Audit Committee Independence and Expertise, Institutional Ownership, and Executive Compensation as Determinants of Audit fees in the Post-SOX Era

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Abstract

The objective of this dissertation is to examine the influence of firm-specific factors: audit committee independence and expertise, institutional ownership, and executive compensation, on audit fees in two different institutional settings in the post-Sarbanes Oxley Act (SOX) era. Prior studies on audit fee determinants examine the influence of these factors separately, from either the demand perspective or the supply perspective. These studies find inconsistent results. This dissertation examines the influence of all of these factors together considering both the demand and supply side perspectives.

The enhanced requirements for audit under SOX increase the audit risk of auditors. SOX imposes requirements for more thorough audit processes, and the oversight of auditors. These requirements make auditors more susceptible to legal penalties. However, SOX also emphasizes better corporate governance arrangements for firms. The quality of a corporate governance arrangement can serve as a signal for the auditors concerning the audit risk associated with a firm. The better the corporate governance a firm enjoys the lower would be the level of audit risk. This lessens the need for more thorough audits and, thereby, reduces the audit fee for the audited company.

This study uses the market perspective of price setting and regards audit fees as a price for audit services. While price could be regarded simply as an outcome of the quality of product demanded and supplied, there are many other factors that can influence price. Following the audit fee literature, this dissertation includes many determinants of audit fee including the firm-specific factors mentioned above. The study also looks at the influence of institutional settings on the price setting arrangements. In this regard, this study examines two different institutional settings, one a more regulated and highly litigious setting, and the other a less regulated and moderately litigious setting, to understand whether the variations in institutional settings influence the relation between the firm-specific variables and audit fees. The two institutional settings are those of the US and New

Zealand audit markets, where the US market is more regulated and litigious than the New Zealand market.

The study examines 4,490 US firm-years and 445 New Zealand firm-years from the years 2004 to 2008. The overall results suggest that the prevalence of independent audit committees and expertise has increased over the years in both countries. Therefore, no significant effect is found for the association between audit fees, and audit committee independence and audit committee expertise, except for the negative association for audit committee expertise in 2004. The result for institutional ownership is negative and significant for the US, whereas in New Zealand it is not significant. The likely reason for this difference is that financial institutions hold high levels of shares in US companies, whereas, in New Zealand the shareholdings of financial institutions is relatively small. Further analysis seems to suggest that, in New Zealand, corporate ownership in firms plays a stronger role in the audit fee setting process than institutional ownership.

For executive compensation, the two countries observe different incentive arrangements. The US firms have large incentive-based salaries and stock option schemes, whereas the New Zealand firms mainly have base salaries. For all of these methods of compensation, the results show that when compensation is high, audit fee is also high suggesting that auditors perceive higher audit risk when executive compensations under these schemes are high.

Further analyses of the above results reveal that the audit markets in both countries have supply-side market segmentation. Both countries seem to have three tiers of firms arising from the level of industry specialisation and the amount of audit fees charged. The level of audit fees varies between the tiers, and between the two countries for each tier. These variations suggest that the market for audit services has idiosyncrasies, and these idiosyncrasies vary across countries.

The data of the two countries are re-examined using a pooled data test. The sample of this test comprises firms of similar size from each country. The results show that because of their stronger regulatory oversight environment, on a scale

relative to total assets, US firms have lower audit fees than New Zealand firms when audit committee expertise and basic executive compensation are higher.

Taken as a whole, the findings of this dissertation provide strong support for the supply-side hypotheses of audit fee determination. The findings suggest that with better corporate governance arrangements in the post-SOX era, auditors perceive lower audit risk, which in turn, lowers audit fees. There is, however, some indication that strong regulations may have diminished the audit risk signalling capacity of audit committee independence and expertise.

Key Terms: Audit fees, audit market, supply-side hypotheses, audit committee independence and expertise, institutional ownership, executive compensation, BIG4 firms, and SOX.

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Table of Contents

List of Figures

List of Tables and Exhibit

Abbreviations used in this thesis

AF	Audit Fees
AICPA	American Institute of Certified Public Accountants
AMEX	American Stock Exchange
BRC	Blue Ribbon Committee
CCMAU	Crown Company Monitoring Advisory Unit
CEO	Chief Executive Officer
CFO	Chief Financial Officer
FMA	Financial Markets Authority
GAAP	Generally Accepted Accounting Principles
GAO	Government Accountability Office
IFRS	International Financial Reporting Standard
IRD	The Inland Revenue Department
MED	The Ministry of Economic Development
NACD	National Association of Corporate Directors
NAF	Non-Audit Service Fees
NASDAQ	The National Association of Securities Dealers Automated Quotations
NEU	National Enforcement Unit
NYSE	New York Stock Exchange
NZAX	New Zealand Alternative Market
NZDX	New Zealand Debt Market
NZX	New Zealand Stock Market
OFCANZ	The Organised and Financial Crimes Agency of New Zealand
PCAOB	Public Company Accounting Oversight Board
PED	Price Elasticity of Demand
PES	Price Elasticity of Supply
POB	Public Oversight Board
SEC	Securities and Exchange Commission-US
SECNZ	Securities and Exchange Commission New Zealand
SFO	The Serious Fraud Office
SOX	Sarbanes-Oxley Act, 2002
US GAAP	US Generally Accepted Accounting Principles

Chapter 1 Introduction

This chapter introduces the thesis. First, it provides the background and objective of the research reported in the thesis. It then provides the scope and structure of the thesis.

1.1 Background and Objective

The objective of this dissertation is to examine the influence of firm-specific factors: audit committee independence and expertise, institutional ownership, and executive compensation, on audit fees in two different institutional settings in the post-Sarbanes Oxley Act (SOX) era. The effects of audit committee independence and expertise, institutional ownership, and executive compensation on audit fees are extensively examined in the audit fee literature (e.g., Carcello et al. 2002; Abbott et al. 2003; Krishnan and Visvanathan 2006). Prior literature examines the influence of these factors on audit fees using mainly a demand perspective, and finds varied results (These results are reviewed in Hay, Knechel, and Wong, 2006, and in the literature review section of this dissertation). The demand perspective provides only a partial view of the audit fee setting process. I add the supply-side perspective to the previous examinations and re-examine the issue of audit fee setting to explain the relation between audit committee independence and expertise, institutional ownership, and executive compensation, and audit fees. As espoused in earlier studies such as Simunic (1980), both the demand and supply functions of the audit services market determine the audit fee, rather than just the demand function on its own.

In the post-SOX environment, I expect the supply-side effects of corporate governance arrangements to have an audit risk lowering effect. The enhanced requirements for audit under SOX have raised the level of risks auditor's face in statutory audits. SOX has imposed requirements for more rigorous audits, enhanced the scope of audits, and increased the oversight of auditors. These requirements make auditors more susceptible to legal penalties such as criminal

actions and civil suits. Concurrently, SOX underscores the need for better corporate governance arrangements for the audited firms (auditees). The quality of a corporate governance arrangement can serve as a signal for the auditors relating to the audit risk associated with an auditee. The signal would be that the better the corporate governance the lower the level of audit risk for the auditor. Lower risk can lessen the need for more rigorous audits, which can lead to reduced audit fees for the auditee. Likewise, where an auditee's corporate governance arrangements are of higher quality, I predict that the audit fee would be lower. Therefore, I re-examine the influence of audit committee independence and expertise, institutional ownership, and executive compensation to assess their influence on audit fees in a new regulatory environment.

Much debate has occurred on the increased cost of audits (e.g., see Foster, Ornstein, and Shastri 2007) for both the auditors and the auditees. If the supply perspective is in effect in the post-SOX era, it will imply that SOX indeed had better implications for both the auditors and the auditees. Griffin, Lont, and Sun (2008) have provided evidence in this regard using US data from 2000 to 2005. They find that while better governance is costly, it also enhances the quality of financial statements and internal controls, which enables auditors to decrease the price of audit risk and reduce fees. They adopt an economic framework of governance (implied cost of internal control) and show that better governance causes both fee increasing and fee decreasing tendencies. In a sense, their framework is a partial use of the demand and supply framework because they attempt to gauge the two countervailing forces of governance, both the audit fee increasing and decreasing forces.

Hay et al. (2006) revisit the audit fee literature and identify numerous inconsistencies and gaps in the results of the studies conducted since 1980. Their results reveal that the path adopted in the extant studies have been less than systematic. I observe that many of the prior studies do not follow a single theory to explain the determination of audit fees. While Simunic (1980) adopts the market perspectives of demand and supply, others attach the contracting notions of agency

or simply acknowledge the demand-side hypotheses. Many variables included in prior studies could proxy for either a demand or a supply-side hypothesis. Therefore, some of the results that are inconsistent with the demand-side hypotheses could be explained using the supply-side hypotheses. In other instances when the results are not significant, the opposing forces of demand and supply may have influenced the results. Therefore, the concept adopted by Griffin et al. (2008) can be applied to many variables to explain why different variables have a positive, negative or no effect on audit fees. They contend that certain variables such as corporate governance can have both audit fees increasing and audit fees decreasing effects. Likewise, I include important product-related factors, and demand and supply factors in order to examine their demand and supply impact.

One could also explain variations in results across time or under different institutional contexts. Price elasticity of demand (PED) and price elasticity of supply (PES) vary under different institutional contexts. Griffin et al. (2008) considered the changing scenario of audit fees under SOX in a single institutional context. I consider the effects across institutional contexts. I conduct the study across two countries to examine if institutional contexts affect the determination of audit fees. The two institutional contexts I consider are those of the US and New Zealand after the implementation of SOX in the US and a corporate governance reform in New Zealand. The main differences between the two contexts for this study are that SOX has brought in stringent regulations for audit and corporate governance, but the New Zealand reform brought in a set of codes of better corporate governance, which is not mandatory. Further, the US audit environment is litigious, whereas the New Zealand audit environment is moderately litigious. These conditions can affect the extent of influence demand and supply factors have in the audit markets raising concerns for higher audit prices.

I also put into perspective the joint or complementary influence of non-audit service fees. Much of the literature tends to deal with audit fees and non-audit service fees separately. A small part of the literature, however, suggests that the presence of non-audit service fee can influence the audit fee of corporate entities.

Since institutional arrangements in both the US and New Zealand limit or discourage the use of non-audit services by auditors, one may see a reduction of the non-audit services influence on audit fees.

Furthermore, the audit fee literature has revealed many other tendencies in the audit fee setting process. Even though global capital markets have had similar corporate governance developments, individual countries have their own market peculiarities. I expect some of these peculiarities to exist in the US and New Zealand audit markets. For example, the two countries have certain variations in audit committee, institutional ownership, and executive compensation arrangements. I discuss these variations later in Chapters 7, 8 and 9. I hypothesise that these differences will affect the audit fee setting processes of the two countries. In addition, I consider other intricacies identified in the audit fee literature, for example, audit market segmentation, audit industry specialisation and other audit risk factors.

The study uses 4,490 US firm-years from the Compustat database for the US study, and 445 New Zealand firm-years for the New Zealand study, for the years 2004 to 2008. It then uses a third combined sample of 936 firm-years from both the US and New Zealand settings based on firm size for additional pooled regression analyses.

For independent audit committees and audit committee financial expertise, I find that such features of audit committees are widespread in both countries. Thus, there is no significant effect for the association between audit fees, and audit committee independence and audit committee expertise. Note that strong regulations can also diminish the signalling capacity of the corporate governance arrangements, as in the case of audit committee independence and expertise.

For institutional ownership, the results for the US show a negative association with audit fees but for New Zealand, it is negative but not significant. The likely reason for US firms having lower audit fees when institutional shareholding is high is that the US firms have relatively higher institutional

shareholdings, which involves stronger monitoring of the firms by the institutional owners. On the other hand, New Zealand firms have low institutional shareholdings, which suggest that there would be lower levels of external monitoring from the institutional owners. Likewise, for the US firms, it can be construed that auditors perceive lower levels of audit risk when there is a higher level of institutional ownership, which leads to reduced audit fees. New Zealand firms seem not to have a similar setting.

For executive compensation, the firms in the two countries have quite different incentive arrangements. In the US, incentive-based salaries and stock option schemes are common. In New Zealand, firms mainly have base salaries. In both countries, the results show that there is a positive association between audit fees and compensation levels. This suggests that auditors link audit risk with executive compensation levels. In New Zealand, since firms mainly use base salaries to compensate their managers, auditors seem to rely on base salary as an indicator of audit risk. This may be because, in the absence of other incentives, managers may consider managing accounting numbers and use these numbers for bargaining for higher base salaries (i.e., engages in *ex post* settling up).

A closer analysis of the results reveals that the audit markets in both countries have market segmentation on the supply-side. Each country seems to have three tiers of firms based on the level of industry specialisation and the amount of audit fees charged. In the US, the first tier has PWC, with a large market share, especially of the large firms market, and specialisations in several industries. In New Zealand, PWC has a similar profile, followed closely by KPMG. The market leader in the US, PWC, enjoys similar average "relative audit fee" (audit fees scaled by total assets) as other BIG4 firms, but in New Zealand both PWC and KPMG earn the lowest average "relative audit fees". While the US BIG4 market seems to be competitive in terms of fees, in New Zealand, PWC and KPMG could be charging less because of economies of scale. The second tier of the two audit markets consists of the remaining BIG4 firms. In the US, they have the lowest average "relative audit fees", and in New Zealand, their "relative audit fees" feature in the middle of the fee

spectrum. In the last tier are the Non-BIG4 firms, BDO and Grant Thornton. In the US, both charge high "relative audit fees," but in New Zealand, only BDO charges high "relative audit fees." The lack of economies of scale could be the reason for the higher fees.

The pooled data test reveals some between-country variations picture. Since the US firms are in a stronger regulatory oversight environment, I expect that the audit risk signals/variables would lead to lower audit fees. The results support this contention for audit committee expertise and base salary.

Overall, the findings of this study suggest that better corporate governance arrangements in the post-SOX era lead to lower audit risk, which, in turn, lowers the audit fee. The results show a strong support for the supply-side hypotheses. In doing so, this study extends both the US and New Zealand literature on audit fee determinants. For the policy makers, the results suggest that, post-SOX, audit committee independence, and expertise have little signalling value left for the auditors. However, institutional ownership and executive compensation have significant value, especially in the more regulated US environment. The study also promotes the idea of the market concept in examining the audit fee. I believe that this concept is a well-recognized and easy to understand concept, and it allows us to explain many of the intricate details of the audit market.

1.2 Scope

The scope of this study is mainly limited to three issues. First, the study focuses on the effects of audit committee independence and expertise, institutional ownership, and executive compensation on audit fees. These are related corporate governance measures and are perceived to have direct effects on audit fees, rather than indirect effects as perceived in earlier studies (e.g., Bedard, Chtourou, and Courteau 2004; Dhaliwal, Naiker, and Navissi 2006; Griffin et al. 2008). Second, the study examines the effects of these corporate governance measures on audit fees in the post-SOX era. A point of interest of this study is to see how the enhanced audit and governance regulations under SOX affects audit fees through their effects on

audit risk. Third, this study uses basic market theory and considers both demand and supply characteristics of the governance variables and the control variables in its analyses. The market theory, I believe is more comprehensive as compared to other theories, such as agency theory, which focus narrowly on either the demand or supply notions, but not both.

1.3 Structure

The remainder of the dissertation consists of nine chapters. The second chapter reviews the audit fee literature from the perspective of the generic market features of demand, supply, and institutional influences, and shows that a market-based analysis captures the audit fee setting process. An issue in the literature is that of the incomplete conceptualisation of the effects of audit committee features, institutional ownership, and executive compensation on audit fees. I show that the conceptualisation has been mainly through the demand perspective, and not the supply perspective. The institutional settings of both the US and New Zealand are discussed in Chapter Three. Chapters Four and Five lay down the hypotheses for the US and New Zealand analyses, respectively. The hypotheses for each country are motivated in keeping with the respective regulatory settings. Chapter Six discusses the research design for both countries. For comparison purposes, the overall research design is similar for the two countries. However, where necessary, alterations are made to make the examinations more related to the country. Chapter Seven reports and discusses the results of the US study. Chapter Eight reports and discusses the results of the New Zealand study. Chapter Nine discusses the pooled data study and reports its results. Chapter Ten provides the conclusions, the contributions, and the limitations of this study, and identifies future research issues.

Chapter 2 Literature Review

Audit fee research has its roots in the market framework. Early studies such as Simunic (1980) explicitly saw the audit fee as a price for audit services and initiated the use of the demand and supply functions to identify the determinants of audit fees. The reason for adopting this framework was the argument that the market for audit services was oligopolistic and the larger audit firms were charging excessive rents. However, many of the audit fee studies deviated from the market framework and the focus of audit fee research shifted to other notions like contracting framework, and agency framework, resulting in myriad inconsistent results (Hay et al. 2006).

In this chapter, I review the audit fee literature from the perspective of the generic market features, and show the incomplete conceptualisation of the effects of corporate governance, institutional ownership, and executive compensation in the prior literature on the determinants of audit fees. I show that the conceptualisation has only been through the demand perspective without sufficient emphasis on the supply perspective.

A large section of the extant audit literature regards both audit services and non-audit services as products and audit fees and non-audit service fees as the price paid for these products.

Many of the studies on audit fee determinants commencing from Simunic (1980) have used the market framework to identify the factors that determine audit fees (Hay et al. 2006). The market theory covers both the demand-side and the supply-side determinants, i.e., the determinants representing pressures arising from the companies demanding audits and the determinants representing pressures arising from the auditors who supply audit services. Within the market framework, institutional intervention could affect market forces. Institutional intervention is commonplace in market economies and audit markets are not new to such intervention. One of the major reasons for the enhanced demand for and

supply of auditing is the enhanced corporate reporting requirements. Institutional intervention, as I will discuss later, affects both the demand and supply functions of auditing, and, therefore has to be considered in all market-based analyses of audit fee determinants.

2.1 The Audit Fee Literature

In this section, I review the audit fee literature from the perspective of the generic market features. The purpose of the literature review is to show that prior examinations of the determinants of audit fees are incomplete in terms of conceptualising the effects of independent audit committees, institutional ownership, and executive compensation on audit fees. Based on the neo-classical economic setting for audit fee pricing, it is imperative to understand both the supply and the demand influences to understand fully how the price of audit services is determined. In addition, I also identify the institutional factors that are influencing both the demand and supply aspects of audit services in recent years.

Audit markets do not strictly follow the commodity market price setting. The demand for audit quantity is rigid and the supply is restricted to a few suppliers (oligopoly). Nevertheless, in a limited sense, the commodity market theory can be used to explain the price setting in the audit market. For example, the commodity demanded remains the same every year but the client firm could demand more types and amounts (hours) of audit services and has the ability to select the supplier. In the discussion below, I relate client and auditor characteristics to the demand-side and supply side motivations of the clients and auditors, respectively, to explain how these characteristics can influence audit fees. In doing so, I explain that some client and auditor features can have both demand and supply influences depending on the context in which audit fee is determined.

One of the few papers that recognise the opposing effects of client features having both demand and supply features on audit fees is Griffin et al. (2008). They argue that corporate governance can have both audit fees increasing and decreasing effects. Their argument is that better governance measures increase the

audit cost but at the same time enhances the quality of financial statements and internal control, which reduces audit risk, and results in lower audit fees. They find that audit fees increased following SOX due to increased audit effort and risk and suggest that the fee increase is moderated by fee offsets from governance-induced reductions. While they do not explicitly use the demand and supply notions, their arguments are similar to those expressed in this dissertation. Since they adopt this notion for only corporate governance and not for the other variables in their study, I regard this as a partial adoption of the demand/supply notion.

I first explain that the literature has regarded audit fees as the price for audit services. Then, I discuss how the audit fee literature has examined audit fees from the perspectives of demand and supply. I then review the discussion in the literature on institutional intervention in the audit and non-audit services market. From this discussion, I identify why a further examination on the determinants of audit fees is required.

2.1.1 The Nature of Audit Services and Audit Fees

Audit fees are the product of unit price and the quantity of audit services demanded by the management of the audited company, which the audit firm provides (Simunic 1980). Contracting or agency theory has provided a much accepted and applied framework for audits of companies. However, it has been effective in explaining mainly the demand for external auditing. The provision of audited financial statements under contracting or agency theory is primarily a cost-effective contractual response to agency costs (DeAngelo 1981; Watts and Zimmerman 1983).

The size of the firm, complexity of the audit and the risk associated with the audit mainly determine the audit price. The audit firms are likely to charge more audit fees when the firm is large, the audit is complex, and audit risk is higher. The audit firm determines the number of hours worked based on different factors like the company size, factors that add to the complexity of the business and factors that

contribute to different aspects of audit risk (e.g., inherent risk, control risk and detection risk).

Auditors also have to work for more hours and employ specialised labour in industries that are prone to high litigation risk. Audit engagements of high litigation firms prove costly to auditors if audits are of poor quality. They not only face the risk of litigation, but also loss of reputation and bad publicity in the market (Francis, Reichelt, and Wang, 2005).

Regulatory changes on compulsory auditor rotation and auditor tenure may increase auditor's workload and audit risk. At times, it is difficult to find audit partners with the desired skills to replace the lead partners. In such a case, the audit firm has to increase the fee to compensate for more risk exposure (Rama and Read 2006).

The introduction of corporate governance codes has further increased the workload of the auditors. Auditors now evaluate their audit risk by looking at various factors like board independence, audit committee independence, audit committee expertise, duality etc. The audit committee members may persuade management to appoint auditors with appropriate knowledge and higher reputation, and may demand greater audit effort from the external auditors. A strong audit committee (more independent directors and directors with financial expertise) may reduce the auditor's workload and result in reduced audit fees (Bedard et al. 2004).

This study is on listed companies for whom external audits are compulsory. The firms in such a market need to have their accounts audited without exception, which can increase the PED. The only choice the companies have is the option of selecting the auditors. At the same time, audit firms also have the option of declining audit engagements of risky clients or demand exorbitant fees. Note that audit firms are limited in number, which indicates that the PED can be further enhanced, as the suppliers are likely to take advantage of limited supply. I now

discuss the influences in further detail using the demand and supply framework of the neo-classical market model.

2.1.2 Demand Features (Client Firm Characteristics)

Chow (1982) opines that the demand for audit services arises either due to manager-shareholder-bondholder contracting or institutional requirements. While early literature such as Chow (1982) and DeAngelo (1981) explained that the primary determinant of auditing demand was the managers desire to reduce agency costs, later literature covers a host of variables, ranging from corporate needs such as information asymmetry reduction to cost of capital reduction, good corporate governance and litigation costs. These corporate needs are not necessarily mutually exclusive, and are often closely related. The variables identified and used in the literature to represent these related needs are size, complexity, risk, industry, corporate governance, institutional ownership, and executive compensation. The discussion that follows is based on these variables.

2.1.2.1 Size

Size is a significant factor in the determination of audit fees (Hay et al. 2006). The number of hours required to complete the audit work determines the audit fee. Larger firms require more hours of audit work than small firms. Simunic (1980) observes that external auditors traditionally approach the audit process through the ending balance sheet, and rely on the fact that verification of balance sheet components indirectly verifies reported income. Since both internal accounting and external auditing are sampling-based processes, any increase in measured total assets reflects increases in the number of individual elements in the balance sheet. Increases in the individual elements in the total assets increase the audit sampling size, and in turn the audit hours. Earlier studies conducted since the 1980's find that firm size is significant in the determination of audit fees (e.g., Simunic 1980; Chow 1982; Maher et al. 1985; Simon 1985; Taffler and Ramalingam 1982; Taylor and Baker 1981; Firth 1985; Whisenant, Sankaragurswamy, and Raghunandan 2003; Mitra and Hossain 2006; Hay et al. 2006; Carson and Fargher

2007). These studies used total assets at the end of the balance sheet year as a measure of firm size.

2.1.2.2 Complexity of Business Operations

The complex nature of the business operations is a factor in the determination of audit fees. Firms that have more business segments, geographical segments, and subsidiaries increase the complexity of a business. Additional segments and subsidiaries increase the hours of audit work because of the different dimensions of each segment. More segments and subsidiaries mean longer audit hours, extended travel time, additional time to learn the possible different systems in place at each subsidiary, and the additional time for consolidating the data at the firm level. Foreign-based subsidiaries further add to the workload of the auditor.

The number of subsidiaries (both inside and outside the country) has a positive and significant association with audit fees (Simunic 1980). The results of other studies in this regard are mixed. Simon (1985) endorses the findings of Simunic (1980). In the Canadian setting, Chung and Lindsay (1988) find that the number of subsidiaries is a significant determinant of the amount of audit fees. Similarly, Taffler and Ramalingam (1982), and Taylor and Baker (1981) find that the number of subsidiaries is a significant factor in the determination of audit fees in the UK. However, using a US sample, Maher et al. (1985) did not find subsidiaries significant. Using New Zealand samples, Firth (1985), and Johnson, Walker, and Westergaard (1995) find conflicting results. Firth (1985) did not find any evidence to support the Simunic (1980) findings, whereas Johnson et al. (1995) did. The conflicting results could be because of industry differences, institutional differences and differences in size of the firms between the samples of these firms. The nature of the industries of the segments and subsidiaries can cause variations in the level of complexity and, therefore, in the level of audit fees charged. The institutional differences between countries cause variations in the level of risks auditors face across countries, with countries such as the US having higher litigation risks and New Zealand have lower litigation risks. Finally, the sample firms in countries like

New Zealand are mostly smaller than their US counterparts. Other differences (e.g., ownership composition) may also exist across countries. These and other issues are discussed in detail in Chapter 3.

2.1.2.3 Industry

The industry of the firm is another important factor in the determination of audit fees. Certain industries (e.g., mining, banking) need special audit work because of their nature. These industries have different accounting policies regarding among other things, recognition of revenue and expense, and valuation of assets. Identifying significant audit areas, and inspection and observations of records need distinct skills. The audits of firms in such an industry call for specialised knowledge of the industry and the firms that operate within the industry. Simunic (1980) finds that the industry has a positive and significant association with audit fees. Other studies support these findings (e.g., Maher at al. 1985; Taffler and Ramalingam 1982; Taylor and Baker 1981). Simon (1985), Firth (1985), and Johnson et al. (1995) did not include industry as a variable in their study because they examined only supplier concentration in the audit market, leaving out the demand-side issues.

2.1.2.4 Operational Risks

The amount of accounts receivable and inventory held by a company also adds to the riskiness of the business. Items like inventory and accounts receivable are difficult to value because they are the result of a host of transactions. The firm can easily manipulate these items. The audit firms have to spend more time in analysing the components of accounts receivable. Accounts receivable pose risks to the auditor because the list of accounts receivable may be inaccurate or the balances of the accounts may not exist or may not be collectible. In short, accounts receivable pose credit risk to the firm, which in turn affects audit risk. Most of the earlier studies (e.g., Simunic 1980; Maher et al. 1985; Simon 1985; Taffler and Ramalingam 1982; Taylor and Baker 1981; Johnson et al. 1995) support the view that accounts receivable and inventory leads to increased workload and increased

audit fees because audit firms tend to look at these items carefully. Firth (1985), using a New Zealand sample, did not find any evidence (for inventory) to support the view of Simunic (1980) in this regard. Once again, it may be due to country specific reasons.

Firms that report financial losses in their balance sheet may influence the auditor's judgement of risk. Existence of loss is an indicator of increased risk in those firms. Such firms may be more likely to engage in questionable activities (earnings manipulation), and these might involve problems for the auditor. The auditor has to conduct audits that are more extensive for such firms, which results in a higher audit fee. Similarly, poor profitability and a high level of variability in profits may lead to greater risk and greater amounts of audit work. Furthermore, the presence of qualified audit opinions on a particular firm may be indicative of increased audit risk because the auditor becomes concerned about uncertainties relating to the reliability of the firm's accounts. Simunic (1980) finds that both losses and qualified audit opinions have significant positive associations with audit fees. Maher et al. (1985) supports the findings of Simunic (1980) for loss but not for audit opinion, which is similar to the finding reported by Simon (1985). However, Firth (1985), and Johnson et al. (1995) did not find any significant association between firm risk (loss, profit variability) and audit fees in New Zealand.

Most of the prior studies identify size, complexity of operations, industry, and risk as significant factors that could have an impact on the audit fee. The audit firms view these factors as a business risk. The results of the earlier studies are mixed for a variety of reasons such as sample size, the method of collecting data, the year of study, misspecified models, omitted variables and different institutional settings. Moreover, the earlier studies looked at the competition in the audit market from only the supply-side perspective. No studies, including Simunic (1980), addressed the effects of some of the demand-side features like corporate governance, ownership, and executive compensation on audit fees.

2.1.2.5 Corporate Governance

The literature is replete with the use of the demand notion in examining the effects of corporate governance on audit fees. Agency theory provides a framework for reducing conflict of interests among firm managers, shareholders, and debt holders. Since the ownership is diversified and separate from management, shareholders and debt holders have expectations from managers to ensure protection of their investments and returns on their investments. The quality of board oversight indicates internal control risk. For example, duality (CEO as the chairman of the board) may reduce the board's effectiveness to provide oversight over managerial decisions and activities (Vance 1983). The structure (size of the board, number of meetings, and the number of committees) and composition (executive, non-executive, and independent directors) of the board of directors affect corporate governance. For example, better corporate governance measures could result in a demand for a better audit. Board characteristics are important determinants of corporate governance (e.g., Hermalin and Weisbach 1998; Bhagat and Black 2002; Bhagat and Bolton 2008). The composition of the board is an important factor for the demand for audit services. An independent, diligent, and expert board may demand differentially higher audit quality (which requires more audit work) than the audit firm normally provides, primarily to protect the board's own interests.

The board may seek to protect its reputation capital (Fama 1980; Fama and Jensen 1983; Gilson 1990), to avoid legal liability (Gilson 1990; Sahlman 1990) and to promote shareholder interests by purchasing differentially higher audit quality. Higher quality audit work demanded results in an increase in the audit fee. Tsui, Jaggi, and Gul (2001) examined whether firms with independent corporate boards (chief executive officer and chairman being separate individuals) provide a more effective internal monitoring mechanism and are thus associated with lower control risk, resulting in lower audit effort and fees as compared to non-independent, CEO-dominated boards. They find that firms with independent corporate boards (chief executive officer and chairman being separate individuals)

provide a more effective internal monitoring mechanism and are thus associated with lower control risk, resulting in lower audit effort and fees as compared to non-independent, CEO-dominated boards. Tsui et al. (2001) did not examine audit committee expertise because in the pre-SOX period the presence of financial experts in the audit committee was not mandatory.

Carcello et al. (2002) find significant positive relations between audit fees of Big6 auditors and board independence, diligence, and expertise. Their findings support the view that more independent, diligent, and expert boards seeking to protect their reputation capital, to avoid legal liability, and to promote shareholder interests, purchase differentially higher quality audit services from their auditors. Carcello et al. (2002) also report that audit committee characteristics lose significance when board characteristics are included. This study looked only at companies that engaged a Big6 auditor on the assumption that the companies purchased the highest level of quality available. The study ignored small audit firms in the market. The Big6 firms cannot audit all the firms. Similarly, not all the firms can engage a Big6 audit firm as their auditor. The market saturation for big firms should eventually lead to firms moving towards middle level auditors. At the same time, some firms might leave the market because of high costs of compliance.

Audit committees are sub committees of the board. The audit committee potentially takes three actions related to the external auditor that may result in a higher level of audit assurance or coverage. First, committee members can attempt to persuade management to select a more knowledgeable auditor with greater reputation. Second, the audit committee can demand greater audit effort from the existing external auditor (Simunic and Stein 1996). Third, indirect means by which an audit committee can influence the level of audit coverage is by mitigating management's threat to replace the auditor (Knapp 1985). Management cannot influence the auditor to approve questionable accounting practices because the audit committee can support the auditor and question management.

Abbott et al. (2003) state that the Securities and Exchange Commission (SEC), the Public Oversight Board (POB 1993) and the National Association of Corporate Directors (NACD 2000) stressed the role of the audit committee in providing active oversight of the financial reporting process and in monitoring the relationship between a firm's management and its external auditor. As such, the audit committee has a greater role to play in the determination of audit fees. Abbott et al. (2003) report that audit committee independence and financial expertise are significantly, positively associated with audit fees, which supports the findings of Carcello et al. (2002) to a certain extent. The difference in findings is attributed to changes in the regulatory environment during the middle and late 1990s and variation in audit committee characteristics in the samples used.

Goodwin-Stewart and Kent (2006) find that Australian firms with higher audit fees are more likely to have an audit committee and use a greater level of internal auditing. They also suggest that audit committee financial expertise is positively related to audit fees, but only when both meeting frequency and independence are low. Vafeas and Waegelein (2007) suggest that audit committee characteristics (size, member expertise, and member independence) are positively associated with audit fees. They postulate that audit committees complement the external audit in monitoring management. Rainsbury, Bradbury, and Cahan (2009) examine New Zealand firms in 2001 in the pre-SOX period (unregulated audit committees), and observe no significant association between the quality of audit committees and the level of fees paid to external auditors.

The above findings suggest that the board (through its various committees) may influence audit quality through formal and informal means. The board's commitment towards vigilant oversight may signal to the management and the auditor that the expectations placed on the audit firm are very high. At the same time, outside and independent directors are more concerned with audit quality and they may encourage the firms to purchase higher quality audit services at higher prices.

To sum up, better corporate governance structures such as independent audit committees demand a higher audit quality and, therefore, audit fees are higher for such governance structures.

2.1.2.6 Institutional Ownership

The audit fee literature suggests that the ownership composition of firms affects audit fees. The ownership composition of a firm determines the level and nature of monitoring done by the owners, which then influences the firm-level risks (Shleifer and Vishny 1986). Corporate governance literature has identified two types of ownership composition (Shleifer and Vishny 1997). The first is outside, public ownership and the second is inside ownership. Outside ownership comprises large institutional ownership and smaller dispersed ownership. Institutional ownership has been identified as a major force in maintaining good corporate governance (Mitra and Hossain 2006), and is further categorised into short-term and long-term ownership. Short-term institutional ownership has a short-term investment horizon involving aggressive trading, whereas long-term institutional ownership is more stable holdings involving long-term monitoring arrangements. From a demand perspective, long-term institutional owners demand extra monitoring activities (Bushee 1998) and demand high quality audit. Such a demand can increase audit fees.

When the ownership composition is inside corporate or individual ownership and insiders hold a majority of the shares, the demand for audits could be low. This would be due to the owners having private channels of communication with the board due to either having board membership or having significant influence over the board.

Mitra and Hossain (2006), Han et al. (2009), and Kannan (2009) study the effect of long-term institutional ownership on audit fees. Mitra and Hossain (2006) contend that the presence of sophisticated investors like institutional shareholders determines the effectiveness of stockholder monitoring of corporate affairs including audit and non-audit management process. Various shareholder groups

exert monitoring at different levels depending on their investment objectives and economic stakes in an organisation. Mitra and Hossain (2006) observe that high institutional ownership increases the economic stakes of outside stockholders in a firm. To improve the value of their investment portfolios, such stockholders induce management to reduce the purchase of non-audit services from external auditors if they perceive that the provision of significant non-audit services would potentially impair auditor objectivity and independence. Kane and Velury (2004) argue that institutional investors influence management's strategic decisions because, as large suppliers of equity capital, they can directly affect the market price of stocks. Large shareholders expect higher audit quality that will ensure safety of their investments (demand perspective). They provide empirical evidence of a positive association between institutional ownership and auditor size. However, lower levels of institutional ownership may not affect audit fees, as they may not be able to influence the managers for high quality audits.

On the other hand, a high percentage of ownership concentration may pose a different agency problem. Since the controlling shareholders hold a very large part of capital, their interests may not be aligned with the interests of minority shareholders, therefore creating different agency problems. Fan and Wong (2005) study the effect of inside ownership on audit fees. They find a positive relation between audit fees and inside ownership and explain that auditors assume a higher risk to audit those firms when there is high concentration of family ownership.

All the above studies took a demand-side approach to address the significance of the association between audit fees and ownership. These studies show that to maximise shareholder wealth, institutional investors are likely to encourage the firm to adopt monitoring devices, such as a high quality audit, which increases the audit fee. Therefore, from the demand-side, audit fees are likely to be high when institutional ownership is high. Institutional investors can influence corporate policy to employ governance mechanisms that reduce their monitoring costs. On the other hand, higher levels of private, inside ownership can reduce the demand for external audit, especially when there are too few outside minority

owners to pose a threat to the inside majority shareholders or their auditors. The function of the auditors in this setting would be to serve the interests of the majority inside shareholders in meeting the regulatory requirements and to satisfy debt holder needs.

Typically, institutional investors are banks, insurance companies, pension funds, hedge funds, and mutual funds. On the other hand, private investors include family groups, other corporations, private investment firms, and governments. Private owners often directly participate in the governance of the firm, whereas institutional investors, as portrayed in extant literature, monitor their interests through external means.

2.1.2.7 Executive Compensation

Executive compensation is in the general form of base salary and incentives. Incentives can be short term or long term, and payments are in cash or in kind (stock options). Since the executives manage the affairs of the firm, they may have conflicting interests with shareholders. Jensen and Meckling (1976) provide examples of monitoring/bonding contracts (e.g., executive compensation incentives based on financial measures of performance) that mitigate the manager-share-holder conflict of interests.

Vafeas and Waegelein (2007) find that CEO long-term pay and insider ownership are inversely related to audit fee levels. They opine that certain types of management incentives can lead to reduced corporate audit fees, and argue that boards of directors choose external auditors of higher quality that charge higher fees to restrain management from excessive earnings manipulation to increase their compensation (Vafeas and Waegelein 2007). Wysocki (2010) finds that there is a positive and significant association between CEO total compensation and audit fees. Once again, this is a demand perspective. It examines the influence of demand incentives for audit services on audit fees.

2.1.3 Supply Features (Audit Firm Characteristics)

The supply for audit services depends upon auditor capability, in terms of services. The literature identifies several features that signify the services auditors can provide, and include auditor size and industry specialisation (e.g., Simunic 1980; Gramling and Stone 2001). Further, corporate governance, institutional ownership, and executive compensation of firms affect the determination of audit fees from the supply perspective. These features help the auditors to assess the risks associated with an audit.

2.1.3.1 Size

The size of the audit firm is a significant factor in the provision of audit services. Large audit firms have efficiencies due to large-scale operations. Conversely, the smaller audit firms may suffer diseconomies, especially with large firms for which they may not have sufficient resources. Large audit firms have more resources to invest in technology, training, and facilities than smaller audit firms. Such investments result in higher fixed costs which smaller clients may find too costly. The Government Accountability Office in the US suggests that it is necessary to have a strong and vibrant second-tier set of audit firms below the BIG4.

Early studies on the issue of whether the audit services market was competitive, observes that the Big8 charge lower fees than the non-Big8 firms due to economies of scale that they pass on to their clients. Simunic (1980) shows that Big8 firms charge lower audit fees in both large and small auditee segments, however, the difference is not significant. This finding is supported by other studies (e.g., Taffler and Ramalingam 1982; Taylor and Baker 1981; Francis 1984; Simon 1985; and Palmrose 1986; Johnson et al. 1995).

Copley, Gaver, and Gaver (1995) show that Big8 firms charge higher fees. Hay et al. (2006) also note the same in their literature review. Pearson and Trompeter (1994) hypothesise that large audit firms charge higher fees but find

that they actually charge less. Therefore, the arguments are for both higher and lower fees.

Abidin, Beattie, and Goodacre (2010) provide evidence of significant upward pressure on audit fees in the UK since 2001, but only for small firms. They observe that Arthur Andersen's demise reduced the level of inequality among the top tier firms. Hamilton, Li, and Stokes (2008) investigate whether Australian audit markets remain competitive in the wake of Arthur Andersen's demise and merger with Ernst & Young to create the BIG4. The results indicate that BIG4 concentration is low in the small client market and high in the large client market in both 2000 and 2003.

Large national and multinational firms will not consider buying audit services from any non-BIG4 auditors because their investors desire the brand name and reputation that a BIG4 audit carries. The middle and smaller firms are likely to choose middle tier or small tier auditors whose cost structures are most efficient for the type of audit they require (Cosgrove and Niederjohn 2008).

From the above discussion, it is clear that audit firm size has a significant effect on audit fees. The large audit firms enjoy economies of scale and are able to charge different price in different markets as compared to smaller audit firms. Since the large audit firms are less in number (BIG4), they tend to have a low PES and this allows them to charge differential fees.

2.1.3.2 Industry Specialisation

Different industries may follow different accounting policies and practices. Their disclosure requirements could also be different. The audit firms need to have resources to train their personnel to audit industries that follow different accounting policies and are under different disclosure requirements.

Gramling and Stone (2001) observe that professional standards and risk-based audit technologies force audit firms to integrate industry expertise into their audit approaches. Due to this integration, auditor specialisation has become both a

minimum requirement and a barrier to entry in the audit service market. Anderson and Zeghal (1994) find in certain industries that the audit fee is lower. They conclude that industry is a significant factor in the determination of audit price. Specifically, the fee premium to auditors is expected to be different depending on the market segment in which the auditor is competing, where market segment is based on client size and nature of industry (e.g., Anderson and Zeghal 1994; Carson et al. 2004). Carson and Fargher (2007) report that fee premiums attributed to industry specialist audit firms are concentrated in the audit fee paid by the largest clients in an industry. Bell, Doogar, and Solomon (2008) observe that in the US big audit firms use a greater proportion of higher-ranked labour following the adoption of business risk audits. They further observe that the increasing complexity of financial reports requires a comprehensive understanding of the industry, strategy, business models, and processes and this could be achieved only by employing high ranked labour (low PES). Since the cost of high ranked labour is high, the audit fee is also high.

From the above discussion of audit firm size and industry specialisation, it is evident that large audit firms are in a position to charge differential prices. Since very few firms have resources to achieve industry specialisation, the PES is less for the specialised firms to charge differential pricing. Small and medium sized audit firms have a high PES due to their limited auditing capabilities. They are not in a position to engage large clients and multinational firms' audit. The size of the audit firm and industry specialisation of an audit firm affects the determination of audit fees.

2.1.3.3 Corporate Governance

It is also possible that the quality of the governance structure will affect audit fees through control risk assessment by its auditor. When the corporate governance structure is strong, the audit firms may lower their fees because of the reduced inherent risk signalled by strong corporate governance. A board with a

majority of outside directors may provide an effective monitoring system and, in turn, reduce the internal control risk.

Cohen and Hanno (2000) find that auditors reduce substantive testing in the presence of a stronger corporate governance structure. Bedard and Johnstone (2004) conclude that the demand-based perspective provides limited support for the explanation that high-quality governance leads to higher audit fees through demand effects, and evoke a risk-based argument. Auditors view accounting or financial expertise as factors that mitigate control risk, as audit committee members with financial expertise can constrain earnings manipulation by assessing the adequacy of provisions for such matters as warranty obligations, lawsuits, and other contingencies (Bedard et al. 2004; Dhaliwal et al. 2006). DeZoort (1998) examines a sample of audit committee members who completed an internal control oversight task and finds that members with financial experience made internal control judgments more like auditors than members without experience.

