.01	0.09
OUTSIDER		-0.06	-0.77	-0.06	-0.72	-0.05	-0.65
IN_OWN		0.19***	2.69	0.19***	2.61	0.18***	2.60
LEVERAGE		-0.03	-0.92	-0.03	-0.88	-0.03	-0.87
ROA		-0.04	-0.88	-0.04	-0.85	-0.04	-0.85
SIZE		0.00	0.88	0.00	0.96	0.00	0.91
SH_BLK		0.00	-0.27	0.00	-0.20	0.00	-0.13
NAS_SP		0.03	1.30	0.02	0.87	0.05*	1.66
Sample Size		300		300		300	
Model F-stat		6.19***		6.10***		6.29***	
R Square		022		0.22		0.22	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-28 illustrates that with the exception of NAS_SP, the results of the regression analysis to model NAS purchases using NAS_Craswell method at three different cut-off points were very similar to those using NAS_Continuous.

While NAS_SP was significant at 0.10 only when using NAS_Craswell 30%, the same variable was insignificant using NAS_Craswell 10% and 20%.

8.9.2 NAS_Palmrose

When using this method, NAS_SP is a dummy variable that takes 1 if the auditor of a company is the leader of its industry or earns equal or more than the cut-off point of the total NAS fees earned by the industry leader and 0 otherwise. The 5%, 15% and 25% cut-off points were used to investigate the impact of using alternative NAS specialization methods on the results of the main analysis.

8.9.2.1 Audit Committee Effectiveness

Table 8-29 presents the results of the linear regression using NAS ratio as the dependent variable, ACE as the only independent variable and NAS_Palmrose method at three cut-off points for the ASX sample.

Table 8-29 The Results of the Linear Regression Using NAS ratio, ACE and NAS_Palmrose method at three different cut-off points for the ASX

Variable Name	Exp. Sign	5%		15%		25%	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Intercept	-	0.41	4.37	0.41	4.39	0.41	4.39
ACE	-	-0.21	-7.60***	-0.22	-7.67***	-0.22	-7.78***
OUTSIDER	-	-0.02	-0.22	-0.02	-0.21	-0.01	-0.13
IN_OWN	+	0.14	2.08**	0.14	2.14**	0.15	2.24**
LEVERAGE	-	-0.02	-0.66	-0.02	-0.64	-0.02	-0.65
ROA	+	-0.02	-0.54	-0.02	-0.51	-0.02	-0.54
SIZE	+	0.00	1.06	0.00	1.04	0.00	0.99
SH_BLK	+	0.00	-0.74	0.00	-0.68	0.00	-0.66
NAS_SP	+	0.02	0.63	0.03	1.07	0.03	1.42
Sample Size		300		300		300	
Model F-stat		13.61***		13.74***		13.89***	
R Square		0.27		0.27		0.28	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-29 shows that with the exception of NAS_SP, the use of NAS_Palmrose method has produced similar results to those using NAS_Continuous method regardless of which cut-off point has been used.

While NAS_SP was significant at 0.01 using NAS_Continuous method, the same variable was insignificant at 0.10 using NAS_Palmrose regardless of the cut-off point that has been used. In addition, the value of the t-test increases with the increase in the

cut-off point indicating that although NAS_SP was insignificant at 0.10 regardless of the cut-off point that has been used, the value of the t-test increases with the increase in the cut-off point. In other words, the selection of the cut-off point might influence the results for NAS_SP when using higher cut-off points.

8.9.2.2 Audit Committee Characteristics

Table 8-30 presents the results of the linear regression using NAS ratio as the dependent variable, ACCS as the independent variables and NAS_Palmrose method at three different cut-off points for the ASX sample.