Krishnan and Visvanathan (2006) observe that auditors price the effectiveness of the audit committee because it relates to control risk and thus, overall audit risk. They find that after controlling for several board and audit committee characteristics and firm characteristics, audit pricing is negatively related to financial expertise. They observe that there is no significant relation between audit fees and financial expertise for firms with weak governance structures. The lack of a significant relationship between non-financial expertise and audit fees suggests that auditors perceive that only financial expertise contributes to the audit committee's effectiveness. This study takes the risk-based argument that auditors price risk factors and lower fees if the governance structure is strong.

The above studies indicate that if the auditor understands that the board is of high quality (more independent directors with less shareholding) and demanding, the auditor may perform a higher quality audit so as not to disappoint the client and endanger the relationship. Similarly, audit firms lower their audit

fees if the governance structure is stronger because such a structure mitigates their business control risk. Audit firms believe that the majority of independent directors and independent directors with financial expertise on the board provide effective monitoring and enhance internal controls of the firm. Since effective controls are already in place, auditors reduce substantive testing. These studies document that better governance improves audit quality, thereby reducing audit fees.

2.1.3.4 Institutional Ownership

Similar to the demand perspective, ownership composition can affect audit fees (institutional and inside ownership). From a supply-side perspective, long-term institutional ownership could reduce the audit risk and audit fees due to their high level of monitoring. Prior studies (e.g., Grossman and Hart 1980; Shleifer and Vishny 1986; Huddart 1993) support this view and suggest that large institutional shareholders have the incentive to undertake monitoring or other costly control activities because increased returns are sufficient to cover the associated monitoring costs.

On the other hand, small short-term institutional ownership could increase audit risk due to the possibility of earnings manipulation by managers to please such investors. Han et al. (2009) document that auditors charge a fee premium as the ownership percentage of such institutional ownership increases. Auditors perceive greater risk because of the view that short-term institutional ownership creates pressure on managers to report short-term earnings that meet earnings targets. From a supply perspective, small short-term institutional ownership do not signal any significant reduction in audit risk, conversely it may even increase the audit risk.

On the other hand, Kane and Velury (2004) observe that high inside ownership mitigates audit risk and reduce the probability of class-action lawsuit. Chan, Ezzamel, and Gwilliam (1993) observe that inside ownership (managerial and major shareholder) is negatively associated with audit fees.

2.1.3.5 Executive Compensation

Executive incentive schemes may also increase audit risk. Such incentives enhance the risk of earnings manipulation by management. Healy (1985) and Holthausen, Larcker, and Sloan (1995) document that bonuses influence managerial accounting and reporting practices by encouraging managers to manipulate earnings in order earn their bonuses. Similarly, equity based incentive schemes raise the potential risk of the auditor. In order to evaluate the inherent risks of managerial compensation, auditors have to employ skilled personnel to review incentive schemes. This may lead to increases in audit fees for firms that provide incentive based compensation to their managerial personnel.

Executive compensation also affects audit fees. Both short-term and long-term incentives influence managerial accounting and reporting practices, as managers engage in risk taking behaviour to enhance personal wealth from incentive pay. Cheng and Warfield (2005) observe that managers with higher equity incentives from stock- based compensation and stock ownership are more likely to report earnings that meet or just beat analysts' forecasts, and are less likely to report large positive earnings surprises, suggesting that equity incentives lead to earnings management. Audit firms believe that managers with a larger percentage of their annual compensation in the form of bonus plans have stronger incentives to manage earnings. Audit firms increase their audit fees for firms that provide managers with large incentives (both short and long-term) due to perceived increased audit risk.

Auditors price the potential risk in CEOs' incentive pay and equity holdings because that risk may increase the likelihood of a material misstatement from error or fraud and, thus could have cost implications to auditors from litigation, reputational damage, and lost fees. Healy (1985) provides evidence that bonuses based on annual earnings increase the likelihood that managers will manage earnings to maximize the value of their bonus awards. Gaver, Gaver, and Austin (1995), and Holthausen et al. (1995) find evidence that managers manipulate

earnings downward when their bonuses are at their maximum in order to maximize their bonus in subsequent periods. Richardson and Waegelein (2002) provide evidence that firms with long-term performance plans engage in less earnings management than firms that do not provide incentives.

Well-structured compensation agreements provide managers with incentives to perform their monitoring function well, and may substitute for monitoring services provided by an external auditor (Vafeas and Waegelein 2007). Kannan (2009) postulates that the board of directors may be interested in the association between audit fees and CEO compensation contracts, as it may influence the compensation committees' design of future compensation contracts. Including incentive pay in CEO compensation is aimed at reducing the agency conflict between managers and shareholders, which could lead to agency cost reductions and higher shareholder wealth. Conversely, incentive pay could be costly to the firm through higher audit fees, as well as the costs of a financial statement restatement or fraud allegation.

Kannan (2009) finds that auditors price CEOs' incentive pay in the post-SOX period. Furthermore, auditors price CEOs' non-linear incentives from their holdings of stock options as a fraud risk factor but do not price linear incentives from CEOs' holding of stock and restricted stock. In addition, auditors price CEOs' opportunity to commit fraud, as well as CEOs' rationalizing the act of committing fraud. Likewise, auditors would consider executive bonus plans based on stock option as an audit risk factor.

2.2 The Non-Audit Services Fee Literature

Many firms purchase non-audit services from auditors. Non-audit services are not mandatory. Financial information systems design and implementation, internal audit outsourcing services, broker or dealer, investment advisor, or investment banking services are some of the non-audit services demanded by firms. Some firms demand audit and non-audit services from the same supplier, whereas others demand non-audit services from other suppliers. While non-audit

services can go hand-in-hand with audit services, it is not dependent on audit services. When demanded along with audit services from the same supplier, it can create cross elasticities of demand and supply. Non-audit services can be a complementary product when a non-audit service improves the quality of the audit (Francis and Pollard 1979; Simon 1985; Palmrose 1986), such as acquiring additional non-audit services for improving its accounting processes.

Some countries regulate and restrict non-audit services by the incumbent auditor. In such a case, there is a possibility of a swap between audit and non-audit fees when demanded from the same auditor. Therefore, when attention on non-audit fees intensifies, its supply elasticity is lowered and auditors switch more of the non-audit services into the audit services or completely transfer those services to other entities to be able to accrue positive rents. Dickins and Young (2008) observe that firms disclose non-audit services provided by the company's external auditor as fees from audit services when a company's corporate governance rating is worse than that of its competitors.

For audits, auditors are required to have prescribed qualifications (e.g., CPA, CA), which can create a low PES. Since auditors provide mandatory audit services, the PED for audit services is low. On the other hand, non-audit services are not mandatory, and there is no prescribed professional qualification required for such services. Therefore, non-audit services may enjoy high PED and PES.

Non-audit service fees are a factor that could have an impact on the amount of audit fees. The provision of non-audit services by the same audit firm creates cross elasticity of demand and supply. Earlier studies (DeAngelo 1981; Simon and Francis 1988) have shown that audit firms engage in low balling practices on audit fee pricing. This leads to a loss-leader practice on the belief that the audit firm will be able to make good the loss from non-audit service fees. Discounting audit fees on initial engagements to attract non-audit services might also play a role in the determination of audit fees. The ban on the provision of certain non-audit services

might influence the determination of audit fees as audit firms may increase the audit fee to compensate for the loss of non-audit services.

There is a possibility of cross-subsidisation of audit fees arising from the provision of non-audit services because audit firms provide both audit and non-audit services. Francis and Pollard (1979) found evidence of cross elasticities of demand with an increase in the proportion of audit firm clients engaging their auditors for non-audit services whereas Williams and Turpie (1983) observed non-audit services are neither substitutes nor complements but rather non-recurring, "one-off jobs". However, Simon (1985) and Palmrose (1986) provide evidence of a positive relation between fees for audit and non-audit services, confirming that the two coexist in the market. Non-audit fee foster the client-auditor economic bond by increasing the portion of auditor wealth derived from a client (e.g., Simunic 1984; Becker et al. 1988). This shows that Big8 auditors followed the 'loss-leader' strategy of reducing audit fees, which in turn, attracts customers to buy non-audit services from them.

Mitra and Hossain (2006) find that institutional stock ownership is significant and negatively related to the NAF fee ratio (non-audit fees to total fees). The study addresses the relation of non-audit fees ratio to variables including board composition and corporate governance. The results indirectly indicate that the reduction in non-audit services reduces the elasticity of non-audit services, and auditors may switch more of the non-audit services to audit services or increase the audit fee. Further, this study uses data from the pre-SOX period when corporate governance rules are not mandatory and certain non-audit services are not prohibited. The data regarding audit and non-audit fees were hand-collected from proxy statements.

Audit fee determination, to a certain extent, depends on non-audit services. The provision of non-audit services by the incumbent auditor has been criticised by regulators, who believe that auditors become financially dependent on their clients if they derive higher economic rents from non-audit service fees as compared to

audit fees. Because of this economic bonding, they are less likely to stand up to management pressure for financial misreporting (DeAngelo 1981). The accounting profession has rebutted regulatory allegations about the economic bonding effects on the quality of the audit. They argue that the joint provision of audit and non-audit services provides the audit firm valuable "inside" knowledge about the client, enhancing the quality of the audit. Recent research by Knechel and Sharma (2008) supports this view. These authors provide evidence of higher quality financial reporting for clients generating higher levels of non-audit service fees for the auditor. The rationale is that the auditor provided non-audit services create knowledge spillovers that enhance the auditor's knowledge about the client, including more timely recognition of potential accounting problems.

Non-audit services influence the determination of audit fees, and the provision of non-audit services has both positive and negative effects. Audit fee literature provides mixed evidence on the provision of non-audit services (Hay et al. 2006). Some of the studies (e.g., Kinney, Palmrose, and Scholz 2004) show that non-audit services affect earnings quality whereas others (e.g., Knechel and Sharma 2008) find that high levels of non-audit services provide high quality financial reporting. However, SOX has restricted the scope for such services to the incumbent auditor. Some countries, e.g., UK, Australia, and New Zealand have not placed any restrictions on non-audit services. Studies that explore these different settings could justify such a stance by these countries.

2.3 Institutional Influences

As mentioned earlier, three types of institutional pressures exist in markets, the coercive, the normative, and the mimetic pressures. In auditing, the coercive pressures are mainly those of a regulatory agency, e.g., SOX regulation 404 and the SEC rules. The normative pressures are mainly the codes and standards of practice adopted by accounting professional bodies. The mimetic pressures arise because of peer group pressures of adopting best practices. The strengths of these

institutional pressures vary from the coercive ones being the strongest to the mimetic ones being simply discretionary in nature.

Institutional pressures affect both the demand and supply sides. Previous initiatives in institutional intervention in audit services target the issue of improving competition, with the view that improved competition would enhance quality of services and reduce price fixing, e.g., low balling in audit services and higher non-audit service fees. The current interventions seek to improve the quality of the audit. As mentioned in the previous section, all of these relevant pressures affect price. These issues are discussed in detail later under the discussions on demand and supply features of audit services and the discussions on institutional pressures.

In the US, BIG4 firms have become more conservative in their audit client-retention decisions in the post-SOX period, which is construed as a measure taken by auditors to avoid risk and enhance their reputation (e.g., Rama and Read 2006; Huang, Raghunandan, and Rama 2009). Plitch and Wei (2004) observe that the BIG4 audit firms are dropping smaller, low marginal revenue audits due to new auditing requirements imposed by SOX. Asthana, Balsam, and Kim (2004) find that many small tier-auditing firms exit the market in order to avoid the costs of registering with the Public Company Accounting Oversight Board (PCAOB), possibly decreasing competition for small audits, and raising their prices. Beckstead (2006) contends that the PCAOB's one-size-fits-all rules actually create a barrier to entry for small tier auditors. Cosgrove and Niederjohn (2008) find evidence of higher audit fees across all firms in the US (both BIG4 and non-BIG4) resulting from compliance with SOX. This could be due to reduced competition in the audit market. Small-sized audit firms that have few SEC audit clients are leaving the market for SEC required audits (Read, Raghunandan, and Rama 2004). Taylor and Simon (1999) observe that increased litigation pressures, institutional traditions of increased disclosure, and increased regulation put upward pressures on audit fees in the US. Griffin et al. (2008) find that better governance enhances

the quality of financial statements and internal controls, which enables auditors to decrease the price of audit risk and reduce fees.

Prior studies in New Zealand have noted the effects of institutional changes on audit and non-audit fees. Hay and Lee (1999) investigate the determinants of audit fees in New Zealand in the pre-and post-regulatory change period. New Zealand deregulated advertising effective January 1, 1986, six years earlier than solicitation was deregulated, effective January 1, 1992. They find that audit fees increased between 1985 and 1990, but decreased between 1990 and 1995. The decrease was due to the additional changes to further increase competition. They attribute change to professional regulations (which permitted the New Zealand firms to use the names of their international Big8 affiliates from 1984) and general reforms to the New Zealand economy as major reasons for such results. Hay and Knechel (2010) observe that changes in regulation in 1986 and 1992 regarding advertising and solicitation by audit firms in New Zealand led to fee increases in the case of advertising and fee reductions in the case of solicitation, especially for the Big8. Griffin, Lont, and Sun (2009) examine the association between overseas and New Zealand governance regulatory reforms, its companies' audit and non-audit fees, and report that audit fees have increased due to adoption of The International Financial Reporting Standards (IFRS) in New Zealand.

Boo and Sharma (2008) find both positive and negative institutional influences on internal control and audit fees. They opine that regulation can either mitigate or enhance the effectiveness of the internal governance arrangements. Additionally, Haskins and Williams (1988) provide evidence of mimetic behaviour across countries. They examine audit fee differences in a sample from the UK, Australia, New Zealand, Ireland, and the US. They observe that there is a great deal of uniformity in major audit firms' audit fees across countries (UK, Australia, New Zealand, and the US) which have similar accounting and auditing environments.

In all, these studies provide examples of institutional pressures that enhance the demand and supply pressures or, in other words, interact with the demand and

supply factors to affect audit fees. Most findings suggest an audit price increasing effect through the enhancement of demand for increased audit quality. However, there is some indication of supply-side effects such as in Boo and Sharma (2007). Therefore, if the quality of governance of firms is enhanced through better quality governance the resulting audit risk reduction can reduce audit fees.

2.4 Underlying Reasons for Audit Fees Increase (Decrease)

The above discussion on the demand and supply determinants of audit fees reveals two underlying reasons for higher or lower audit fees. Examining the demand-side determinants, the rationale for each one of the determinants is better quality audit leading to better quality accounting information. In fact, several studies use similar demand determinants to explain earnings quality or audit fees, where audit fees proxy for audit quality (Dhaliwal et al. 2006). Therefore, one underlying determinant of audit fee is accounting quality, a demand-side determinant.

On the supply-side, the literature review suggests that the determinants affect audit fees through audit risk. If a determinant increases (decreases) audit risk, it is likely to increase (decrease) audit fees.

Every audit firm faces audit risk. Audit risk is the risk of the auditor providing an inappropriate opinion on the financial statements. Inherent risk, control risk, and detection risk influence audit risk. Inherent risk (management integrity, business related risk, industry, economy related risk) is the likelihood that a material misstatement exists in the financial statements under audit, without the consideration of internal controls. Control risk (internal control) is the risk that the client's internal control policies and procedures fail to detect or prevent a material misstatement from occurring on a timely basis. Both inherent and control risk are non-controllable risk. The auditor has very little or no control over these risks. Detection risk (tests of detail and substantive analytical procedure) is the likelihood that a material misstatement relating to an assertion is not detected by

substantive testing. The auditor can control this risk by planning a proper audit procedure (Van Peursem and Pratt 2006).

Business risk auditing is developing a deep and comprehensive understanding of the industries, business models, strategies, and processes of the firm (Lemon, Tatum, and Turley 2000). Business risks have the potential to affect financial statements and increase the risk of material misstatements. In order to identify business risks, auditors should have an understanding of the entity. The industry of the entity, regulations affecting the entity, nature, size, business segments, management structure of the entity, and internal control of the entity are some of the factors that an auditor should consider and understand to estimate business risk.

Gramling and Stone (2001) observe that professional standards and risk-based audit technologies force audit firms to integrate industry expertise into their audit approaches. Auditors determine their audit fees based on the audit risk. If they perceive greater risk, they increase their audit effort resulting in an increase in audit fees, or they withdraw from the audit engagement.

Prior to SOX, most of the corporate governance guidelines were not mandatory. The firms that have board independence, an independent audit committee with financial experts, and a large percentage of institutional ownership demand high quality audits by engaging large auditing firms. The auditors can consider executive compensation as a risk when a large percentage of incentive pay to total pay exists. To compensate for such risk they demand higher audit fees. In the pre-SOX period, demand forces rather than supply forces drove audit fees. However, it is possible that auditors could reduce their audit fees after considering corporate governance, ownership and executive compensation factors because they can reduce audit risk. However, there is no concrete evidence in the audit literature that supports this view.

SOX imposes a substantial cost on many companies to strengthen governance, including increased auditing and internal control spending. Post-SOX,

the auditor's probability of risk has increased considerably due to certification of internal control requirements. The scope for non-audit services has reduced considerably. In the absence of non-audit services, the auditors have to depend more on their audit effort to assess business risk. In such a scenario, the auditors view corporate governance, institutional ownership, and executive compensation as important indicators of audit risk. It is quite possible that auditors are ready to reduce fees (due to reduced audit effort) if the client firm has good corporate governance practices (board and audit committee independence, financial expertise, and absence of duality). A large percentage of institutional holdings of a company also lead to reduced audit risk. However, it is not possible to say that audit fees could be lower for firms with well-designed executive compensation agreements. Better corporate governance, institutional ownership, and well-designed executive compensation, in general, reduce audit risk that in turn reduces audit fees. At the same time, better governance leads to high quality audits and results in increased audit fees. An increase in audit fees because of demand-side pressures (e.g., corporate governance) may moderate audit fees offsets from demand-induced reductions in the price of audit risk (supply-side).

2.5 Research Question

The early literature on audit fee determinants centred on the market forces of demand and supply. A host of researchers (e.g., Taffler and Ramalingam 1982; Francis 1984; Maher et al. 1985; Simon 1985; Palmrose 1986; Francis and Simon 1987; Johnson et al. 1995) find that client firm size, complexity, and size of the audit firm are significant factors in the determination of audit fees. Chung and Lindsay (1988), who studied Canadian firms replicating Simunic's (1980) study, did not find any significant price difference between Big8 and non-Big8 firms. Francis and Stokes (1986) find that, in Australia, no premium exists in the large firm segment and no significant differences in audit prices between Big8 and non-Big8 audit firms occurs. Similarly, in New Zealand, studies by Firth (1985), and Johnson et al. (1995) did not find any price premium charged by large audit firms. The different results could be due to different institutional settings (economy,

politics, accounting standards, regulations, disclosure regime etc.) of the US, Canada, Australia and New Zealand. In such a case, a cross-country study with similar period data might explain the causes for the mixed results.

Another important factor in all the above studies is that they were all piecemeal in nature. They tried to address only one or two aspects that affected the demand or supply sides of the audit market. They often ignored how the supply aspects of auditing influenced the relation between audit fees and corporate governance, ownership, and executive compensation, which are important factors in the estimation of audit risk. Studies that included corporate governance, ownership, or executive compensation looked at these effects in the pre-SOX period. In none of the studies were these variables considered together to analyse their effect on audit fees. The audit firms have to consider these factors together to assess their audit risk and avoid risky clients.

Increased regulations and changes to accounting and auditing standards happen in the post-SOX period. Such changes affect the market in one way or another by altering both the demand and the supply elasticities. Countries throughout the world have implemented rules incorporating major regulations of SOX and have introduced corporate governance principles. Such measures increase compliance cost to the firm and increase work and risk of the audit firm. The enhanced audit requirements and establishment of PCAOB increase audit risk for audit firms in the post-SOX period (Griffin et al. 2008). Corporate governance, institutional ownership, and executive compensation became important indicators for the audit firms for determining audit risk and audit fees. Large audit firms consider these factors in the analysis of risky audit engagements. Smaller audit firms may leave the audit market because they do not have the resources to carry out SOX regulations. In such a scenario, it is necessary to investigate whether audit firms consider corporate governance, institutional ownership, and executive compensation as determinants of audit fees. Most of the earlier studies ignore the collective effect of corporate governance, institutional ownership, and executive compensation and their effects on audit fees.

Prior studies provide inconclusive results. Inconclusive results could be due to overlooking the supply-side arguments and the interacting effects of institutional influences. Adequate audit committee independence, expertise, and a high percentage of institutional shareholdings minimise the audit risk of audit firms, which could result in reduced audit fees. I study audit committee independence and expertise, institutional ownership, and executive incentives as the determinants of audit fees in the US and New Zealand in the post-SOX period 2004 to 2008. The institutional settings in the two countries vary in certain aspects with regard to audit committee independence and expertise, institutional ownership, and executive compensation, and I expect the results to be different under these settings. For example, New Zealand has limited executive incentives as compared to the US setting leading to differing results. In addition, the strengths of the regulatory settings are different, with the US having stronger regulatory arrangements than New Zealand.

Therefore, the research questions are (a) what role does audit committee independence and expertise, institutional ownership, and executive compensation play in the determination of audit fees when both the demand and supply perspectives are considered in the post-SOX era; and (b) how do these variables affect audit fees in a more stringently regulated and highly litigious setting (i.e., in the US) and in a less stringently regulated and moderately litigious setting (i.e., in New Zealand). I adopt the following primary research model to address the aforementioned research question:

Audit fees = f {demand (firm size / complexity / riskiness / industry / audit committee independence and expertise / institutional ownership / executive compensation / litigation), supply (audit firm size / specialisation / accounting quality / litigation)}.

Chapter 3 Institutional Settings and the Influence on Audit Fees

Hay et al. (2006) identify that audit fee studies are conducted over a broad spectrum of countries. A review of the countries suggests that the countries varied from those with strong auditing traditions to weak auditing traditions. Likewise, some have strong market regulatory systems while others have weak market regulatory systems in place. In a similar manner, there are variations between these countries for a wide range of variables that determine audit fees (e.g., market size, company size, ownership structure, corporate governance arrangements, and accounting practices). I conduct a limited test of institutional differences by examining the audit fee determination in two market settings, the US and New Zealand. Both of these markets have similar auditing traditions, but the US setting is more strongly regulated and litigious than the New Zealand setting.

In this chapter, the corporate, audit, and legal environment of the US and New Zealand are discussed in order to understand the two country settings. The institutional settings of these countries are similar yet they differ in some crucial areas. The main difference is the strength of audit regulation. Since the establishment of SOX, legislative intervention affects audit regulation, whereas in New Zealand the regulations remain profession based, i.e., based on professional standards. While the US also has professional standards, the overriding guidance from the statutes and the influence of the Securities Exchange Commission (SEC) makes its regulatory setting more coercive than other countries, which do not have statutory intervention. Therefore, in terms of the institutional setting, the US setting is more coercive in nature and the New Zealand setting is more normative in nature.

This difference in the nature of institutional settings brings about differences in the penalties from non-compliance with the regulations and, creates greater pressure on the firms to follow the regulations. This primary difference between the two countries provides an ideal setting for studying audit

markets and audit fee determination processes in two different regulatory settings. Much of the earlier audit fee literature in the US is pre-SOX. Therefore, it is also important to revisit the determinants from the US perspective to understand what may have changed concerning the determinants of audit fees in the US setting post-SOX.

3.1 Background- US

The US capital market is large and diversified. It holds many features that are not too prevalent in other capital markets of the world, especially in the smaller ones such as New Zealand. Some of the features of the US setting identified in the literature are mentioned here.

In the US, The American Institute of Certified Public Accountants (AICPA) has been regulating the accounting and auditing profession since 1877. The AICPA provides guidelines to its members on handling auditing and accounting issues in a variety of industries. Prior to SOX, the AlCPA set standards on auditing, quality control, independence, and ethics. The establishment of the PCAOB by SOX has shifted regulatory responsibilities from the AICPA, effectively ending the profession's self-regulation (Venuti 2004). The accounting firms that wish to prepare or issue audit reports on US public companies must register with the PCAOB. The PCAOB develops auditing standards and oversees US accounting firms (PCAOBUS 2010). The supervisory role of PCAOB has further increased the audit firms' risk in the US.

The audit firm mergers of the 1980s and the 1990s increased the global Big4 audit market concentration, which had attracted the interest of regulators, market participants, and academics. As a result, the audit services market in many countries has come under scrutiny because of concerns about monopolistic pricing arising from a small and limited number of major audit firms in the market. Hermanson, Dykes, and Turner (1987) report such concerns about the possible existence of non-competitive pricing in the audit market in the US in the 1970s. The AICPA changed its professional rules in 1979 so that members could advertise their

services, tender for audit contracts, and solicit clients directly from other members (Hermanson et al. 1987). The audit market concentration increased further with the fall of Arthur Andersen. BIG4 firms have traditionally dominated the large company audit market due to a number of factors, including the auditor's technical skills, reputation, and capacity (Doogar, Fargher, and Hong 2005). Given the significant changes in the auditing profession following the enactment of SOX, it is likely that audit firms' business models, cost structures, and pricing decisions would have significantly changed after the enactment of SOX. Specifically, in the post-SOX period audit firms are much more likely to have priced auditing as a stand-alone service in light of SOX's restrictions related to non-audit services and supervision of accounting firms by PCAOB. This implies that auditors would be less likely to low ball audit fees in order to obtain the client's non-audit service contracts (Huang et al. 2009). Reduced competition leads to low PES for large audit firms. With less competition, the auditors have the power to decide who they wish to audit and by how much, thereby increasing the fee.

The US Federal Government regulates private enterprises in numerous ways. The SEC has statutory authority to establish financial accounting and reporting standards for publicly held companies under the Securities Exchange Act of 1934. The SEC oversees the key participants in the US securities market (securities exchanges, securities brokers and dealers, investment advisors, and mutual funds). The SEC is concerned primarily with promoting the disclosure of important market-related information, maintaining fair dealing, and protecting against fraud and has enforcement authority (SEC 2000).

Previously there were three major stock exchanges in the US. The New York Stock Exchange (NYSE), The National Association of Securities Dealers Automated Quotations (NASDAQ), and The American Stock Exchange (AMEX) are the major stock exchanges in the US. The NYSE provides a means for buyers and sellers to trade shares of stock in companies registered for trading. NASDAQ is the first electronic stock market in the US. NYSE acquired AMEX in 2009. AMEX operated an auction market in stocks (including overseas stocks), exchange traded funds, and

derivatives, including options on many NYSE-traded, and over-the-counter (OTC) stocks mostly of small companies (Stock Exchange Worldwide 2010).

Corporate governance has been the subject of significant debate in the US since the 1970s. Efforts to reform corporate governance are driven, in part, by the needs and desires of shareowners to exercise their rights of corporate ownership. The various financial crises of the 1990s and collapse of Enron in 2001 led to increased shareholder and governmental interest in corporate governance. SOX increases the overall corporate responsibility, in particular, those of the CEO, the CFO and the external auditor. It revises sentencing guidelines and imposes more penalties for white-collar crimes (Strader 2007).

In the US, the corporate governance codes, as prescribed by SOX, are mandatory for all listed American companies, their foreign subsidiaries and foreign companies that have US listings. It applies to all SEC registered organisations, irrespective of their geographical trading activities. Sections 302, 404, and 409 of SOX 2002 require management (CEO, CFO) and the auditor of the company to disclose certain details and certify certain statements.

Section 404 of SOX requires management and the external auditor to report on the adequacy of the company's internal control. SOX authorizes the establishment of the PCAOB, which oversees the accounting profession. The PCAOB registers accounting firms, develops auditing standards and rules of ethics for the profession, and investigates accounting firms. The board may discipline and sanction accounting firms that violate rules and reports to the SEC.

SOX prohibits the provision of certain non-audit services by incumbent auditors. The audit committees of publicly traded companies are expected to show higher responsibility and be an important participant in the financial reporting process of the company. The main audit committee requirements as required by SOX (Section 10A (m) (1) of the Securities Exchange Act of 1934, as added by Section 301 of the Sarbanes-Oxley Act of 2002) are:

- Each audit committee member must be independent;
- At least one member of the audit committee must be a financial expert;
- The audit committee is directly responsible for the appointment, compensation, and oversight of the auditor;
- All auditing services and most non-auditing services must be preapproved by the audit committee; and
- The audit committee must establish procedures for the receipt, retention, treatment, and confidential handling of complaints regarding accounting and auditing-related matters.

"An audit committee financial expert" in the above requirements is a person who has the following attributes:

- An understanding of financial statements and generally accepted accounting principles;
- An ability to assess the general application of such principles in connection with the accounting for estimates, accruals and reserves;
- Experience preparing, auditing, analysing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the registrant's financial statements, or experience actively supervising one or more persons engaged in such activities;
- An understanding of internal controls and procedures for financial reporting; and
- An understanding of audit committee functions.

SOX enhances the audit risk for both the auditee and the audit firms as firms must follow these guidelines, and audit firms are now under the supervision of PCAOB.

Specific to the US, the size of institutional shareholdings play an important role in the monitoring process of both the management and the auditors of the company. Large insider block holdings reduce the need for quality external reports, thereby reducing the need for quality audits.

In the US, the CEO and other top executives are paid salary and short-term and long-term incentives or bonuses. The interests of CEOs and the shareholders align from the issuance of stock options. Critics argue that the executives of the US corporations receive too much for the services they provide, prompting the SEC to mandate publicly traded companies to disclose more information explaining their executives' compensation (Klein 2003). Equity incentives to CEOs are associated with private class action suits in the US. Such litigation impacts the auditor in assessing CEOs' equity incentives and bonus schemes as probable risk factors while determining the overall audit risk and audit fees (Kannan 2009).

3.2 Background-New Zealand

As mentioned earlier, the primary difference in the New Zealand and the US institutional setting is in the regulatory strength of the institutional setting. Overall, New Zealand has a legal system similar to that of the US. It has a common law system with a securities market, and its securities market regulatory system is similar to that of the US. Being a smaller country, its rules and regulations mimic the rules and regulations of larger common law countries such as the US, the UK, and Australia. While such similarities exist, the New Zealand system is more normative rather than coercive, as in the US. This is particularly evident concerning auditing requirements. The New Zealand auditing rules and regulations derive from the professional and auditing standards of the New Zealand Institute of Chartered Accountants (NZICA), a professional body. In the US, auditing rules and regulations come from professional standards and legislative requirements.

The NZICA regulates the accounting and auditing profession in New Zealand. Until 1983, most of the major audit firms (except PWC) were trading with a local name. In this early setting, there was no active price competition in the New

Zealand audit market (Firth 1985) and the Big8 earned audit fee premiums (Firth 1993). Currently, the BIG4 audit firms do most of the audit and non-audit work for companies listed on the NZX. Unlike SOX, which prohibits certain non-audit service fees payments to auditors there is no regulation in New Zealand that expressly prohibits non-audit services by an audit firm. The accounting and auditing profession is self-regulated by the NZICA. Unlike the US, very few competitors can provide non-audit services as a standalone product. Litigation risk for auditors in New Zealand is similar to that in Australia and the United Kingdom, but less than in the United States (Wingate 1997).

New Zealand has a smaller economy than the US with a higher prevalence of smaller businesses than other developed economies (Skilling 2001; Simmons 2004). Frederick and Chittock (2006) state that New Zealand's economy is dominated by 'lifestyle entrepreneurs' aspiring towards independence and an optimal work-life balance rather than wealth creation. Most of the companies are small compared to the US companies. Companies, financial institutions, trusts, family trusts, and individuals also hold a higher percentage of shares in some of the listed companies (Sharma, Sharma, and Umapathy 2011). Unlike the US, companies in New Zealand have very few institutional holders and they hold small percentages of shares in most of the listed companies. Most of the companies are small compared to the US companies.

Hossain, Prevost, and Rao (2001) present evidence that ownership in NZ is significantly more concentrated than in the US. They observe that mean proportion of stock held by the top 20 shareholders in New Zealand is 73%, while the equivalent percentage in the US is only 37.66%. Bhabra (2007) observes that companies in New Zealand have lower institutional and higher concentrated shareholdings with lower levels of external monitoring. The geographical separation of foreign institutional investors from their invested companies is partially responsible for the ineffective institutional monitoring observed in New Zealand.

The New Zealand companies have a high percentage of ownership concentration and it is not clear whether they are inside or outside block holders. In such a scenario, the audit firms in New Zealand do not face the same amount of pressure from institutional investors for a better quality audit as seen in the US.

The listed equities market in New Zealand is thin, the debt (both private and listed), private equity, and venture capital markets are also less developed compared to many other developed countries, and New Zealand lacks a derivatives exchange (Evans 2009). Furthermore, New Zealand relies considerably on foreign capital because of its small capital market. The executive compensation schemes of the companies listed in the NZX are less complex than the incentive-based, stock compensation schemes of the US companies. Very few firms pay incentives like bonus, retention benefits, and CEO option risk. Most of the CEOs are also part of the ownership concentration seen in most of the medium and small-scale New Zealand firms. Since the CEOs of such firms already have incentives as a shareholder, the firms do not offer other incentives to the CEOs. The NZX listed companies offer primarily basic salaries with a limited set of profit-based incentives with few companies offering stock options (Roberts 2005). The companies disclose the remuneration of directors, including the CEO, in their annual report. Unlike the US, very few companies offer long-term incentives plan (LTIP) to their executives as a part of executive compensation (Roberts 2005). Private class action suits against the CEO are rare (e.g., the case against the directors of Feltex Ltd). Since the executive compensation is less complex and very few companies offer stock and LTIP options, the audit firms in New Zealand do not face the same amount of audit risk as in US.

In order to understand the issues faced by listed companies in New Zealand, consider the following facets of the institutional setting. The Corporate Governance Principles in New Zealand mostly incorporate SOX principles and guidelines. To oversee the implementation of corporate governance principles there is no strong regulatory agency like the SEC in New Zealand (Roberts 2005). Moreover, the risk arising from financial misstatements and accounting fraud is low in New Zealand.

New Zealand has witnessed some financial misreporting scandals (e.g., Feltex) and failure of some finance companies over the last decade, but the implications of these scandals have not been as far reaching as those of the US (e.g., Enron, WorldCom). In addition, the legal environment in New Zealand is less litigious than in the US (Wingate 1997). The availability of only a small pool of directors for board positions in New Zealand has created an excessive interlocking directorate problem in large companies where some directors sit on many different company boards with some people engaged in boards of four to ten different companies (Keown 2009), which could influence the objectivity and independence of the directors. These relationships hamper the ability of the audit committee to monitor the financial reporting process (Sharma et al. 2011). Since the businesses are mostly medium and small, they may have higher business risks, which lead to an increase in audit risk. Since the major audit firms operate worldwide, audit failure in New Zealand could invariably affect their reputation and loss of business in other parts of the world.

Relative to the US, there are fewer companies listed on the stock exchange. The Ministry of Economic Development (MED) provides policy advice and overall monitoring of the regulatory system. The New Zealand Securities Commission (NZSC) is New Zealand's main securities market regulator. However, compared to the SEC, it has very limited enforcement capacity when it comes to implementing the securities market regulations. It is only one of several enforcement authorities. Prada and Walter (2009) observe that apart from NZSC, other organisations that have the capacity to enforce securities regulations are the New Zealand Stock Exchange (NZX), Crown Company Monitoring Advisory Unit (CCMAU), National Enforcement Unit (NEU), the Serious Fraud Office (SFO), the Inland Revenue Department (IRD), and the Organised and Financial Crimes Agency of New Zealand (OFCANZ). While each of these organisations has specified terms of reference, Bond (2010) notes that recent cases suggest that there is an unnecessary duplication of activities and resources between them. New Zealand has established the Financial Markets Authority (FMA) in 2011, which replaces the NZSC. Another noteworthy

difference between the US and the New Zealand systems is that, unlike the SEC, the NZSC has no statutory authority to establish financial accounting and reporting standards for publicly held companies.

With regard to the stock market, the New Zealand Stock Exchange (NZX) is the country's only stock exchange. The NZX is a registered company. The NZX comprises three different security markets:

- New Zealand Stock Market (NZSX)
- New Zealand Alternative Market (NZAX)
- New Zealand Debt Market (NZDX).

The NZSX is the primary equity market for New Zealand listed companies. The NZAX is a lower cost marketplace, designed for small to medium-sized, fast-growth businesses seeking a safe and efficient alternative capital source. It also allows listing of non-traditional entities like co-operatives for trading and price discovery. The NZDX provides a primary market facility where investors can buy newly issued debt securities from the issuer, and provides a secondary market where investors can buy and sell debt securities (NZSC 2004).

For the audit requirements of New Zealand listed companies, reforms in the US have spilled over to New Zealand. Mimicking SOX, the NZX imposed changes in its listing rules to improve the governance and audit quality of New Zealand public companies, and requires compliance from the year 2004. The new rules require the establishment of an audit committee with majority independent director membership (listing rule 3.6), a minimum quota of one-third seats with a minimum of two seats for independent directors on company boards (listing rule 3.3), and a non-mandatory Corporate Governance Code of Best Practice (Appendix 16 of NZX listing rules). In addition, in 2004 the NZSC promoted a non-mandatory set of nine corporate governance principles supporting the general thrust of the NZX rules (NZSC 2004).

In addition to the mimicking of the US rules, the BIG4 auditors, being multinational auditors, spread common corporate governance and disclosure practices around the world. This is through the adoption of common auditing practices in their country-offices in different parts of the world. Chaney, Jeter, and Shivakumar (2004) postulate that the largest auditors structure themselves to efficiently serve their client segment by investing more heavily in technology, training, and facilities than smaller auditors. They follow standardised practices throughout the world. They tend to uphold high quality accounting practices because adverse reputational effects can spread beyond country boundaries. Therefore, even in smaller markets such as New Zealand, BIG4 firms try to apply US-based practices, and this may include practices that are mandatory in the US but not in New Zealand.

Since most of the New Zealand companies are medium sized or small, and operate in a less complex business environment, applying SOX type rules or mandatory corporate governance codes may not be desirable but preferable. The effect of cross listing on New Zealand firms is also likely to be minimal. Very few New Zealand companies cross-list in the US and a few list in Australia, where accounting and auditing regulations are similar to those in New Zealand. Both Australian and New Zealand companies follow principle-based accounting and auditing standards. Despite a less complex corporate environment, because of SOX and other international auditing developments, there is a greater awareness of governance practices and the costs and benefits of the auditing process among New Zealand companies (Ministry of Economic Development 2004).

3.3 Comparison – US and New Zealand Setting

The background settings of both the US and New Zealand identify certain significant factors that are unique to each country (See summary of the settings below). The differences in the institutional settings of the US and New Zealand can have different impacts on the audit price settings in the two markets. In the US, the greater coerciveness of the regulations affects the PED and PES in the audit market.

The audit firms in the US face more risk in the post-SOX period due to increased supervision of the accounting and auditing profession by the PCAOB. Audit services require considerable expertise and ability, and the supply of such skills and abilities is limited, making the PES of audit services low. With the introduction of SOX, the supply-side of auditing services is under further strain (ACAP 2008). For example, with the introduction of Regulation 404, smaller audit firms are less likely to be in the market for large audits because of its arduous regulatory requirements, which adds to their audit risks. However, with greater attention paid to corporate governance matters under SOX and executive compensation, US audit firms are likely to use corporate governance measures to assess audit risk. The better these measures, the lower the audit risk. Therefore, from a supply-side perspective, in the US, auditors are likely to reduce their audit fees if the auditee has better audit committee independence and expertise (two measures of corporate governance emphasised by SOX), higher institutional ownership, and executive compensation.

In contrast, these governance factors would have less effect on audit services and audit fees in New Zealand. Firstly, in New Zealand, these factors are regarded as suggested codes rather than requirements. Secondly, the level of audit risk in New Zealand, relative to the audit risk in the US, is low. Thirdly, the penalties of audit failure are far less obvious in New Zealand than in the US. Fourthly, the New Zealand audit profession is self-regulatory in nature, and is not under any supervisory body like the PCAOB in the US. Finally, unlike the SEC, the NZSC has no statutory authority to establish financial accounting and reporting standards for publicly held companies. Drawing from the earlier discussions, there are other important differences between the two settings.

First, the US is a highly litigious country, whereas New Zealand is less litigious. In the US, the corporate governance codes are mandatory but in New Zealand, it is optional. US firms have a high percentage of institutional shareholdings as compared to New Zealand. Executive compensation in the US is widely distributed as compared to New Zealand. The SEC in the US has the statutory authority to establish and enforce accounting and reporting standards

while NZSC has no such statutory or enforcement authority. The US follows USGAAP as its accounting standards but New Zealand follows IFRS.

The US corporate governance arrangements such as audit committee independence and expertise are mandatory which may reduce audit fees through audit risk reduction, a supply perspective. In New Zealand, the corporate governance codes are optional which may not affect the audit fee. Institutional shareholdings are higher in the US as compared to New Zealand, which could mitigate the audit risk resulting in lower audit fees from a supply perspective. The executive compensation arrangements in the US may have a mixed effect on the audit risk unlike New Zealand, which does not have wider incentive schemes. The SEC in the US has enforcement authority, which increases the audit risk of audit firms in the US resulting in higher audit fees. The next chapter further details these effects of the institutional environments.

Table A Summary of Institutional Settings of the US and New Zealand

Title	US	Impact on audit market	New Zealand	Impact on audit market
Economy	Largest economy (based on GDP)	Larger markets and more competition for audit work, which lowers audit fees.	One of the Smaller economies (based on GDP)	Competitive audit market and less audit fees
Litigation	Highly litigious	High direct audit risk leading to high audit fees. However, firms also have high litigation risk, which could improve governance and lower audit risk.	Less litigious	Litigation (audit risk) is lower resulting in reduced audit fees. However, firms also have low litigation risk, which could lead to weak governance and lower audit risk.

Table A Summary of Institutional Settings of the US and New Zealand (continued)

Corporate governance codes	Compulsory (Coercive)	Better governance reduces audit risk of audit firms and reduces audit fees.	Mostly voluntary (normative)	To a certain extent, increases the audit risk and might result in increased audit fees.
Institutional Ownership	High institutional ownership	Audit firms' risk is less leading to reduced audit fees.	Low institutional ownership	Low institutional holdings have a low impact on audit fees.
Executive Compensation	Has wider varieties of incentives for executives	Auditors have to spend more hours to look at the schemes and associated risks resulting in higher audit fees.	Basic salary is offered in most of the companies. Has wider varieties in few companies at the top tier	Higher audit fees for companies having wider schemes because of associated risks.
Financial reporting standards	USGAAP/SEC supplements (Coercive)	Increased compliance (audit risk) resulting in higher audit fees.	IFRS (Coercive)	Increased compliance resulting in higher audit fees.
Role of securities authority	SEC has enforcement authority	Audit firms follow instructions and regulations to avoid fines-more audit fees.	Overseeing capital market and one of the regulators with enforcement power	Companies follow the guidelines and effect on audit fees is not clear.

Chapter 4 Hypotheses Development – US

This chapter deals with hypotheses development for the US institutional setting. As discussed earlier, the US institutional setting is strongly regulated with statutory, judicial, and professional intervention in corporate governance and auditing. Strong regulatory arrangements are likely to make the audit risk of audit activities more prominent and, in turn, make auditors more reliant on corporate governance, institutional ownership, and executive compensation to gauge the level of audit risk associated with the firm. The level of audit risk assessed allows the auditor to estimate the extent of audit work and the amount of audit fee to be charged. This is a supply-side argument. The demand-side argument is that these determinants prompt the audit committee to demand higher or lower quality audits. Based on these arguments, I draw hypotheses for the main experimental variables: corporate governance, institutional ownership, and executive compensation.

4.1 Audit Committee Independence and Expertise

The structure of the board of directors (size of the board, number of meetings, and the number of committees of the board) and the composition of the board (executive, non-executive, and independent) affect the corporate governance of the firm. These board characteristics are important determinants of corporate governance (e.g., Hermalin and Weisbach 1998; Bhagat and Black 2002; Bhagat and Bolton 2008). The composition of the board is an important factor for the demand for audit services. An independent, diligent, and expert board may demand differentially higher quality audits. Such a demand may exist to protect both the board's own interests and the shareholders' interests. Through a higher quality audit, the board protects the shareholders, which in turn helps the directors avoid legal scrutiny and protect their reputational capital (Gilson 1990).

The role of the audit committee is a subject of increasing regulatory interest. In the 1990s, the SEC, the Public Oversight Board (POB 1993), and the National

Association of Corporate Directors (NACD 2000) stressed the role of the audit committee in providing active oversight of financial reporting. The Blue Ribbon Committee (1999) recommended that audit committee charters specify that the outside auditor is ultimately accountable to the board of directors and the audit committee, and the audit committee has the ultimate authority and responsibility to select, evaluate, and, where appropriate, replace the outside auditor. Prior to 1999, large US companies were encouraged to maintain audit committees with a majority of members being 'independent' of management; however, there was no uniform definition of independence (Buchalter and Yokomoto 2003).

SOX has directed that the issuer companies should maintain an audit committee, and that the audit committee be responsible for the appointment of the external auditor, oversight of the external auditor's work, fees paid to the external auditor, and approval of non-audit services. SOX introduced several changes with the objective of strengthening the audit committee (SEC 2003) and used a stricter definition of independence (Buchalter and Yokomoto 2003). To qualify as an 'independent' director, the audit committee member may not accept any 'consulting, advisory, or other compensatory fee' from the firm other than for serving as a director nor be an 'affiliated person' of the firm or its subsidiaries. Section 301 of SOX requires that all listed firms have audit committees composed entirely of independent directors. Section 407 of the SOX requires firms to disclose in periodic reports whether a financial expert serves on a firm's audit committee (SE 2003).

Prior studies (Carcello et al. 2002) find significant positive relations between audit fees of Big6 and board independence, diligence, and expertise. They also report that audit committee characteristics lose significance when board characteristics are included. In the post-SOX period, the audit committee has a larger role to play in the audit fee determination process.

Prior research has shown that key audit committee characteristics, rather than the mere presence of an audit committee, critically affect the audit

committee's ability to effectively execute its duties (e.g., Abbott and Parker 2000; Beasley et al. 2000; Carcello and Neal 2000; Raghunandan, Read, and Rama 2001). An audit committee with independent directors with financial expertise should be able to conduct investigations when appropriate, assess risks and exposures, and comment on internal audit practices. The presence of an effective audit committee could substitute for some of the work of external auditors. Krishnan and Visvanathan (2006) observe that auditors price the effectiveness of the audit committee as it relates to the control risk and thus, the overall audit risk. They find that after controlling for several board and audit committee and firm characteristics, audit pricing is negatively related to accounting and financial expertise. In the post-SOX environment, and because of the attention corporate governance has received in recent years, indicators such as an independent audit committee with at least one financial expert is an important signal of audit risk and audit fees reduction in the US. Therefore, consistent with prior literature, I conjecture that an effective (ineffective) audit committee would lower (increase) audit fees. However, this is in contrast to the demand-side argument that effective audit committees would require higher quality audits and, therefore, higher audit fees. As argued earlier in Chapter 3, the supply-side argument is more plausible in the stricter regulatory environment of the post-SOX era, where auditors are more concerned about their risks and have to provide more governance oriented assurances to the capital markets. Therefore, for the post-SOX setting, I hypothesise that:

H1a: There is a negative association between audit fees and the percentage of audit committee independence.

H1b: There is a negative association between audit fees and the percentage of audit committee financial expertise.

4.2 Institutional Ownership

The audit fee literature suggests that the ownership composition of firms affects audit fees. Ownership composition (institutional ownership, inside

corporate or individual ownership) of a firm determines the level of monitoring, which influences its risk environment. Various shareholder groups exert monitoring at different levels depending on their investment objectives and economic stakes in an organisation. When the level of stock ownership is low, shareholders minimise their monitoring of firm decisions because it is too costly to stay informed. However, when institutional owners are substantial in nature, their economic stakes increase in a firm and in order to protect their investments they demand a higher quality audit.

In the US, long-term institutional owners are featured prominently in the ownership composition of the firms, and play an important role in the monitoring process of both the management and the auditors of the company (Mitra and Hossain 2006). Prior studies (e.g., Grossman and Hart 1980; Shleifer and Vishny 1986; Huddart 1993) suggest that large institutional shareholders have the incentive to undertake monitoring or other costly control activities because increased returns from monitoring are sufficient to cover the associated costs. Kane and Velury (2004) provide empirical evidence of a positive association between institutional ownership and auditor size.

Mitra and Hossain (2006) observe that long-term institutional ownership leads to greater interest in monitoring the activities of the firm. In this respect, Han et al. (2009) did not find any association between audit fees and long-term institutional ownership. However, they observe that audit firms charge a fee premium as the ownership percentage of short-term institutional investors' increases. This could be because of the view that short-term institutional ownership creates pressure on managers to report short-term earnings that meet earnings targets. A higher percentage of long-term institutional shareholders might force the audit firm to conduct an effective audit programme that requires greater audit effort and higher audit fees. From an auditor's lens, audit firms are aware that a high percentage of long-term institutional stockholders have their own monitoring arrangements and contracts in place to align manager and shareholder interests. In this scenario, managers would be less likely to engage in accounting

manipulations, which would reduce the audit risks of the audit firm and, in turn, will reduce the audit effort and the audit fee.

Sec 404 of SOX has imposed greater responsibilities on the auditors. This has led to increased audit risk. Higher long-term institutional ownership signals better corporate governance to the auditor. Sec 404 of SOX requires greater scrutiny of internal control arrangements by the auditor. With better governance associated with long-term institutional ownership, auditors regard higher institutional ownership as a signal of lower control risks within the firm. Therefore, the auditor is likely to lower (increase) audit fee for firms having high (low) long-term institutional ownership. Accordingly, I propose the following hypothesis:

H2: There is a negative association between audit fees and the percentage of long-term institutional ownership.

4.3 Executive Compensation

Jensen and Meckling (1976) provide examples of monitoring/bonding contracts (e.g., executive incentives based on financial measures of performance) that mitigate manager-shareholder conflict of interests. CEOs shareholding incentives may motivate CEOs to manipulate firm performance to enhance personal wealth, at the expense of shareholder interests (Bergstresser and Philippon 2006). Audit firms may believe that managers with a larger percentage of their annual compensation in the form of bonus plans have stronger incentives to manage earnings. Earnings management may increase the likelihood of a material misstatement from error or fraud, and, thus, result in cost implications to auditors from litigation, reputational damage, and lost fees.

Since executive compensation increases audit risk, the audit firms consider it while planning the audit engagement. Post-SOX, the auditor's probability of risk has increased considerably, and auditors view executive compensation as increasing their risks. Kannan (2009) observes that auditors, boards of directors, compensation committees, shareholders, managers, academics, and regulators may

be interested in whether audit pricing reflects risks impounded in CEO pay and equity incentives. Healy (1985) and Holthausen et al. (1995) along with other researchers have documented that bonuses have an influence on managerial accounting and reporting practices. Healy (1985) finds that managers manage earnings downwards when the maximum bonus is achieved, or the minimum requirement for a bonus is not achieved. Holthausen, et al. (1995), expanding on the work of Healy (1985), find that managers manage earnings downwards when bonuses are at the maximum but not when earnings are below the minimum necessary to receive any bonus. Managers do not have much control over strategic changes in the short run and in order to achieve their targets, manipulate accounting figures thereby increasing audit risk. Audit firms view short-term incentives as a greater risk as they may lead to accounting based manipulation. Detection of accounting based manipulation requires greater audit effort and higher audit fees.

Vafeas and Waegelein (2007) opine that certain types of management incentives can lead to reduced audit fees and can restrain management from excessive earnings manipulation. Kannan (2009) finds that auditors price CEO incentive pay in the post-SOX period and Wysocki (2010) finds that there is a positive and significant association between CEO total compensation and audit fees. However, Wysocki (2010) did not consider effects of long-term incentive plans (LTIP) and restricted stock plans in his study.

The audit firms consider executive incentives (long-term incentive plans and stock options) as a risk factor (Kannan 2009). However, there are two sides to this argument. In the presence of greater amounts of long-term incentives and stock options, executives may reduce earnings manipulation and this leads to lower external audit efforts. This lowers the audit risk arising from earnings manipulation and, therefore, lowers the audit effort required. Alternatively, stock option awards may induce executives to manage earnings in order to tilt the parameters of the option grants in their favour. This stance increases the audit risk arising from earnings manipulation and, therefore, increases the audit effort required. These

two points of view have opposing effects on audit fees. From the earlier discussion, it is clear that incentives (both short and long-term) and stock options could either increase or reduce the audit risk. Because of the conflicting effects, audit fees may not vary systematically with the amounts of the incentive schemes. Therefore, I propose the following hypotheses in the null form.

H3a: There is no association between audit fees and the level of CEO short-term incentives.

H3b: There is no association between audit fees and the level of CEO long-term incentives.

H3c: There is no association between audit fees and the level of CEO stock options.

4.4 Summary

To sum up, the US audit market is highly regulated. I have tried to build these features into the predictions I make concerning the relation between audit fees and the governance features of audit committees, institutional ownership and executive compensation. Post-SOX, the market became more regulated. While SOX has enhanced audit risks for the auditors, it has also benefited the auditors by requiring significant improvements in corporate governance variables. Pre-SOX, most studies assumed good corporate governance created a demand for better quality audits leading to higher audit fees. Post-SOX, I predict the supply-side to be more prominent and that it will help reduce audit risk when the audit committees are independent and have more financial expertise. Griffin et al. (2008) provide some early evidence of this effect. Institutional ownership also creates demand pressures, but at the same time, it can also mean additional outside scrutiny that can reduce audit risk for audit firms. For the post-SOX environment, I argue that audit risk reduction effects are more prominent, and it negatively affects the audit fee. Finally, for executive compensation, I argue that it can have both audit risk

increasing and decreasing impacts. Therefore, I predict a scenario of no significant association between audit fees and executive compensation.

4.5 The US Conceptual Schema

The Figure A below summarises the conceptual schema of the US hypotheses. For the US, SOX requires certain audit committee features (bold line connecting SOX with audit committee independence) and emphasises better corporate governance (dashed line connecting SOX with institutional ownership and executive compensation). SOX also requires better quality audits under Regulation 404 which could increase the earnings quality (bold line connecting SOX with Earnings Quality).This could also affect audit risk (bold line connecting SOX with Audit Risk). It is also possible that earnings quality could affect audit risk (bold line connecting Earnings Quality with Audit Risk). My argument in this chapter is that the governance (independent) variables listed on the left-hand side, influence audit fees (dependent) variable on the right hand side for two underlying reasons: audit risk and audit/earnings quality. The figure demarcates between the two underlying reasons with a dotted line. As explained in the chapter, the independent variables have both supply and demand arguments that lead to higher or lower audit fees. In this chapter, I have argued that in the post-SOX era the supply-side explanation is more prominent in influencing the audit fee. For both audit committee independence features and institutional ownership, I argue that these variables reduce audit risk, which leads to a reduction of the audit fee. For executive compensation, I argue that both demand and supply influences coexist creating countervailing forces that lead to no systematic association between the executive compensation features and audit fees (Bold lines connecting the independent variables with Audit Risk and the bold line connecting Audit Risk and Audit Fees).

On the demand-side, my argument is that the influences of the determinants are less prominent in the post-SOX era, thus, no systematic influence on audit fees

(Dashed and dotted lines connecting the determinants with Earnings Quality and connecting Earnings Quality with Audit Fees).

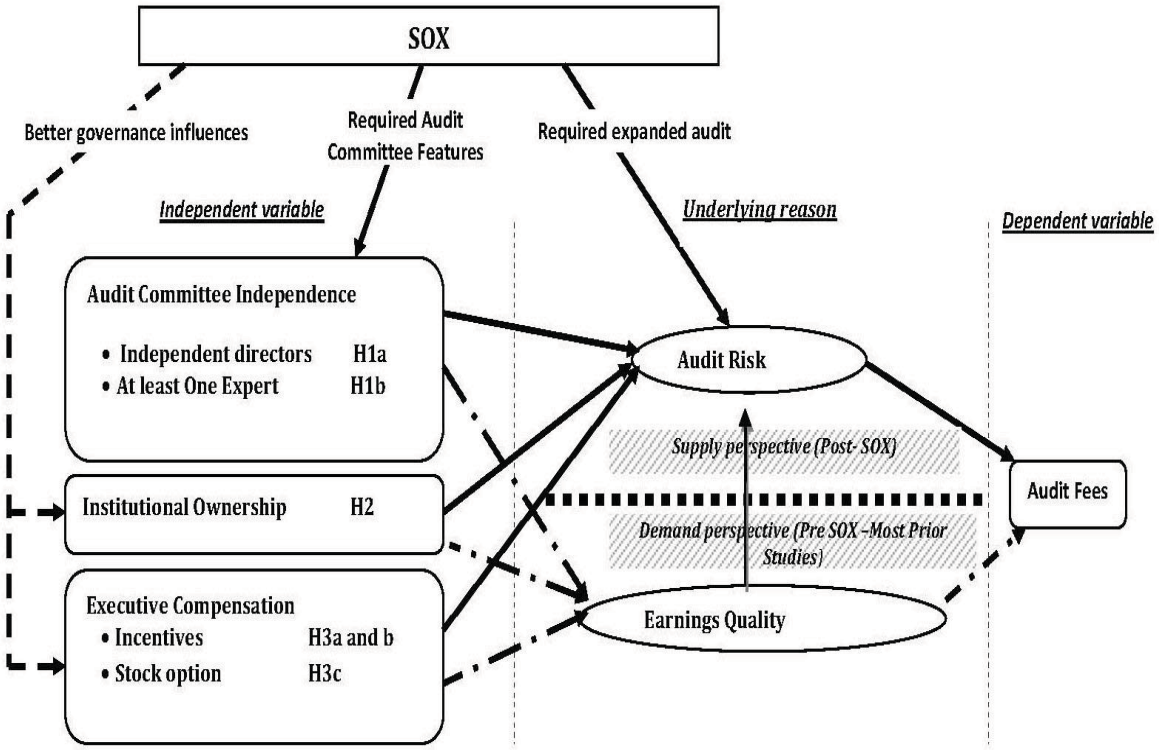

Figure A Conceptual Schema-US in the Post-SOX Era

Chapter 5 Hypotheses Development– New Zealand

This chapter deals with hypotheses development for the New Zealand institutional setting. As discussed earlier in Chapter 3, the New Zealand institutional setting is driven more by professional and market norms than regulations. The auditors in this setting consider audit committee independence and expertise, institutional ownership, and executive compensation as risk factors, but not to the extent as in the US setting. Therefore, I expect the supply-side influences of audit committee independence and expertise, institutional ownership, and executive compensation to be weaker, and at times negated by the demand-side influences in the determination of audit fees. Based on this notion, I frame the hypotheses for the New Zealand setting.

5.1 Audit Committee Independence and Expertise

Prior research in the US indicates that key board and audit committee characteristics affect audit fees (e.g., Abbott and Parker 2000, 2001; Beasley et al. 2000; Carcello and Neal 2000; Raghunandan et al. 2001). On the demand-side, an independent, diligent, and expert board may demand differentially higher audit quality than the large audit firm normally provides, primarily to protect the board's own interests. The board may seek to protect its reputational capital, and to avoid legal liability (Gilson 1990). To maintain reputation they promote shareholder interests by purchasing higher audit quality.

Krishnan and Visvanathan (2006) observe that auditors price the effectiveness of the audit committee because it relates to control risk and thus, the overall audit risk. The results observed in the US may not be the same in other settings due to institutional and governance differences in the settings. Moreover, audit committee independence is now required or recommended in many jurisdictions. While there may be variations in the level of independence, there is a

large influence of such variables (independence percentage) in the regulatory arrangements.

As discussed earlier, SOX influence comes to the New Zealand setting through mimicking and BIG4 auditors. Porter and Gendall (1998) find that around 60% of the companies have audit committees in both private and public sector undertakings. Rainsbury et al. (2009) examine the association between the quality of audit committees on financial reporting quality and external audit fees in New Zealand and find that higher quality audit committee does not impact audit fees. This finding is from a sample of 87 companies for the year 2001(pre-SOX period). Companies in New Zealand are relatively smaller than US companies and have highly concentrated ownership (Rainsbury et al. 2009), which may make the need for audit committees and the effect of audit committee quality less effective than in the US. In addition, because audit firms in New Zealand do not face the same regulatory and litigation pressures as found in the US, audit fees and audit quality may not have a direct association. Countervailing demand and supply pressures may exist leading to no systematic association between audit fees and audit committee independence. Unlike the US context, there is less pressure from the regulatory system in New Zealand to create additional audit risk above those indicated by governance mechanisms. Accordingly, for New Zealand companies, I propose the following hypotheses in the null form.

H4a: There is no association between audit fees and the percentage of audit committee independence.

H4b: There is no association between audit fees and the percentage of audit committee financial expertise.

5.2 Institutional Ownership

The nature of ownership of a firm is very important to gauge the extent of it being monitored by its owners. Large external institutional shareholders demand better monitoring in order to safeguard their interests as compared to high levels

of internal block holding. Kane and Velury (2004), and Mitra and Hossain (2006) provide empirical evidence of a positive association between institutional ownership and audit fees.

Unlike the US, the proportion of external institutional ownership in listed NZX firms is low. The top twenty shareholders of most of the companies are mainly corporate owners mainly constituting private companies. This is followed by trusts, and to a certain extent individual shareholders (Roberts 2005). Outside ownership of financial institutions is relatively low (This is further explained in Chapter 8). New Zealand firms also have high ownership concentration (Hossain et al. 2001; Bhabra 2007).

The lower levels of outside institutional ownership or, alternatively, higher levels of inside ownership are indicative of lower levels of outside shareholder monitoring. Lack of effective monitoring by low levels of institutional owners suggests that institutional ownership may not have any noticeable effect on audit risk. Likewise, institutional ownership may not affect audit fees of New Zealand firms.

Since institutional ownership in New Zealand is low, audit firms in New Zealand may not consider the influence of institutional shareholders on audit risk and audit fees. Hence, I propose the following null hypothesis:

H5: There is no association between audit fees and the percentage of institutional ownership.

5.3 Executive Compensation

Audit firms may believe that managers with a larger percentage of their annual compensation in the form of bonus plans have stronger incentives to manage earnings (Kannan 2009). Earnings management may increase the likelihood of a material misstatement from error or fraud, and, thus, have cost implications for auditors in the form of litigation costs, reputational damage, and

lost fees. Since incentive-based executive compensation increases audit risk, audit firms are likely to examine executive compensation packages while determining the risk involved in an audit engagement. Vafeas and Waegelein (2007) opine that certain types of management incentives such as long-term pay can lead to reduced corporate audit fees. Kannan (2009) reports that auditor's positively price CEO incentive pay. Wysocki (2009) finds that total CEO salary as a measure of executive compensation is positively associated with audit fees. All of these are US studies.

Over recent years, the level of executive compensation paid by New Zealand firms has come under greater scrutiny of the shareholders. The shareholders of New Zealand publicly listed companies are becoming increasingly vocal in their opposition to large salaries, bonuses, and share options granted to senior executives, with seemingly little regard to actual firm performance (Roberts 2005). Roberts (2005) finds that New Zealand CEOs are not overpaid, while Andjelkovic et al. (2002) find that CEO cash incentives depend primarily on firm size. Gunasekaragea and Wilkinson (2002) draw similar conclusions, but show that if compensation includes the change in the value of CEO share holdings and cash, then short-term, long-term, and future firm performances become significant determinants of the total compensation for CEOs. Similarly, Elayan et al. (2003) conclude that executive compensation depends primarily on company size and business risk.

The executive compensation packages offered by most firms listed on the NZX as compared to US firms are simpler with basic salary and limited incentives. Very few companies offer long-term incentives plans, and some offer stock options (Roberts 2005). Since executive compensation is a risk factor for the audit firms, audit firms view them as significant signals of audit risk and a reason for charging audit fee premiums in a high-risk setting like the US. However, New Zealand auditors operate in a low-risk environment and executive compensation incentive schemes are not comparable to those of the US. In such an environment, it is unlikely that the audit firms would view executive compensation as a potential

audit risk in the determination of audit fees. Accordingly, I propose the following hypotheses:

H6a: There is no association between audit fees and the level of CEO base/total salary.

H6b: There is no association between audit fees and the level of CEO incentives.

H6c: There is no association between audit fees and the level of CEO stock options.

5.4 Summary

Relative to the US setting, the New Zealand market has smaller firms with higher percentage of inside ownership, which leads to lower separation between ownership and control. Additionally, auditing and corporate governance regulations are less coercive. However, because of internationalisation, the global trend towards better auditing and corporate governance also affect New Zealand auditors and companies, respectively. In such an environment, I argue that the opposing forces of demand and supply will be at work and the lower regulatory requirements would reduce the governance signals of the corporate governance variables. Therefore, I posit null hypotheses for audit committee independence and expertise. I also have a null hypothesis for institutional ownership. This is expected because lower levels of institutional ownership do not affect audit risk and audit fees. Executive compensation in New Zealand is limited to basic salary in most firms. Only a few large firms offer incentive based schemes. In such a setting, I expect no association between audit fees and executive compensation.

5.5 The New Zealand Conceptual Schema

Figure B below summarises the conceptual schema of the New Zealand hypotheses. The New Zealand Corporate Governance Principles and Codes recommend certain audit committee features and emphasise better corporate governance (dashed line connecting the New Zealand Corporate Governance Principles and Codes with audit committee independence, institutional ownership, and executive compensation). The New Zealand Corporate Governance Principles and Codes recommend better quality audits, which improve earnings quality (dashed lines connecting the New Zealand Corporate Governance Principles and Codes with Audit Risk and Earnings Quality). It is also possible that earnings quality could affect audit risk (bold line connecting Earnings Quality with Audit Risk). I contend in this chapter that the governance (independent) variables listed on the left-hand side determine audit fees (dependent) variable for two underlying reasons: audit risk and audit/earnings quality. As explained in the chapter, the independent variables have both supply and demand arguments that lead to higher or lower audit fees. The figure demarcates between the two underlying reasons with a thin dotted line. The reason for the thin dotted line instead of a thick one as in the case of the US, suggests that both the demand and the supply forces are at work because of the discretion available to both the supplier of audit services and management. Likewise, I have argued that both demand and supply influences co-exists creating countervailing forces that lead to no systematic association between audit fees and all three experimental variables (Bold lines connecting the independent variables with Audit Risk and Earnings Quality, and the bold lines connecting Audit Risk and Earnings Quality with Audit Fees).

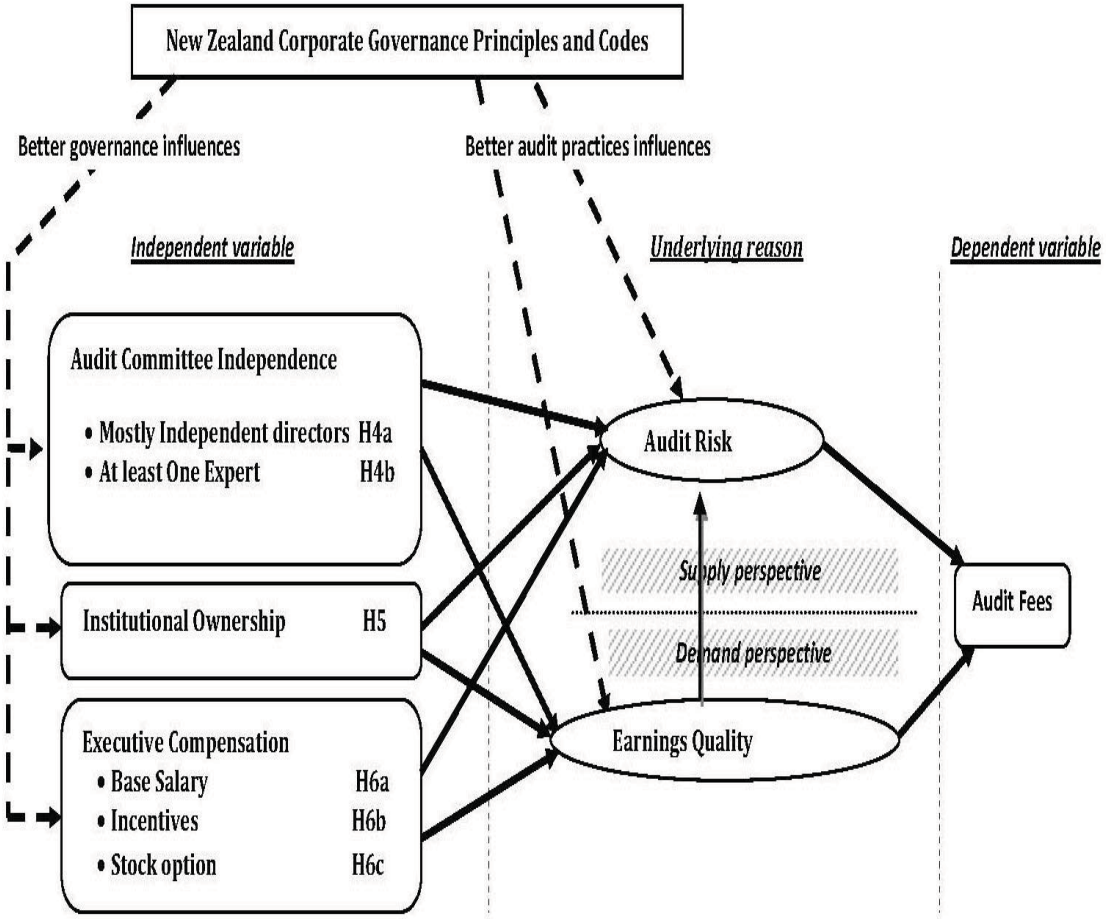

Figure B Conceptual Schema - New Zealand Corporate Governance Principles

Chapter 6 Research Methodology

This chapter explains the research design and methodology employed to test the hypotheses outlined in Chapters 4 and 5. First, I describe the data, data measurement, and the data collection procedures. Second, I explain the research design, the empirical models, and the statistical procedures needed for the study. Finally, I discuss the use of control variables that are drawn from the extant literature.

6.1 US Sample Selection

Since for US firms I examine whether audit committee independence and expertise, institutional ownership, and executive compensation affect audit fees in the post-SOX period, I use data from 2004 to 2008 for the US tests. While SOX came into effect in 2002, using data from 2004 onwards ensures that SOX regulations are in effect for the period covered by this study. These years are the same for the New Zealand sample. The New Zealand sample is from 2004 onwards because a code of corporate governance was established in 2004 in New Zealand. The description of the New Zealand sample is in the next section. Table 2, Panel A shows the sample selection for the US.

The financial data for the US companies is collected from Compustat. I obtain data for S&P 1,500 firms (S&P 500 Super, S&P 400 MidCap, and S&P 600 SmallCap firms. The S&P Super firms are large cap firms, whose stocks are widely held and actively traded either in the NYE or in NASDAQ representing 70 per cent of the equity market in the US. The MidCap firms are midsized firms in various industries representing 7 per cent of the equity market in the US, and Small firms are in various industries representing 3 per cent of the equity market in the US. Consistent with prior auditing research, I exclude financial sector firms and foreign firms. After excluding financial and foreign firms, I obtain 1,228 firms for each of the years from 2004 to 2008. I obtain audit fees and executive compensation data from the Board Analyst database. Matching the firms from both Compustat and

Board Analyst, I obtain 912 firms for 2004, 956 firms for 2005, 1,104 firms for 2006, 1,158 firms for 2007, and 1,173 firms for 2008. Overall, I obtain an initial sample of 5,303 firm-year observations for the period 2004 to 2008. From this sample, I exclude all the firms that do not have all five years' data. Eighteen firms have only one year of data. Fifty firms only have data for two years. One hundred and thirty eight firms only have data for three years. Sixty-four firms only have data for four years. The overall sample consists of 898 firms (4,490 firm-years) for the period 2004 to 2008. The US industry descriptors, based on two digit US SIC codes, are used to classify firms into their respective industry groups.

The sample distribution in Table 2, Panel B shows that the greatest proportion (25.6 per cent, n=1150, where 'n' represents firm-years) of the sample is in the durable manufacturers industry. The retail industry accounts for 13.7 per cent (n=615) followed by the computers industry with 13.5 per cent (n=605). The services industry represents 8.9 per cent (n=400). The utilities industry represents 8.2 per cent (n=370) and the textiles and printing and publishing industry accounts for 6.0 per cent (n=270). The extractive and transportation industries represent 4.8 per cent (n=215) of the sample. The chemical industry accounts for 4.0 per cent (n=180) of the sample. The pharmaceutical industry accounts for 3.9 per cent (n=175) followed by the food industry with 3.7 per cent (n=165) of the sample. The mining and construction industry has the least number of sample firms representing 2.9 per cent (n=130) of the sample. In spite of the large presence of certain industries, there is a reasonable spread over most industries. While I expect industry biases to be minimal, I conduct additional tests by industries to note any influence of particular industries on the main results of the study.

(Insert Table 2)

6.2 New Zealand Sample Selection

The sample is selected from the firms listed on the New Zealand Stock Exchange (NZX) over fiscal years 2004 to 2008. The Corporate Governance Best Practice Code and amendments incorporating corporate governance regulations

into the New Zealand Exchange Listing Rules entered into force, on a "comply or explain" basis in the year 2004. The financial data for all companies are obtained from the Global Vantage database. Data for audit fees, ownership percentage, and executive compensation are from the annual reports filed with the NZX.

The initial sample of New Zealand firms has 264 firms for 2004, 250 firms for 2005, 249 firms for 2006, 236 firms for 2007, and 232 firms for 2008, 1231 firms. From this total, 208 foreign firm-years cross-listed on the NZX are eliminated because they are influenced by foreign reporting regulations. A further 136 firm-years on the New Zealand Alternative Market (NZAX) and 242 firm-years on the New Zealand Debt market (NZDX) are excluded because these firms are smaller, not actively traded, and not subject to the same governance regulations. Forty-three firm-years in the finance industry and 25 firm-years in the utility industry are eliminated because these firms have different income measurement rules and unique capital structures, which result in fundamentally different accrual processes that are not captured by the modified-Jones model to estimate discretionary accruals (Klein 2002). Fifteen firm-years are eliminated because of dual listing. Fifty-four firm-years are excluded because the observations were less than five in their respective industry category, as a minimum of five firms per industry is required to estimate discretionary accruals (Dechow, Sloan, and Sweeney 1996). Fifty-eight firm-years are excluded due to non-availability of data for all the five years. One firm is eliminated due to abnormal data. The overall sample, therefore, consists of 445 (89 firms) firm-years. These firms are the same for every year. I use the same firms to reduce survivability bias i.e., anomalies caused by firms that are new or the firms that leave the market in distress or for merger and acquisition reasons. Table 10, Panel A, summarizes the sample selection procedure.

The NZX industry descriptors, based on two digit US SIC codes, are used to classify firms into their respective industry groups. These industry classifications are much broader than the two-digit SIC codes used in prior literature, but are reasonable in the New Zealand context.

The sample distribution in Table 10, Panel B shows that the greatest proportion of the sample is in the consumer industry 19.1 per cent (n=85 where 'n' represents firm-years). The property and agriculture and fishing industry each accounts for 12.4 per cent respectively (n=55) and the intermediate and durable industry represents 11.2 per cent (n=50) of the sample. The biotechnology industry constitutes 10.1 per cent (n=45) of the sample. The Ports and Transport industry constitutes 9.0 per cent (n=40). Thirty-five firms are from the health and services industries and thirty firms are from the media and communication, representing 7.9 per cent 6.7 per cent of the respectively. The leisure and tourism and the food industry makes up the least number of sample firms each representing 5.6 per cent (n = 25) for the study.

(Insert Table 10 here)

Both the US and New Zealand samples are dominated by durable and consumer products, and the remaining industries of the US sample, have an inclination towards technology and extractive industries while the New Zealand sample has a strong representation of agriculture, property and bio-technology firms.

6.3 Empirical Model

In this part, I discuss the empirical model. Following prior studies (e.g., Simunic 1980), ordinary least squares regression (OLS) is employed to investigate if audit committee features, institutional ownership, and executive compensation are determinants of the audit fee in the post-SOX period.

6.3.1 OLS Regression

$$AF_t = \beta_0 + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t \text{ or } BSAL_t \text{ or } TSAL_t + \beta_5 STOP_t \text{ or } INCEN_t + \beta_6 LTIP_t + \beta_7 \text{Control} + \varepsilon \quad \textbf{Model 1}$$

Where,

Dependent Variable:

AF_t: Audit fees paid by the auditee firm in a fiscal $year_t$ scaled by total assets of the firm at the end of the fiscal $year_t$.

Independent Variables:

$ACINDPER_t$: The proportion of independent directors to total directors on the audit committee;

$ACEXPPER_t$: The proportion of independent financial expert directors to total directors on the audit committee;

$INST_t$: *US Study*: 1 if the majority of the percentages of shares are held by long-term institutional shareholders, and 0 otherwise; *New Zealand Study*: the percentage of shares held by institutional shareholders;

$STIP_t$: *US Study*: CEOs short-term incentives as a proportion of total compensation scaled by the total assets at the end of the fiscal $year_t$;

$BSAL_t$: *New Zealand Study*: CEOs basic pay scaled by the total assets at the end of the fiscal $year_t$;

$TSAL_t$: *New Zealand Study*: CEOs total salary including incentives scaled by the total assets at the end of the fiscal $year_t$;

$STOP_t$: The value of stock options measured in $ value scaled by total assets at the end of the fiscal $year_t$ (US study) and 1 if the CEO is offered stock options by the firm, and 0 otherwise (NZ study);

$INCEN_t$: *New Zealand Study*: Total incentives (short and long-term) paid to CEO scaled by the total assets at the end of the fiscal $year_t$; and

$LTIP_t$: *US Study*: The total dollar value of all LTIP payments made during the year$_t$ to the CEO scaled by the total assets at the end of the fiscal year$_t$.

Control Variables:

$BSEG_t$: The square root of the number of business segments reported by the auditee (standardised);

$GSEG_t$: The square root of the number of geographic segments reported by the auditee (standardised);

$INDS_i$: Industry, a dummy variable where it is equal to 1 if the firm is in the industry$_i$, and 0 otherwise;

$ARINV_t$: Accounts receivable plus inventory scaled by total assets of the firm at the end of the fiscal year$_t$;

$LOSS_t$: Equal to 1 if the firm reported a loss in any two consecutive years, and 0 otherwise;

BIG4: Equal to 1 if the firm is audited by the BIG4 (KPMG, Deloitte, Ernst & Young or PWC), and 0 otherwise;

INDSP: Equal to 1 if the auditor is an industry specialist at the national level based on the total audit fees earned in an industry, and 0 otherwise;

$BDSIZE_t$: The total number of directors on the board of the firm;

$ACSIZE_t$: The total number of directors in the audit committee;

$LOGMB_t$: Natural log of the market value of the firm scaled by book value of total assets;

$LEVERAGE_t$: Proportion of long-term debt to shareholders' funds;

NAF_t: Total non-audit fees paid in a fiscal year$_t$ scaled by total assets of the firm at the end of the fiscal year$_t$; and

$YEAR_t$: Year, a dummy variable where it equal 1 if the firm-year is in year$_t$, and 0 otherwise.

6.4 Variables

In this section, I discuss the various variables that are used in the empirical model. First, I discuss the dependent variable followed by independent and control variables respectively.

6.4.1 Dependent Variable

Consistent with prior studies (e.g., Simunic 1980; Maher et al. 1985; Firth 1985; Kannan 2009), I use audit fees scaled by the total assets at the end of the fiscal year of the firm (AF_t) as the dependent variable. In other words, AF_t represents audit fees (sum of audit fees, audit fees other, and audit fees related) relative to size; the relative audit fee. For the US study, the amount of audit fees are obtained from the electronically available Board Analyst database whereas for the New Zealand study it is obtained from electronically available annual reports of companies filed with NZX.

6.4.2 Independent Variables

An explanation of the measurement of the experimental variables corporate governance, institutional ownership, and executive compensation follows below under their respective headings.

6.4.2.1 Audit Committee Independence and Expertise

The focus of this study is audit fee determination, thus, I use governance features that are presumed to affect audit fees for this study. In this regard, the features that are prominent in the literature are audit committee independence and expertise. I measure the audit committee independence variable ($ACINDPER_t$)

as a proportion of independent directors to total directors on the audit committee. I determine the number of independent members with financial expertise ($ACEXPPER_t$) using the SOX definition of expertise (see Chapter 4). I count the number of independent audit committee members with financial expertise and compute the proportion of such members relative to the number of members on the audit committee. The data for audit committee independence for the US study is obtained from the electronically available Board Analyst database while for the New Zealand study it is obtained from electronically available annual reports of companies filed with NZX.

6.4.2.2 Institutional Ownership

In the US setting, I use ($INST_t$) as a proxy for institutional ownership. It is a dummy variable measured as 1 if the majority of shares are held by institutional shareholders in the firm, and 0 otherwise. The data is obtained from the electronically available Board Analyst database. The database provides information in the form of YES (1) for majority institutional holdings and NO (0) if there are no majority institutional holdings.

Unlike the US, the presence of external institutional holders in New Zealand is limited. For the New Zealand setting, $INST_t$ represents the institutional ownership defined as a percentage of shares held by external institutional holders (as for example shares held by external financial institutions like New Zealand Superannuation Fund Nominees ltd, Accident Compensation Corporation, and AMP Investments Strategic Equity Growth Fund). The data are obtained from electronically available annual reports of companies filed with NZX.

6.4.2.3 Executive Compensation

To test the effects of executive compensation on audit fees, for the US, I use three proxies, short-term incentive plans, stock options, and long-term incentive plans. The short-term incentives (the amount of compensation paid out to executives based on firm performance over a period not exceeding one year (e.g.,

cash bonus) paid to CEOs every year ($STIP_t$) is expressed as proportion of total compensation scaled by total assets at the end of fiscal year. I use the stock option ($STOP_t$) awarded to the CEO by scaling the total value of stock options (the value of CEO' stockholding as a multiple of base salary using the year end middle market share price) by total assets at the end of the fiscal year. Long-term incentive compensation is the amount of compensation paid out to executives based on firm performance over a period exceeding one year measured in dollar value of all long-term pay-outs excluding restricted stock and or notional profit on the exercise of option. I compute long-term incentive payments ($LTIP_t$) by scaling the total dollar value of all LTIP payments made during the year to the CEOs by the total assets at the end of the fiscal year. The data for all executive compensation variables are obtained from the electronically available Board Analyst database.

To test the effects of executive compensation on audit fees in New Zealand, I use three proxies, namely fixed salary, other incentive plans, and stock options. The base salary paid to CEOs every year ($BSAL_t$) is expressed as basic pay scaled by the total assets at the end of the fiscal year. Alternatively, I also use $TSAL_t$, which is total salary (base salary plus all incentives excluding stock options) scaled by total assets at the end of the fiscal year. Very few firms pay incentives like bonus, retention benefits, and CEO option risk. Since very few firms offer the incentives, I have added both short and long-term incentives to form $INCEN_t$ variable. For the incentives, I compute incentive payments ($INCEN_t$) by scaling the total dollar value of all incentives made during the year to the CEO by the total assets at the end of the fiscal year. Most of the New Zealand firms do not offer stock options. Hence, I use the stock options ($STOP_t$) awarded to the CEO measured as 1 if the CEO is offered stock option by the firm, and 0 otherwise. The data for all executive compensation variables is obtained from electronically available annual reports of companies filed with NZX.

6.4.3 Control Variables

As discussed in the literature review (Chapter 2), many variables can affect the determination of audit fees. Some of these variables are specifically demand-side or supply-side variables, while others can affect audit fees from either the demand-side or the supply-side.

6.4.3.1 Size

Studies conducted in the 1980s and 1990s established that size is a significant demand-side determinant of audit fees (e.g., Simunic 1980; Chow 1982; Maher et al. 1985; Simon 1985; Taylor and Baker 1981; Taffler and Ramalingam 1982; Firth 1985). This influence of size continues to dominate the results of recent studies (Whisenant et al. 2003; Mitra and Hossain 2006; Carson and Fargher 2007). These studies use total assets at the end of the fiscal year as a measure of size.

However, size is a scale variable and is often associated with financial statement-based dependent and independent variables. Reference to endogeneity arising from size related factors is made in the audit fee literature (e.g., DeFond 1992; Hay et al. 2006). Therefore, instead of using size as an independent variable, I scale all financial variables associated with size (audit fee, non-audit fee, accounts receivable, inventory, earnings, etc.) by the size proxy, total assets at the end of the fiscal year of the firm. The amount of total assets for the US study is obtained from the electronically available Compustat database (annual data item number A6) whereas for the New Zealand study it is obtained from the electronically available Global Vantage database.

6.4.3.2 Complexity

More business ($BSEG_t$) and geographical segments ($GSEG_t$) increase the hours of audit work because of different dimensions of these segments (e.g., Simunic 1980; Taffler and Ramalingam 1982; Taylor and Baker 1981; Carson and Fargher 2007). I use square root of number of business/geographic segments of the

sample. The number of segments for the US study (both business and geographic) is obtained from the electronically available Compustat database (mnemonically coded as SEGNU for business segments and GEONUM for geographical segments). For the New Zealand study, the number of segments is obtained from the electronically available Global Vantage database.

6.4.3.3 Industry

The varied accounting practices and policies of different industries can cause variations in audit risk. My descriptives statistics, reported later, also show variations in audit fees by industries. Consistent with prior studies (Simunic 1980; Maher at al. 1985; Taylor and Baker 1981; Taffler and Ramalingam 1982) I use industry ($INDS_i$) as a dummy control variable. For the US study, SIC code of industries is obtained from electronically available Compustat database. The industry code for the New Zealand study is obtained from the Global Vantage database.

6.4.3.4 Operational Risks

Certain balance sheet components are indicators of audit risk, and are often used to determine whether the auditor conducts additional substantive tests (Van Peursem and Pratt 2006). The amount of accounts receivable and inventory held by a company adds to firms' business risk. Most of the earlier studies (e.g., Simunic 1980; Maher et al. 1985; Simon 1985; Taylor and Baker 1981; Taffler and Ramalingam 1982; Johnson et al. 1995) support the above view. Accordingly, I compute the total of accounts receivable plus total inventory and divide it by total assets at the end of the fiscal year of the firm ($ARINV_t$) as a proxy for business risk. The amount of accounts receivable (annual data item number A2) and inventory (annual data item number A3) for the US study is obtained from electronically available Compustat database whereas for the New Zealand study it is obtained from the electronically available Global Vantage database.