Table 8-30 The Results of the Linear Regression Using NAS Ratio, ACCS and NAS_Palmrose method at three different cut-off points for the ASX

Variable Name	Exp. Sign	5%		15%		25%	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Intercept		0.48	3.09	0.48	3.08	0.48	3.08
AC_IND		-0.10***	-3.23	-0.10***	-3.27	-0.10***	-3.31
AC_SIZE		-0.01	-0.72	-0.01	-0.74	-0.01	-0.80
AC_ACT		-0.02***	-3.39	-0.02***	-3.42	-0.02***	-3.47
AC_CHAR		-0.01	-0.25	-0.01	-0.24	-0.01	-0.25
AC_EXP		0.05	1.12	0.05	1.14	0.05	1.14
AC_LIT		0.01	0.06	0.01	0.08	0.01	0.10
OUTSIDER		-0.06	-0.80	-0.06	-0.79	-0.06	-0.74
IN_OWN		0.18**	2.51	0.18**	2.55	0.19***	2.62
LEVERAGE		-0.03	-0.90	-0.03	-0.90	-0.03	-0.90
ROA		-0.04	-0.86	-0.04	-0.86	-0.04	-0.87
SIZE		0.00	0.95	0.00	0.96	0.00	0.92
SH_BLK		0.00	-0.32	0.00	-0.28	0.00	-0.25
NAS_SP		0.01	0.40	0.02	0.62	0.02	0.92
Sample Size		300		300		300	
Model F-stat		6.04***		6.06***		6.10***	
R Square		0.22		0.22		0.22	

***, ** and * indicate that a variable is significant at 0.01, 0.05 and 0.10 respectively(2-tailed).

Table 8-30 indicates that with the exception of NAS_SP, the use of NAS_Palmrose method has produced similar results to those using NAS_Continuous method regardless of which cut-off point has been used.

While NAS_SP was significant at 0.01 using NAS_Continuous method, the same variable was insignificant at 0.10 using NAS_Palmrose regardless of the cut-off point that has been used. In addition, the value of the t-test increases with the increase in the cut-off point indicating that although NAS_SP was insignificant at 0.10 regardless of the cut-off point that has been used, the value of the t-test increases with the increase in the cut-off point. In other words, the selection of the cut-off point might influence the results for NAS_SP when using higher cut-off points.

In summary, with the exception of NAS_SP, the use of alternative methods to identify NAS specialization has produced very similar results to those using NAS_Continuous method. While NAS_SP is significant using NAS_Continuous method indicating that the ASX companies with a NAS-specialist auditor had higher NAS ratio compared to these without a NAS-specialist auditor, the same variable has produced mixed results when using different cut-off points under the two alternative methods. Finally, the results of using different cut-off points indicated that NAS_Palmrose method was less sensitive to changing the cut-off point compared to NAS_Craswell method.

8.10 Summary

Eight different sensitivity tests have been conducted and discussed in this chapter. Some of the sensitivity tests revealed that including the financial sector in the sample, having different periods of time to comply, the use of auditor size as a proxy for audit quality, the unavailability of data on management ownership for the SSM sample and the use of alternative control variables did not influence the results of the main regression analysis in Chapter 7 and that the results of the regression analysis remain robust.

On the other hand, other sensitivity tests indicate that the arbitrary selection of the cut-off points to identify specialist auditors in providing audit and NAS under AQ_Craswell and AQ_Palmrose methods had produced different results for different cut-off points. This provides support for the argument that considers the AQ_Continuous method to be superior over AQ_Craswell and AQ_Palmrose methods, which require the use of arbitrary cut-off points.

CHAPTER 9: CONCLUSION

9.1 Introduction

As set out in Chapter 1, the primary aim of this study was to evaluate and compare the efficacy of the ASX CGC and SMC best practices and recommendations regarding audit committees in the context of auditor selection; as well as to explore only the efficacy of the ASX CGC best practices and recommendations regarding audit committees in the context of the magnitude of NAS purchases because incumbent auditors are not allowed to provide such services to their clients.

In order to achieve these aims, the associations between ACE and both audit quality and NAS purchases were investigated using the ASX CGC and SMC best practices and recommendations as benchmarks. In addition, the most important determinant of audit quality among the six different audit committee characteristics was identified for Australian and Saudi listed companies. Finally, the most important determinant of the magnitude of NAS purchases among the six different audit committee characteristics was identified.

There have been virtually no prior academic studies in the area of the efficacy of the ASX CGC and SMC best practices and recommendations regarding audit committee in the context of auditor selection and NAS purchases (only for ASX listed companies). This study would be the first study- to my knowledge- that investigated the influence of having different audit committee frameworks and market developments between Australia and Saudi Arabia on ACE in the context of the auditor selection process. Finally, this study would provide databases that could be used to study different issues or by others to study similar issues in different settings or environments.