Existence of loss is an indicator of increased risk. Such firms may be more likely to engage in questionable activities (e.g., earnings manipulation) adding to the audit risk. Simunic (1980) finds that loss existence has a significant positive association with audit fees. Maher et al. (1985) endorse this finding. I use $LOSS_t$ to capture operational risk, and it is 1 if the firm reported a loss in any two consecutive years and 0 otherwise. The amount of net income/loss (annual data item number A172) for the US study is obtained from electronically available Compustat database whereas for the New Zealand study it is obtained from the electronically available Global Vantage database.

6.4.3.5 Corporate Governance Variables

I also control for other corporate governance variables as well as audit committee variables. The number of independent audit committee members and financial expertise of the audit committee members largely depends on the size of the board and audit committee. Accordingly, I consider board size ($BDSIZE_t$), the total number of directors on the board, and the total number of directors on the audit committee ($ACSIZE_t$) as control variables, consistent with earlier studies (e.g., Carcello et al. 2002; Abbott et al. 2003). The number of directors on the board and audit committee is obtained from the electronically available Board Analyst database whereas for the New Zealand study it is obtained from electronically available annual reports of companies filed with NZX.

6.4.3.6 Size of Audit Firm

From the supply-side perspective, the size of the audit firm has a significant effect on audit fees. Large audit firms enjoy economies of scale and are able to charge different prices in different markets as compared to smaller audit firms (Simunic 1980). I include the size of the audit firm (*BIG4*) as a variable. It is a dichotomous variable measured as 1 if the firm is audited by a BIG4 (KPMG, Deloitte, Ernst & Young or PWC), and 0 otherwise. The data for the auditor (mnemonically coded as AU) for the US study is obtained from the electronically

available Compustat database whereas for the New Zealand study it is obtained from electronically available annual reports of companies filed with NZX.

6.4.3.7 Industry Specialisation

I use industry specialisation (*INDSP*) as a variable. This variable is equal to 1 if the auditor is an industry specialist at the national level, and zero otherwise. Following Francis et al. (2005), the specialist in an industry is the auditor with the highest total audit fees from clients in any two-digit, SIC code industry. The total audit fees (sum of audit and non-audit) for the US study is obtained from the electronically available Compustat database whereas for the New Zealand study it is obtained from electronically available annual reports of companies filed with NZX.

6.4.3.8 Non-Audit Service Fees

Simunic 1980 did not consider non-audit service fees in his model. However, Simon (1985), and Palmrose (1986) included non-audit service fees in their model. They found a significant positive association between audit fees and non-audit service fees. Hay, Knechel, and Li (2006) report that audit fees and non-audit service fees are jointly determined, and that the determining factor is the size of the auditee. I include non-audit service fees (NAF_t) as a variable computed by dividing the total non-audit service fees (sum of fees for tax and other services) by the total assets at the end of the fiscal year because the literature suggests that non-audit services seem to co-exist with audit services. As discussed earlier, when demanded along with audit services from the same supplier, it can create cross elasticities of demand and supply. The amount of non-audit fees for the US study is obtained from the electronically available Board Analyst database whereas for the New Zealand study it is obtained from electronically available annual reports of companies filed with NZX.

6.5 Summary

This chapter detailed the necessary steps taken to test the hypotheses. It explained sample selection of both the US and New Zealand samples, the empirical model and the variables measurement procedures. The research model was estimated in several different ways with a view to better understand the influence of some of the control variables. Further details of how the control variables are used in different tests are explained in the results chapters.

Chapter 7 US Results and Discussion

This chapter reports and discusses the results of the US study. The first section of this chapter reports the results of the US study. The second section deals with the discussion of the results of the US study.

7.1 Results

The first part of the results section deals with analysis of the descriptive data for all the variables. The second part of it reviews the bivariate correlations of the test and dependent variables. The third part of it contains the multivariate statistics based on the model estimations as explained in Chapter 6.

7.1.1 Descriptive Statistics

In this part, I explain the descriptive statistics for the dependent variable audit fees, and its associated independent variables, non-audit service fees, audit committee independence and expertise, and the executive compensation variables.

Table 3 (Panels A and B) and Table 4 (Panels A to F) provides the summary descriptive statistics of (without any scaling or modification) audit fees, non-audit service fees, executive compensation, accounts receivable, inventory, total assets, and audit committee independent directors' percentage. Some of the important results of Table 3 and 4 are summarised in figures in the subsequent discussions. Table 5 provides the descriptive statistics for the data after scaling and modifications, as explained in Chapter 6 for the dependent variable (scaled audit fees), the explanatory variables, and the control variables. To eliminate outliers and skewness, I winsorise all the continuous variables for the descriptive statistics in Table 5 and the remaining tabulated tests.

7.1.1.1 Audit Fees

Here I evaluate the level of audit fees per auditee and by total assets to understand the trend of audit fees in the post-SOX era. As per Table 3, Panel A, the

mean (median) audit fees ($ million) in the US between 2004 and 2008 is 4.02 (1.98). The mean (median) non-audit service fees ($ million) in the same period is 0.69 (0.19). Average audit fees show a steady increase over the years, but the increase in audit fees in the year 2005 is much more than any other year (Figure 1a). Non-audit service fees show a declining trend in the years 2004 to 2007 but shows a marginal increase in 2008 (Figure 1a). Earlier studies (Rama et al. 2006; Kannan 2009) have documented such an increase in the audit fee, decrease in the non-audit service fee, and attribute this to the implementation of SOX.

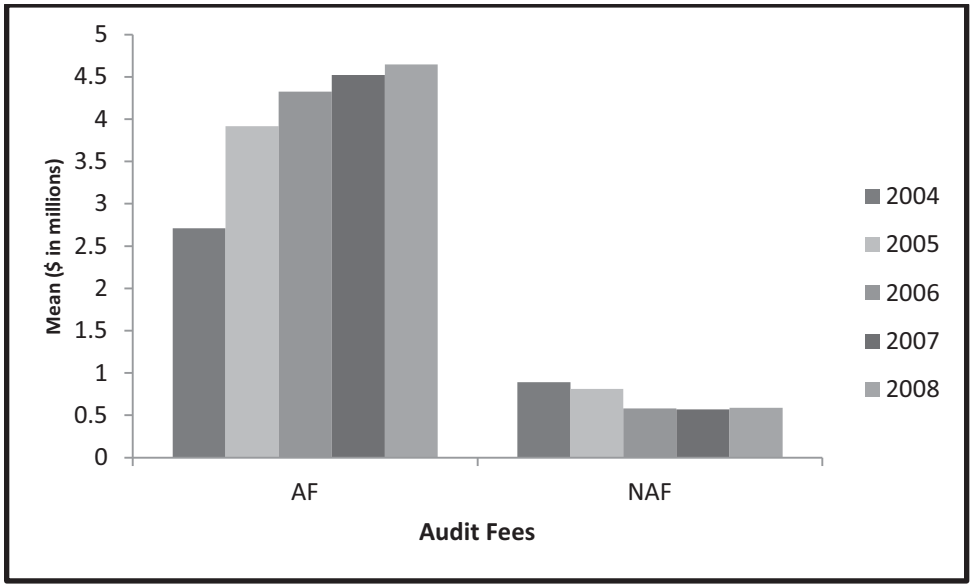

Figure 1a: Overall Annual Audit Fees and Non-audit Service Fees

Figure 1b shows that audit fees per dollar of total assets increased from 2004 to 2006 but stays steady for the years 2007 and 2008. Figure 1a also shows a similar trend. This suggests that there is a clear increase in audit fees in the earlier years of the post-SOX era but the increase slows in later years. Similar to Figure 1a, Figure 1b shows that non-audit service fees per dollar of total assets declines until the year 2007 but increases in the year 2008.

(Insert Tables 3 and 4 here)

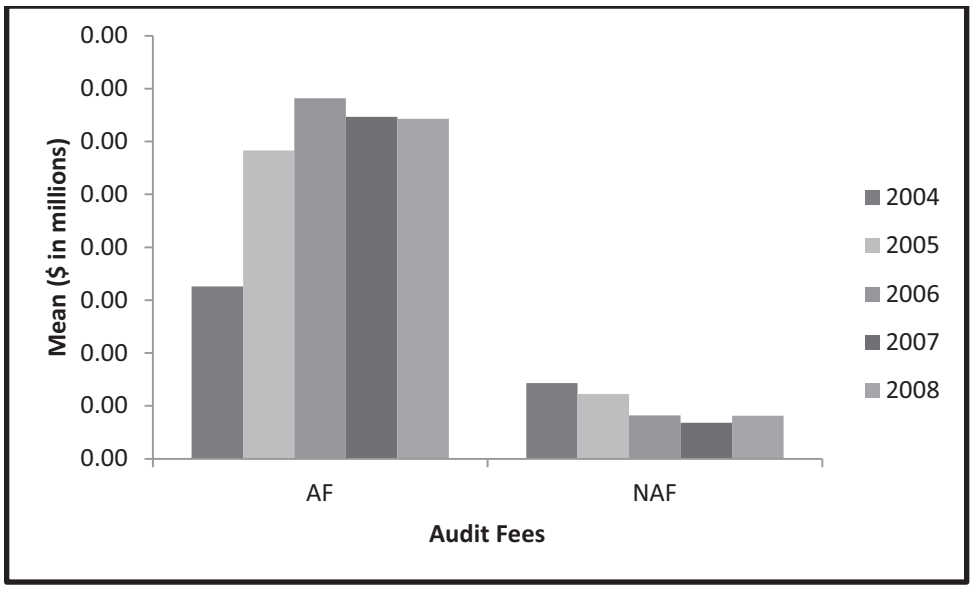

Figure 1b: Overall Annual Audit Fees-Scaled By Total Assets

7.1.1.2 Audit Fees by Auditors

Prior studies have found that BIG4 auditors charge more audit fees than non-BIG4 firms (Hay et al. 2006). Figure 1c shows the distribution of audit fees, by the audit firms from 2004 to 2008. PWC charges more audit fees than the other auditors because they have large auditees. Figure 1c also shows that, audit fees increase steadily between 2004 and 2006 but steadies thereafter for all audit firms.

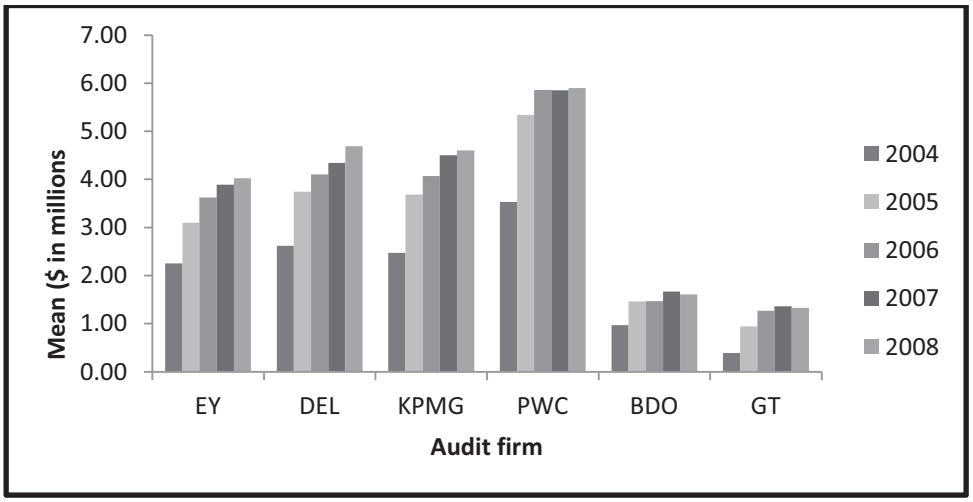

Figure 1c: Overall Annual Audit Fees of Audit Firms

Figure 1d shows that as a proportion of total assets, audit fees increase in the years 2004 and 2005, but steady thereafter for most of the firms except for Grant Thornton. The figure also shows that BDO and Grant Thornton charge more audit fees per dollar of total assets, and for Grant Thornton this seems to be higher than BDO's amounts.

The results suggest that the BIG4 firms tend to charge higher levels of audit fees per auditee, but this is likely due to the size of the auditees. This is indicated by the size of audit fees when scaled by the total assets of the auditee. This analysis shows that the non-BIG4 firms charge higher levels of audit fees.

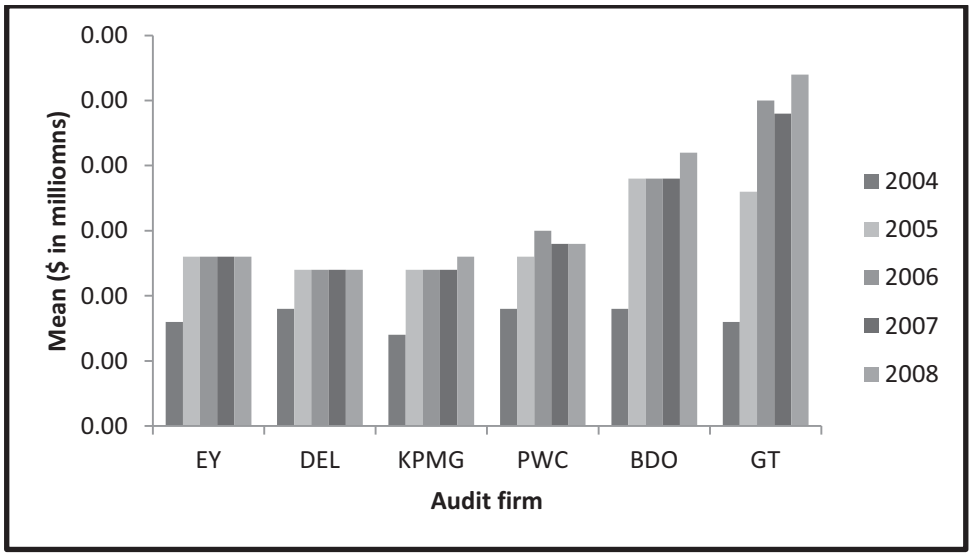

Figure 1d: Annual Audit Fees Of Audit Firms-Scaled By Total Assets

7.1.1.3 Non-audit Service Fees

Prior studies find associations between audit fees and non-audit service fees. I evaluate the non-audit service fees trend between 2004 and 2008.

Figure 1e shows annual non-audit service fees of audit firms. PWC charges more non-audit service fees than any other firm for all years. Non-audit service fees decline for all BIG4 firms in the years 2005 and 2006, but steady thereafter.

However, for Grant Thornton, non-audit service fees increase in the year 2005 and decline in the year 2006 and 2007.

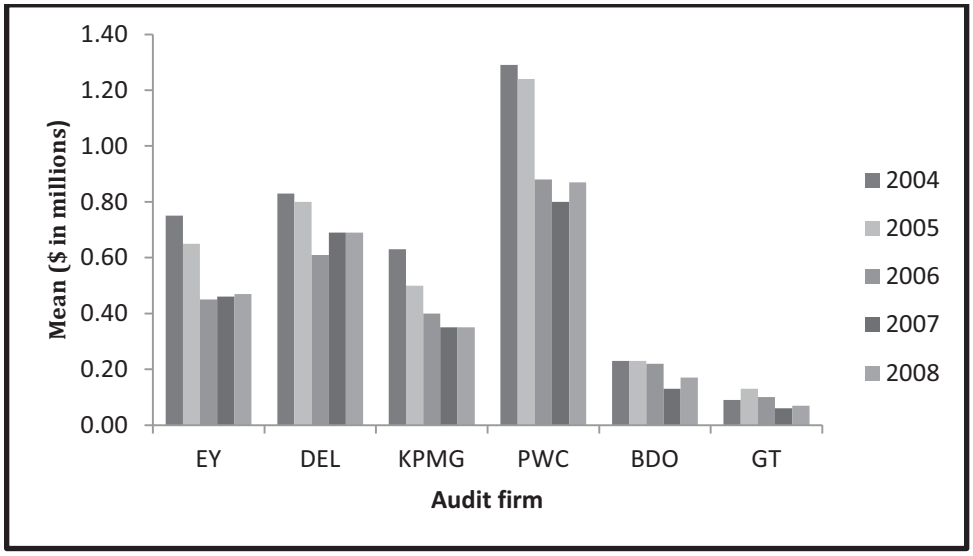

Figure 1e: Annual Non-Audit Service Fees of Audit Firms

Figure 1f shows that the non-audit service fees of audit firms per dollar of total assets show a declining trend in the years 2005 to 2006 but steadies after 2006 for most of the firms. Grant Thornton seems to charge more non-audit service fees per dollar of total assets for the years 2004 and 2005.

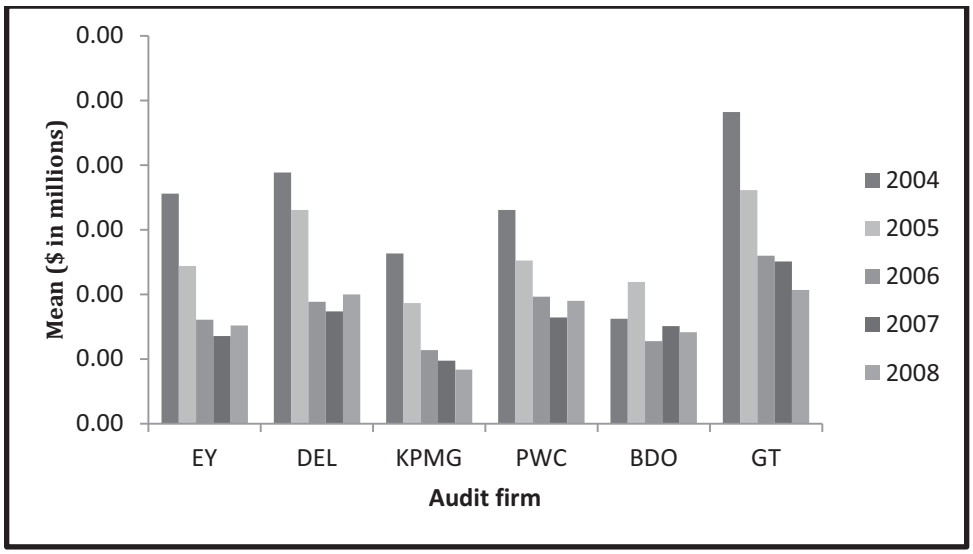

Figure 1f: Annual Non-Audit Service Fees of Audit Firms-Scaled by Total Assets

The results here suggest that, while audit fees have increased, *albeit* gradually in recent years, non-audit service fees have declined rapidly.

7.1.1.4 Audit Fees by Industries

Prior studies have contended that industry is an important factor in the determination of audit fees. They argue that industries have different levels of risk, and, thus, may have different levels of audit fees. Also, some large audit firms are seen as industry specialists, and there is a contention that they charge higher audit fees. I evaluate whether or not these industry influences exist in the post-SOX era.

As per Table 3, Panel B, on average, the food industry pays more audit and non-audit service fees followed by the pharmaceuticals industry. The mining and construction industry pays the least amount on average. Industry-wise, average audit fees show an increasing trend while non-audit service fees show a decreasing trend from year 2005 to 2008. However, some of the industries paid higher average non-audit service fees in the year 2008 as compared to 2007. Figure 1g shows fees distribution by industry. The food industry pays more audit and non-audit service fees as compared to all other industries. Figure 1h shows fees distribution per dollar of total assets. The services industry pays more audit fees per dollar of total

assets, whereas the durable manufacturers industry pays more non-audit service fees per dollar of total assets.

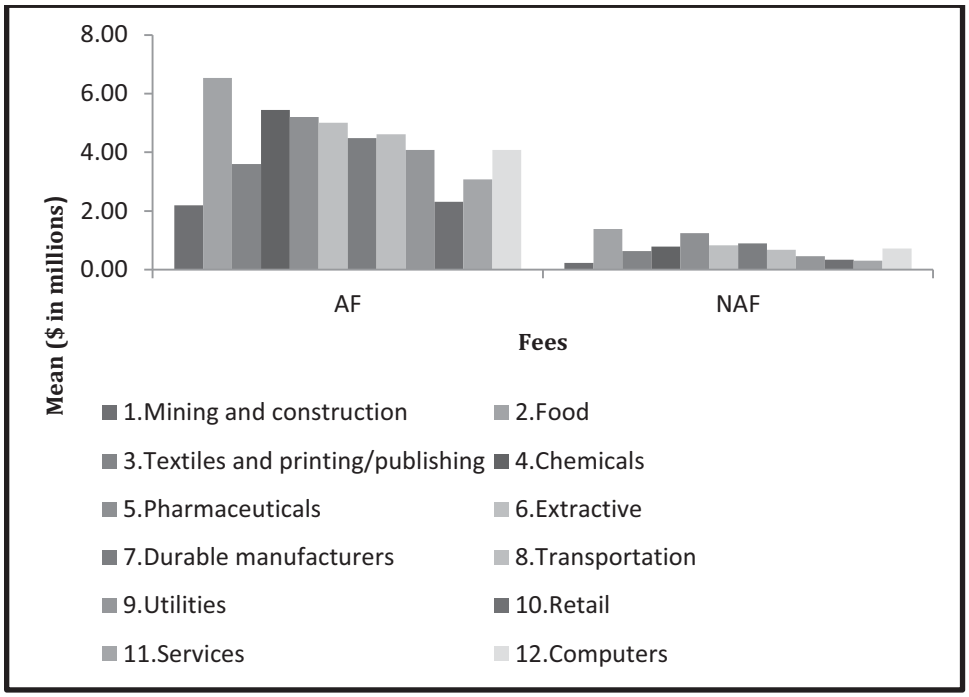

Figure 1g: Annual Audit Fees by Industries

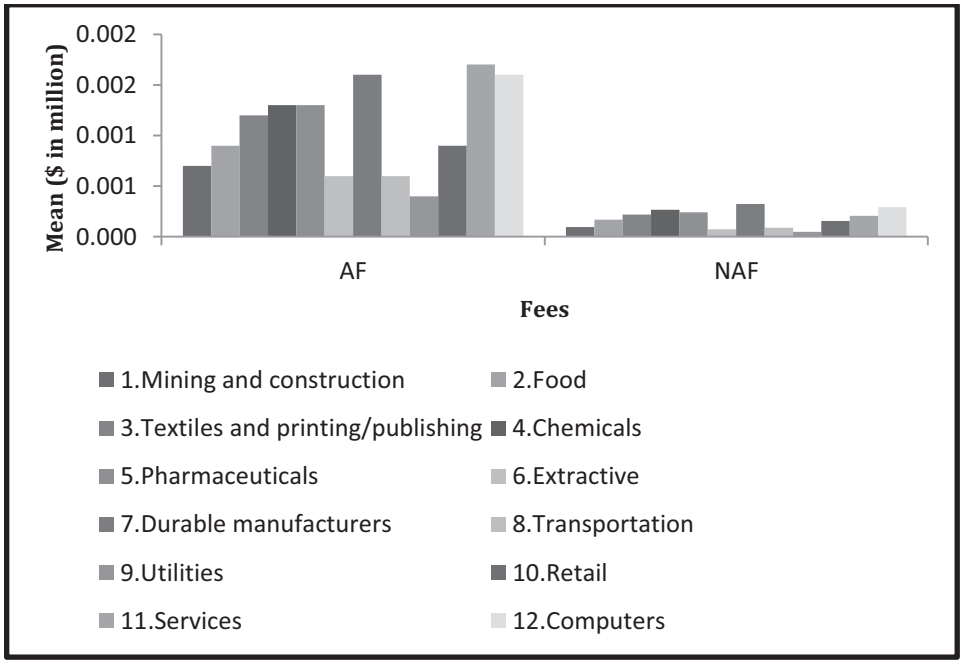

Figure 1h: Annual Audit Fees by Industries-Scaled by Total Assets

An analysis of audit fees earned by audit firms shows, on average, PWC charges more audit and non-audit service fees (in millions) per auditee than the other BIG4 and non-BIG4 audit firms (Table 4, Panel A). On average, the BIG4 audit firms charge more audit and non-audit service fees than the non-BIG4 audit firms. However, the smaller firms tend to charge more audit fees per dollar of total assets. The results suggest that while there is some indication of audit fees variation for some industries and the dominance of auditors within industry, on a total assets basis, there is no evidence of an audit fee premium by BIG4 firms. In fact, the non-BIG4 firms charge higher audit fees per dollar of total assets.

Overall, audit fees statistics show an increasing trend whereas non-audit service fees have become steady due to non-availability of certain non-audit service in the non-audit service market. The increase in the audit fee and decrease in the non-audit service fee in earlier years is likely to be due to the implementation of SOX. Perhaps audit firms are not providing as much non-audit services as they were in the pre-SOX era due to restrictions on certain non-audit services in the post- SOX era. Further, the non-BIG4 firms charge more audit and non-audit service fees as a proportion of total assets. This is likely to be due to lack of economies of scale as compared to the BIG4.

7.1.1.5 Audit Fees and Non-audit Service fees by Firm Size

I now analyse audit and non-audit service fees by firm size. Prior studies (e.g., Hay et al. 2006) have identified that the BIG4 firms charge premiums and are more associated with larger auditees. My analysis attempts to ascertain whether such trends exist in the post-SOX era.

An analysis of audit fees earned by audit firms in the Super category shows that on average, PWC charges more audit fees than any other firm does (Table 4, Panel B). In the MidCap category, Ernst & Young's and Deloitte's audit fees show a steady increase over the period 2004 to 2008 whereas the audit fees of KPMG and PWC decrease in the year 2007 and 2008. BDO's audit fees show a steady increase whereas Grant Thornton's audit fees increased from 2004 to2007 and decreased in

2008. In the SmallCap category, Ernst & Young's, Deloitte's, and KPMG's audit fees show a steady increase over the period 2004 to2008 while PWC's audit fees reduce in the year 2007. Grant Thornton's audit fees show a gradual increase over the period 2004 to 2008, but BDO's audit fees decrease in 2006 and 2008. The audit market supply-side segmentation is clearly visible in the US. Of the BIG4 firms, PWC enjoys a clear advantage over the other three large firms in terms of audit and non-audit service fees revenue. There is a high concentration of BIG4 firms in the audit market, and the second tier firms' share is slowly increasing for SmallCap firms.

An analysis of non-audit service fees earned by the audit firms in the Super category shows that on average, non-audit service fees of all the audit firms decrease in the years 2005 and 2006 with the exception of BDO, which shows an increase in the year 2005. In the MidCap category, non-audit service fees show mixed trends. Non-audit service fees charged by BDO show an increase in trend except for 2007. The BIG4 non-audit service fees decrease in the year 2005 but remain steady thereafter. In the SmallCap category, non-audit service fees decrease in the year 2006. However, the non-audit service fees of PWC, Ernst & Young, and Deloitte register an increase in the year 2008. Figure 2a shows average audit fees by the major audit firms in the Super category. On average, PWC charges higher audit fees than any of the other firms. There is very little presence of non-BIG4 audit firms in the Super category.

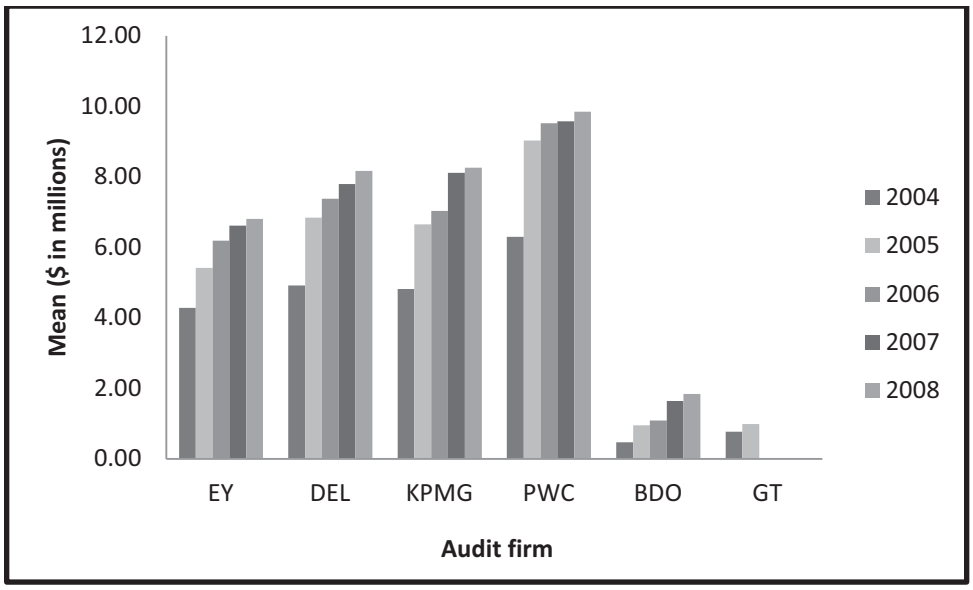

Figure 2a: Audit Fees-Super Firms

Figure 2b shows average audit charged by the major audit firms in the MidCap category. On average, BDO charges more audit fees in 2004 whereas Ernst & Young charges more audit fees in 2008. On average, audit fees of most of the audit firms drop in 2005, 2006 or 2007, but rise gradually in 2008 with the exception of Ernst & Young whose audit fees show a steady increase from 2004 to 2008.

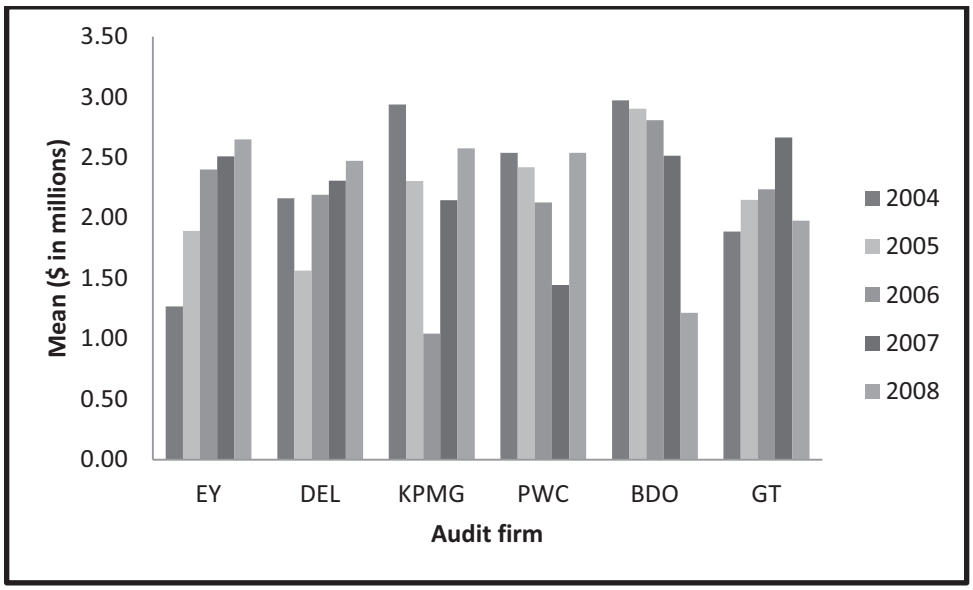

Figure 2b: Audit Fees-MidCap Firms

Figure 2c shows average audit fees by major audit firms in the SmallCap firm category. It shows that on average, audit fees of most of the audit firms show a steady growth except PWC and KPMG whose audit fees drop slightly in the year 2007.

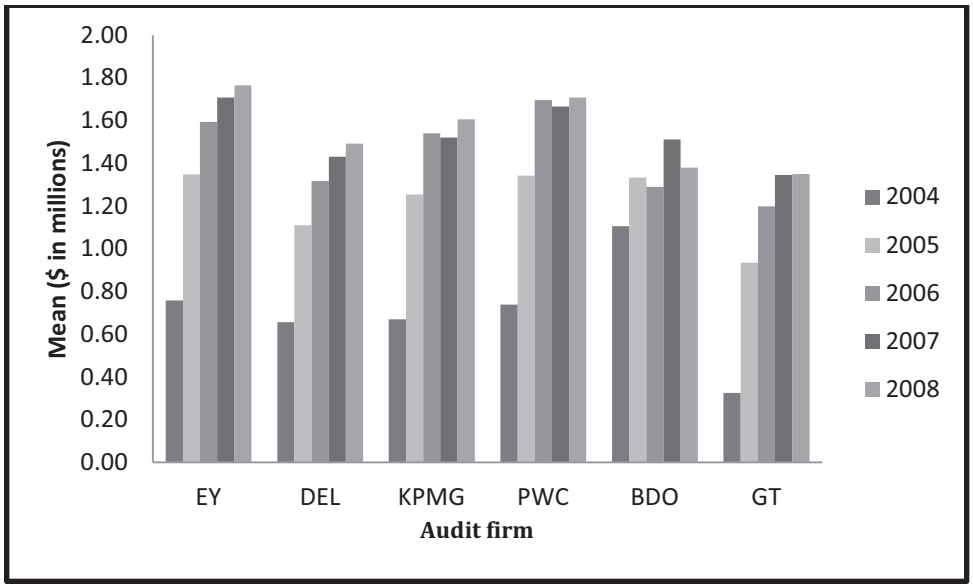

Figure 2c: Audit Fees-SmallCap Firms

Figure 2d shows that on average, PWC charges more non-audit service fees than any other firm in the Super firms' category. Non-audit service fees dropped in 2005 onwards for most of the firms' probably due to non-availability of certain non-audit services in the post-SOX era.

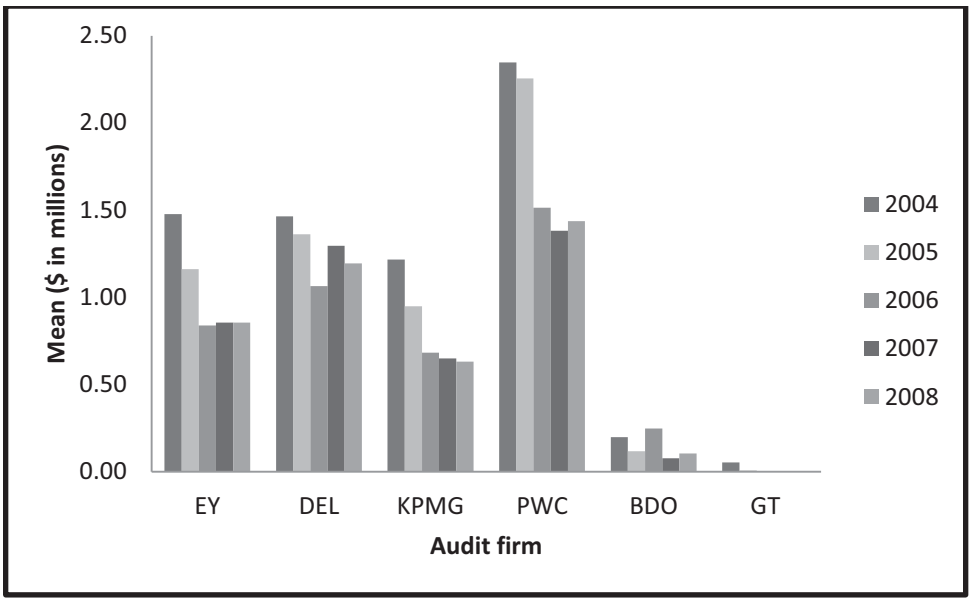

Figure 2d: Non-Audit Service Fees-Super Firms

Figure 2e shows average non-audit service fees of MidCap firms. On average, non-audit service fees decreased in 2006 except BDO whose non-audit service fees increase in 2006. BDO's non-audit service fees are higher than any other audit firm in 2008.

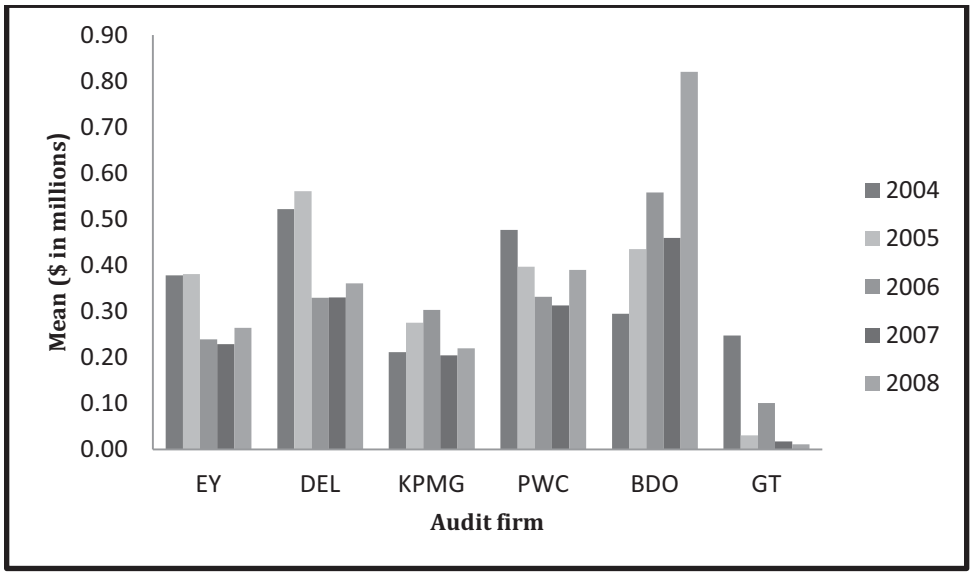

Figure 2e: Non-Audit Service Fees-MidCap Firms

Figure 2f shows the average non-audit service fees charged by the major audit firms in the SmallCap firms' category. Non-audit service fees decrease in 2006 for all audit firms. PWC charges more non-audit service fees in 2008. KPMG's non-audit service fees show a gradual decline from 2004 to 2008.

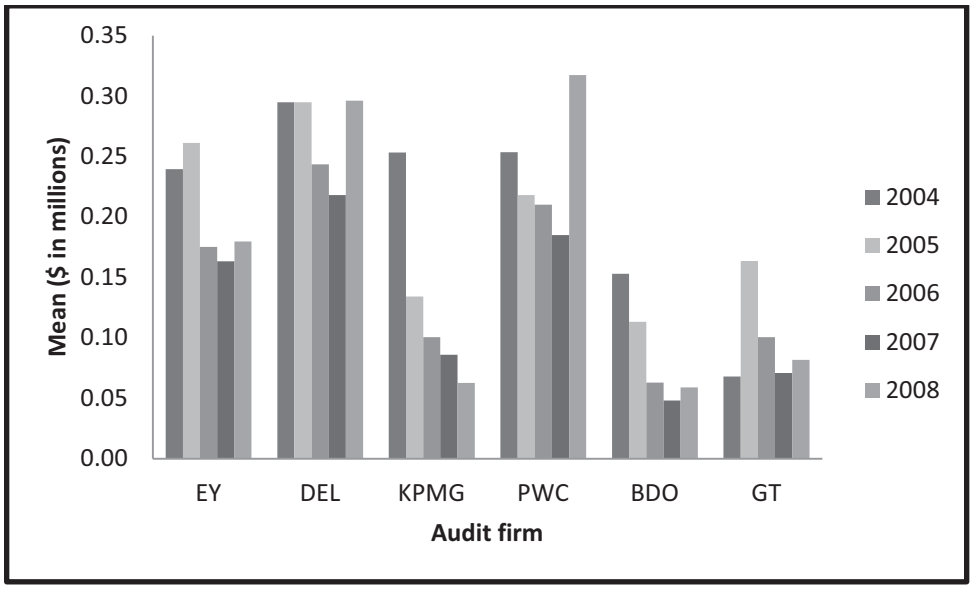

Figure 2f: Non-Audit Service Fees-SmallCap Firms

The audit and non-audit service fees breakdown by size of auditee suggests that BIG4 firms charge higher audit and non-audit service fees when they audit Super firms. It is likely that they audit very large auditees in this group. In the other two groups, in particular MidCap firms, the non-BIG4 firms charge similar fees.

The audit and non-audit service fees based on size reveals the audit pricing strategy of different audit firms. For example, PWC charges more audit fees in the Super category than in the other two categories. This suggests that audit firms may follow price differentiation policies in different market segments, and that the BIG4 firms use their PES to their advantage in different segments of the audit market. In the large firm segment where supply is limited (mainly the BIG4 firms) and PES is low, the BIG4 firms, and, in particular, PWC charge higher prices. The audit market segmentation favours the BIG4 and in particular PWC. The other three large firms possibly may have a relatively higher PES when compared to PWC. The non-BIG4

firms compete in a small firm market, which has high demand elasticity. Furthermore, the non-BIG4 firms do not have economies of scale to audit large auditees.

7.1.1.6 Distribution by Audit Firms

Table 4, Panel C, D, and E shows descriptive statistics of the audit firm distribution by types of firms audited. Of the 1,850 Super firm-years, PWC audits the highest number (n=596) followed by Ernst & Young (n= 510). Together, the BIG4 audit most of these (n=1,835). Of the 1245 MidCap firm-years, Ernst & Young audits the highest number (n=347) followed by PWC (n=325). The BIG4 audit most of these (n=1,216). Non-BIG4 audit the rest 2.33 per cent (n=29) of them. Of the 1,395 SmallCap firm-years, Ernst & Young audits the largest number (n=435) followed by PWC (n=318). Together, the BIG4 audit most of them (n=1,275).

It is evident that in the SmallCap category, BDO and Grant Thornton audit more firms than in the other two categories. The share of BIG4 firms in the SmallCap firms' category is less than the other two categories. Consistent with prior studies (Rama et al. 2006) most of the Super firms are audited by BIG4 firms.

Ernst & Young audits the largest number of the firm-years in the sample (n=1292) followed by PWC (n=1239), Deloitte (n=1009), and KPMG (n=786). Overall, the BIG4 firms audit most (n= 4326) of the sample firm-years leaving the non-BIG4 with (n=164) of the total sample. Figure 3a shows that PWC audits more firms in the Super firms' category than any other firm over the period 2004 to 2008. The presence of non-BIG4 firms is very low.

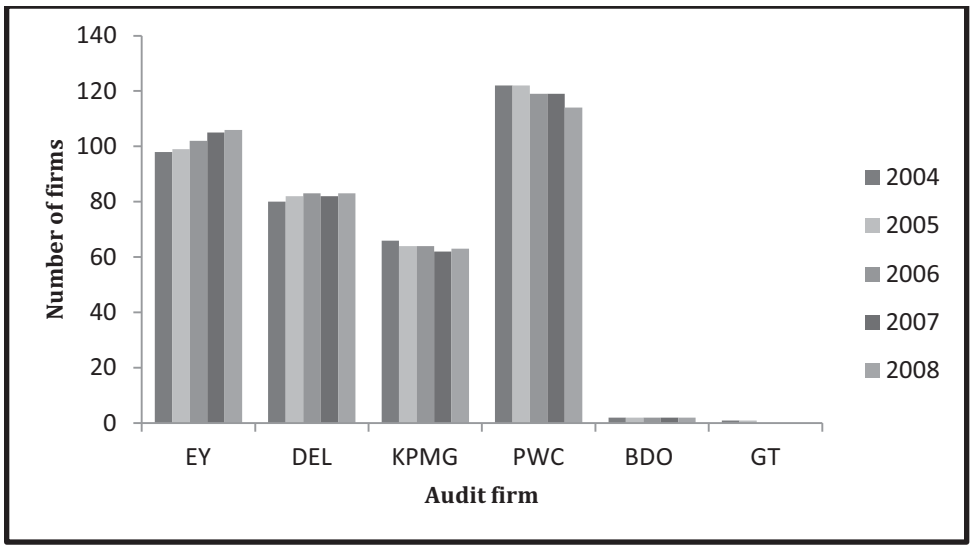

Figure 3a: Annual Audit Engagements for Super Firms

Figure 3b shows that Ernst & Young audit more than all other audit firms in the MidCap firms' category over the period 2004 to 2008. Both PWC and KPMG audit fewer firms from 2006. The non-BIG4 audit firm's share is very low.