This chapter is divided into six sections. Section 1 provides an overview of the structure of this thesis. In section 2, the principal findings of the study are briefly presented. Section 3 provides a number of recommendations and implications of this study aimed at improving ACE in both countries. In section 4, a number of the limitations of this study are identified and discussed. Section 5 introduces and

identifies future research opportunities in relation to ACE. Finally, Section 6 provides short a summary for this chapter.

9.2 Overview

This thesis has nine chapters including this conclusion chapter. In Chapter 1, the bases of this thesis were provided. The objectives, motivations and contribution to the ACE literature were identified and discussed in detail. Chapter 2 offered a comprehensive review of audit committee developments overtime in the US, UK, Canada, Australia and Saudi Arabia.

In Chapter 3, the audit committee literature, in general, and ACE literature, in particular, was reviewed. In addition, more attention has been given to audit committee literature in the context of audit quality and NAS purchases. Finally, a number of gaps in ACE literature was identified and six research questions were stated.

Chapter 4 presented a review of the differences between Australia and Saudi Arabia related to audit committee frameworks and market developments. In addition, a number of audit committee theories that have been used in the literature was presented and critiqued. Furthermore, the underpinning theories and the model of this study were presented and summarized in Figures 4-1 and 4-2. Also, the hypotheses of this study were developed and stated.

In Chapter 5, the methodology that has been adopted in this research was presented. In addition, the justification for the use of specific research methods and data collection techniques were provided. The research design of this study was discussed in detail including sample selection, test period, dependent variables, independent variables and regressions.

Chapter 6 presented the descriptive data analysis for the full Australian and Saudi samples. In Chapter 7, the presence of multicollinearity was investigated by examining the correlations among the independent variables (correlation analysis). In addition, the t-test of two-independent samples (groups) was used to identify if the differences in means between two-independent groups occur only by chance or not. Moreover, the main regression analysis used to test the hypotheses of this study was

presented. The main regression analysis was divided into two parts. In Part 1, the association between ACE and audit quality was investigated and the determinants of audit quality among the six audit committee characteristics was identified. In Part 2, NAS purchase was modelled to investigate its relationships with ACE and the six audit committee characteristics. Finally, an additional test to examine the impact of having different compliance requirements for companies within the ASX on the results of the main regression analysis.

Chapter 8 presented a number of sensitivity tests performed to ensure that the results of the main regression analysis in Chapter 7 were not driven by changing number of factors such as alternative proxies or methods for audit quality that might affect such results.

9.3 The Principal Findings

In terms of the compliance with their local best practices and recommendations regarding ACE and the six different audit committee characteristics, the ASX listed companies were in better position compared to their Saudi counterparts. The correlation analysis indicated that multicollinearity does not represent any threats when running the regression analysis.

On the other hand, the t-test of two-independent groups identified the nature (occurred by chance or not) of the differences in means between the two groups and showed that some independent variables would not be significant determinants of audit quality or NAS purchases because differences in means for such variables occurred only by chance (equal means).

The main regression analysis revealed that there was a positive association between ACE and the selection of a specialist auditor for the ASX sample indicating that the ASX companies with an effective audit committee were more likely to hire a specialist auditor compared to those with a non-effective audit committee. However, there was no association between ACE and the selection of a specialist auditor for the SSM sample indicating that the SSM listed companies with an effective audit committee were not more likely to utilize a specialist auditor compared to those with a non-effective audit committee. In addition, while audit committee independence was

the most important determinant of audit quality among the six audit committee characteristics for the ASX listed companies, none of the six audit committee characteristics was a determinant of audit quality for the SSM.

These results indicate that while the ASX best practices and recommendations regarding audit committees were efficient in the context of the auditor selection process, the SMC best practices and recommendations regarding audit committees were not efficient. The differences in the results of the main regression analysis between the ASX and SSM samples in the context of the auditor selection process could be attributed to the differences in audit committee frameworks, the differences in market developments, the differences in cultural factors, the small sample size of the SSM or the limitations associated with Saudi collected data that will be discussed in Section 9.5.

On the other hand, the main regression analysis also revealed that there was a negative relationship between ACE and the magnitude of NAS purchases for the ASX sample indicating that the ASX companies with an effective audit committee were more likely to have a lower NAS ratio compared to those with a non-effective audit committee In addition, audit committee independence was the most important determinant of NAS purchases among the six audit committee characteristics for the ASX listed companies.

An additional test was conducted to investigate the impact of having different audit committee requirements for the ASX Top 300 and ASX Non-Top 300 companies on the result of the regression analysis for the ASX sample. The general results remained robust as ACE was positively (negatively) associated with the selection of a specialist auditor (the magnitude of NAS purchases) and audit committee independence was the most important determinant of audit quality and NAS purchases for both sub-samples. However, while audit committee activity was a determinant of audit quality and NAS purchases for the ASX Non-Top 300 sub-sample, such audit committee characteristic was not a determinant of audit quality and NAS purchases for the ASX Top 300 sub-sample. A possible explanation could be attributed to the lack of variability in the number of audit committee meetings for the ASX Top 300 sub-sample.

Finally, a number of sensitivity tests was conducted to investigate the impact of changing a number of factors on the results of the main regression analysis. Including the financial sector in the sample, having different periods of time to comply, the use of auditor size as a proxy for audit quality, the unavailability of data on management ownership for the SSM sample and the use of alternative control variables did not influence the results of the main regression analysis in Chapter 7 and that the results of the regression analysis remain robust.

On the other hand, the use of alternative methods to identify specialist auditor in providing audit and non-audit services other sensitivity indicated that the arbitrary selection of the cut-off points to identify such specialist auditors under AQ_Craswell and AQ_Palmrose methods had produced different results for different cut-off points. This provides support for the researcher's argument that considers AQ_Continuous method to be superior over AQ_Craswell and AQ_Palmrose methods, which require the use of arbitrary cut-off points.

9.4 Recommendations of the Study

The results of this study indicate that despite the fact that the ASX CGC and SMC best practices and recommendations aimed at improving ACE are similar in both countries, the SMC recommendations and best practices were not efficient in the context of audit quality. This provides evidence that other factors such as audit committee framework, market development and cultural factors might influence ACE. As a result, the following recommendations could enhance ACE in Saudi Arabia.

- Audit committee framework in Saudi Arabia should be developed to include listing rules from the SSM that require listed companies to have effective audit committees and disclose the structure of such committees.
- The SSM should be developed by the Saudi Stock Exchange Commission (SSEC) to make it a secure market for both local and international investors.
- Review the SMC best practices and recommendations in the light of the nature of Saudi Arabian society with its strong dependence on connection between family and friends and with the strong influence of religious beliefs on the behavior of individuals.

While the ASX CGC best practices and recommendations do not specify a minimum number of audit committee meetings, the SMS recommends that audit committee should meet at least three time a year. As a result, it is recommended that the ASX CGC and SMC should adopt the international standard which recommends that the audit committee should meet at least four times a year in order to be effective in doing its duties as companies are required to produce quarterly financial reports. (BRC 1999).

9.5 Limitations of the Study

Almost all research projects are constrained in some way whether in terms of the design and methodology of the study, the accessibility of data or the interpretation of the results of the study. In this context it is important for both the researcher and users of the research to be aware of the relevant limitations as they seek to develop and interpret the results of the study or to clarify their meaning (Anderson and Poole, 2001).

There is a number of limitations for this study. First, the SSM sample was very small (44 companies) compared to the ASX sample (300 companies). The small size may result in the lack of variability of the sample data for one or more of the test variables and consequently such variables will not be significant. In addition, the small sample size limit the results of running logistic regressions on such sample as these regression required large samples. This explain the strange results from running such regression on the SSM sample. Moreover, the small sample create a problem when identifying specialist auditor because some sectors will have only one or two companies.

On the other hand, although the ASX sample was quite large, it would be better if the whole population of the ASX were used to avoid any sample selection bias. It is possible that the ASX sample is not representative for the whole population in terms of industry composition, size, auditor size, and the engagement of a specialist auditor. However, as there was a time restriction for this study, it was impossible to include all the population.