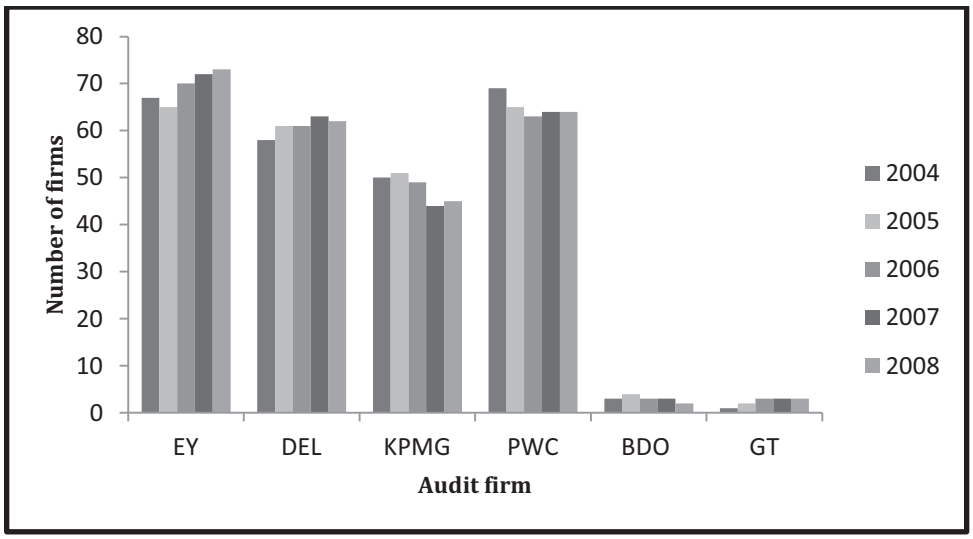

Figure 3b: Annual Audit Engagements for MidCap Firms

Figure 3c shows that Ernst & Young audits more than the other audit firms in the SmallCap firms' category over the period 2004 to 2008. BDO's share of audits shows a gradual increase over the same period. An interesting issue to note in Figure 3c is that as the number of SmallCap firms recedes for theBIG4 firms, the

number of auditees of non-BIG4 is increasing. This suggests that firms in this category are shifting from BIG4 auditors to non-BIG4 auditors.

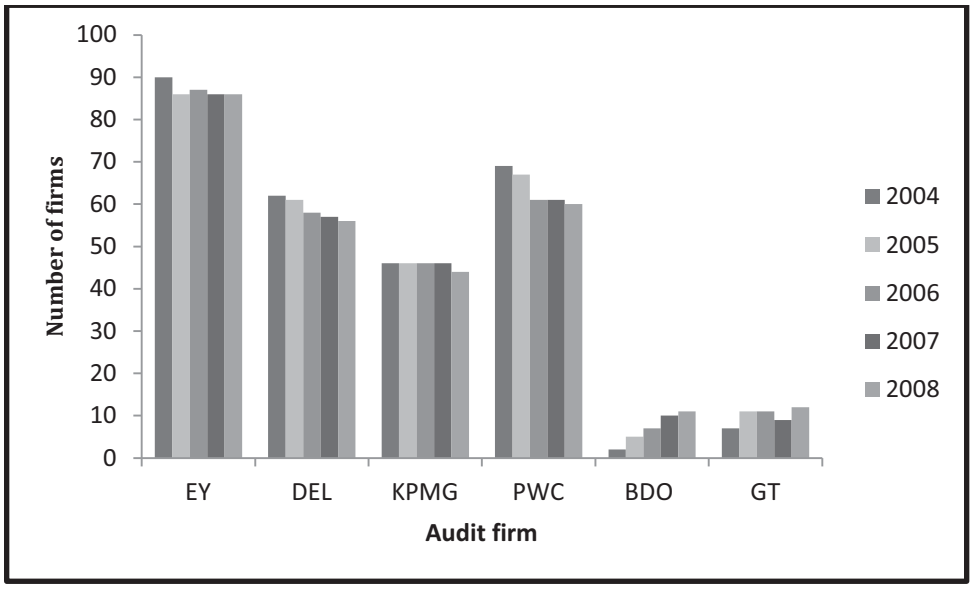

Figure 3c: Annual Audit Engagements for SmallCap Firms

Figure 3d shows the industry leadership of the audit firms. PWC leads in six industries and shares one industry with Ernst & Young. Deloitte is the industry specialist in only one industry. KPMG and non-BIG4 audit firms seem to lack industry specialisation. An important point to note is that when an industry's share is computed by the number of audits, instead of audit fees, the industry dominance of the auditors changes. Therefore, industries where there is dominance by fewer auditors need not necessarily have lower audit fees. It begs the question of what is driving audit fees, and the likely answer is firm size.

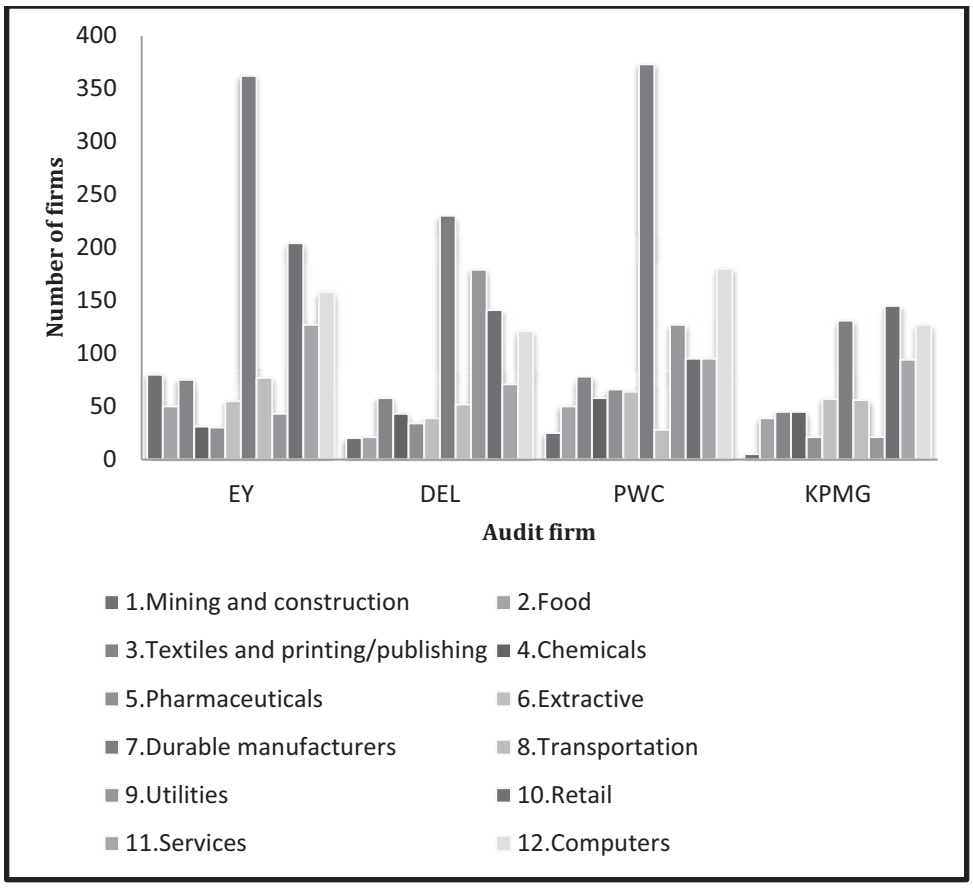

Figure 3d: Audit Firms –Industry Leaders

Overall, of the BIG4 audit firms, PWC charges more audit and non-audit service fees as compared to others even though it audits 1,239 firm-years as compared to Ernst & Young that audits 1,292 firm-years. This is consistent with the claims of prior studies that PWC is the most dominant of the BIG4 firms (Hay et al. 2006). It is also evident that PWC is dropping clients (Table 4). This could be due to either its risk aversion policy to avoid riskier firms or competition from other BIG4 and non-BIG4 audit firms. BDO's and Grant Thornton's shares are increasing in the SmallCap category indicating that BIG4 firms may be dropping audits of riskier and smaller firms after the implementation of SOX or smaller firms are switching auditors due to the cost implications. It could also be that they may be filling up the space left by Arthur Andersen. PWC, Ernst & Young are the leading industry specialists based on total audit revenue generated in specific industries.

7.1.1.7 Audit Committee Independence

As per Table 3, Panel A, the mean (median) percentage of audit committee independence is 94 per cent (100%) and the audit committee directors with financial expertise is 40 per cent (33%). Figure 4 shows the percentage of audit committee independence over the years for Super, MidCap, and SmallCap firms. The independent member's percentage is generally between 90 to 95 per cent. The percentage of independent directors with financial expertise as required by SOX is less than 10 per cent in the year 2004 and gradually increases to 40-45 per cent over the years 2005 to 2008. The financial expertise percentage is higher in Super firms than either MidCap or SmallCap firms over all years. The implementation of SOX is responsible for this growth in the number of independent directors with financial expertise.

Overall, audit committee independence is steady over the years 2005 to 2008. The financial expertise shows a steep increase in the year 2005 and steadies thereafter. Almost all firms have an audit committee with independent directors, and at least one director with financial expertise. There seems to have been a strong response to the SOX audit committee requirements.

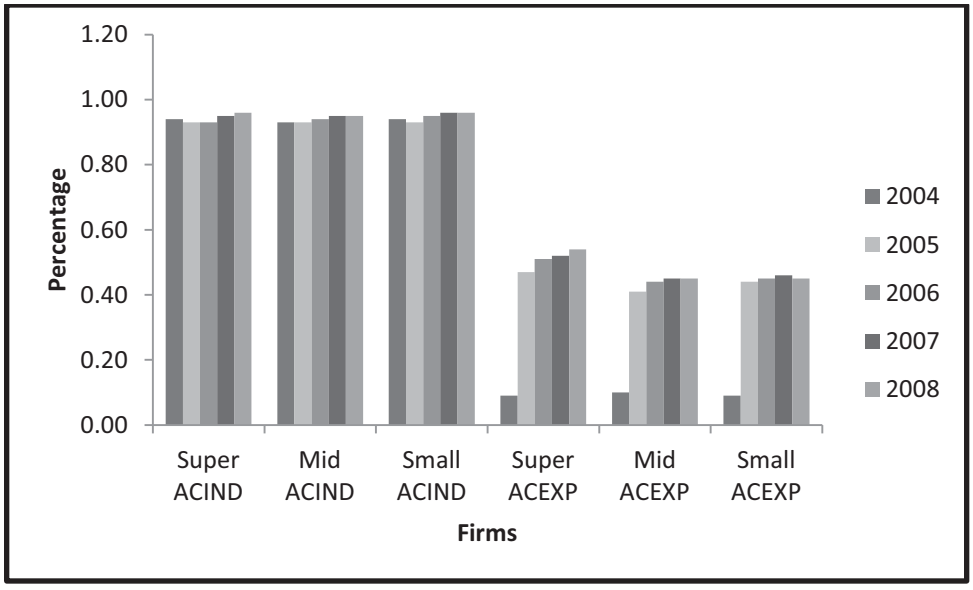

Figure 4: Annual Audit Committee Independence and Expertise Percentage

7.1.1.8 Institutional Ownership

As per Table 5, the mean (median) institutional shareholding ($INST_t$) is 0.810 (1.000). This high percentage is as expected for the US institutional setting in which dispersed shareholders and large financial institutions own large firms. Overall, in the US, institutional shareholders hold a very high percentage of shares of listed firms.

(Insert Table 5 here)

7.1.1.9 Executive Compensation

As per Table 3, Panel A, the mean (median) short term incentives ($STIP_t$) paid to the CEO is $ 1.57 ($ 0.99). The mean (median) stock option value ($STOP_t$) paid to the CEO is $ 44.45 ($ 5.66). Most US firms offer stock options to the CEOs as indicated by the percentile distribution (Table 3, Panel A). The mean (median) long-term incentives ($LTIP_t$) paid to the CEO is $ 0.36 ($ 0.00). However, most firms do not reward their CEOs' with long-term incentive plans, which is evident from the percentile distribution. The firms that pay $LTIP_t$ are present only in the last quartile (75 to 100%), which raises skewness and kurtosis concern.

Further analysis reveals that the food industry grants higher stock options to the CEOs, whereas the computer industry grants the least amount. On average, the extractive industry pays higher short-term and long-term incentives to their CEOs, whereas the computer industry pays the least short-term incentives and the services industry pays the least long-term incentives to the CEOs.

Figure 5a shows the compensation awarded to the CEO. Stock options seem to be the most popular incentive for US firms, and the popularity of LTIP is waning. MidCap firms provide more stock options than other categories except for the year 2006, where Super firms offered more stock options.

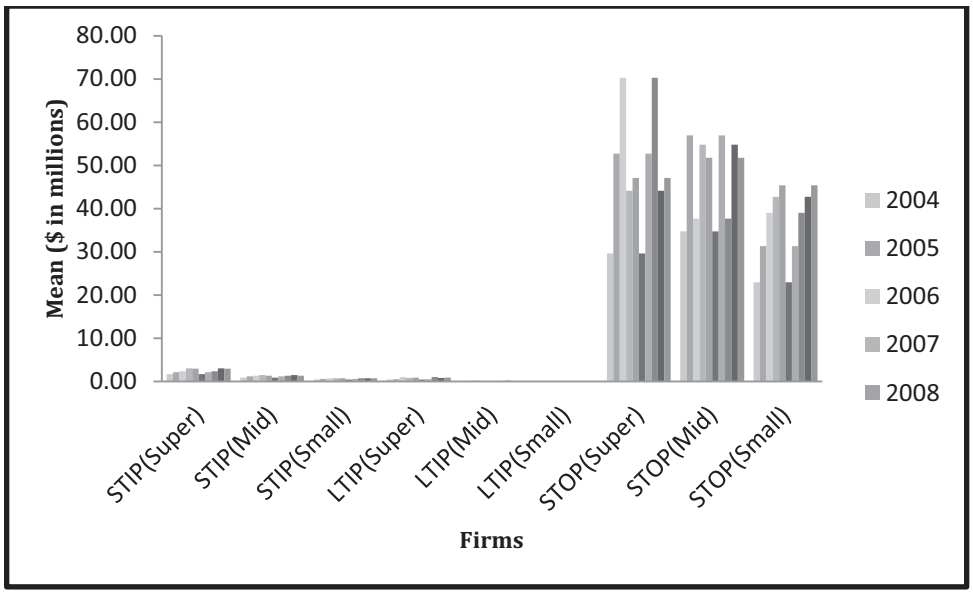

Figure 5a: Annual CEOs Compensation

Figure 5b shows CEO compensation as a proportion of total assets. The $STIP_t$ and $LTIP_t$ incentives relative to firm size are almost non-existent. Stock options seem to be the most popular incentive arrangement for CEOs. On a relative basis, small firms tend to rely on stock option based compensation more than the Super and MidCap firms. The likely reason for this is that stock options do not involve cash, and small firms generally do not have large cash resources as the larger firms have.

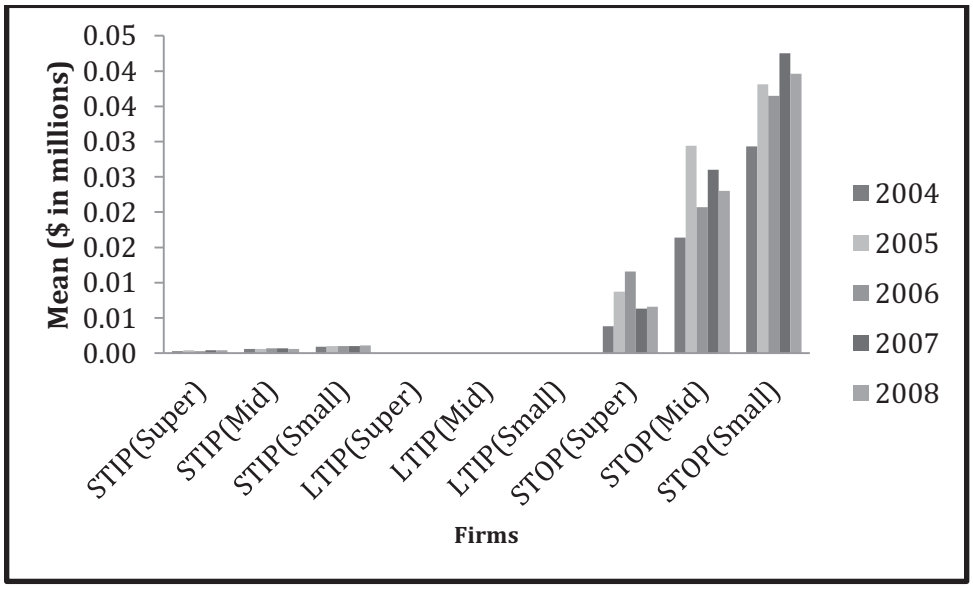

Figure 5b: Annual CEOs Compensation-Scaled by Total Assets

Overall, audit committee independence and expertise, and institutional ownership are high. Additionally, stock options dominate the executive compensation incentive schemes. The audit committee expertise, institutional ownership, and stock option variables have higher levels of standard deviations, indicating that they are likely to have statistical implications in bivariate and multivariate tests.

7.1.2 Bivariate Correlations

I conduct both parametric and non-parametric correlation analyses to explore how the variables are related. Table 6 provides the Pearson and Spearman correlations between the independent variables. I report the Pearson correlations above the diagonal and the Spearman correlations below the diagonal. Correlations between AF_t and $ACINDPER_t$, AF_t and $ACEXPPER_t$ are positive but not significant. The low correlation suggests that the relation between the variables is not strong enough to be useful. There are several significant Pearson and Spearman correlations between AF_t and other variables. The AF_t has significant positive correlations with $STIP_t$ and $STOP_t$ ($p< 0.05$, two tail). This suggests that the higher the level of incentives through short-term incentives or stock options, the higher the audit fee. The dependent variable AF_t has significant positive correlations with $GSEG_t$, and $ARINV_t$ ($p<0.05$, two tail) suggesting that the higher the level of business risk and complexity, the higher the audit fee. The dependent variable AF_t has significant negative correlations with $BDSIZE_t$, $ACSIZE_t$, and $LEVERAGE_t$ ($p<0.05$, two tail). This suggests that the higher the number of board members, audit committee members and debt, the lower the audit fee. The negative association with governance variables suggest that better governance can reduce audit risks, which leads to lower audit fees. The negative association with leverage suggests that higher leverage can lead to greater monitoring by debt providers who then reduce audit risk of the audit firms leading to lower audit fees. Also noticeable is the positive correlation between AF_t and NAF_t ($p<0.05$, two tail), suggesting that

both audit and non-audit service fees remain correlated after the SOX enactment of the restrictions on non-audit services.

There are significant correlations between some independent variables. This could result in multicollinearity concerns for the multivariate tests. The issue of multicollinearity is addressed later in this chapter.

(Insert Table 6 here)

7.1.3 Multivariate Analyses

In this section, I report and review the results of OLS regressions. This is followed by sensitivity tests. The first sets of tests are based on OLS Model 1 (Tables 6 and 7).

Model 1 examines the audit fee determinants using both the experimental and the control variables. Table 7 provides the results for OLS tests conducted using Industry and Year as dichotomous control variables. Table 8 provides the results for OLS tests conducted using Years and Audit firms as dichotomous control variables. The reason for keeping industry and audit firm separate is the high association between certain industries and certain auditors, but this is not an issue when auditor reduces to a single *BIG4* variable. The F scores of the OLS tests are significant ($p<0.01$, two tail) in both Tables 7 and 8.

7.1.3.1 Experimental Variables

7.1.3.1.1 Audit Committee Independence

In Tables 7 and 8, the coefficients of both $ACINDPER_t$ and $ACEXPPER_t$ are positive but not significant. The result of $ACINDPER_t$ does not support either the demand-side or the supply-side arguments that independent directors in the audit committee demand better audit quality and that audit firms view high percentage of independent directors as a factor that can reduce their audit risk.

The result of $ACEXPPER_t$ also does not support either the demand or the supply-side arguments that financial experts in the audit committee demand better audit quality or that audit firms view a high percentage of financial experts as a risk mitigating factor. It is also possible that there is little variability across firms as audit committee independence and expertise are required by SOX. The results do not support H1a and H1b.

7.1.3.1.2 Institutional Ownership

The coefficient of $INST_t$ is negative and significant in both Table 7 ($p<0.05$, one tail), and in Table 8 ($p<0.01$, one tail). This result supports the supply-side argument that audit firms reduce their audit fees due to the presence of high institutional ownership. Therefore, H2 is supported.

7.1.3.1.3 Executive Compensation

In Table 7, the coefficient of $STIP_t$ is positive and significant ($p<0.01$, two tail), and the coefficient of $STOP_t$ is also positive and significant ($p<0.01$, two tail), However, the coefficient of $LTIP_t$ is positive but not significant. In Table 8, the coefficient on $STIP_t$ is positive and significant ($p<0.01$, two tail), and the coefficient on $STOP_t$ is positive and significant ($p<0.01$, two tail). The coefficient on $LTIP_t$ is once again positive but not significant.

For short-term incentives and stock options, the results support the supply-side argument that incentives paid to CEOs in cash, equity or stock options increases audit risk leading to higher audit fees. Audit firms are aware that managers may engage in risk-taking behaviour to enhance personal wealth from incentive pay, and that equity incentives could lead to earnings management.

These results do not support H3a and H3c but support H3b, which are based on the opposing demand and supply-side effects leading to no systematic variations in audit fees. However, the results of H3a and H3b support the supply-side argument that short-term and equity incentives could act as audit risk indicators. For $LTIP_t$, the percentile distribution (Table 3, Panel A) shows that most of the

firms do not reward their CEOs with long-term incentives. Only the firms in the last quartile (75% to 100%) offer $LTIP_t$. Figure 5a and 5b clearly show that $LTIP_t$ is almost zero for most SmallCap and MidCap firms.

The results of $STIP_t$ and $STOP_t$ tend to suggest that CEOs' short-term incentives and stock options are considered high-risk factors in setting the audit fee by the audit firms.

7.1.3.2 Control Variables

The results of the control variables reported in Tables 7 and 8 are discussed here. The coefficient of $BSEG_t$ (Table 8) and $GSEG_t$ are positive and significant ($p<0.01$, one tail), indicating that an audit firm's perceived risk increases with the number of business segments resulting in increased audit fees being charged. This supports both the demand and supply-side arguments that more business segments require more audit effort, and, because auditors perceive higher audit risks associated with an increasing number of segments, charge higher audit fees. Of the $INDS_i$ dummy variable, the mining and construction, textile, printing and publishing, extractive, transportation, utilities and retail industries have a negative and significant effect ($p<0.01$, two tail) on audit fees whereas the services and computers industries have a positive and significant ($p<0.05$, two tail) effect on audit fees (Table 7). The coefficients of $ARINV_t$ are positive and significant ($p<0.01$, one tail) in both Tables 7 and 8 indicating that audit firms view the accounts receivable and inventory as risk factors, which leads to higher audit fees. The coefficients of $LOSS_t$ are positive and significant ($p<0.01$, one tail) suggesting that the reporting of financial losses in any two consecutive years increases audit risk, thereby increasing the audit fee. The coefficient of *BIG4* are negative and significant ($p<0.01$, one tail) in both Table 7 and 8.

The coefficients of *INDSP* are positive and significant ($p<0.01$, one tail) indicating that the industry specialist audit firms (BIG4) are able to charge a premium audit fee for their industrial expertise. The coefficients of $BDSIZE_t$ are negative and significant ($p<0.01$, two tail). The coefficients of $ACSIZE_t$ are negative

and significant (p<0.05, two tail). The coefficients of $LOGMB_t$ and $LEVERAGE_t$ are negative and significant (p<0.01, two tail) suggesting higher growth and debt reduce audit fees.

The coefficient of NAF_t is positive and significant (p<0.01, two tail) suggesting that incumbent auditors still provide similar amounts of audit and non-audit services.

Year 2004 to 2006 seem to be significantly associated with audit fees confirming that audit fees did rise in the initial years after the implementation of SOX. Year 2008 is negatively associated with audit fees.

(Insert Tables 7 and 8 here)

7.1.3.3 Multicollinearity

Gujarati (2003) and Hair et al. (1995) regard a bivariate correlation of 0.80 as the threshold at which multicollinearity concerns may threaten the Ordinary Least Squares (OLS) regression analysis. None of the significant bivariate correlations of Table 6 were that high.

Further, variance inflation factor (VIF) values greater than 10 may be a cause for concern of multicollinearity, which could bias the parameter estimates (Myers 2001). VIF in the multivariate regression results (Tables 7 and 8) are well below 10, in most of cases, less than three, ruling out the effects of multicollinearity on hypothesis testing. Since the data involve similar companies over a period of five years, I run the time series tests for auto-correlation and, find that the Durbin-Watson coefficients are above two suggesting that the data is not auto-correlated. Therefore, I find no strong evidence of multicollinearity or auto-correlation.

7.1.4 Sensitivity Tests

Prior literature (e.g., Simunic 1980; Simon 1985) suggest use of sensitivity tests in order to ensure the robustness of the OLS regression results. I use several sensitivity tests to verify the results. In the US, BIG4 firms audit most firms. These

audit firms seem to charge different levels of audit fees and, in some cases, audit in different industries. PWC charges more audit and non-audit service fees than the other audit firms, and is the market leader in a large number of industries. Client size differences have an impact on the audit fee paid to the audit firms. The OLS regressions in Tables 7 and 8 do not highlight these effects. Prior literature (e.g., Simunic 1980; Simon 1985) suggest sensitivity tests in order to ensure the robustness of the OLS regression results. I use several sensitivity tests to verify and further analyse my results. The first sets of tests reestimate OLS Model 1 using alternative measures of the dependent variable, audit fees, and the independent control variable, non-audit service fees. I also test for 100% independent audit committee and audit committee expertise. The next set of tests reestimates OLS Model 1 by each year, by client size, by audit firms, for auditor switch, and by individual industry.

7.1.4.1 Alternative Scaling

Prior research studies use natural logarithm scaling for audit and non-audit service fees and total assets as a control variable. Reestimating OLS Model 1 using the log of audit fees as the dependent variable, I find similar results to the results reported earlier. I also use market value of the firm as a scaling measure, and scale all continuous variables by the market value of the firm and reestimate OLS Model 1. The results are similar to the results obtained earlier, which enhances the robustness of the results (not reported).

7.1.4.2 Independent Audit Committee and Expertise

Since SOX requires a fully independent audit committee, I rerun the OLS regression in Table 7 replacing $ACINDPER_t$ with $FULLACIND_t$ (100% independent directors), 3682 firm-years. The coefficient of $FULLACIND_t$ is positive but not significant suggesting that an independent audit committee has no significant association with audit fees (results not reported). The results of $ACEXPPER_t$, $INST_t$, $STIP_t$, $STOP_t$, $LTIP_t$, and control variables are similar to the earlier results reported in Table 7. The insignificant results for $FULLACIND_t$ could be due to the lack of

variation across firms in the level of independence. Boo and Sharma (2008) document similar effects of SOX in their study. Non-SOX compliant firms are mostly small, and since it is difficult for them to get independent audit committee members due to their size, they may seek an exemption from this SOX requirement.

I also rerun the OLS regression in Table 7 replacing $ACINDPER_t$ with $FULL\ ACIND_t$, and $ACEXPPER_t$ with $FULLACEXPPER_t$ (100% EXPERTS in the Audit committee). The coefficients of $FULLACIND_t$ and $FULLACEXPPER_t$ are positive but not significant (results not reported). The results of $INST_t$, $STIP_t$, $STOP_t$, $LTIP_t$, and control variables are similar to the earlier results reported in Table 7. The results suggest that a fully independent audit committee with all its members having financial expertise has no significant association with audit fees. This confirms our earlier findings that in the post-SOX era, audit committee independence, and expertise have lost their signalling effect due to regulatory requirements rather than countervailing demand and supply pressures.

7.1.4.3 Annual Tests

The impact of regulations like SOX does not take effect immediately. To address this potential effect, I repeat the OLS Model 1 for each of the years. Table 20 reports the results. The results for $STIP_t$ and $STOP_t$ are similar across all the years as reported earlier. The results for $ACEXPPER_t$ are positive and significant only for years 2004 and 2005 suggesting that the implementation of SOX regulations had an impact in the initial periods but waned later as all firms implemented SOX requirements. It is negative but not significant for the years 2006 and 2008, and positive and insignificant for the year 2007. The result for $INST_t$ is negative but not significant for all the years. The result for $LTIP_t$ is significant only for the year 2004 suggesting that implementation of SOX and more disclosures on executive compensation has affected the audit fee paid. The control variables' results are consistent with the earlier results.

7.1.4.4 Client Size

Client Size has a significant effect on audit fee. Earlier studies (Simunic 1980) used total assets as a measure of client size. Since I scale all the continuous variables by total assets in my research model, I test for client size effects by conducting separate tests for Super, MidCap, and SmallCap firms. Table 21 reports the results.

The coefficients of $ACINDPER_t$ seem to be positive and significant for SmallCap firms, but not for Super, and MidCap firms. Similarly, the coefficients of $ACEXPPER_t$ are positive and significant for Super and MidCap firms. The coefficients of $INST_t$ are similar to earlier findings, but only for Super firms. It is positive and significant for SmallCap firms. The coefficients of $STIP_t$ are similar to the earlier findings. $STOP_t$ is positive and significant only for SmallCap firms. The coefficients of $LTIP_t$ are positive but not significant for SmallCap and Super firms, and negative but not significant for MidCap firms. As mentioned earlier, few firms offer $LTIP_t$ and, as a result, it loses its statistical significance. All other control variables' results are significant and consistent with the earlier results reported.

7.1.4.5 Auditor Size

As reported in the descriptive statistics, the size of the audit firm is a significant factor in the determination of audit fees. Accordingly, I reestimate the OLS Model 1 using six individual regressions for PWC, KPMG, Ernst & Young, Deloitte, BIG4, and non_BIG4. Table 22 reports the results.

The result for $ACINDPER_t$ is negative and significant for firms audited by Ernst & Young, whereas for Deloitte, KPMG, and PWC it is positive and significant. It is negative but not significant for non-BIG4 firms. The results for $ACEXPPER_t$ are positive and significant for firms audited by Ernst & Young, and PWC. The coefficients of $INST_t$ are negative and significant only for Ernst & Young and KPMG. The results for $STIP_t$ are consistent with the results reported earlier for all audit firms. The coefficient on $STOP_t$ is positive and significant for all the BIG4 firms. The

coefficient $LTIP_t$ is positive and significant for Ernst & Young. Overall, the results for each audit firm indicate that audit firms do not view audit committee independence, and institutional holdings percentage in the same manner. However, they all view short-term incentives and stock options as a significant audit risk factor. All other control variables' results are consistent with the results reported in Table 7.

7.1.4.6 Auditor Switch

The firms are free to select the audit firm they want to engage. They are also free to change the present audit firm, if they feel that the cost of the audit is too high. Rama et al. (2006) document that BIG4 auditors are seem to be more conservative in the post-SOX period as they drop more clients in 2003. Clients dropped by BIG4 firms must switch to other audit firms. Switching from one auditor to another also impacts audit fee determination. To address this potential effect, I include auditor switch (*AUDSWITCH)* a dummy variable measured as 1 if there is a change in the audit firm, and 0 otherwise. The results for $ACINDPER_t$, $ACEXPPER_t$, $INST_t$, $STIP_t$, $LTIP_t$, and $STOP_t$ are similar to the results reported earlier. Auditor switch is also positive and significant ($p<0.01$, two tail) (not reported). All other control variables' results are consistent with the results reported in Table 7.

7.1.4.7 Industry Tests

Auditors specialise by industries (Gramling and Stone 2001). Table 3, Panel B shows the amount of audit and non-audit service fees paid by the firms in different industries. These variations in the level of audit and non-audit service fees could affect the results. Moreover, the number of firms in each industry is different, which once again can affect the results. For example, the more concentrated the market share of a few audit firms in an industry, the lower the PED, allowing suppliers to charge higher audit fees. This can make audit risk a less consequential issue for audit pricing issues. To address the potential effect of such variations, I reestimate and run OLS model 1 for individual industries. Table 23 reports the results.

The durable and intermediate products, retail, and services industries have 1,150, 615, and 400 firm-years, respectively, and account for almost half of the sample firm-years. The results for $ACINDPER_t$ are positive and significant for pharmaceuticals, durable and intermediate products, retail, and services industries. The results for $ACEXPPER_t$ are positive and significant for the textiles and printing and publishing, extractive, durable and intermediate products, and utilities industries. The results for $INST_t$ are positive and significant for the food, and negative and significant for chemicals, extractive, transportation, utilities, and retail industries. The results for $STIP_t$ are positive and significant for all industries except the mining and construction and textiles, and printing and publishing. The results for $STOP_t$ are positive and significant for the extractive, durable and intermediate, utilities, retail, services, and computer industries. The results for $LTIP_t$ are positive and significant only for the chemicals and services industries. The results suggest that each industry has its own unique features, which affect audit fee determination. For example, the $INST_t$ result is positive and significant only for the food industry, which suggests that institutional shareholders only in that industry demand more quality audits.

Table 4, Panel F shows the level of concentration of auditors in each of the industries. In several industries, one or two auditors have more than 50 per cent of the market share. This is reflected in the results of audit committee independence and expertise and institutional ownership. The results of these variables turn positive and significant showing that the previously observed no associations and negative associations are now positive. This suggests that in several industries the demand-side influences are stronger than supply-side influences.

7.1.4.8 Discretionary Accruals/Demand-side Model

Several previous studies have related audit fees with accounting quality (e.g., Kinney et al. 2004). However, the experimental variables and many of the control variables of this study affect accounting quality. Put in a different way, the experimental variables and several control variables influence audit fees through

earnings quality, i.e., their demand for higher earnings quality leads to higher audit fees. Using this demand view, I conduct a two-stage test, where I first regress the experimental variables and certain control variables against earnings quality. Then, I take both the predicted value and residuals of this regression and regress it against audit fees, along with a few control variables that affect audit fees directly. If the experimental variables are associated with earnings quality and the predicted value of the first regression is associated with audit fees then the experimental variables affect audit fees through the demand for higher quality accounting earnings. While there are different measures of accounting quality, e.g., audit opinion restatements, etc., I use abnormal accruals as a measure of accounting quality. I use the modified Jones model adjusted for performance (Kothari et al. 2005) to estimate discretionary accruals.

$$DACC = \alpha + \beta_1(1/TA_{t-1}) + \beta_2(\Delta REV - \Delta AR)/TA_{t-1} + \beta_3 PPE/TA_{t-1} + \beta_4 ROA_{t-1} + \varepsilon$$

Where *DACC* stands for discretionary accruals, $1/TA_{t-1}$ indicates 1 scaled by total assets last year, *ΔREV* stands for revenue in current year minus revenue last year, *ΔAR* is accounts receivable in current year minus accounts receivable last year scaled by total assets at the beginning of the year, PPE/TA_{t-1} indicates property, plant and equipment scaled by total assets at the beginning of the year, and ROA_{t-1} stands for return on assets last year. The models are shown below.

The accounting quality and audit fees models for this two-stage process are:

$$ABSDACC = \beta_0 + \beta_1 ACPERIND_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t \text{ or } BSAL_t \text{ or } TSAL_t + \beta_5 STOP_t \text{ or } INCEN_t + \beta_6 LTIP_t + \beta_7 \text{Control} + \varepsilon \quad \textbf{(2a)}$$

$$AF_t = \beta_0 + \beta_1 PREDICT + \beta_2 RESIDUAL + \beta_3 \text{Control} + \varepsilon \quad \textbf{(2b)}$$

The definition of variables used in 2a and 2b are similar to the definitions in Chapter 6, except for *PREDICT* and *RESIDUAL*. *PREDICT* is the predicted value of 2a, explained quality variables, and *RESIDUAL* is the residual value of 2a, unexplained quality variables.

Matsumoto (2002) reports that firms with high growth prospects are more likely to be associated with earnings management. The market-to-book ratio is a proxy for growth and is expressed as the natural log of the market value of the firm scaled by book value of total assets ($LOGMB_t$). $LEVERAGE_t$ is the ratio of total liabilities to total assets of the firm. This is consistent with prior research (Mitra and Hossain 2006). These variables are used in the first stage of the two-stage model. The amount of total assets, (annual data item number A6) liabilities, (annual data item number A181) and market value (mnemonically coded as MKVAL) for the US study is obtained from electronically available Compustat database whereas for the New Zealand study it is obtained from the electronically available Global Vantage database.

The results of the demand-side model are reported in the Tables 18 and 19. The coefficient of $ACINDPER_t$ is negative, but not significant. The coefficient of $ACEXPPER_t$ is positive but not significant. The coefficients of $INST_t$, $STIP_t$, and $STOP_t$ are positive and significant. The coefficient of $LTIP_t$ is negative but significant.

The results indicate that audit committee independence is not associated with earnings quality. The positive association between $INST_t$ and earnings quality suggests that higher institutional ownership is positively associated with earnings quality. The positive and significant association between $STIP_t$ and earnings confirms the results that short term incentives could affect earnings quality. Similarly, the positive association between $STOP_t$ and earnings quality suggests that stock options could motivate the management to manipulate earnings and increase audit risk for the audit firm. However, the negative but weak association between $LTIP_t$ and earnings quality suggests that long-term incentives align management interests with shareholders and reduce the scope for manipulation of earnings.

In Table 19, the coefficient of *PREDICT* is positive and significant, suggesting that the variables that predict earnings quality also predict audit fees, supporting the view that institutional holdings and executive compensation affect audit fees through audit quality supporting the demand-side arguments. The results also

suggest that when institutional holdings and executive compensation result in better accounting quality, they are also signals for higher quality audits. However, the explanations for the two variables could be different. In the case of institutional ownership, the outside owners, in their need for better quality accounting, may require higher quality audits, increasing audit fees. However, for executive compensation, to minimise the agency costs the managers may align their interests with the interests of the shareholders by demanding higher quality audits.

7.2 Discussion

In this section, I discuss the results of the US study. First, I discuss the results of the main experimental variables, and then the important results of the control variables.

7.2.1 Audit Committee Independence and Expertise

Prior studies in audit independence have mixed outcomes. Carcello et al. (2002) and Abbott et al. (2003) find significant positive relations between audit fees and audit committee independence and financial expertise. While Cohen and Hanno (2000), Bedard and Johnstone (2004), and Krishnan and Visvanathan (2006) argue that audit firms view audit committee independence and financial expertise as risk mitigating factors that could lead to lower audit fees. Krishnan and Visvanathan (2006) find a negative association between audit fees and financial expertise. Griffin et al. (2008) recognise governance as an audit fee enhancing and audit fee reducing variable, but find that SOX promotes the audit fee reducing tendencies. I revisit the market perspective of audit fees introduced by Simunic (1980), and argue in favour of the supply perspective, which suggests that audit committee quality reduces audit risk and, therefore, reduces audit fees. Prior studies were conducted in the pre-SOX period when corporate governance and, in particular, audit committee independence, and expertise were not mandatory. My argument is based on the view that SOX enhances the prominence of the corporate

governance mechanisms. The implementation of SOX also changes the composition of audit committees.

7.2.1.1 Percentage of Independent Directors in the Audit Committee

I find no association between audit fees and audit committee independence and financial expertise, and mixed results in the sensitivity analyses. I discuss these results below.

The lack of significant results could be for two reasons. Firstly, there is a very large percentage of independent directors (average 93%) on the audit committees of US firms (Table 3, Panel A). The quartile distribution of $ACINDPER_t$ suggests that almost all firms have independent audit committees and therefore, there is little variation in the distribution of $ACINDPER_t$. Since an independent audit committee is required, the audit firms may not be able to use independent audit committees to distinguish riskier firms.

Secondly, the results of the sensitivity tests on various sub-samples reveal opposing results, suggesting that both demand and supply functions may exert opposing pressures in different contexts. The percentage of independent directors in the audit committee has a positive and significant association with audit fees for SmallCap firms. All BIG4 firms consider independence as a significant factor in the determination of audit fees. Firms audited by Deloitte, KPMG, and PWC show significant positive association between $ACINDPER_t$ and audit fees. However, firms audited by Ernst & Young show a significant negative association between $ACINDPER_t$ and audit fees. This suggests that Ernst & Young regards higher audit committee independence as a risk-reducing factor and charges lower audit fees. It is also possible that Ernst & Young is following a loss-leader policy in order to attract more clients. The descriptive statistics show that they have one of the lower audit fee profiles among the BIG4 firms, and the growth in the number of firms audited by Ernst & Young has increased over the years (see Figure 3a and 3b).

Only the pharmaceuticals, durable and intermediate, retail and to a certain extent services industries show positive and significant association between audit fees and audit committee independence. Further, auditor-specific, and industry-specific results suggest more demand-based pressures for audit fees when the audit committee is more independent.

The findings are not consistent with the earlier findings of Carcello et al. (2002) and Abbott et al. (2003). Inconsistent results could be due to the period of study and sample size. Both Carcello et al. (2002) and Abbott et al. (2003) conduct their studies in the pre-SOX period where audit committee independence requirements are optional. Further, Carcello et al. (2002) study Fortune 1000 companies and Abbott et al. (2003) study 492 unregulated firms. Vafeas and Waegelein (2007) sample the pre-SOX period (2001 to 2003), and report positive associations between audit committee independence and audit fees, which is not found in this study. Audit committee requirements at that time are different to the post-SOX requirements. Moreover, they study only Fortune 500 companies. Audit firms are aware that in a strongly regulated US setting almost all the firms are required to have an independent audit committee in the post-SOX period. The audit committee independence is also high, however, it varies in different categories of firms and in various industries. Another issue could be that audit committee independence needs to be defined and measured differently. If every independent audit committee were truly effective, then there would be no corporate scandals. The results of this study suggest that audit committee independence percentage is no longer a significant factor for audit firms in estimating their audit risk, due to regulatory requirement.

This study finds that the audit committee proxy for an indicator of lower audit risk and a higher demand for quality audit reduces due to regulatory intervention. Boo and Sharma (2008) observe that regulatory influence reduces the strength of corporate governance. Therefore, this study does not support hypothesis 1a, a negative association between audit fees and audit committee independence, because post-SOX, audit committee independence is no longer a

significant factor in the determination of audit fees. The imposition of SOX in the US is evident in the higher percentage of independent directors in the audit committee of the sample firms.