Second, the questionnaire was used to collect data regarding different audit committee characteristics. Matthews (2002) suggested that all surveys had weaknesses. For

instance, respondents might lie or give the answers that they think are expected of them or which show themselves and their firms in the best light. This could be noted in the respondents' answer for the evaluation of their independence. While they described themselves as independent, they were executive directors who would never be independent. In addition, it is possible that the questionnaire may have lacked clarity in certain sections causing respondents to interpret questions differently. However, the questionnaire was pilot tested to ensure that it was easy, clear, did not take much time to be completed and covered the six audit committee characteristics.
Third, although the ASX CGC and SMC best practices and recommendations regarding audit committees were used as benchmarks to identify independent directors, it was possible that such identification was not accurate as most of the data that had been used to make such judgement were taken from the annual reports or the questionnaire.

Fourth, consideration should be given to the difference in cultural factors between Australia and Saudi Arabia and their impact on audit committee effectiveness. For example, Saudi Arabian society is known for its strong dependence on connection of family and friendship, which may considerably impact ACE. McKinnon (1984) found, in contrast to Western societies, that the cultural determinants of interpersonal and inter-group relationships in Japan preclude an intrinsic acceptance of audit independence. This case is also mentioned by Ow-Yong and Guan (2000) in Malaysia. However, although the differences in cultural factors were noted in this study, no attempt has been made to test them.

Fifth, the differences between Saudi Arabia and Australia in terms of cultural factors, types of data (archival Vs. survey), market developments and audit committee frameworks limit the conclusion of this comparative study.

Sixth, the fact that some of the Saudi sectors lack the presence of two or more of the Big 4 also limits the conclusions of this comparative study.

Seventh, it should be noted that although selecting specialist auditor is based on specialization existing prior to the current year of engagement, specialization is calculated concurrently with the year of analysis (2004).

Eighth, where the tenure of auditors precedes the formation of the audit committee, it is less likely that such committee will influence the selection of auditors. As a result, the length of audit committee existence and auditor control should be controlled for. However, this has not been done in this study.

Finally, despite the fact that differences in audit committee frameworks and market developments between Australia and Saudi Arabia were noted in this study, the impact of such differences on ACE was not investigated.

9.6 Future Research Opportunities

Corporate governance involves complex interrelated mechanisms. As yet research (particularly in Australia and Saudi Arabia) into the extent of the associations between different corporate governance mechanisms is extremely limited. As a result, further research is needed to investigate the following research question.

Is there an association between various corporate governance mechanisms?

In addition, little is known about the impact of having different audit committee frameworks, different market developments and different cultural factors on audit committee effectiveness (ACE). As a result, further research is required to test the influence of such differences on ACE using a research question similar to the following.

What is the impact of having different audit committee frameworks, market developments and cultural factors on ACE?

As mentioned in Chapter 3, audit committee literature could be described as US based literature. Research evidence obtained from the study of US companies suggests that there is an association between ACE and accountability. However, it is not clear that the findings of such research are appropriate to other countries especially Australia and Saudi Arabia as there are a number of significant differences between these

countries with respect to audit committee frameworks, market developments and cultural factors.

Therefore, the following research questions present future research opportunities that could be investigated in Australia or / and Saudi Arabia.

Is there a positive association between ACE and firm performance?

What is the relationship between firm performance and the different audit committee characteristics?

What is the market reaction to the announcement of a new audit committee?

What is the relationship between ACE and internal audit?

Is there a positive association between ACE and audit fees?

What is the most important determinant of audit fees among the different audit committee characteristics?

9.7 Summary

This chapter provided a comprehensive review of this thesis including its objectives, motivations, contribution to knowledge, structure, principal findings, recommendations, limitations and future researches.

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APPENDIXES

Appendix 1:Questionnaire- English

25th June 2004

Dear an audit committee member:

I request your kind support by responding to this questionnaire, which is part of my Doctor of Philosophy degree by research at Victoria University of Technology in Melbourne, Australia.

This research aims to examine and compare audit committee effectiveness in Australian and Saudi listed companies. A reply to the attached questionnaire would help to ensure the validity of the results of this research.

While your cooperation in completing the questionnaire is valued and appreciated, your participation is voluntary. The only people to have access to the collected data are my supervisors and myself. The results will be used only in an aggregated form and therefore your anonymity and the confidentiality of your response are assured.

The questionnaire should take less than 10 minutes to complete and should be answered by audit committee members.

Please return the completed questionnaire to the contact person in your company, place it in the reply paid envelope or fax it to 06-3800565. The time I can spend in Saudi Arabia is limited and I would greatly appreciate it if you could return the questionnaire within 15 days.

Thank you very much for your kindly participation.

Yours truly,

Ibrahim Al-Lehaidan

Research Student

Any queries regarding the questionnaire, please feel free to contact me on (056113445), fax (06-3800565) or e-mail me at: allehaidan@hotmail.com or my main supervisor Professor Robert Clift at: Bob.clift@vu.edu.au. If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, P.O. Box 14428 MCMC, Melbourne, 8001, (Telephone No: 00613-96884710).

25th June 2004

Dear an audit committee members

I am writing to confirm that Mr. Ibrahim Al-Lehaidan is planning to do his empirical study.

Mr. Al-Lehaidan is pursuing his PhD in Accounting at the Victoria University in Australia, and he is attempting to explore Audit Committee Effectiveness with special reference to Australia and Saudi Arabia.

I would be most grateful if you help him to fill in the attached questionnaire. This data is necessary to complete his doctoral thesis.

Thank you for your co-operation. If you have any further information, please contact me at the above address.

Yours sincerely,

Dr. Obaid Al-Motairy

Chairman of the Department of Accounting
College of Economics & Business
King Saud University
Qasseem, 81888
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At Work TEL and Fax 0096663800565- Mobile 0096655468670 -
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Email: o_motairy@hotmail.com

Section 1: General Questions

The following questions are general questions regarding the audit committee. Please tick ☑ only one box in every question.

1- How many members are on the audit committee including you?

☐ 2 members ☐ 3 members

☐ More than 3, please state ____ members.

2- How many non-executive directors are on the audit committee?

☐ None ☐ One

☐ Two ☐ More than 2, please state ____

3- Are you the chairman of the audit committee?

☐ Yes ☐ No, then go to Q5

4- Are you the chairman of the Board of Directors?

☐ Yes ☐ No

5- How many meetings have been held during the financial year ended on 31/12/2003?

☐ 1 Meeting ☐ 2 meetings

☐ 3 meetings ☐ More than 3, please state ____

6- Does the audit committee have a charter?

☐ Yes ☐ No, then go to Q8

7- Please rate the audit committee independence from management,

☐ Very independent ☐ Independent

☐ Flexible ☐ dependent

8- Does the audit committee have at least one member who is a qualified accountant or a certified public accountant?

☐ Yes ☐ No

9- Financial literacy means the ability of audit committee members to read and understand financial statements, please rate the financial literacy of the audit committee?

☐ Strong ☐ Good

☐ Average ☐ Weak

Section 2: Specific Questions.

The following questions are specific questions regarding the audit committee members. Please tick the appropriate boxes in each question.

10- What are your qualifications? (You can tick more than one box)

☐ Bachelor Degree in Accounting or Finance

☐ Certificate of Public Accounting (CPA)

☐ Postgraduate degree in Accounting or Finance

☐ Other, please state _____

11- You describe yourself as (You can tick more than one box)

☐ A member of a recognized professional body

☐ Having banking or investment management experience

☐ Holding or having held the position of Chief Executive Officer

☐ Having directory memberships in other firms.

12- Please rate your understanding of the financial statements?

☐ Strong ☐ Good

☐ Average ☐ Weak

13- Other than being an audit committee member, how do you classify yourself in relation to the company? (You can tick more than one box)

☐ Major customer ☐ Major supplier

☐ A management advisor ☐ A relative to an executive director

☐ Other, please state _____

☐ None

14- Did you work as an employee or an executive in this company in the last 5 years?

☐ Yes ☐ No

Section 3: (*optional*)

The researcher is interested in conducting short interviews with audit committee members through the phone, Please tick yes if you wish to participate.

☐ Yes, please provide contact details

Name _____

Phone _____

☐ No

Do you wish to get a copy of the results of this study via Email?