7.2.1.2 Percentage of Independent Directors with Financial Expertise

The results of $ACEXPPER_t$ suggest that there is no association between audit fees and audit committee financial expertise percentage. This result differs from Abbott et al. (2003) who find a positive and significant association, and Krishnan and Visvanathan (2006) that find a negative and significant association between audit fees and financial expertise of independent directors in the audit committee. Pre-SOX samples (2000 to 2002) and a sample of S&P 500 firms of the earlier studies could be the reason for different results. In the pre-SOX period, financial expertise of independent directors in the audit committee is optional. Audit firms at that time could have considered firms with audit committee financial expertise as a risk-mitigating factor and lowered their audit fees. In the post-SOX era, all firms have at least one audit committee director with financial expertise and the percentage of $ACEXPPER_t$ has increased from 9 per cent in 2004 to 40 per cent in 2008 (see Figure 4). Additionally, the percentile distribution of $ACEXPPER_t$ (Table 3, Panel A) shows that, except for 2004, almost all firms have at least one independent director with financial expertise. Based on these findings, it seems that the regulatory influence of SOX has reduced the signaling capacity of audit committee financial expertise.

While the data of this study do not support H1b, it is not a sufficient indication that audit committee financial expertise is not an important issue. A sensitivity analysis by audit firms shows a positive and significant association between expertise and audit fees (Table 22) for the Ernst & Young and PWC sub-samples. Further industry analyses show positive and significant associations between expertise and audit fees suggesting that financial experts on the audit committees of firms in the textiles, publishing and printing, extractive, and durable industries demand quality audits. The positive and significant association between

expertise and audit fees for firms audited by Ernst & Young and PWC suggest that firms audited by these two firms expect higher quality audits, resulting in higher audit fees.

Based on this analysis, I conclude that there is no evidence to support hypothesis 1b. An inference is that audit firms are aware that most audit committees have financial expertise and no longer consider audit committee financial expertise as a significant risk factor when regulatory influences are strong.

Overall, in the post-SOX era, audit committee independence and expertise lose their signalling capacity to the audit firms, and, perhaps, others who rely on such variables, e.g., investors and regulators.

7.2.2 Institutional Ownership

Earlier studies find inconclusive results for institutional ownership. Whisenant et al. (2003) find no significant association between audit fees and institutional ownership. Han et al. (2009) also find no association between audit fees and long-term institutional ownership. Kannan (2009) find a positive and significant association between institutional ownership percentage and audit fees. Kannan's (2009) sample includes both S&P 1500 non S&P 1500 firms from the years 2003 to 2005. These inconsistent results could be due to the period (pre-SOX) of study, the sample size (e.g., S&P 500) or the institutional setting of the study.

This study has a sample of S&P 1500 firms from 2004 to 2008. The results for institutional ownership in this study are negative and significant for all firms, and for the subsamples of SmallCap and MidCap firms but not for Super firms. Super firms, being large firms, are under constant scrutiny and are considered less risky in most instances, whereas smaller firms are in greater need of risk reducing signals. It seems that institutional shareholdings are seen as risk mitigating signals by audit firms. Further sensitivity tests reveal that for the audit firms, Ernst &

Young and KPMG, the institutional ownership coefficient is negative and significant suggesting that these firms consider institutional ownership as a risk mitigating factor.

The results by industries are mixed. The coefficient of $INST_t$ is positive and significant for the food industry, whereas it is negative and significant for the chemicals, extractive, transportation, utilities, and retail industries. Institutional shareholding in the food industry is positively associated with audit fees suggesting that institutional shareholders demand a better quality and costlier audit. The negative and significant results for the chemicals, extractive, transportation, utilities, and retail industries suggest that audit firms view institutional holdings as a risk-reducing factor, and reduce their audit fees for firms in those industries when institutional holdings are high.

Overall, the result for long-term institutional holdings is negative and significant which favours the supply-side hypothesis. This is despite the fact that there is a high percentage of institutional ownership in the US, who normally demand higher quality audit (average 81%).

7.2.3 Executive Compensation

In the area of executive compensation, mixed results are the norm. For example, Vafeas and Waegelein (2007) find that CEO long-term pay has a negative relation to audit fees. Wysocki (2010) finds that there is a positive and significant association between CEO total compensation and audit fees. I cover three common types of compensation, $STIP_t$ (short-term incentive plans), $STOP_t$ (stock options), and $LTIP_t$ (long-term incentive plans). I discuss the test results of these variables below.

7.2.3.1 Short-term Incentive Plans

The results for $STIP_t$ are positive and significant (Tables 7 and 8) for all years from 2004 to 2008, for all types of firms, for all audit firms, and for most of the industries except mining and construction, textiles and printing and publishing,

and extractive industries. The results confirm the belief that audit firms regard short-term incentives as a signal of managerial incentives that can lead to earnings management. As a result, audit firms would conduct audits that are more rigorous and lead to higher audit fees.

The results do not support hypothesis 3a which is based on the expectation that opposing demand and supply forces leads to no systematic direction in the relation between audit fees and $STIP_t$. The results of a positive association between $STIP_t$ and audit fees support the supply-side argument that short-term incentives create audit risks and auditors respond through rigorous audits and higher fees. The result is consistent with Kannan (2009).

7.2.3.2 Stock Options

The results for $STOP_t$ are positive and significant in sensitivity tests for all years, for SmallCap firms, for all audit firms except the non-BIG4 and for extractive, durable, retail, services, and computers industries. This suggests that stock options provide an audit risk signal to audit firms except in the case of non-BIG4. Stock options can lead to insider trading and other discretionary choices that increase the audit risk of auditors. Therefore, there is sufficient evidence to suggest that auditors price $STOP_t$ in setting audit fees.

While the results do not support hypothesis 3c, the results of this study provide evidence that there is a positive association between CEO stock options and audit fees thereby providing support for the supply-side arguments. The results are consistent with Kannan (2009).

7.2.3.3 Long-term Incentive Plans

The results for $LTIP_t$ are positive and significant for only those firm-years audited by Ernst & Young (n=1292), and for firms that are in the retail and chemical industries (n=615). The overall result for $LTIP_t$ is positive but not significant (Table 7) suggesting that long-term incentives awarded to CEOs are not a significant factor in the determination of audit fees. However, in (Table 18) it is

negative and significant ($p<0.05$, two tail) suggesting that from an auditors' perspective, long-term CEO incentives reduce the scope for earnings management. This finding is consistent with the notion that compensation design aligns the interests of managers and shareholders. Vafeas and Waegelein (2007) find similar results. However, very few firms offer long-term incentives to their CEOs (Figure 5a, and 5b), therefore, the results are applicable only for firms having long-term incentive plans.

To sum up, the results suggest that short-term incentive plans and stock options are likely to lead to higher audit fees. For long-term plans, the results are not conclusive.

7.2.4 Control Variables

The audit market literature in Chapter 2 lists various factors that affect the audit fee. Some of the factors are demand oriented while others are supply oriented. First, I discuss the results of demand factors (size, complexity, industry, and risk). Then, I discuss the supply factors (size, and industry specialisation), followed by discussion of non-audit service fees, which prior literature suggests can affect the pricing of audits.

The results of control variables based on demand-side factors like size, complexity, industry, and operational risk are positively and significantly associated with audit fees and are consistent with the results of earlier studies (e.g., Simunic 1980; Chow 1982; Maher et al. 1985; Simon 1985; Firth 1985; Mitra and Hossain 2006; Carson and Fargher 2007). The results of this study show that in the post-SOX era demand-side factors are still considered as major audit risk indicators by audit firms in setting audit fees.

The control variables results of supply-side factors such as audit firm size (negative and significant), and industry specialisation (positive and significant) are consistent with those of earlier findings (e.g., Taffler and Ramalingam 1982; Taylor and Baker 1981; Francis 1984; Simon 1985; and Palmrose 1986; Johnson et al.

1995; Abidin et al. 2008; Hamilton et al. 2008; Anderson and Zeghal 1994; Carson et al. 2004). In the US, BIG4 firms audit 96 per cent of the sample. The result for BIG4 is negative and significant suggesting that the BIG4 audit firms enjoy economies of scale, and are able to reduce audit fees for their clients. Another reason could be that the BIG4 try to avoid risky firms. Most of the audit firms seem to be charging audit premiums except Deloitte and Ernst & Young who seem to pass on their economies of scale and charge less audit fees or adopt a loss-leader policy (Table 8).

The results of board size and audit committees indicate that audit firms view board size and its audit committee size as risk-reducing factors and charge lower audit fees if the board size or audit committee size are larger. This could be because larger boards or audit committees could accommodate more directors with a broader set of expertise and skills.

The finding also shows that higher growth and debt reduce audit fees. The reason for growth is that high growth firms are likely to be better performers with lower risk. The reason for debt (normally a risk indicator for investors) could be that debt providers in the US are normally outside bondholders whose interests are monitored by trustees. Trustees, who are often large finance houses, have their own monitoring systems in place, which assures the auditors of higher levels of external monitoring of the auditees.

While audit fees rose between 2004 and 2007, they dropped in 2008. This reduction could be attributed to the waning effect of SOX or to the general economic conditions arising from the 2008 recession.

7.2.5 Non-audit Service Fees

The result for non-audit service fees (NAF_t) is positive and significant for all years of the sample, for all types of firms in the sample, for all audit firms and for all industries, leaving the question of cross elasticity between the two open for further

debate. These results suggest that, even in the post-SOX period, audit firms use loss-leader policies to generate non-audit service fees.

The results are consistent with the findings of studies conducted in the pre-SOX period. The positive association suggests that non-audit services and audit services are complementary products. There could be two plausible reasons for the positive association between audit and non-audit service fees. First, the firm avoids passing proprietary information into too many hands by employing the auditor to provide certain services such as taxation services. The other reason could be that the incumbent can provide non-audit services at lower cost because it has prior knowledge of the firm's circumstances and business activities (Firth 1997).

7.3 Summary

Overall, the results indicate that, in the post-SOX era, audit firms do not view the presence of independent directors and independent directors with financial expertise in the audit committee as a significant factor for determining audit fees. Therefore, there is no support for H1a and H1b. However, this does not mean that the importance of independence and expertise has diminished. These results seem to arise due to the strong regulatory environment of SOX. An issue is that audit committee independence may have to be redefined and measured differently. It is likely that auditors may use other features of audit committees to determine their audit risks.

For institutional ownership, the results support hypothesis 2, a negative association between the level of institutional ownership and audit fees. These results are mostly consistent across several different sensitivity tests.

For executive compensation, the results suggest that audit fees are high for firms providing higher short-term incentives and higher stock options. With long-term incentives being less common, I find only weak negative results, consistent with prior studies.

The additional sensitivity tests reveal some consistent results. One such result is that the dominance of PWC leads to some strong demand-side results. Noticeable among these are the positive and significant results for both audit committee independence and audit committee expertise. Firstly, this could have occurred because of the lower supply-side concerns for a market leader, which may be associated with low risk, reputable firms. In the case of highly reputable firms, the likely scenario is that they are hiring PWC, a highly reputable auditor, to maintain their reputation even if the fees are relatively higher.

While industry differences in audit fees are noticed and revealed in the results (Table 7), I observe no systematic effects of industry on the relation between the experimental variables and audit fees. I also observe no systematic influence of auditor concentration in industries on the relation between audit fees and the experimental variables.

A summary of the results is below.

Table B Summary of Results of Tests of Hypotheses-*US*

	Hypothesis	**Results**
H1a	There is a negative association between audit fees and percentage of audit committee independence.	Not supported.
H1b	There is a negative association between audit fees and percentage of audit committee financial expertise.	Not supported.
H2	There is a negative association between audit fees and the percentage of long-term institutional ownership.	Supported and significant ($p<0.05$, two tail).
H3a	There is no association between audit fees and the level of CEO short-term incentives.	Null hypothesis rejected. Positive and significant association ($p<0.01$, two tail).
H3b	There is no association between audit fees and the level of CEO long-term incentives.	Null hypothesis accepted.
H3c	There is no association between audit fees and the level of CEO stock options.	Null hypothesis rejected. Positive and significant association ($p<0.01$, two tail).

Chapter 8 New Zealand Results and Discussion

This chapter reports and discusses the results of the New Zealand study. The first section of this chapter reports the results and the second section deals with the discussion of the results.

8.1 Results

The first part of the results section deals with an analysis of the descriptive data for all the variables. The second part reports and reviews the bivariate correlations of Spearman and Pearson correlations. The third part contains the multivariate statistics based on the model estimations explained in Chapter 6.

8.1.1 Descriptive Data

In this part, I explain the descriptive statistics for the dependent variable, audit fees, and its associated variable non-audit service fees, followed by descriptive statistics for audit committee independence, and all executive compensation variables.

Table 11 (Panels A to F) provides the descriptive summary statistics of un scaled audit fees, non-audit service fees, executive compensation, accounts receivable, inventory, total assets, and audit committee independent directors' percentage. Some of the important results of Table 11 are summarised in figures in the subsequent discussions. Table 12 provides the descriptive statistics for the data after scaling and modifications as explained in Chapter 6 for the dependent variable (scaled audit fees), the explanatory variables, and the control variables.

8.1.1.1 Audit Fees

As per Table 11, Panel A, the mean (median) audit fees (in millions) in New Zealand between 2004 and 2008 are $ 0.24 ($ 0.08). The mean (median) non-audit service fees are $ 0.10 ($ 0.02).

Table 11, Panel A, and Figure 6a show that average audit fees steadily increase from 2004 to 2008, and non-audit service fees decline in the years 2005 to 2007, but increase in 2008. Griffin et al. 2009 document such an increase in audit fees and opine that the adoption of NZ IFRS, rather than overseas governance reforms, is the main cause of the increase. The non-audit service fees increase in 2008 could also be due to IFRS.

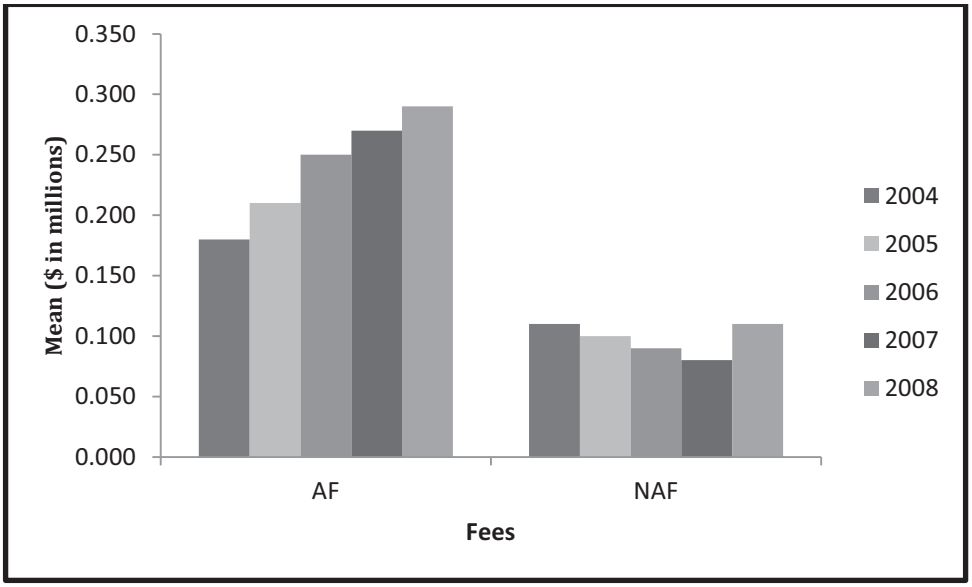

Figure 6a: Annual Audit Fees

Figure 6b shows that, as a proportion of total assets, audit fees increase slowly between 2005 and 2007 but jump in 2008. Non-audit service fees, as a proportion of total assets, decline in 2005, but remain constant thereafter. The large increase in audit fees in 2008 could be due to the implementation of the IFRS, which became compulsory from 2007 onwards in New Zealand. There is no visible evidence of SOX having an effect in New Zealand. It is quite possible that New Zealand firms, being relatively small, do not require rigorous audits and extensive non-audit services. The decrease in non-audit service fees could be due to the adoption of corporate governance principles and practices in New Zealand, which mimic SOX. However, it is possible that there is a ripple effect of SOX, which began implementation from 2004.

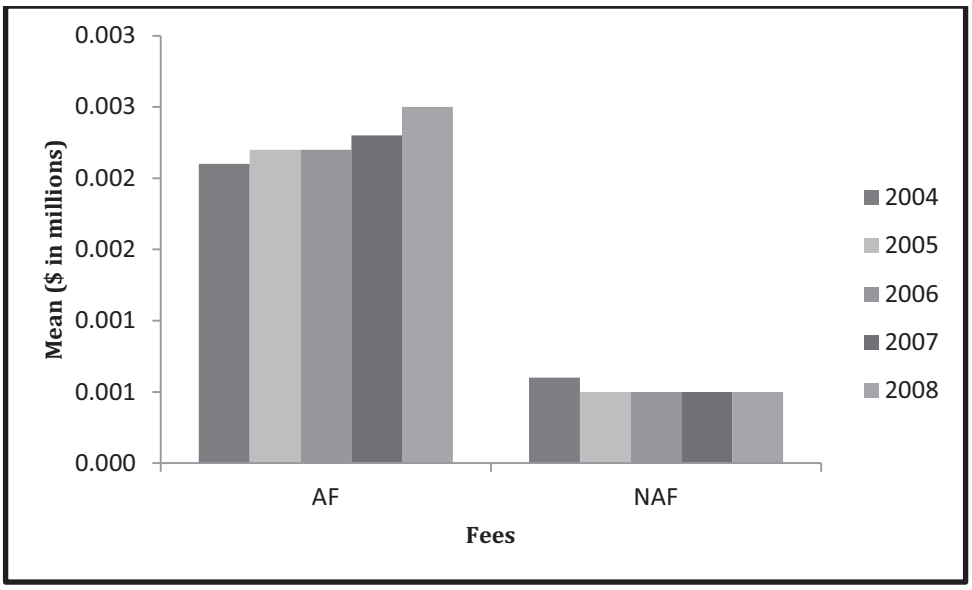

Figure 6b: Annual Audit Fees-Scaled by Total Assets

8.1.1.2 Audit Fees by Industry

The issue of industries having different needs and different levels of audit risk leading to different levels of audit fees are discussed in the literature. As per Table 11, Panel B, on average, the media industry pays higher average audit fees than any of the other industries, the leisure industry pays higher amounts of non-audit service fees than other industries, and the food industry pays the least amount of audit and non-audit service fees. From an industry perspective, average audit fees show an increasing trend while non-audit service fees show a decreasing trend from 2005 to 2008, although some of the industries paid higher average non-audit service fees in 2008 as compared to 2007. Figure 6c illustrates the average audit fees distribution by industries. Both audit and non-audit service fees vary by industries.

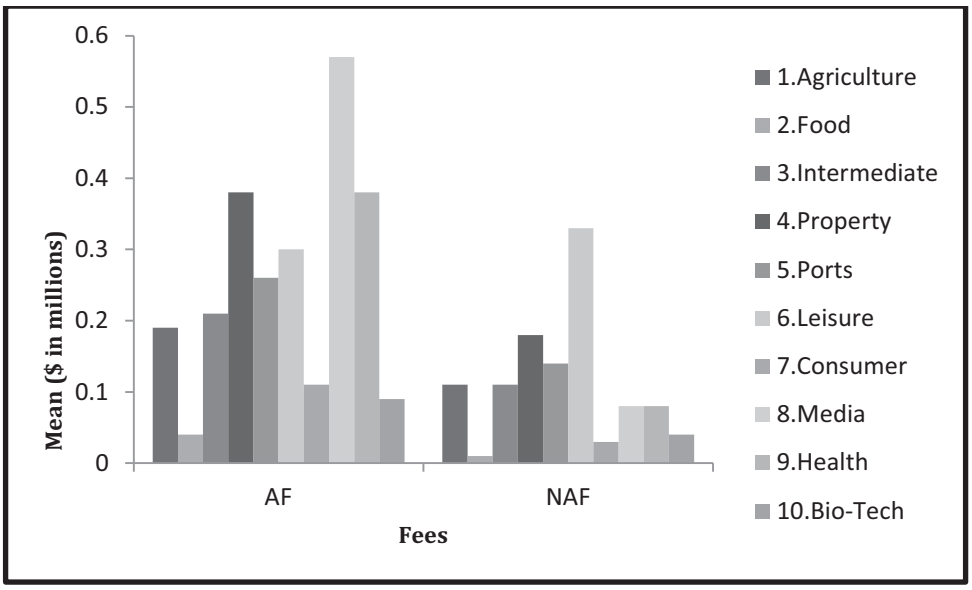

Figure 6c: Audit Fees – Industry-Wise

Figure 6d illustrates the audit and non-audit service fees distribution by industries scaled by total assets. The biotechnology industry pays more audit fees per dollar of total assets whereas leisure and media industries pay more non-audit service fees per dollar of total assets.

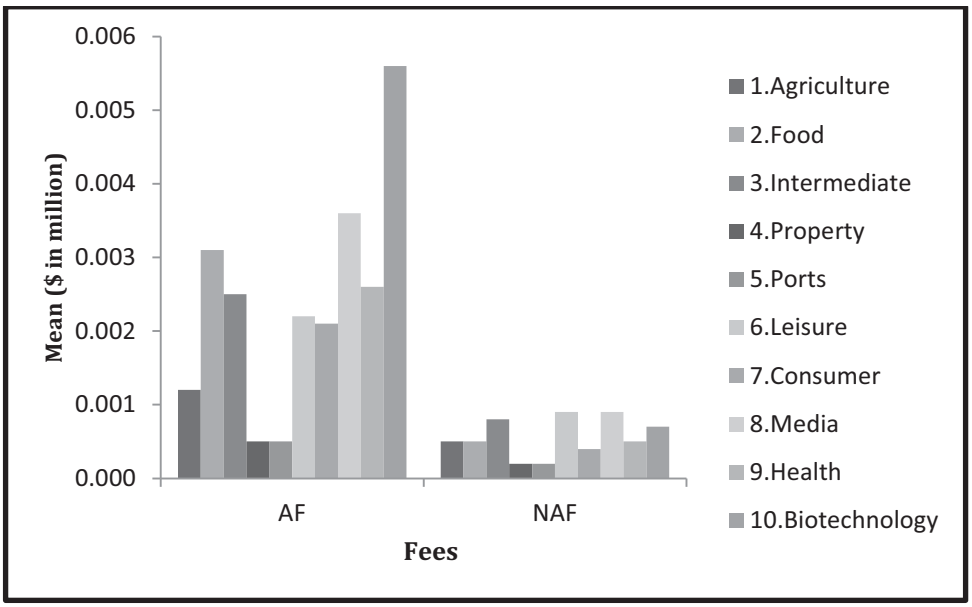

Figure 6d: Audit Fees –Industry-Wise-Scaled by Total Assets

8.1.1.3 Audit Fees by Auditors

Auditor dominance is another issue that has been pointed out in the literature (Hay et al.2006). I test this contention to identify the current state of audit fees in the New Zealand audit market.

As per Table 11, Panel C, on average, PWC charges more audit ($.0.36 million) and non-audit service fees ($.0.14 millions) than the other BIG4 and non-BIG4 audit firms. Of the BIG4 firms, Deloitte on average charges lower audit fees ($.0.14 million), while Ernst & Young charges the least amount of non-audit service fees ($.0.07 million). On average, the BIG4 audit firms charge more audit fees ($.0.27 million) and non-audit service fees ($.0.12 million) than the non-BIG4 audit firms. On average, Grant Thornton charges more audit fees than Deloitte and Ernst & Young, possibly due to a few large company audit engagements, as shown later in Figure 7a. On average, of the BIG4, PWC charges higher non-audit service fees than all other firms (except fees for the year 2008).

(Insert Table 11)

Figure 7a shows the average audit fees charged by the major audit firms. On average, of the BIG4 audit firms, PWC charges higher audit fees than all other firms. BDO charges the least amount of audit fees. It is also evident that audit fees have increased steadily over the years for most firms.

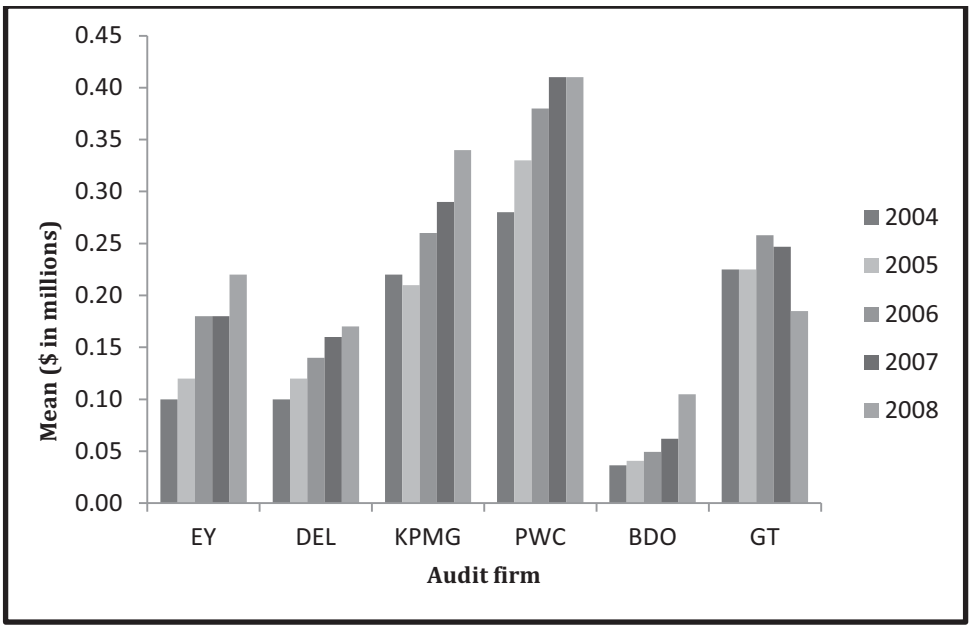

Figure 7a: Audit Fees of Audit Firms

Figure 7b shows the average audit fees (scaled by total assets) charged by the major audit firms. As a proportion of total assets, BDO charges higher audit fees than all other firms. PWC charges the least amount of average audit fees scaled by total assets.

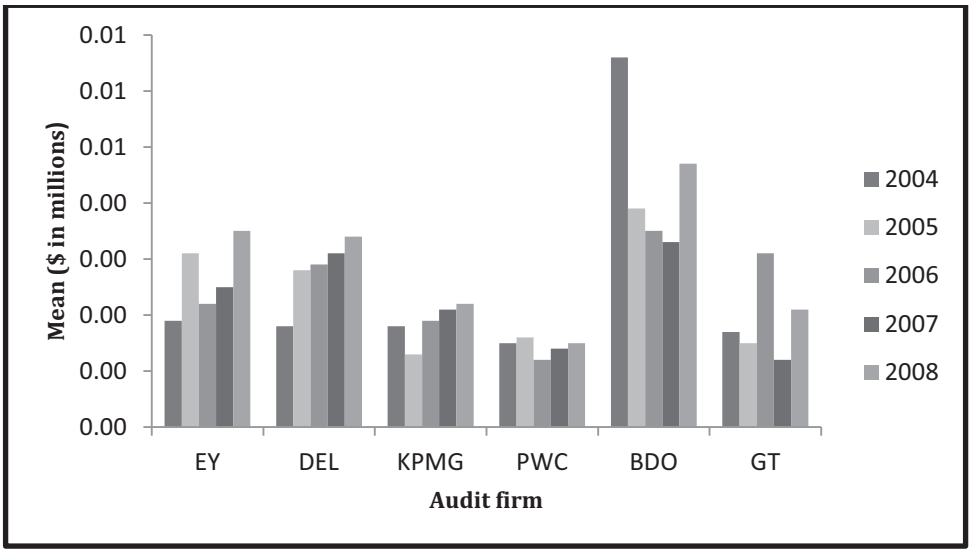

Figure 7b: Audit Fees of Audit Firms-Scaled by Total Assets

8.1.1.4 Non-audit Service Fees by Auditors

The close association between audit and non-audit service fees is a matter of significant concern to investors and regulators like. In this section, I evaluate the trend of non-audit service fees.

Figure 7c shows average non-audit service fees charged by audit firms. On average, PWC charges higher non-audit service fees than all other firms and for all the years except 2008. It is worth noting that non-audit service fees show an upward movement for some of the firms in the year 2008.

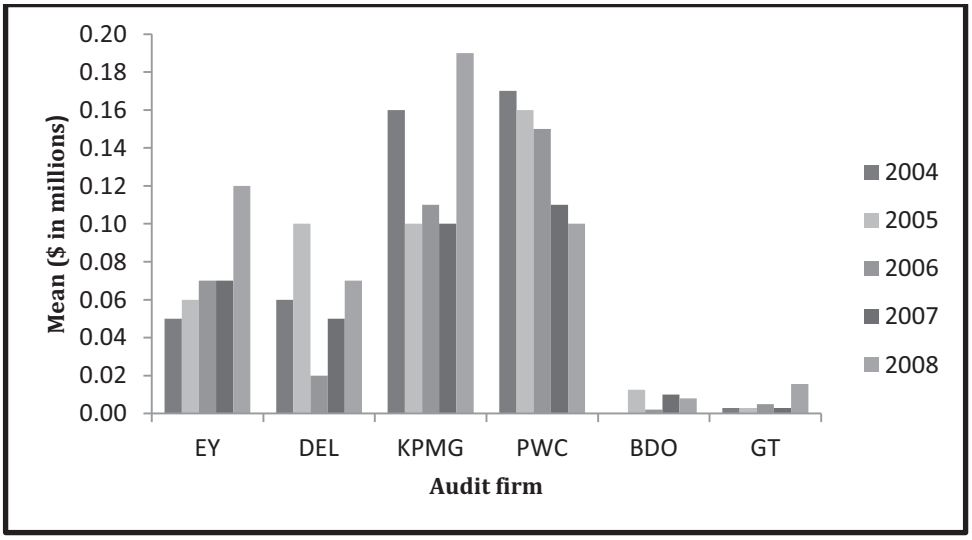

Figure 7c: Non-Audit Service Fees of Audit Firms

Figure 7d shows that Deloitte charges more non-audit service fees per dollar of total assets than all other firms; non-audit service fees charged by PWC drops in 2005 and 2007. It is also evident that non-audit service fees decrease steadily up to 2007, which supports Griffin et al. (2009). The statistics in Table 11 (Panel A, B and C) show that smaller firms in New Zealand do not contract non-audit services on a continuous basis.

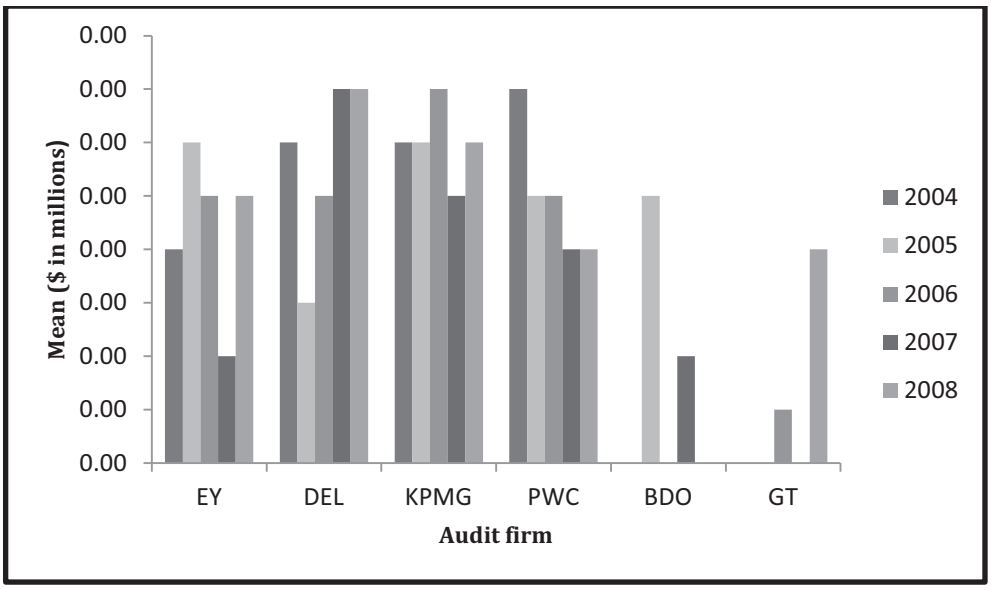

Figure 7d: Non-Audit Service Fees of Audit Firms-Scaled by Total Assets

8.1.1.5 Distribution of Audit Firms

Distribution of audits by audit firms is another way of ascertaining the spread of the audit market. I evaluate the spread of audit fees between audit firms and between industries.

Table 11, Panel E shows the annual distribution by audit firms in New Zealand. PWC audited 36 per cent of the sample firms, followed by KPMG (25%), Deloitte (15%), and Ernst & Young (8%). These distributions do not change much over the five years of the sample. Overall, the BIG4 firms audit 84 per cent of the sample firms. Between PWC and KPMG, they audit 60 per cent of the sample firms, showing that these two firms audit more companies than all the others.

Figure 8a illustrates the distribution by audit firms.

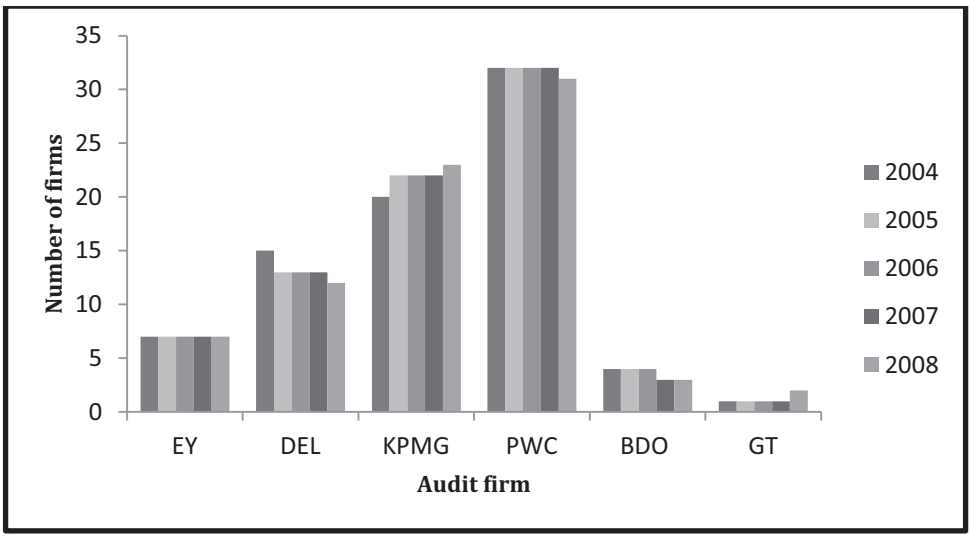

Figure 8a: Annual Audit Engagements of Audit Firms

Table 11, Panel F shows the industry distribution by audit firms. PWC leads audits in all industries except the agriculture and property industries. KPMG leads in the agriculture, property, and food industries. In the food industry, KPMG and PWC audit all the sample firms. This confirms that in New Zealand these two firms rule the audit market. Figure 8b illustrates this pattern. The dominance of PWC, in particular, is, perhaps, because it is the first BIG4 firm to start operating under its own name in New Zealand (*circa* 1930).

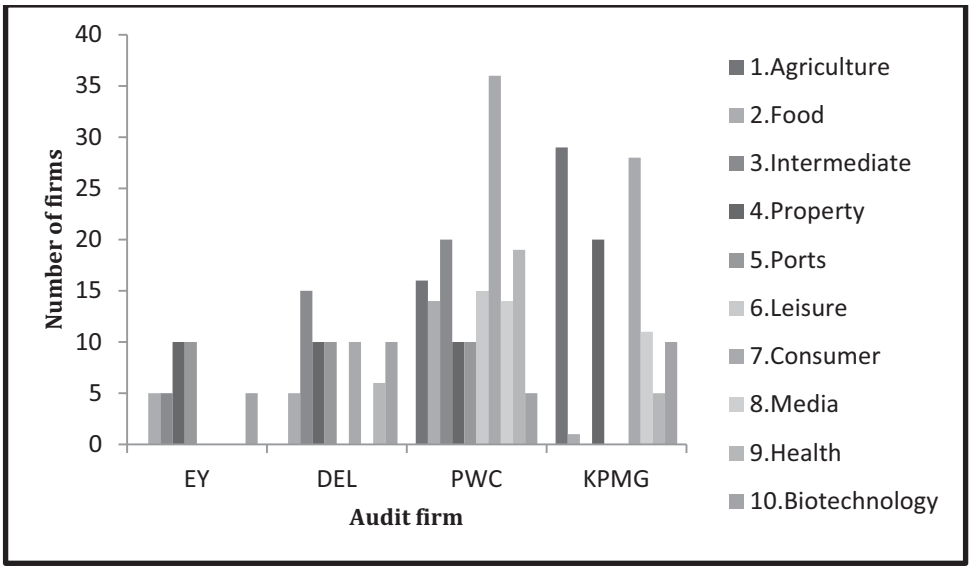

Figure 8b: Industry Leaders

It is obvious that the audit service suppliers of New Zealand listed companies are split into three groups, PWC and KPMG, Deloitte and Ernst & Young, and the non-BIG4. The non-BIG4 firms' share of audit engagements is a little higher than that of the US with PWC at the top in both countries. Unlike the US, the non-BIG4 firms in New Zealand are not expanding their share in the listed company market.

8.1.1.6 Audit Committee Independence

The mean (median) percentage of audit committee independence is 78 per cent (67%), and mean (median) percentage of independent directors with financial expertise is 51 per cent (67%). This shows that a large majority of the audit committee members are independents and a marginal majority have financial expertise.

In New Zealand, the Corporate Governance Best Practice Code of the NZSX Listing Rules (circa 2004) provides principles that are desirable but not mandatory. Yet, as shown in Figure 9, for the years 2004 to 2008 the independent members' percentage has been between 70 and 80 per cent, and the percentage of independent directors with financial expertise has been around 50 per cent. This means that despite the code being optional, New Zealand firms have actively followed its guidance. However, the level of adoption for independent members of the audit committee is below the US level. The t-test results (not reported) are significant ($p<0.000$, two tail) suggesting that level of adoption in New Zealand is below the US level. This could be because New Zealand audit committees are not required to be entirely independent as in the US.

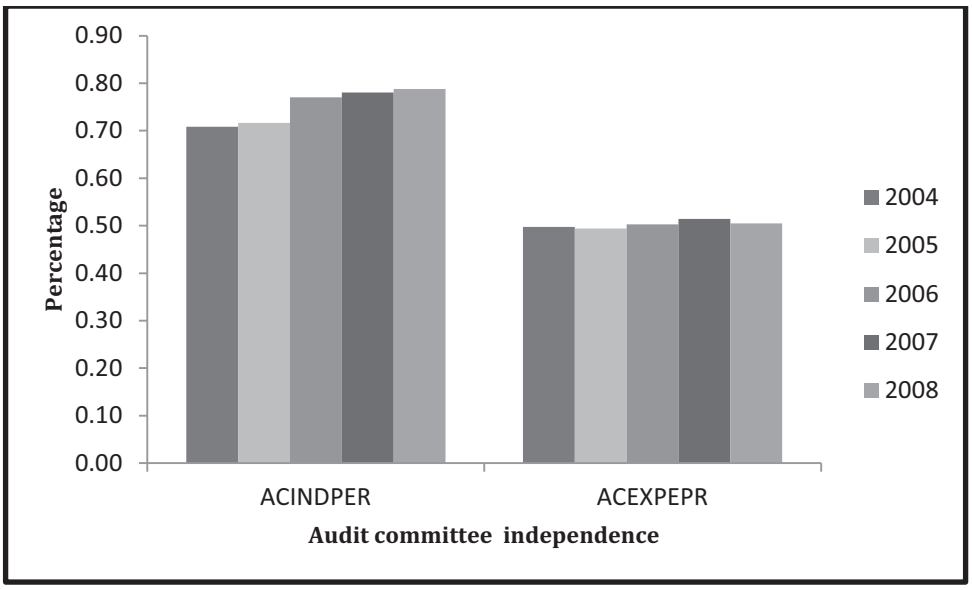

Figure 9: Annual Audit Committee Independence Percentage

Overall, audit committee independence and financial expertise percentage has been high and steadily growing for the years 2004 to 2008. Almost all firms have audit committees with independent directors and at least one director with financial expertise.

8.1.1.7 Institutional Ownership

As per Table 12, the mean (median) institutional ownership ($INST_t$) is 0.13 (0.06). This suggests that only 13 per cent of the shareholders of auditee firms are institutional owners. Figure 10, shows the ownership holdings of corporates and external institutional shareholders. The percentage of corporate holdings is comparatively higher and t-test results (not reported) are significant ($p<0.01$, two tail) suggesting that in the New Zealand shareholder setting, corporate holdings have a greater prominence than institutional holdings.

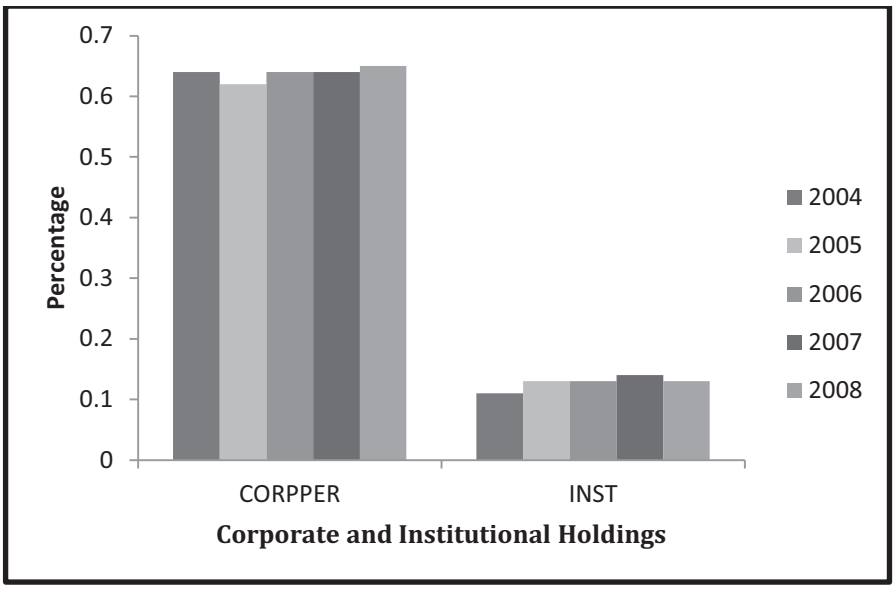

Figure 10: Percentage of Corporate and Institutional Holdings

(Insert Table 12 here)

8.1.1.8 Executive Compensation

As per Table 11, Panel B the mean (median) CEO base salary is $0.53 million ($ 0.32 million). The mean (median) total CEO incentives are $ 0.08 million ($ 0.00 million). Few firms offer incentives (short and long-term), and they are in the 87th percentile. The mean (median) CEO total salary is $ 0.61 million ($ 0.34 million). On average, the biotechnology industry pays the highest average CEO base salary, whereas the food industry pays the least amount of base salary. Firms in New Zealand reward their CEOs mostly with base salary. Very few large firms tend to reward their CEOs with incentives and stock options.