☐ Yes, Email _____

☐ No

Appendix 2: Questionnaire- Arabic

عزيزي عضو لجنة المراجعة **المحترم**

السلام عليكم ورحمة الله وبركاتة, وبعد:

أرجو من سعادتكم التكرم بمساعدتي على ملء هذه الاستبانة والتى تعد جزءا مهما لاستكمال بحثي لدرجة الدكتوراه بجامعة فكتوريا في مدينة ملبورن الاسترالية.

ويهدف البحث الى فحص ومقارنة فعالية لجان المراجعة في الشركات المساهمة التى يتم تداول اسهمها في الاسواق المالية في كل من المملكة العربية السعودية وأستراليا, ومن ثم فان قيامكم بملء الاستبانة المرفقة سيساعد على تأكيد صلاحية نتائج هذا البحث. وبما ان الهدف من هذه الاستبانة هو جمع بيانات عن خصائص لجان المراجعة في الشركات المساهمة في المملكة العربية السعودية فأرجوا من سعادتكم في حالة كونكم عضو في اكثر من لجنة مراجعة ملء استبانة لكل شركة لكم عضوية فيها.

وبالرغم من ان ملء هذه الاستبانة امر تطوعي فاننى اقدر لكم تعاونكم لانجاح هذا البحث, هذا مع ملاحظة ان الاطلاع على المعلومات الواردة في الاستبانة سوف يقتصر على الباحث والمشرفين على الرسالة فقط مما يعنى ان سرية ردودكم محفوظة ومؤكدة وان نتائج البحث سيتم عرضها بشكل اجمالي من دون تحديد اسماء الشركات محل الدراسة.

ولمعرفتى التامة بكثرة مشاغلكم ووقتكم الثمين فقد تم تصميم هذه الاستبانة لتكون قصيرة وواضحة حيث ان الوقت المقدر لملئها اقل من عشر دقائق.

وبعد الانتهاء من ملء الاستبانة ارجوا اعادتها الى وسيط الاتصال في الشركة, او وضعها في المظروف البريدي المدفوع القيمة, او ارسالها على الفاكس رقم: 063800565 حسب ماترونه مناسب لكم, كما احيطكم علما بان الوقت المتاح لى في المملكة العربية السعودية محدود, لذا أرجوا التكرم باعادتها خلال خمسة عشر يوما, وذلك كسبا للوقت.

شاكرين لكم تعاونكم. **المخلص**

ابراهيم اللحيدان

في حالة وجود اى استفسار يرجى التصال بي هاتفيا على 0506113445 او عن طريق البريد الالكتروني allehaidan@hotmail.com او الاتصال بالمشرف على الرسالة البرفسور Robert Clift عن طريق البريد الالكتروني Bob.clift@vu.edu.au . في حالة وجود اى استفسار او شكوى للطريقة التى تمت معاملتك بها في هذه الاستبانة, يرجى الاتصال بسكرتيرة لجنة اخلاقيات البحوث العلمية في جامعة فكتوريا على هاتف: 0061396884710 او على البريد P.O. Box 14428 MCMC, Melbourne, 8001, Australia

السيد العزيز عضو لجنة المراجعة **المحترم**

السلام عليكم ورحمة الله وبركاتة , وبعد:

فان السيد ابراهيم بن علي اللحيدان المبتعث لدراسة الدكتوراه في جامعة فكتوريا في مدينة ملبورن الاسترالية يرغب من سعادتكم التكرم بتعبئة الاستبانة المرفقة التى تعد جزءا مهما لاستكمال بحثه لدرجة الدكتوراه حيث يهدف البحث الى تقييم ومقارنة فعالية لجان المراجعة في الشركات المساهمة التى يتم تداول اسهمها في الاسواق المالية في كل من المملكة العربية السعودية واستراليا.

وساكون ممتنا جدا لمساعدته في ملء هذه الاستبانة, لان هذه البيانات مهمة جدا لاستكمال بحثه مما يساعد على تطوير المهنة واثراء عملية البحث العلمي.

شاكرين لكم تعاونكمو واذا كان لديكم اى استفسارات فالرجاء عدم التردد بالتصال بي.