Figure 11a illustrates the CEO compensation awarded by the firm, with base salary increasing in 2005, but falling thereafter. The average incentives (short-term and long-term) show a growing trend, suggesting that New Zealand firms are introducing incentive plans to reward their CEOs. The average total salary is showing a gradual increase mostly due to incentive plans offered by the firms.

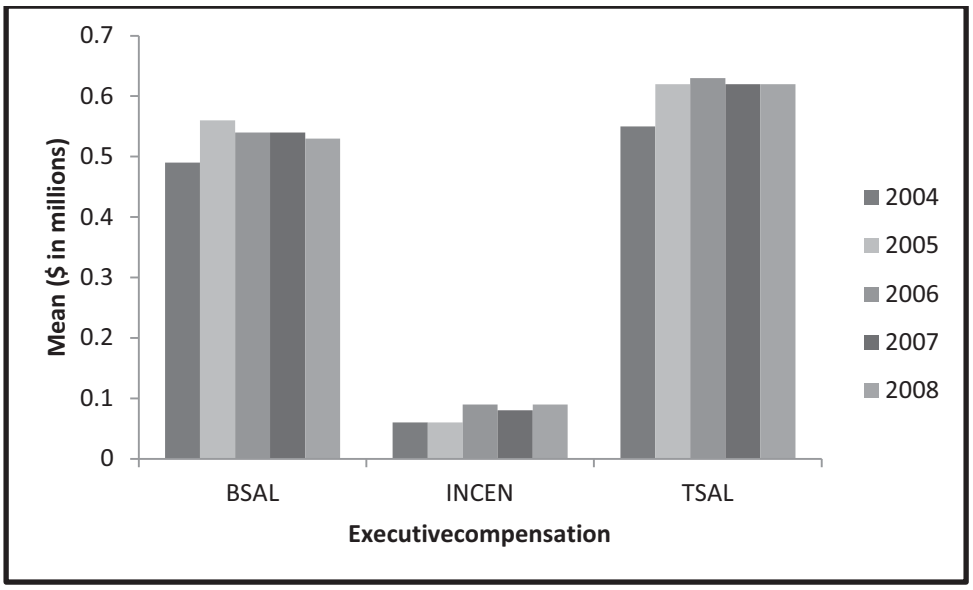

Figure 11a: Annual Executive Compensation

Figure 11b shows executive compensation scaled by total assets at the end of the fiscal year. As a proportion of total assets, both base salary and total salary continues to drop from 2005 onwards, whereas incentives remain constant and relatively very low.

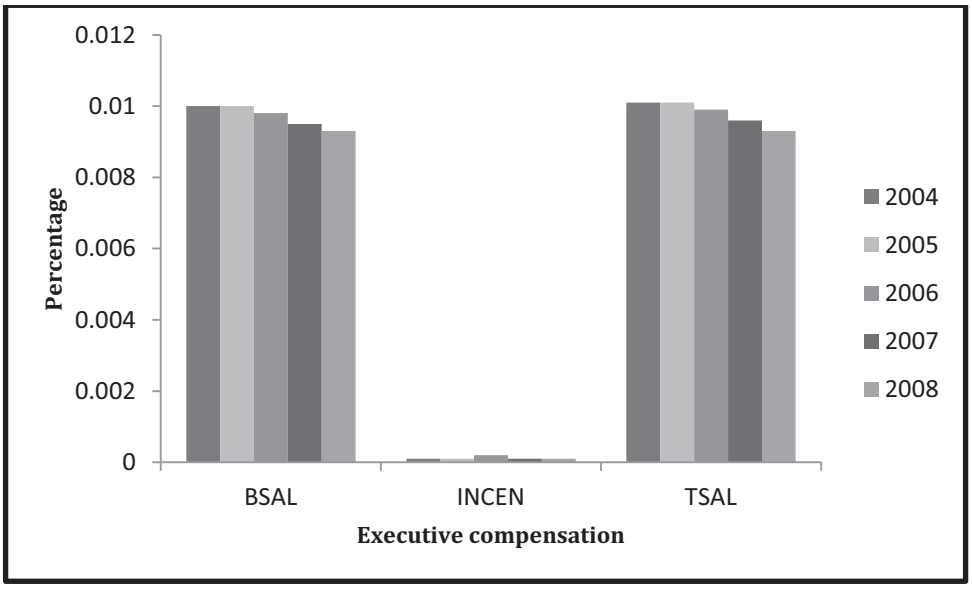

Figure 11b: Annual Executive Compensation-Scaled by Total Assets

8.1.2 Bivariate Correlations

I conduct both parametric and non-parametric correlation analyses to explore how the variables are related. Table 13 provides the Pearson and Spearman correlations between the independent variables with Pearson correlations above the diagonal and Spearman correlations below the diagonal. There are low negative correlations between AF_t and $ACEXPPER_t$, and AF_t and $GSEG_t$. There are several significant Pearson and Spearman correlations between the variables. There is a positive and significant correlation between AF_t and $BSAL_t$ ($p<0.05$, two tail) suggesting that higher levels of fixed salary lead to higher audit fees. However, the significant negative correlation between AF_t and $INST_t$ ($p<0.05$, two tail) suggests that higher levels of institutional holdings are associated with lower audit fees. The positive and significant correlation between AF_t and $ARINV_t$ ($p<0.05$, two tail) suggests that, the higher the complexity of the business, the higher the audit fee. The negative and significant correlation between AF_t and $BDSIZE_t$, AF_t and $ACSIZE_t$ ($p<0.05$, two tail) suggests that larger board and audit committee sizes decrease audit fees. Also noticeable is the positive correlation between AF_t and NAF_t ($p<0.05$, two tail), suggesting that audit and non-audit service fees are still complementary products. There is no ban on the provision of non-audit services in New Zealand.

I also observe significant correlations between $BDSIZE_t$ and $ACSIZE_t$, $BSAL_t$ and $ARINV_t$, $BSAL_t$ and $BDSIZE_t$, and $BSAL_t$ and $LOGMB_t$. This could result in multicollinearity concerns for the multivariate tests. The issue of multicollinearity is addressed later in this chapter.

(Insert Table 13 here)

8.1.3 Multivariate Analyses

Here I report the results of OLS regressions, followed by several sensitivity tests. The first sets of tests are based under OLS Model 1 (Tables 14 - 16).

Table 14 provides the results for OLS tests conducted using Industry, Year, as dichotomous control variables. Table 15 provides the results using an IFRS

dichotomous control variable and Table 16 provides the results using audit firm and year as dichotomous control variables. The F scores are significant (p<0.01, two tail) in all estimations.

In Tables 14-16, I report the results in two Panels. Panel A reports the results for experimental variables $ACINDPER_t$, $ACEXPPER_t$, $INST_t$, $BSAL_t$, and $INCEN_t$, and Panel B reports the results for experimental variables that include $ACINDPER_t$, $ACEXPPER_t$, $INST_t$, $TSAL_t$, and $STOP_t$. Since $STOP_t$ is not common in New Zealand, the Panel A test is estimated first to avoid any errors arising from low degrees of freedom due to a lack of observations of $STOP_t$s.

8.1.3.1 Experimental Variables

8.1.3.1.1 Audit Committee Independence

In Tables 14 and 16, the coefficients of $ACINDPER_t$ in Panel 1 and 2 are negative but not significant. The coefficients of $ACEXPPER_t$ in Panel 1 and 2 are positive but not significant. In Table 15, the coefficient of $ACINDPER_t$ in Panel 1 is negative but not significant. The coefficient of $ACINDPER_t$ in Panel 2 is negative and significant (p<0.10, two tail). The coefficients of $ACEXPPER_t$ in Panels 1 and Panel 2 are positive but not significant. Based on these results, I conclude that H4a and H4b are supported.

8.1.3.1.2 Institutional Ownership

In Tables 14 and 16, the coefficients of $INST_t$ in both Panel 1 and 2 are negative but not significant. In Table 15, the coefficients of $INST_t$ in both Panel 1 and 2 are positive but not significant. A t-test conducted on the means of the highest and lowest quartiles of firms based on institutional ownership reveals that the highest quartile has significantly (p<0.01, two tail) lower audit fees than the lowest quartiles. While the regression results of $INST_t$ is not significant, there is reasonable indication that audit fees are negatively associated with institutional ownership.

8.1.3.1.3 Executive Compensation

In Tables 14 to 16, the coefficients of $BSAL_t$ in Panel 1 are positive and significant (p<0.01, two tail). Similarly, the coefficients of $TSAL_t$ in Panel 2 are positive and significant (p<0.01, two tail). In Tables (14 to 16), the coefficient of $INCEN_t$ in both Panel 1 and 2 are positive but not significant. In Tables (14 to 16), the coefficient on $STOP_t$ in both Panel 1 and 2 are positive but not significant. The results support H6b and H6c but not H6a.

8.1.3.2 Control Variables

The test results of control variables reported in Tables 14 to 16 (both the Panels) are discussed as under. Overall, the coefficients of $ACSIZE_t$ are negative but not significant suggesting that in New Zealand the size of the audit committee is not significant in evaluating audit risk. The coefficients of $BSEG_t$ on most of the Panels are positive and significant (p<0.05, one tail) and the coefficients of $GSEQ_t$ on some of the Panels are positive and significant (p<0.10, one tail). This indicates that the firm's perceived risk increases with the number of business segments, resulting in increased audit fees. The weak association between $GSEQ_t$ and audit fees could be due to the fact that there are very few firms that operate outside New Zealand, thus audit firms do not consider $GSEG_t$ as a significant risk factor in New Zealand as compared to $BSEG_t$.

The coefficient on $ARINV_t$ in most of the Panels are positive and significant (p<0.05, two tail) indicating that audit firms view the amount of accounts receivable and inventory as risk factors resulting in higher audit fees. The coefficient on $LOSS_t$ is positive and significant (p<0.01, two tail), suggesting that reporting financial losses in two consecutive years increases risk thereby increasing the audit fee.

The coefficient on *BIG4* in most of the Panels are negative and significant (p<0.01, two tail), suggesting that the BIG4 audit firms enjoy economies of scale, and are able to reduce audit fees for their clients. The coefficients of *INDSP* in most of the Panels are negative and significant (p<0.05, one tail) indicating that the industry specialist audit firms (PWC and KPMG) pass on their economies of scale through

reduced audit fees. The coefficients of $BDSIZE_t$ in most of the Panels are negative and significant (p<0.01, two tail) indicating that the audit firms view board size as a risk mitigating factor and are inclined to charge lower audit fees if the board size is larger.

The coefficient on $LOGMB_t$ is positive and significant (p<0.01, two tail). The coefficient on $LEVERAGE_t$ is positive and significant (p<0.01, two tail). It suggests that growth and debt increase audit risk.

The coefficient on NAF_t is positive and significant (p<0.01, two tail) suggesting that audit fees and non-audit service fees are considered as complementary products. In the absence of strict regulations, audit firms in New Zealand may adopt the loss-leader policy to obtain lucrative non-audit services.

Of the $INDS_i$ dummy variable, the intermediate, and property industries have a significant (p<0.05, two tail) negative relation with audit fees. Overall, 2004 and 2005 seem to be associated with audit fees. Probably, the effect in these years could be due to the implementation of the corporate governance code in 2004 and the early adoption of IFRS (2005). However, IFRS implementation phases (2005 and 2007) did not have any significant association with audit fees.

(Insert Tables 14, 15, and 16 here)

8.1.3.3 Multicollinearity

Gujarati (2003) and Hair et al. (1995) recommend a bivariate correlation coefficient of 0.80 as the threshold for multicollinearity concerns that may threaten the OLS regression analysis. All of the significant correlations are below this threshold.

To further examine this issue, I estimate variance inflation factors (VIF) for all the independent variables in all the regressions. VIF values greater than 10 may be a cause for concern for multicollinearity, which could bias the parameter estimates (Myers 2001). VIF reported in the multiple regression results (Tables 14 to 16) are well below 10 with reported VIF values in most cases are less than three. The values rule out the presence of multicollinearity bias in hypothesis testing.

Since the data involve similar companies over a period of five years, I also run the time series test for auto serial correlation, and find that the Durbin-Watson coefficient is 1.926. Therefore, I reject the notion that the data are auto correlated.

8.1.4 Sensitivity Tests

Prior literature (e.g., Simunic 1980; Simon 1985) suggest use of sensitivity tests in order to ensure the robustness of the OLS regression results. I use several sensitivity tests to verify the results. The first set of tests estimates OLS Model 1 using alternative measures of the dependent variable, audit fees, and the independent control variable, non-audit service fees. The next set of tests is to estimate the OLS Model 1 for every year, by client size, by audit firm size, and for auditor switch. I report some of the sensitivity tests results.

8.1.4.1 Alternative Scaling

Prior research uses natural logarithm scaling for audit fees and non-audit service fees along with total assets as a control variable. Using the log of audit fees as the dependent variable, I find the results consistent with the results reported in Table 14. I also use market value of the firm as a scaling measure, and scale all the continuous variables by the market value of the firm and reestimate the OLS. The results are consistent with the results reported in Table 14, which enhances the robustness of the previous results (not reported).

8.1.4.2 Annual Tests

Various factors that occur in a year could affect the OLS regression results. To address this potential effect, I repeat the OLS in Table 14 for each of the years. The results for $ACINDPER_t$ are negative but not significant. The results for $ACEXPPER_t$ are positive but not significant. The results of $INST_t$ are negative, but not significant, for all the years. The results for $BSAL_t$ and $TSAL_t$ are positive and significant for all the years except 2004 suggesting that in New Zealand audit firms price fixed salary of CEOs. The implementation of corporate governance principles and codes in New Zealand

increases risk to the CEO, which results in increased fixed salary. The audit firms regard this increase as a risk factor, and charge higher audit fees. Overall, Year 2004 and 2005 are positively associated with audit fees. This could be attributed to the fact that in these years the corporate governance principles and codes (2004) and IFRS (2005) were first suggested in New Zealand. Overall, the results are consistent with the results reported in Table 14 (not reported).

8.1.4.3 Client Size

The client size has a significant effect on the audit fee. Earlier studies (Simunic 1980) used total assets as a measure of client size. I partition the sample into two groups, large and small auditees using the median of total assets and re estimate OLS model. Table 26 reports the results. The results on $ACINDPER_t$ are negative but not significant for both large and small firms. However, $ACEXPPER_t$ is positive and significant in Panel 2 ($p<0.10$, two tail) for larger firms and for smaller firms it is positive but not significant. The results suggest that in larger firms audit committees have higher financial expertise, which require higher quality audits at a higher price. The results for $BSAL_t$, $INST_t$, $INCEN_t$, $TSAL_t$, and $STOP_t$ are similar to the results reported earlier.

8.1.4.4 Auditor Size

The composition of fees can differ across auditors, which could affect the results. To address this potential effect, I reestimate OLS Model 1 by audit firm. Since the sample size is small, and PWC holds a higher market share than all other firms, I have partitioned the audit firms into BIG4 and non-BIG4, and PWC and other audit firms. Table 27 reports the results. Panel 1 shows the effect between BIG4 and non-BIG4 audit firms, and Panel 2 shows the effect between PWC and other audit firms.

Overall, the results are consistent with the results reported earlier. However, the coefficient of $ACINDPER_t$ is positive and significant PWC ($p<0.10$, two tail). The results on $ACEXPPER_t$ is positive and significant for PWC and non-BIG4 firms ($p<0.05$, two tail). This suggests that PWC considers audit committee independence as a

significant factor in the determination of audit fees and non-BIG4 firms consider audit committee expertise as a significant factor in the determination of audit fees. The results of $ACINDPER_t$ and $ACEXPPER_t$ are not significant for other firms.

The results for $INST_t$ is negative and significant ($p<0.05$, two tail) for PWC and for other auditors ($p<0.10$, two tail). This suggests that both PWC and other auditors consider institutional ownership as a significant factor in the determination of audit fees. However, since non-BIG4 firms show no significance for $INST_t$, it is evident that the remaining BIG4 firms do consider institutional ownership as significant factor in the determination of audit fees.

Similarly, the results for, $BSAL_t$, $INCEN_t$, $TSAL_t$ and $STOP_t$ are consistent with the earlier results reported in Table 14 (Panel A and B). It is also noted that Deloitte shows a negative significant association with audit fees, which could be because they are trying to acquire more audits in a competitive audit environment. Note that Deloitte has lost a lot of ground on the non-audit service fees front (Figure 7c) and its audit engagement numbers have been declining (Figure 8a). Non-BIG4 firms show a positive association with audit fees due to increased audit numbers, suggesting that the New Zealand audit market is quite competitive. The effect of other BIG4 audit firms on the audit fee is weak, except for PWC, which shows a significant positive association.

8.1.4.5 Auditor Switch

Firms are free to select the audit firm they want to engage. They are also free to change the audit firm, if they feel that the cost of audit is high. Rama et al. (2006) document that BIG4 audit firms in the US are more conservative in the post-SOX era and dropped more audit clients in 2003. The clients dropped by BIG4 firms switch to other audit firms. The audit fee determination could be affected by change in the audit firm. To address this potential effect, I include auditor switch (*AUDSWITCH*) a dummy variable measured as 1 if there is a change in the audit firm, and 0 otherwise). The results for $ACINDPER_t$, $ACEXPPER_t$, $INST_t$, $BSAL_t$, $INCEN_t$, $TSAL_t$, and $STOP_t$ are

consistent with results reported earlier. However, auditor switch is significantly positive with audit fees ($p<0.01$, two tail) (not reported).

8.1.4.6 Corporate Holdings

As discussed in Chapter 3, there is ownership concentration in most of the New Zealand firms (Hossain et al. 2001; Bhabra 2007). In Section 8.1.1.7, I showed that much of this concentration arises from corporate shareholdings. In order to test the effect of corporate shareholdings, I introduce a corporate shareholding variable, $CORPPER_t$ in the multivariate tests. $CORPPER_t$ is measured as the percentage of shares held by companies in the twenty largest shareholdings of an auditee firm. The results (see Table 28) show that the association for $INST_t$ is negative but not significant in both the panels but the results of $CORPPER_t$ is negative and significant ($p<0.01$, two tail). The results suggest that firms in which companies hold very high shareholdings have lower audit fees. The reason could be that these companies have sufficient monitoring mechanisms of their own and need not require detailed audit procedures. It is also possible that audit firms are aware that these companies act like external institutional holders and have the power to monitor and discipline erring managers. This leads to lower audit risk for audit firms, which results in lower audit fees.

The results for $ACINDPER_t$, $ACEXPPER_t$, $BSAL_t$, $INCEN_t$, $TSAL_t$, and $STOP_t$, under this analysis, are consistent with the results reported under earlier multivariate analyses.

8.1.4.7 Discretionary Accruals/Demand-side Model

I use discretionary accruals as a measure of audit quality to test the indirect association between audit fees and other variables of interest through earnings quality. In other words, I retest the audit fees model (two stage test) using a demand perspective as explained in Chapter 7 sensitivity tests. The results of demand-side model estimation are reported in Tables 24 and 25.

In Table 24, the coefficients of $ACINDPER_t$, and $ACEXPPER_t$, in both Panels 1 and 2 are positive but not significant. The coefficients on $INST_t$ are positive and significant

(p<0.05, two tail). The coefficient on $BSAL_t$ in Panel 1 is positive and significant. The coefficient on $INCEN_t$ in Panel 1 is negative but not significant. The coefficient on $TSAL_t$ in Panel 2 is positive and significant (p<0.01, two tail). The coefficient on $STOP_t$ in Panel 2 is positive but not significant.

The results indicate that audit committee independence is not associated with earnings quality. The positive and significant association between audit quality and $INST_t$ suggests that the lower presence of institutional shareholdings leads to poor earnings quality. The positive association and significant association between $BSAL_t$/$TSAL_t$ and insignificant results for both $INCEN_t$ and $STOP_t$ suggest that, in the absence of incentives and stock options, audit firms view fixed salary as a risk factor that can affect earnings quality in New Zealand.

In Table 25, the coefficient on PREDICT is positive and significant and the RESIDUAL is not significant. The results suggest that the variables that predict earnings quality also predict audit fees. The results of other control variables are also significant in the determination of audit fees, which is consistent with the earlier results.

8.2 Discussion

In this section, I discuss the results of the New Zealand study. First, I discuss the results of audit committee independence, and then I discuss the results of Institutional Ownership, followed by the executive compensation results, and the results of the various control variables.

8.2.1 Audit Committee Independence and Expertise

I have used $ACINDPER_t$ and $ACEXPPER_t$ as experimental variables in this study and hypothesised a null association with audit fees. First, I discuss the results of audit committee independence followed by a discussion on audit committee financial expertise.

8.2.1.1 Percentage of Independent Directors in the Audit Committee

The overall result for $ACINDPER_t$ is positive but not significant suggesting that the percentage of independent directors in the audit committee is not considered as a significant factor in the determination of audit fees. The findings are consistent with the findings of Rainsbury et al. (2009). However, the findings differ to those of prior studies (Carcello et al. 2002; Abbott et al. 2003; Vafeas and Waegelein 2007). The institutional settings of New Zealand in this regard are different from that of the US. As compared to the US, New Zealand's requirement of having independent audit committees is optional, but the results are similar to those of the US. This is probably for the very same reasons as in the US, i.e., high levels of independent directors and financial expertise on audit committees in most firms. The quartile distribution of $ACINDPER_t$ (Table 11, Panel A) shows that almost all firms have an independent audit committee and there is not much variation between firms. This is likely to be because of a flow-over of the SOX notions of good corporate governance into the New Zealand market. The New Zealand corporate governance principles and codes closely mimic SOX with respect to the requirements for independent directors in audit committees.

There could be another reason for the lack of effects. There are very few firms in the New Zealand market, but the same large auditors as in the US. In such a scenario, there is a possibility that audit firms may not need to consider independent audit committee features as risk indicators as they have more detailed knowledge of the firms in the market than what the audit committee features provide. They would use such detailed knowledge to make their auditing decisions.

Audit firms may be aware that directors serve on multiple boards thereby creating scope for personal ties that could influence the objectivity and independence of the directors. The listed companies' market and the board of directors' market in New Zealand are small and many directors hold multiple directorships (Sharma et al. 2011).

Finally, insufficient enforcement and monitoring of corporate governance instruments can make them less significant in the market. Given the voluntary nature

of corporate governance principles and codes in New Zealand, the auditors may give little attention to these indicators.

Sensitivity analyses reveal other interesting details of the effects of audit committee independence. For non-BIG4 audit firms and PWC, the association between audit committee independence and audit fees are positive and significant. The likely reason for this could be that non-BIG4 firms audit smaller firms, and these firms could be having independent audit committees for better monitoring of managerial activities, which is necessary if they wish to compete with the larger players in the market. Therefore, the demand-side objectives supersede the supply-side objectives.

In the case of PWC, they are likely to have clients that are more reputable. In such a scenario, the auditor has little need for audit committee features in assessing the audit risk. On the other hand, the reputable firms' independent committees are hiring PWC at a higher fee to signal their reputation in the market (see Copley et al. 1996 for a discussion on the simultaneity between auditee reputation and auditor reputation).

8.2.1.2 Percentage of Independent Directors with Financial Expertise

The findings of earlier studies in audit committee financial expertise are mixed. It is positive and significant in Abbott et al. (2003) and negative and significant in Krishnan and Visvanathan (2006). The overall result for $ACEXPPER_t$ is not significant in this study. Both Abbott et al. (2003) and Krishnan and Visvanathan (2006) study pre-SOX data and the studies are conducted in the US. Independent audit committees in the US at that time seem to have had some risk signalling. After SOX, audit committee independence loses its risk signalling impact, even in New Zealand. The reasons, perhaps, are similar to those of audit committee independence.

Similar to audit committee independence, the results for $ACEXPPER_t$ are positive and significant for PWC and non-BIG4 audit firms. In New Zealand, a large number of audit committees have a high percentage of independent directors with financial expertise (on average 51%). Again, the reasons are likely to be similar to those of audit committee independence.

When the results are analysed by size, it seems that expertise has a demand-side effect of positive and significant association with audit fees for large firms. This is likely to be because small firms have few, if any, expert directors on their audit committees.

The overall results on $ACEXPPER_t$ do not support either the demand-side or the supply-side arguments that financial experts in the audit committee demand better audit quality, or audit firms view the high percentage of financial experts as a risk mitigating factor. However, for the very large and the smaller auditors there are demand-side effects on audit fees.

8.2.2 Institutional Ownership

Prior studies (e.g., Grossman and Hart 1980; Shleifer and Vishny 1986; Huddart 1993 suggest that large shareholders have the incentive to undertake monitoring or other costly control activities because increased return from monitoring is sufficient to cover the associated costs. This may decrease audit risks and, thereby, decrease audit fees. Kannan (2009) found evidence to support this argument. On the other hand, lower levels of institutional ownership will not have the same impact on audit fees. When the institutional ownership is low, their effective monitoring is also low due to cost implications. Ineffective monitoring does not reduce audit risk of the audit firms and the audit fee.

My multivariate results for the New Zealand setting show that there is no significant association between audit fees and the percentage of institutional ownership. However, the coefficients of $INST_t$ are consistently negative and a t-test computing the means of the upper and lower quartiles of institutional ownership suggests that there is an influence of institutional ownership on the reduction of audit fees. The overall results suggest that while H5 has no strong support, institutional ownership does influence audit fee when it is sufficiently high.

The results for PWC is negative and significant (see Table 27, Panel 2). PWC is the largest supplier of audit services among BIG4 firms in New Zealand. As discussed earlier, it also audits larger and more reputable auditees. I conducted two t-tests to

see if PWC audited larger auditee firms and auditee firms with higher levels of institutional ownership. The results (not reported) suggest that these auditee firms are indeed larger and have higher levels of institutional ownership ($p<0.05$, two tail). It is likely that more reputable financial institutions are also investing in these types of auditees. Such financial institutions have better monitoring arrangements, which can act as a risk mitigating factor and reduce audit fees.

Compared to the US, institutional holdings in New Zealand are low. Instead, New Zealand firms have high corporate holdings (Section 8.1.4.6). Sensitivity tests (see Table 28) show that such corporate holding have a negative association with audit fees. This may be because corporate shareholders, on the one hand, may act like institutional shareholders and reduce the audit risk and audit fees of firms. On the other hand, they may have controlling interests in the firm or are able to exert significant influence on the firms, allowing them to extract information privately. This would require lower levels of audit services, which would lead to lower audit fees. Therefore, in both situations, higher corporate shareholding would lead to lower audit fees.

8.2.3 Executive Compensation

In this study, I use $BSAL_t$ / $TSAL_t$ (base /total salary), $INCEN_t$ (incentives), and $STOP_t$ (stock options) as measures of executive compensation. First, I discuss the results for $BSAL_t$ / $TSAL_t$ followed by $INCEN_t$ and $STOP_t$.

8.2.3.1 Fixed Salary

The results for $BSAL_t$ and $TSAL_t$ are positive and significant for the main tests and almost all the sensitivity tests: large vs. small firms; all the years of the sample except 2004; and BIG4 and non-BIG4 audit firms. While the results do not support hypothesis H6a of no association between the level of base/total remuneration and audit fees, they suggest that fixed salary is a major risk signal for audit firms in New Zealand, and are considered for audit fee setting. These findings are consistent with the findings of Wysocki (2010).

8.2.3.2 Incentives

The results for $INCEN_t$ under the OLS Model 1 are not significant suggesting that cash incentives paid to the CEO are not a significant factor in the determination of audit fees. The result is not consistent with the findings of Vafeas and Waegelein (2007) and Kannan (2009). In New Zealand, most of the firms are small and medium sized, which do not offer incentives to their CEOs. In such a setting, the result is bound to be weak due to a lack of independent variable variations.

8.2.3.3 Stock Options

Overall, the results for $STOP_t$ are consistently insignificant suggesting that CEO stock options are not a significant factor in the determination of audit fees in New Zealand. The results are not consistent with the findings of Kannan (2009). The reason for this is simply that in New Zealand, very few companies offer stock options to their CEOs. The small and medium firms offer mostly basic salaries. In such a scenario, the results for stock options inevitably will vary from the findings of the study conducted in the US where stock options are widely used in CEO remuneration.

For incentives, I conclude that in the absence of incentives and stock options, audit firms take note of the fixed salary of executives for audit fee setting purposes. The audit firms may believe that the absence of incentives and stock options may encourage the executives to indulge in accounting manipulations, which can cause significant audit risks. This could be the possible reason for audit firms pricing the fixed salary of the CEOs in New Zealand.

8.2.4 Control Variables

The results of various control variables based on the demand-side factors of size, complexity, industry, and operational risk are positive and significant, consistent with the results of earlier studies (e.g., Simunic 1980; Chow 1982; Maher et al. 1985; Simon 1985; Taffler and Ramalingam 1982; Taylor and Baker 1981; Firth 1985; Whisenant, Sankaragurswamy, and Raghunandan 2003; Mitra and Hossain 2006;

Carson and Fargher 2007). However, the weak results for $GSEG_t$ could be due to very few companies operating their business outside New Zealand. This is likely to be an outcome of the size of New Zealand firms in relation to US firms.

The results of control variables based on supply-side factor of audit firm size (negative and significant association with audit fees) is consistent with most of the earlier findings (e.g., Taffler and Ramalingam 1982; Taylor and Baker 1981; Francis 1984; Simon 1985; and Palmrose 1986; Johnson et al. 1995; Abidin et al. 2008; Hamilton et al. 2008; Anderson and Zeghal 1994; Carson et al. 2004). The results for industry specialisation (negative and significant association with audit fees) are mixed.

8.2.5 Non-audit Service Fees

Unlike the US, there are no stringent regulations on the provision of non-audit services in New Zealand, even in the post-SOX era. The result for non-audit service fees (NAF_t) is positive and significant for all years, for all types of firms, for all audit firms and all industries. This suggests that even in the post-SOX era, non-audit service fees are positively associated with audit fees. The results are consistent with the results of earlier (pre-SOX) studies (e.g., Simon 1985; Palmrose 1986; Hay et al. 2006) period. The positive association with non-audit service fees suggests that non-audit services and audit services are complementary products. They are not one-off jobs as suggested by Williams and Turpie (1983). However, unlike the US, the non-audit services market is very much limited. In order to restrict the dissemination of proprietary information, firms that require non-audit services seem to engage the incumbent firm.

8.3 Summary

The findings of the New Zealand study show no significant results for audit committee independence and expertise. While this may suggest support for H4a and H4b, from the review of the level of independence and expertise, I am of the opinion that in the post-SOX era, both of these variables have lost their significance for the

purposes of estimating audit risk. Since most firms have independent audit committees and the required expertise percentage, these variables no longer act as signals of good corporate governance. In other words, the audit committee independence and expertise results are affected in the same way as in the US setting.

For institutional ownership, the results support H5. The result suggests that in New Zealand, institutional holders do not play a significant role in the audit fee setting process. The descriptives for institutional ownership suggest that the level of such ownership is quite low. It is perhaps too low to create any significant outside ownership monitoring influence over the firm. Likewise, the auditors would be placing little importance on institutional ownership. In fact, my results suggest that corporate ownership has a stronger influence on audit risk and audit fees than institutional ownership in New Zealand firms.

In the absence of incentives and stock options, audit firms regard fixed salary payment to CEOs as a major risk signal and use it for audit fee setting purposes. This view is clearly supported by the results.

A point to note is that New Zealand also has supply-side segmentation in the audit market. I observe some interesting systematic effects of such segmentation. Other matters that are of concern in the literature, such as IFRS implementation, have no significant effect on audit fee determination.

A summary of the results is provided below.

Table C Summary of Results of Tests of Hypotheses-NZ

	Hypothesis	Results
H4a	There is no association between audit fees and percentage of audit committee independence.	Null hypothesis supported.
H4b	There is a no association between audit fees and percentage of audit committee financial expertise.	Null hypothesis supported.
H5	There is no association between audit fees and the percentage of institutional ownership.	Null hypothesis supported.
H6a	There is no association between audit fees and the level of CEO base/total salary.	Null hypothesis rejected. Positive and significant association at $p<0.01$,two tail
H6b	There is no association between audit fees and the level of CEO incentives.	Null hypothesis supported. No significant association found.
H6c	There is no association between audit fees and the level of CEO stock options.	Null hypothesis supported. No significant association found.

Chapter 9 Pooled Regression

This chapter further explores the institutional setting influences of the audit fee market. For this exploration I conduct pooled regressions for a sample of both the US and New Zealand firms. In the chapter, first, I explain the need for pooled regression. Second, I explain the sample selection and provide the model for pooled regression followed by review and discussion of the results.

9.1 The Need for Pooled Regression

As explained in Chapters 4 and 5, the US audit market is more stringently regulated (e.g., auditor rotation, ban on provision of certain non-audit services) than the New Zealand market in the post-SOX era. While the results of audit committee independence and audit committee expertise are similar in both the US and New Zealand samples, my assessment suggests that it may have been due to slightly different reasons. In the US, the level of independence and expertise are very high, and regulation is the most likely reason for such a scenario. In New Zealand, the regulations for independence and expertise are not stringent, so there could be other contributory factors such as international trends towards better corporate governance and pressures from the securities market institutions, as for example, the stock exchange. Many of these factors co-exist and other effects may not be separately identifiable. However, I attempt to identify whether the US sample has any systematically different effects arising from the experimental variables due to the presence of a more robust institutional setting in the US.

As explained in Chapter 4, since the US setting has a stronger oversight mechanism, I expect that its audit committee independence and expertise levels would be more effective than their New Zealand counterparts. This should lead to lower audit fees in the US when the auditees have higher audit committee independence and financial expertise.

My earlier results point to the issue that regulatory influences change the pattern of the results to a certain extent. However, this is not evident in the single

country tests (see summary of the results below). To confirm whether the US and New Zealand differences in regulatory and other institutional arrangements cause systematic differences in results, I pool the US and New Zealand samples based on size, and reestimate the OLS Model 1. In the reestimation, I test for between country effects by using a dichotomous variable that distinguishes the firms of the two countries as originating from two different environments. Because of its more stringent regulatory environment, I expect that US firms will have lower audit fees in the presence of higher audit independence, higher audit expertise, higher institutional ownership and higher executive compensation incentive arrangements. In other words, I expect the interacting dichotomous variable (*USDUMMY*) with the experimental variables in the reestimation to have a negative sign.

Table D Summary of Findings of the Two Countries

Significant at (p<0.05, two tail)

Association with Audit Fees	**US**	**New Zealand**
Audit committee independent directors percentage	No	No
Audit committee financial expertise percentage	No	No
Institutional ownership	Negative	No
Base/Total salary	N/A	Positive
Short-term incentives	Positive	N/A
Long-term incentives	No	N/A
Incentives (short and long-term)	N/A	No
Stock option	Positive	No

Table E Summary of Findings of the Control Variables

Significant at (p<0.05, two tail)

Variable Name	US	New Zealand
$BSEQ_t$	Positive	Positive
$GSEQ_t$	Positive	No
$ARINV_t$	Positive	Positive
$LOSS_t$	Positive	Positive
BIG4	Negative	Negative
INDSP	Positive	Negative
$BDSIZE_t$	Negative	Negative
$ACSIZE_t$	Negative	No
NAF_t	Positive	Positive

9.2 Sample Selection

The US sample (4,490 firm-years) in the earlier tests was much larger than the New Zealand sample (445 firm-years), and the US firms are also much larger than New Zealand firms. I pool the two samples based on total assets. I select firms of both the US and New Zealand that have less than $ 500 million total assets. The final sample for the pooled regression consists of 936 firm years (570 US firm-years and 366 New Zealand firm-years) for the period 2004 to 2008.

9.3 Empirical Model

In order to test the pooled regression I use the OLS Model 1 as explained in Chapter 6. I reestimate the OLS regressions using interaction terms that interact the US/NZ identifier variable (*USDUMMY*) and the experimental variables. The statistical procedure used in the estimation is the Univariate General Linear Model (commonly known as GLM).

$$AF_t = \beta_0 + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t + \beta_5 INCEN_t + \beta_6 STOP_t + \beta_7 USDUMMY*ACINDPER_t + \beta_8 USDUMMY* ACEXPPER_t + \beta_9 USDUMMY*INST_t + \beta_{10} USDUMMY* BSAL_t + \beta_{11} USDUMMY*INCEN_t + \beta_{12} USDUMMY*STOP_t + \beta_{13}\text{Control} + \varepsilon \quad \textbf{Model 1}$$

The above model is tested for the main effects of all the experimental variables and their interactions with *US DUMMY* are tested in six different tests (tests 1a to 1f in Table 17). In the first five tests, the interactions of each of the experimental variables are introduced separately and in the sixth test all the interaction variables are tested together in one Univariate GLM test.

9.4 Variables

The definitions of variables used in this model are similar to the definitions in Chapter 6, except the following variables: $INST_t$, $BSAL_t$, $INCEN_t$, and $STOP_t$ are defined in a manner to allow the same measurements across both US and New Zealand samples.

$INST_t$: *US sample:* Measured as 1 if the majority of the percentages of shares are held by institutional shareholders in the auditee firm, and 0 otherwise; *New Zealand sample*: Measured as 1 if the firm in which institutional holdings is above the median (0.06) and, 0 if it is below median.

$BSAL_t$: CEOs basic pay scaled by the total assets at the end of the fiscal year;

$INCEN_t$: Total incentives as a proportion of total annual salary scaled by the total assets at the end of the fiscal year; and

$STOP_t$: Expressed as 1 if the CEO is offered stock options by the firm, and 0 otherwise.

USDUMMY: Expressed as 1 if the firm is a US firm, and 0 if the firm is a New Zealand firm.

9.5 Results and Discussion

9.5.1 Multivariate Analyses

Under this heading, I review the results of the univariate GLM regressions. Table 17 reports the results of OLS Model 1 and Tables 29 and 30 reports the results of the demand-side model respectively.

Table 17 reports the results of the Univariate GLM estimate of various determinants on audit fees and the model (F scores) are significant ($p<0.01$) for all the tests (1a to 1f).

9.5.1.1 Experimental Variables

The focus of this discussion is on the interaction variables in Table 17. However, it is essential to review the main effects of the experimental variables before discussing the results of the interaction variables because the interaction variables indicate how the main effects of the experimental variables are affected by the origin of the firm represented by *USDUMMY*.

The coefficients of $ACINDPER_t$ are not significant in any of the tests. The coefficient on $ACEXPPER_t$ in all the tests (1a to 1f) are positive and significant ($p<0.01$, two tail). The result of $ACEXPPER_t$ supports the demand-side argument that financial experts in audit committees demand better and costlier audits.

The coefficients of $INST_t$ in the tests in 1a, 1b, 1d, and 1e are negative but not significant and in 1c the coefficient is positive but not significant. The results do not support the supply-side argument that audit firms reduce their audit fees if the auditee has a high percentage of institutional ownership. The likely reason for this is that most New Zealand firms have very low institutional ownership.

The coefficients of $BSAL_t$ in all the tests are positive and significant ($p<0.01$, two tail). The coefficients on $INCEN_t$ are not significant in any of the tests. The coefficients of $STOP_t$ in all the tests are positive and significant ($p<0.05$, two tail). The

results of $BSAL_t$ suggest that the base salary of the chief executive officer of the firm is a significant risk factor for the audit firms resulting in increased audit fees. The results also support the supply-side argument that stock options as an incentive to CEOs increases the risks of the audits. This confirms the single country test results, which indicate that audit firms are aware that managers may engage in risk-taking behaviour to enhance personal wealth using stock options.

The coefficients of the interaction variable of $USDUMMY*ACINDPER_t$ are negative but not significant. However, the coefficients of the interaction $USDUMMY*ACEXPPER_t$ are negative and significant ($p<0.05$, two tail). The negative result suggests that in the US the positive effect of $ACEXPPER_t$ on audit fees are significantly lower than in New Zealand. The coefficients of the interaction variable $USDUMMY*INST_t$ are positive but not significant. The coefficients of the interaction variable $USDUMMY*BSAL_t$ are negative and significant ($p<0.05$, two tail).

These results suggest that in the US the negative effect of $BSAL_t$ on audit fees is significantly higher than in New Zealand. However, the coefficients of the interaction variables $USDUMMY*INCEN_t$ and $USDUMMY*STOP_t$ are not significant. The primary reason for $USDUMMY*INST_t$ having a positive but not significant association could be that the publicly held institutional ownership is a more effective governance mechanism in terms of reducing audit fees in the US but not in New Zealand. The explanation for the negative associations for the compensation variables with *USDUMMY* could be that very few New Zealand firms provide $INCEN_t$ and $STOP_t$ to their CEO. Also, the negative influence of *USDUMMY* on all of these variables suggests that the US institutional environment enhances the audit risk reduction capabilities of these variables.

Overall, the results in Table 17 of the interaction tests suggest that the US audit firms consider the regulatory strengths of their setting as a risk minimising factor more than the New Zealand audit firms do. The results of the experimental variables *per se* are similar to the earlier results reported in Chapters 7 and 8 except for audit committee expertise and institutional ownership. Since to match the US samples with

the New Zealand samples I have taken mainly the smaller firms, it is possible that in smaller firms (below $500 million total assets) the demand-side hypothesis is effective rather than the supply-side hypothesis for variables such as $ACEXPPER_t$. Smaller firms are less visible. So they may tend to improve their audit quality if they have more financial experts in their audit committees.

(Insert Table 17 here)

9.5.2 Sensitivity Test

9.5.2.1 Discretionary Accruals/Demand-side Model

As stated in Chapters 7 and 8, I use discretionary accruals as a measure of audit quality to test the indirect association between audit fees and other variables of interest through earnings quality. Tables 29 and 30 reports the Univariate GLM estimate of audit fee determinants on discretionary accruals and audit fees. In Table 29, the coefficients of $ACINDPER_t$, $ACEXPPER_t$, $INST_t$, and $INCEN_t$ are not significant ($p<0.05$, two tail) in any of the tests. Only the coefficients of $BSAL_t$ in tests 1a, 1b, 1d, and 1e are positive and significant ($p<0.01$,two tail) and the coefficients of $STOP_t$ in tests 1a, 1b, 1c, and 1d are positive and significant ($p<0.05$,two tail). The coefficients of the interaction variable ($USDUMMY*INCEN_t$) are negative and significant ($p<0.10$, two tail). The coefficients of the interaction variable ($USDUMMY*$ $STOP_t$) are positive and significant ($p<0.01$, two tail). The negative association of $INCEN_t$ interaction with the *USDUMMY* suggest that incentives in fact reduce earnings quality in the US. However, positive association of $STOP_t$ with the *USDUMMY* suggest that stock options increase earnings quality in the US. In Table 30, the coefficients of *PREDICT* in all the tests are positive and significant. The interaction results of these tests suggest that none of the experimental variables cause a demand for better earnings quality in the post-SOX era. Therefore, in the post-SOX era they seem not to play a demand role in audit fee setting.

9.5.2.2 Control Variables

The test results of control variables reported in Table 17 (tests 1a to 1f) are discussed here. Overall, the coefficients of $ACSIZE_t$, is negative but not significant and $LOGMB_t$ is positive but not significant. The coefficients of $BSEG_t$ and $GSEQ_t$ are positive and significant ($p<0.01$, one tail) in most of the tests, supporting the view of both the demand and supply-side arguments, that higher numbers of business and geographic segments result in more work for the audit firms and as a result they charge higher audit fees.