د \ عبيد المطيري

رئيس قسم المحاسبة

تلفون وفاكس \ 063800565 او 063800708

الجزء الأول: أسئلة عامة

يتضمن هذا الجزء أسئلة عامة عن لجنة المراجعة في الشركة. فضلاً ضع علامة ☑ أمام الإجابة المناسبة لكل سؤال من الأسئلة التالية:

1- كم عدد أعضاء لجنة المراجعة ؟

☐ عضوين ☐ ثلاثة أعضاء

☐ أكثرمن ثلاثة أعضاء. الرجاء حدد ____ أعضاء

2- كم عدد المدراء غير التنفيذيين ضمن لجنة المراجعة ؟

☐ لايوجد ☐ عضو واحد

☐ عضوين ☐ أكثرمن عضوين. فضلا حدد ____ أعضاء

3- هل أنت رئيس لجنة المراجعة ؟

☐ نعم ☐ لا. إذهب إلى السؤال الخامس

4- هل أنت رئيس مجلس الإدارة ؟

☐ نعم ☐ لا

5- كم عدد إجتماعات لجنة المراجعة التي إنعقدت خلال السنة المالية المنتهية في 2003/12/31 م ؟

☐ اجتماع واحد ☐ إجتماعين

☐ ثلاثة إجتماعات ☐ أكثرمن ثلاث إجتماعات. فضلاً حدد ____ إجتماعات

6- هل هناك دليل تنظيمي مكتوب للجنة المراجعة؟

☐ نعم ☐ لا

7- كيف تقيم استقلالية لجنة المراجعة عن إدارة الشركة ؟

☐ مستقلة تماماً ☐ مستقلة

☐ مرنة ☐ غير مستقلة

8- هل تتضمن لجنة المراجعة عضواً واحدا على الأقل يحمل مؤهل علمي في المحاسبة أو المراجعة القانونية ؟

☐ نعم ☐ لا

9- إذا كانت المعرفة المالية تعني قدرة أعضاء لجنة المراجعة على قراءة وفهم القوائم المالية، فكيف تقيم المعرفة المالية للجنة المراجعة ؟

☐ ممتازة ☐ جيدة

☐ متوسطة ☐ ضعيفة

الجزء الثاني: أسئلة خاصة

يتضمن هذا الجزء أسئلة خاصة بك كعضو في لجنة المراجعة في الشركة. فضلاً ضع علامة ☑ أمام الإجابة المناسبة لكل سؤال من الأسئلة التالية:

10- ما هي مؤهلاتك العلمية ؟ (يمكن إختيار أكثر من إجابة واحدة)

☐ البكالريوس في المحاسبة أو التمويل

☐ شهادة مراجعة قانونية (CPA)

☐ دراسات عليا في المحاسبة أو التمويل

☐ أخرى. فضلاً حدد _____

11- هل؟ (يمكن إختيار أكثر من إجابة واحدة)

☐ أنت عضو في أحد الهيئات المالية المتخصصة؟

☐ لديك خبرة في الإدارة البنكية أو إدارة الإستثمار؟

☐ تعمل أو سبق أن عملت في وظيفة مدير إدارة تنفيذية؟

☐ أنت عضو مجلس إدارة أو عضو لجنة مراجعة في شركات أخرى؟

12- كيف تقيم فهمك للقوائم المالية ؟

☐ ممتازة ☐ جيدة

☐ متوسطة ☐ ضعيفة

13- بخلاف كونك عضواً في لجنة المراجعة، كيف تصنف نفسك في علاقتك بالشركة؟ (يمكن إختيار أكثر من إجابة واحدة)

☐ عميل رئيسي ☐ مورد رئيسي

☐ إستشاري للإدارة ☐ قريب لمدير تنفيذي

☐ أخرى. فضلاً حدد _____ ☐ لا توجد أي علاقة

14- هل سبق أن عملت كموظف أو مدير تنفيذي في الشركة خلال الخمس سنوات الأخيرة ؟

☐ **لا** ☐ **نعم**

الجزء الثالث: (إختياري)

15- يرغب الباحث في عمل مقابلات قصيرة مع أعضاء لجان المراجعة عن طريق الهاتف. هل ترغب بالمشاركة

☐ نعم، فضلا تزويدنا بـ:

الإسم

رقم الهاتف

☐ لا

16- هل ترغب في الحصول على نسخة ملخصة من نتائج هذه الإستبيان عن طريق البريد الإلكتروني؟

☐ نعم،البريد الإلكتروني (Email)

☐ لا