The coefficient of $ARINV_t$ in all the tests are positive and significant ($p<0.01$, one tail) indicating that audit firms view the amount of accounts receivable and inventory of the auditee as risk factors resulting in higher audit fees. The coefficient of $LOSS_t$ is positive and significant ($p<0.01$, one tail) suggesting that reporting of financial losses in two consecutive years increases the audit firms risk thereby increasing the audit fee.

The coefficient of *BIG4* in all the tests are negative and significant ($p<0.01$, one tail) suggesting that BIG4 audit firms enjoy their economies of scale and are able to reduce the audit fee for their clients.

The coefficient of $BDSIZE_t$ in the test results reported in Table 17 are negative and significant ($p<0.01$, two tail) indicating that audit firms view the size of the board as a risk factor and are inclined to charge lower audit fees if the auditee firm's board size is larger. The coefficients of NAF_t are positive and significant ($p<0.01$, two tail) suggesting that audit fees and non-audit service fees are complementary products. Probably the high cross elasticity of the audit and non-audit service fee is the reason for the positive and significant association between them.

In sum, much of the control variables results are similar to the results of control variables in the single country studies.

9.6 Summary:

The results reported and discussed (see the summary below) in this chapter depicts that the more robust institutional setting of the US results in lower audit fees paid by the auditees. This finding suggests that while SOX could be making auditing costlier in the US, on a cross-country basis, the US firms are still better off and are perhaps having beneficial effects from the more stringent regulations under SOX. An alternate view, however, could be that the US market is larger and, therefore, more competitive, which could lower the audit fee in that market.

Given below is the summary of the main findings.

Table F Summary of Findings of this Thesis

Significant at (p<0.05, two tail)

Association with Audit Fees	**US**	**New Zealand**	**Pooled (*USDUMMY* Interaction Effect)**
Audit committee independent directors percentage	No	No	No
Audit committee financial expertise percentage	No	No	Negative
Institutional ownership	Negative	No	No
Base/Total salary	N/A	Positive	Negative
Short-term incentives	Positive	N/A	N/A
Long-term incentives	No	N/A	N/A
Incentives	N/A	No	No
Stock option	Positive	No	No

Chapter 10 Conclusion

This chapter first provides the summary and conclusions of the thesis. This is followed by the identification of the contributions of the thesis, a review of the limitations of the thesis and some suggestions for future research.

10.1 Summary and Conclusions

The literature on the determinants of audit fees is based on the market notions of demand and supply. My review of this literature reveals that the demand and supply determinants of audit fees have two underlying reasons for high (low) audit fees. The demand-side rationale is that the determinants encourage better quality audits for better quality accounting, which leads to higher audit fees. On the supply-side, my literature review suggests that the determinants affect audit fees through audit risk. If a determinant increases (decreases) audit risk, it is likely to increase (decrease) audit fees.

The provisions of SOX significantly influence the audit fee setting arrangement in the US by imposing additional responsibilities on the auditors. The additional provisions enhance the auditor's responsibilities in terms of scrutiny of internal controls and detection of misstatements. The enhanced responsibilities are likely to increase audit risks. However, at the same time the auditors in the US have an advantage in the post-SOX environment. The advantage is that SOX enhances the importance of good corporate governance arrangements, which can signal lower (higher) audit risk and assist audit planning and fee setting purposes. I regard this as the supply-side influence arising from regulatory improvements. While the US has strong regulatory arrangements, other developed countries such as New Zealand have less stringent regulatory arrangements. Under such settings, certain governance variables could act as demand-side and supply-side variables. As demand-side variables they can enhance the quality of audits, which can increase audit fees; and as supply-side variables, good governance arrangements can decrease audit risk, which can lower audit fees.

I use the notion of demand and supply in the post-SOX environment and examine how firm-specific governance factors: audit committee independence and expertise, institutional ownership, and executive compensation affect audit fees in the post-SOX era. The effects of these variables have been tested in the pre-SOX environment, but the results of the prior studies have been mixed. Most of the prior studies took a demand-side view to see how they contributed to better quality audits leading to increased or decreased audit fees. However, they found support for either the demand or the supply notion or for neither of the two notions.

On the supply side, I argue that the quality of a corporate governance arrangement can serve as a signal to the auditors regarding the audit risks associated with an auditee. I argue that due to the enhancement of audit risks and additional emphasis on corporate governance under SOX, auditors view the corporate governance measures as indicators of the level of risks associated with an auditee. Therefore, when governance arrangements are strong, audit risk perceived by the auditor is likely to be low, leading to lower audit fees. Likewise, I predict a negative association between audit fees, and audit committee independence and audit committee expertise in the US in the post-SOX setting.

Given that in the US setting institutional ownership plays an important corporate governance role, I contend that a high percentage of institutional ownership will reduce audit risk and have a negative effect on audit fees. Further, the US firms have relatively stronger incentive-based compensation arrangements. Effective compensation arrangements can reduce audit risk, as it can reduce opportunistic earnings management. However, higher levels of incentive compensation can be a matter of concern for the auditors because it can incentivise managers to manage earnings. Therefore, I argue that there are opposing demand and supply forces that lead to no systematic pattern in the relation between audit fees and levels of incentive compensation schemes. Likewise, I propose a null hypothesis for the association of levels of executive cash incentive (short and long-term) and stock options with audit fees.

Many equity-based countries like the UK, Australia, and New Zealand have implemented corporate governance principles that mimic SOX. However, since the rules of SOX are statutory in nature, the US requirements are more stringent than the rules of these other countries. In a voluntary setting, I argue that both demand and supply effects of these determinants could be present simultaneously and counteract against each other resulting in no significant systematic effects on audit fee. This perhaps was the likely issue in the pre-SOX US setting where many of the US studies generated inconclusive and conflicting results.

To examine this contention, I examine the same audit fee determinants in a less strongly regulated setting, but with similar audit traditions as in the US. This setting is that of listed companies in New Zealand. New Zealand's audit profession is mostly self-regulated, and the professional bodies stipulate much of its audit requirements and the stock exchange stipulates the corporate governance requirements.

Therefore, my research primarily involves answering two questions: (a) what role does audit committee independence and expertise, institutional ownership, and executive compensation play in the determination of audit fees in the post-SOX era; and (b) how does the institutional environment influence the relation between these variables and audit fees.

For the US, the results indicate that post-SOX, there is no support for the hypotheses that audit fees are negatively associated with audit committee independence, and expertise. Under the strong regulatory environment of SOX, audit committee independence and expertise are required features. Likewise, the presence of independent directors and independent directors with financial expertise in the audit committee seems to have lost the capacity to signal audit risk. In a year-by-year analysis, I find that financial expertise in the audit committee has strong positive association with audit fees in 2004 and 2005, showing signs of demand for better audits in the earlier years. This association turns negative (though not significant) in later years, suggesting supply motivations taking over from the demand motivations. While audit committee features may continue as important governance variables to

reduce audit risks, it is likely that auditors may use other features of audit committees and corporate governance to determine their audit risks and set their audit fees.

For institutional ownership, the results strongly support the contention that there is a negative association between audit fees and the level of institutional ownership for the US firms.

For executive compensation, audit fees are positively associated with levels of short-term incentives and stock options. Long-term incentives being less common, the results are weak, but with a negative sign, as found in prior studies. It suggests that long-term incentives may lower audit risks when short-term incentives are having the opposite impact.

In spite of its less stringent institutional arrangements, New Zealand also has a high level of audit committee independence and financial expertise. Likewise, audit firms in New Zealand also do not view the presence of independent directors and independent directors with financial expertise in the audit committee as signals of audit risk for determining their audit fees. While New Zealand does not have stringent audit requirements as in the US under SOX, similar to the US, there seems to be a prevalence of independent audit committee features in its companies.

For institutional ownership, I find no significant association between audit fees and institutional ownership for New Zealand firms. The institutional ownership in New Zealand firms is typically low as compared to the US and does not reduce the audit risk of the audit firms. In New Zealand, corporate ownership seems to play a stronger role in the audit fee setting processes of firms than institutional ownership.

For executive compensation, the only choice the auditors of New Zealand firms have is to consider the base salary of the CEO for assessing audit risks. Very few companies offer other incentives. In this regard, I observe positive associations in my tests, suggesting that higher base salaries lead to higher audit risks, which then translates into higher audit fees. This may occur because, in the absence of other

incentive schemes, the auditors may view base salary enhancement as the primary motive of the managers while preparing their accounts.

As explained in the literature review chapter, regulations can constrain the demand and supply functions and affect PED and PES of audit services. Since SOX enhances both the demand for and supply of the quality of auditing, it is likely to reduce both the PED and PES of auditing. However, as discussed earlier, the corporate governance variables may indeed allow auditors to be more flexible in setting audit fees, which can lower the audit fee. Therefore, while SOX can have constraining effects on PED, it seems to have PES enhancing effects too.

I use a pooled regression to examine whether or not the more stringently regulated setting of the US has any effects on audit fees. The results show that regulatory strength has a strong negative influence on the associations between audit fees and the level of audit committee expertise, institutional ownership, and base salary. These results suggest that stronger regulatory arrangements can make auditors wary of their risks and the use of signals to evaluate their risks. Therefore, signals such as audit committee expertise and institutional ownership are likely to be taken seriously for audit planning purposes in a stringent regulatory environment. The reason base salary has a negative effect in the US is most likely because of the competing signals coming from incentive compensation schemes. In New Zealand companies, the results of these compensation schemes are weak mainly because of non-existence of such schemes.

Nevertheless, the findings highlight that while both a more strongly regulated setting and a less strongly regulated setting have similar effects of the experimental variables of this study, there are distinctly greater audit fee reduction effects in the more strongly regulated setting.

Further analysis reveals that both countries have three tiers of audit firms based on the level of industry specialisation and the amount of audit fees charged. In the US, the first tier has PWC, with a large market share, especially of the large firm market, and specialisations in several industries. In New Zealand, PWC and KPMG

have a combined share of 60 per cent of the market. While in the US, PWC enjoys similar average audit fees scaled by total assets as other BIG4 firms, in New Zealand, both PWC and KPMG earn the lowest average audit fees scaled by total assets. In New Zealand, PWC and KPMG could be charging less due to the economies of scale arising from auditing the larger auditees in the market. The second tier of the two audit markets has the remaining BIG4 firms. In the US, they have the lowest average audit fees scaled by total assets, and in New Zealand, it is in the middle of the fee scale. The last tier has the Non-BIG4 firms, BDO and Grant Thornton. These firms charge higher audit fees scaled by total assets, perhaps because of a lack of economies of scale.

Much of the mixed results in this study arise from the mid-tier audit firms and the BIG4 firms that are not market leaders in any industry. It is likely that because of their weaker position in the large auditee market, they compete not just based on the variables of interest in this study, but also other indicators that have not been covered here.

Further investigation reveals that there is some variance in the results when the tests are conducted by audit firms for US auditees. The more noticeable results are those of PWC, which suggest that demand-side influences are more prevalent than supply-side influences for PWC auditees. This could have occurred because of the lower audit risk concerns for a market leader because of its low risk reputable auditees. Additionally, its reputable clients would be demanding higher quality audits at higher fees in order to maintain their reputation.

New Zealand firms also have some systematic effects of audit market segmentation. Other concerns in New Zealand, such as IFRS implementation, have no significant effect on audit fee determination.

Industry differences in audit fees are noticed, but I observe no systematic effects of industry on the relation between the experimental variables and audit fees. Auditor concentration in industries also has no systematic influence on the relation between audit fees and the experimental variables.

Finally, the client size test results of the two countries are quite similar. The results of both countries show that audit committee expertise is positively associated with audit fees in larger firms. A reason for this could be that larger firms tend to have more audit committee expertise as compared to medium and small firms.

10.2 Contributions

This study contributes to the literature and practice as follows. First, it revisits the audit fee literature and highlights the important determinants that affect audit fees. In this regard, it is pointed out that audit fees are determined by both demand and supply variables in a market that treats audit fees as the market price for audit services. I also identify that the institutional arrangements of the audit market within a country have significant roles in the determination of audit fees. The roles that they play have more of an interaction influence. My discussion suggests that stronger institutional arrangements can change the nature of influence a determinant plays in the market. For the case of the experimental variables, I argue that in a highly regulated setting, the role of these variables is more of a supply-side audit risk signalling role rather than a demand-side role of demand for better quality auditing. Using this notion, I design different sets of hypotheses for two different institutional settings. Overall, I find that the joint consideration of the demand and supply perspectives provides a wider depiction of the audit fee determination process. Additionally, the theoretical framework elaborated in the dissertation can help in better evaluations of audit fee setting in other institutional environments.

Second, the study contributes to the literature by providing insights into how audit fees are determined in the contemporary audit market setting of the post-SOX era. I conduct the examination in the institutional environments of two countries, US and the New Zealand. This is done to capture the influence of institutional environments on audit fee setting. The US environment, I argue, is stringent and litigious, and the New Zealand setting is less stringent and less litigious. Unlike prior studies, I consider both the demand and supply-side arguments. I favour the supply-side hypotheses because of the consequences and benefits that SOX has created for

the auditing community. The results also help understand how the audit firms perceive audit risk in markets with different levels of regulation.

Third, the study has potential implications for relevant regulatory bodies in both the US and in New Zealand. In both countries audit committee independence and expertise have become weak determinants of audit fees. Much of this arises because of the high levels of audit independence and expertise in both countries, which diminishes the signalling value of these variables. Also, the significant association between audit fees and non-audit service fees can raise audit independence issues. The continued association raises questions about the effectiveness of the regulatory arrangements to minimise the use of audit engagements to acquire lucrative non-audit services contracts. Market segmentation may also be a matter of concern for the regulators. The major concern in New Zealand is that of the BIG4 firms, where PWC and KPMG together make up 60 per cent of the market share suggesting that among the BIG4 firms competition is between PWC and KPMG at the very top, and between the other two BIG4 firms in the middle of the fee spectrum. I see indications of both lower fees and higher fees among these firms. Clearly, more research is required before any firm conclusions can be drawn.

The results also help the auditing community understand the current environment of auditing and audit fee setting within the context of SOX in the US and the context of similar regulations in New Zealand. The audit fee literature has paid more attention to the adverse consequences of regulations. This study provides a wider picture of both the pros- and cons of regulations.

Finally, I have made a methodological change from previous studies. My statistical tests are based on audit fees scaled by total assets, or audit fees relative to the firm size. Prior studies use log of audit fees and control for total assets. However, size is a scale variable and is associated with most financial statement-based dependent and independent variables, and can cause multicollinearity effects in multivariate tests. To remove the size bias, I scale all the financial variables that are associated with size, including audit fees. Therefore, this study considers only the

relative audit fees rather than total audit fees in assessing the association between audit fees and its determinants. This methodological contribution can be used in future studies to minimise the influence of size.

10.3 Limitations

First, the scope of the study is restricted to certain corporate governance measures, institutional ownership, and compensation plans. Apart from the audit committee characteristics there are a number of other board committee factors that influence the audit fee determination process. Further, I consider only the level of the broader incentive payments in this study. To better examine the effects of the incentive compensation plans, one needs to examine the actual conditions stipulated in the plans, and determine how these conditions affect the level of audit fees.

Second, this study focuses only on the post-SOX data in both the US and New Zealand since 2004. Although SOX came into effect in 2002, the period prior to 2004 is ignored due to non-availability of data. For similar reasons, this study did not investigate the effects of the changes on audit fees from the pre-SOX period to the post-SOX period. Additionally, the study covers only two countries, the US and New Zealand, to examine the influence of institutional setting on audit fees. This does not allow an extensive appreciation of the effects of cross-country differences on audit fees.

Third, most of the variables used in the study are based on earlier studies and are specified accordingly. It is possible that variable misspecification can distort the results. For example, if audit committee independence is measured differently it could lead to different results. It can be suggested that other proxies be used to further confirm the results of this study.

Fourth, internal control is one of the important requirements of Section 404 of SOX, which affects audit quality. I omit internal control variables in all the tests due to the non-availability of data. For similar reasons, I exclude other determinants of audit fees, such as audit tenure and client importance.

Fifth, the data for audit committee independence characteristics (independent directors and financial expertise) and executive compensation for the New Zealand study have been hand collected from annual reports. The quality and transparency of the disclosure in annual reports vary across firms. This could raise some concerns over the reliability and validity of the results of the New Zealand study.

10.4 Future Research

The limitations of this study open opportunities for future research.

First, the non-availability of data for the pre-SOX period in the US and hand collected data for certain variables in New Zealand restrict the scope of this study. Additional data can be procured from the auditee through interviews or questionnaires. However, this may be at the expense of having a smaller sample size and the results can be affected by non-response and other biases.

Second, future studies can widen the scope by incorporating other governance variables and wider incentive plans. These studies could further confirm or assess the influence of incentive schemes on audit fees.

Third, future studies can explore the determination of audit fees by internal control quality measures, and client importance measures. It is possible that both the clients and audit firms will gain experience from the SOX audit requirements, and eventually design cost saving methods that can reduce audit fees. These efficiencies would further add to audit fee reduction in the US market.

Fourth, in order to improve validity and reliability of the results, use of electronic data from trusted sources (like S&P or Compustat) rather than hand-collected data could be used to study audit fee determination in New Zealand. However, this will be possible only when the trusted sources provide such data for these variables along with other financial data.

Fifth, future studies can investigate a wider sample covering both pre-and post-SOX periods to more fully assess the effects of SOX. Then again, this will be restricted by the data constraints mentioned earlier.

Finally, future research could cover more countries to see the impact of diverse institutional settings (such as France, and Germany where audit regulations are different from those of the Anglo-American countries) on audit fees. Such studies could further explain how different audit regulatory requirements in different institutional settings impact audit fees.

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Tables-US

Table 1 Dependent and Treatment Variables Definitions

AF_t	Audit fees paid by the auditee firm in a year$_t$ scaled by total assets of the firm at the end of the fiscal year;
$ACINDPER_t$	The proportion of independent directors to total directors on the audit committee;
$ACEXPPER_t$	The proportion of independent financial expert directors to total directors on the audit committee;
$INST_t$	Measured as 1 if the majority of the percentage of shares are held by institutional shareholders in the auditee firm, and 0 otherwise;
$STIP_t$	CEOs variable pay as a proportion of total compensation scaled by the total assets at the end of the fiscal year of the auditee;
$LTIP_t$	This is calculated by dividing the total dollar value of all LTIP payments made during the year$_t$ to the CEO and scaled by the total assets at the end of the fiscal year of the auditee;
$STOP_t$	The value of stock option measured in dollar value scaled by total assets at the end of the fiscal year of the auditee;
$BSEG_t$	The square root of the number of business segments reported by the auditee;
$GSEG_t$	The square root of the number of geographic segments reported by the auditee;
$INDS_i$	Industry of the auditee firm;
$ARINV_t$	Accounts receivable plus inventory scaled by total assets of the firm at the end of the fiscal year;
$LOSS_t$	Measured as equal to 1 if the firm reported a loss in two consecutive years, and 0 otherwise;
BIG4	Measured as 1 if the firm is audited by the Big4 (KPMG, Deloitte, Ernst & Young or PWC), and 0 otherwise;
INDSP	Measured as 1 if the auditor is an industry specialist at the national level based on the total audit fees earned in an industry , and0 otherwise;
$BDSIZE_t$	The total number of directors on the board of the firm (standardised);
$ACSIZE_t$	The total number of directors in the audit committee (standardised);
$LOGMB_t$	Natural log of the market value of the firm scaled by book value of total assets;
$LEVERAGE_t$	Proportion of long term debt to firm value;
NAF_t	Non-audit service fees paid by the auditee firm in a year$_t$ scaled by total assets of the firm at the end of the fiscal year; and
ABSDACC	Absolute values of discretionary accruals (estimated using modified Jones model adjusted ROA (Kothari et al. 2005);

Table 2 Panel A Data Selection-*US*

	2004	2005	2006	2007	2008	Total
Initial sample	**912**	**956**	**1104**	**1158**	**1173**	**5303**
Less: Agriculture Industries	(01)	(02)	(02)	(02)	(03)	(10)
Less: Fabrication industries	(03)	(03)	(03)	(03)	(03)	(15)
Less: Firms with only One year data	(02)	(03)	(07)	(04)	(02)	(18)
Less: Firms with only Two year data	(02)	(04)	(30)	(45)	(19)	(100)
Less: Firms with only Three year data	(04)	(31)	(85)	(154)	(140)	(414)
Less: Firms with only Four year data	(02)	(15)	(79)	(52)	(108)	(256)
Total Observations dropped	**(14)**	**(58)**	**(206)**	**(260)**	**(275)**	**(813)**
Final sample	**898**	**898**	**898**	**898**	**898**	**4490**

Table 2 Panel B Distribution by Industry-*US*

Industry Description	Two-Digit SIC	Number of observations	Percentage of Sample
MINING AND CONSTRUCTION	10-19	130	2.9
FOOD	20-21	165	3.7
TEXTILES, PRINTING/PUBLISHING	22-27	270	6.0
CHEMICALS	28	180	4.0
PHARMACEUTICALS	30	175	3.9
EXTRACTIVE	29	215	4.8
DURABLE MANUFACTURERS	31-34	1150	25.6
TRANSPORTATION	40-48	215	4.8
UTILITIES	49	370	8.2
RETAIL	50-59	615	13.7
SERVICES	70-89	400	8.9
COMPUTERS	35-36	605	13.5
TOTAL		**4490**	**100.00**

Industry membership is determined by SIC code as follows: mining and construction (1000-1999, excluding 1300-1399), food (2000-2111), textiles and printing/publishing (2200-2799), chemicals (2800-2824, 2840-2899), pharmaceuticals (2830-2836), extractive (1300-1399, 2900-2999), durable manufacturers (3000-3999, excluding 3570-3579 and 3670-3679), transportation (4000-4899), utilities (4900-4999), retail (5000-5999), services (7000-8999, excluding 7370-7379), and computers (3570-3579, 3670-3679, 7370-7379). ***Agriculture (0100-0999) and fabrication (9997) have been excluded, as the number of observations in the sample is less than 20.***

Table 3 Panel A Descriptive Statistics -*US* (in million $)

Variable Name	YEAR	N	Mean	Std. Dev	Min	Max	Percentiles						
							12.5	**25**	**37.5**	**50**	**62.5**	**75**	**87.5**
AF_t	2004	898	2.71	5.34	0.02	78.70	0.36	0.54	0.77	1.09	1.62	2.46	4.96
	2005	898	3.92	6.39	0.11	93.70	0.64	0.98	1.37	1.89	2.68	4.09	7.56
	2006	898	4.32	6.97	0.18	100.80	0.80	1.21	1.65	2.29	3.11	4.51	7.97
	2007	898	4.52	7.03	0.20	106.40	0.91	1.28	1.79	2.38	3.32	4.83	8.06
	2008	898	4.65	7.17	0.19	112.20	0.94	1.31	1.79	2.49	3.49	4.91	8.77
	Average	**4490**	**4.02**	**6.65**	**0.02**	**112.20**	**0.67**	**1.02**	**1.44**	**1.98**	**2.82**	**4.30**	**7.27**
NAF_t	2004	898	0.89	2.17	0.00	23.10	0.02	0.08	0.16	0.28	0.45	0.81	1.69
	2005	898	0.81	2.00	0.00	27.60	0.02	0.06	0.13	0.25	0.41	0.71	1.50
	2006	898	0.58	1.43	0.00	16.80	0.00	0.04	0.08	0.15	0.27	0.52	1.18
	2007	898	0.57	1.68	0.00	32.20	0.00	0.03	0.07	0.13	0.25	0.47	1.03
	2008	898	0.59	1.66	0.00	31.00	0.00	0.02	0.06	0.14	0.28	0.54	1.20
	Average	**4490**	**0.69**	**1.81**	**0.00**	**32.20**	**0.00**	**0.04**	**0.10**	**0.19**	**0.33**	**0.61**	**1.30**
$STIP_t$	2004	898	1.09	1.46	0.00	20.28	0.09	0.28	0.44	0.67	0.99	1.43	2.16
	2005	898	1.41	1.82	0.00	27.03	0.18	0.43	0.65	0.92	1.34	1.82	2.74
	2006	898	1.61	2.37	0.00	30.97	0.22	0.48	0.72	1.03	1.47	1.98	2.86
	2007	898	1.90	3.00	0.00	49.32	0.27	0.53	0.82	1.15	1.62	2.24	3.27
	2008	898	1.83	2.41	0.00	36.15	0.26	0.56	0.86	1.18	1.69	2.29	3.33
	Average	**4490**	**1.57**	**2.29**	**0.00**	**49.32**	**0.20**	**0.43**	**0.68**	**0.99**	**1.41**	**1.95**	**2.91**
$STOP_t$	2004	898	28.96	116.85	0.00	999.11	0.00	0.00	0.01	1.89	4.87	10.26	27.78
	2005	898	47.24	148.28	0.00	999.11	0.00	1.03	2.91	5.33	9.37	18.95	61.36
	2006	898	51.51	158.00	0.00	999.11	0.53	1.97	3.94	6.66	11.96	23.52	63.10
	2007	898	46.66	139.82	0.00	999.11	0.69	2.47	4.33	6.93	12.45	24.04	62.19
	2008	898	47.87	149.41	0.00	999.11	0.85	2.63	4.68	7.54	11.94	23.71	62.65
	Average	**4490**	**44.45**	**143.32**	**0.00**	**999.11**	**0.00**	**1.20**	**3.18**	**5.66**	**10.00**	**19.77**	**54.57**

Table 3 Panel A Descriptive Statistics ($ in millions) (Contd)-*US*

Variable Name	YEAR	N	Mean	Std. Dev	Min	Max	Percentiles						
							12.5	25	37.5	50	62.5	75	87.5
$LTIP_t$	2004	898	0.22	0.00	0.87	9.88	0.00	0.00	0.00	0.00	0.00	0.00	0.19
	2005	898	0.28	0.00	1.04	13.69	0.00	0.00	0.00	0.00	0.00	0.00	0.38
	2006	898	0.52	0.00	2.15	29.28	0.00	0.00	0.00	0.00	0.00	0.00	0.76
	2007	898	0.39	0.00	1.74	5.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2008	898	0.40	0.00	1.94	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Average	**4490**	**0.36**	**0.00**	**1.63**	**29.28**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.14**
A/R	2004	898	1270.61	0.00	12038.96	336233.00	34.51	78.91	137.07	205.14	346.26	603.05	1363.43
	2005	898	1327.50	0.00	11525.60	320047.00	40.11	89.52	149.83	246.10	386.15	717.36	1619.15
	2006	898	1460.33	0.00	12973.21	365226.00	43.70	100.29	162.27	266.80	407.30	769.25	1698.25
	2007	898	1617.71	0.00	14747.22	418777.00	46.93	106.15	180.31	284.96	444.18	859.38	1827.56
	2008	898	1541.48	0.00	14036.67	402631.00	49.33	110.51	180.83	281.01	446.85	828.22	1717.89
	Average	**4490**	**1443.51**	**0.00**	**13113.95**	**418777.00.**	**43.13**	**96.51**	**161.34**	**253.91**	**406.41**	**748.49**	**1655.25**
INV	2004	898	187.54	0.00	230.52	991.00	0.00	21.00	49.38	98.00	165.63	258.75	464.75
	2005	898	193.18	0.00	227.73	998.00	0.00	21.50	53.25	103.00	180.75	277.50	477.50
	2006	898	211.25	0.00	243.16	992.00	0.00	27.00	64.00	116.00	196.00	304.00	550.50
	2007	898	217.70	0.00	245.70	998.00	0.00	27.40	67.47	119.95	205.56	324.88	551.67
	2008	898	229.70	0.00	256.75	1000.00	0.00	29.00	76.00	129.00	213.00	345.00	564.00
	Average	**4490**	**207.61**	**0.00**	**241.22**	**1000.00**	**0.00**	**25.00**	**60.00**	**113.00**	**191.00**	**305.00**	**525.50**
TA	2004	898	8084.34	73.26	31149.99	750507.00	411.93	728.06	1146.86	1846.33	2938.04	5536.60	15012.88
	2005	898	8458.30	76.81	29427.00	673321.00	467.07	776.83	1313.43	2075.75	3328.92	6034.83	15567.75
	2006	898	9320.05	79.87	32030.68	697239.00	521.40	890.63	1491.58	2264.10	3613.93	6497.39	17107.06
	2007	898	10081.89	92.68	35026.86	795337.00	541.02	978.83	1684.38	2611.78	4020.89	7236.61	18474.26
	2008	898	10176.15	91.55	34524.81	797769.00	553.58	997.29	1716.33	2680.00	4257.36	7437.00	19518.50
	Average	**4490**	**9224.15**	**73.26**	**32495.88**	**797769.00**	**495.53**	**849.96**	**1452.29**	**2247.54**	**3634.46**	**6561.34**	**16490.00**

Table3 Panel A Descriptive Statistics (in %) (Contd)-*US*

Variable Name	YEAR	N	Mean	Std. Dev	Min	Max	Percentiles						
							12.5	25.0	37.5	50.0	62.5	75.0	87.5
$ACINDPER_t$	2004	898	0.90	0.14	0.00	0.00	0.75	1.00	1.00	1.00	1.00	1.00	1.00
	2005	898	0.93	0.15	0.00	1.00	0.75	1.00	1.00	1.00	1.00	1.00	1.00
	2006	898	0.94	0.14	0.00	1.00	0.75	1.00	1.00	1.00	1.00	1.00	1.00
	2007	898	0.95	0.12	0.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00
	2008	898	0.96	0.10	0.00	1.00	0.80	1.00	1.00	1.00	1.00	1.00	1.00
	Average	**4490**	**0.94**	**0.13**	**0.00**	**1.00**	**0.75**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
$ACEXPPER_t$	2004	898	0.09	0.18	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.15	0.33
	2005	898	0.45	0.30	0.00	1.00	0.20	0.25	0.33	0.33	0.40	0.67	1.00
	2006	898	0.47	0.29	0.00	1.00	0.20	0.25	0.33	0.33	0.50	0.67	1.00
	2007	898	0.48	0.29	0.00	1.00	0.20	0.25	0.33	0.33	0.50	0.67	1.00
	2008	898	0.49	0.31	0.00	1.00	0.20	0.25	0.33	0.33	0.50	0.67	1.00
	Average	**4490**	**0.40**	**0.32**	**0.00**	**1.00**	**0.00**	**0.20**	**0.25**	**0.33**	**0.33**	**0.60**	**1.00**

A/R = Accounts receivable; Inv= Inventory; and TA= Total assets. Definitions of all other variables are in Table 1.

Table 3 Panel B Descriptive Statistics (Industry-Wise)-*US*
($ in Millions)

Variable Name	Mining and construction			Food			Textiles and printing/publishing			Chemicals		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AF_t	0.23	11.87	2.19	0.15	38.80	6.53	0.14	23.80	3.60	0.27	51.81	5.44
NAF_t	0.00	3.23	0.23	0.00	20.70	1.39	0.00	5.88	0.64	0.00	5.82	0.79
$STIP_t$	0.00	27.49	4.41	0.00	18.00	2.09	0.00	17.05	1.45	0.00	6.67	1.60
$LTIP_t$	0.00	15.03	0.44	0.00	6.35	0.29	0.00	5.72	0.22	0.00	9.86	0.30
$STOP_t$	0.00	999.11	59.49	0.00	904.15	29.32	0.00	999.11	60.66	0.00	949.20	45.29

Variable Name	Pharmaceuticals			Extractive			Durable manufacturers			Transportation		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AF_t	0.15	29.31	5.20	0.16	31.10	5.01	0.02	112.20	4.48	0.10	33.60	4.61
NAF_t	0.00	18.15	1.25	0.00	21.60	0.83	0.00	32.20	0.90	0.00	13.86	0.68
$STIP_t$	0.00	12.92	1.67	0.00	36.15	2.73	0.00	18.50	1.37	0.00	16.09	2.14
$LTIP_t$	0.00	5.83	0.09	0.00	29.28	0.80	0.00	11.69	0.23	0.00	19.79	0.27
$STOP_t$	0.00	999.11	40.70	0.00	704.09	38.64	0.00	999.11	50.22	0.00	920.11	46.47

Variable Name	Utilities			Retail			Services			Computers		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AF_t	0.25	27.40	4.08	0.11	17.82	2.31	0.18	83.62	3.08	0.13	59.40	4.08
NAF_t	0.00	10.80	0.46	0.00	5.50	0.34	0.00	8.92	0.31	0.00	27.60	0.72
$STIP_t$	0.00	10.80	1.24	0.00	49.32	1.48	0.00	7.99	1.26	0.00	14.20	1.08
$LTIP_t$	0.00	19.81	0.43	0.00	4.40	0.07	0.00	3.97	0.04	0.00	6.86	0.06
$STOP_t$	0.00	999.11	43.00	0.00	919.11	43.38	0.00	999.11	38.96	0.00	929.11	34.89

Table 4 Panel A Average Audit Fees of Audit Firms (Annual)-*US*
($ in millions)

Variable Name	Year	Ernst & Young			Deloitte			KPMG			PWC		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AF_t	2004	0.08	51.81	2.25	0.10	25.46	2.62	0.10	78.70	2.47	0.02	39.80	3.53
	2005	0.14	28.20	3.10	0.22	32.80	3.74	0.22	93.70	3.68	0.17	53.80	5.34
	2006	0.18	33.30	3.62	0.24	37.35	4.10	0.29	100.80	4.07	0.37	83.62	5.86
	2007	0.20	33.60	3.89	0.28	43.20	4.34	0.29	106.40	4.50	0.40	66.09	5.85
	2008	0.19	34.90	4.02	0.42	35.44	4.69	0.28	112.20	4.60	0.40	59.40	5.90
	Average	**0.08**	**51.81**	**3.39**	**0.10**	**43.20**	**3.90**	**0.10**	**112.20**	**3.85**	**0.02**	**83.62**	**5.27**
NAF_t	2004	0.00	20.60	0.75	0.00	10.80	0.83	0.00	17.33	0.63	0.00	23.10	1.29
	2005	0.00	10.10	0.65	0.00	10.47	0.80	0.00	10.95	0.50	0.00	27.60	1.24
	2006	0.00	8.00	0.45	0.00	10.51	0.61	0.00	8.40	0.40	0.00	16.80	0.88
	2007	0.00	7.50	0.46	0.00	32.20	0.69	0.00	9.00	0.35	0.00	18.50	0.80
	2008	0.00	5.90	0.47	0.00	31.00	0.69	0.00	10.30	0.35	0.00	21.60	0.87
	Average	**0.00**	**20.60**	**0.55**	**0.00**	**32.20**	**0.72**	**0.00**	**17.33**	**0.45**	**0.00**	**27.60**	**1.02**

Table 4 Panel A Average Audit Fees of the Audit Firms (Annual) ($ in millions) (Contd)-US

Variable Name	Year	BDO			Grant Thornton			BIG4			Non-BIG4		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AF_t	2004	0.27	1.90	0.97	0.11	0.81	0.39	0.02	78.70	2.76	0.11	3.24	0.80
	2005	0.27	3.83	1.46	0.11	2.76	0.94	0.14	93.70	4.01	0.11	3.83	1.13
	2006	0.27	3.38	1.47	0.37	2.73	1.27	0.18	100.80	4.45	0.20	3.74	1.30
	2007	0.27	5.81	1.67	0.44	2.81	1.36	0.20	106.40	4.66	0.21	5.81	1.39
	2008	0.32	4.14	1.61	0.44	2.27	1.33	0.19	112.20	4.80	0.31	5.93	1.46
	Average	**0.27**	**5.81**	**1.50**	**0.11**	**2.81**	**1.11**	**0.02**	**112.20**	**4.13**	**0.11**	**5.93**	**1.27**
NAF_t	2004	0.01	0.53	0.23	0.00	0.25	0.09	0.00	23.10	0.91	0.00	1.28	0.21
	2005	0.02	1.16	0.23	0.00	0.60	0.13	0.00	27.60	0.83	0.00	1.16	0.18
	2006	0.00	1.62	0.22	0.00	0.42	0.10	0.00	16.80	0.60	0.00	1.62	0.15
	2007	0.00	1.25	0.13	0.00	0.30	0.06	0.00	32.20	0.59	0.00	1.25	0.10
	2008	0.00	1.34	0.17	0.00	0.30	0.07	0.00	31.00	0.61	0.00	1.34	0.11
	Average	**0.00**	**1.62**	**0.19**	**0.00**	**0.60**	**0.09**	**0.00**	**32.20**	**0.71**	**0.00**	**1.62**	**0.14**

Table 4 Panel B Average Audit Fees of Audit Firms (S&P type)-*US*
(in millions)

Variable Name	Year	Ernst & Young			Deloitte			KPMG			PWC		
		Super	**Mid**	**Small**	**Super**	**Mid**	**Small**	**Super**	**Mid**	**Small**	**Super**	**Mid**	**Small**
AF_t	2004	4.28	1.27	0.76	4.92	1.56	0.66	4.82	1.04	0.67	6.29	1.44	0.74
	2005	5.41	1.89	1.35	6.84	2.19	1.11	6.65	2.14	1.25	9.03	2.54	1.34
	2006	6.19	2.40	1.59	7.37	2.31	1.32	7.03	2.57	1.54	9.52	2.97	1.70
	2007	6.61	2.51	1.71	7.80	2.47	1.43	8.11	2.54	1.52	9.57	2.90	1.67
	2008	6.80	2.65	1.76	8.16	2.94	1.49	8.25	2.42	1.61	9.84	2.81	1.71
	Average	**5.89**	**2.16**	**1.43**	**7.03**	**2.30**	**1.19**	**6.95**	**2.13**	**1.32**	**8.83**	**2.51**	**1.41**
NAF_t	2004	1.48	0.38	0.24	1.46	0.52	0.29	1.22	0.21	0.25	2.35	0.48	0.25
	2005	1.16	0.38	0.26	1.36	0.56	0.29	0.95	0.28	0.13	2.26	0.40	0.22
	2006	0.84	0.24	0.18	1.06	0.33	0.24	0.68	0.30	0.10	1.51	0.33	0.21
	2007	0.86	0.23	0.16	1.30	0.33	0.22	0.65	0.20	0.09	1.38	0.31	0.19
	2008	0.85	0.26	0.18	1.19	0.36	0.30	0.63	0.22	0.06	1.44	0.39	0.32
	Average	**1.03**	**0.30**	**0.20**	**1.27**	**0.42**	**0.27**	**0.83**	**0.24**	**0.13**	**1.79**	**0.38**	**0.24**

Table 4 Panel B Average Audit Fees of Audit Firms (S&P type) (Contd)-*US* (in millions)

Variable Name	Year	BDO			Grant Thornton			BIG4			Non-BIG4		
		Super	**Mid**	**Small**	**Super**	**Mid**	**Small**	**Super**	**Mid**	**Small**	**Super**	**Mid**	**Small**
AF_t	2004	0.47	1.21	1.11	0.77	0.49	0.33	5.19	1.34	0.71	1.24	1.17	0.50
	2005	0.95	1.89	1.33	0.99	0.95	0.94	7.15	2.19	1.27	0.96	1.58	0.99
	2006	1.09	2.15	1.29	0.00	1.51	1.20	7.68	2.56	1.54	1.09	1.83	1.20
	2007	1.64	2.24	1.51	0.00	1.42	1.34	8.09	2.61	1.60	1.64	1.83	1.29
	2008	1.84	2.66	1.38	0.00	1.27	1.35	8.31	2.72	1.66	2.99	1.83	1.22
	Average	**1.20**	**1.98**	**1.38**	**0.88**	**1.25**	**1.08**	**7.28**	**2.28**	**1.35**	**1.68**	**1.65**	**1.12**
NAF_t	2004	0.01	0.53	0.23	0.00	0.25	0.09	1.72	0.41	0.26	0.43	0.31	0.09
	2005	0.02	1.16	0.23	0.00	0.60	0.13	1.53	0.41	0.24	0.08	0.33	0.14
	2006	0.00	1.62	0.22	0.00	0.42	0.10	1.08	0.30	0.19	0.25	0.33	0.10
	2007	0.00	1.25	0.13	0.00	0.30	0.06	1.09	0.27	0.17	0.08	0.24	0.07
	2008	0.00	1.34	0.17	0.00	0.30	0.07	1.07	0.31	0.22	0.26	0.33	0.06
	Average	**0.00**	**1.62**	**0.19**	**0.00**	**0.60**	**0.09**	**1.30**	**0.34**	**0.21**	**0.24**	**0.31**	**0.09**

Table 4 Panel C Annual Audit Firm Distribution for S&P Super Firms-*US*

Name of audit firm	2004	%(total)	2005	%(total)	2006	%(total)	2007	%(total)	2008	%(total)	Total	%(total)
ERNST & YOUNG	98	26.49%	99	26.76%	102	27.57%	105	28.38%	106	28.65%	510	27.57%
DELOITTE	80	21.62%	82	22.16%	83	22.43%	82	22.16%	83	22.43%	410	22.16%
KPMG	66	17.84%	64	17.30%	64	17.30%	62	16.76%	63	17.03%	319	17.24%
PWC	122	32.97%	122	32.97%	119	32.16%	119	32.16%	114	30.81%	596	32.22%
BIG4	**366**	**98.92%**	**367**	**99.19%**	**368**	**99.46%**	**368**	**99.46%**	**366**	**98.92%**	**1835**	**99.19%**
BDO	2	0.54%	2	0.54%	2	0.54%	2	0.54%	2	0.54%	10	0.54%
GRANT THORNTON	1	0.27%	1	0.27%	0	0.00%	0	0.00%	0	0.00%	2	0.11%
OTHERS	1	0.27%	0	0.00%	0	0.00%	0	0.00%	2	0.54%	3	0.16%
NON-BIG4	**4**	**1.08%**	**3**	**0.81%**	**2**	**0.54%**	**2**	**0.54%**	**4**	**1.08%**	**15**	**0.81%**
TOTAL	**370**	**100.00%**	**370**	**100.00%**	**370**	**100.00%**	**370**	**100.00%**	**370**	**100.00%**	**1850**	**100.00%**

Table 4 Panel D Annual Audit Firm Distribution for S&P MidCap Firms-*US*

Name of audit firm	2004	%(total)	2005	%(total)	2006	%(total)	2007	%(total)	2008	%(total)	Total	%(total)
ERNST & YOUNG	67	26.91%	65	26.10%	70	28.11%	72	28.92%	73	29.32%	347	27.87%
DELOITTE	58	23.29%	61	24.50%	61	24.50%	63	25.30%	62	24.90%	305	24.50%
KPMG	50	20.08%	51	20.48%	49	19.68%	44	17.67%	45	18.07%	239	19.20%
PWC	69	27.71%	65	26.10%	63	25.30%	64	25.70%	64	25.70%	325	26.10%
BIG4	**244**	**97.99%**	**242**	**97.19%**	**243**	**97.59%**	**243**	**97.59%**	**244**	**97.99%**	**1216**	**97.67%**
BDO	3	1.20%	4	1.61%	3	1.20%	3	1.20%	2	0.80%	15	1.20%
GRANT THORNTON	1	0.40%	2	0.80%	3	1.20%	3	1.20%	3	1.20%	12	0.96%
OTHERS	1	0.40%	1	0.40%	0	0.00%	0	0.00%	0	0.00%	2	0.16%
NON-BIG4	**5**	**2.01%**	**7**	**2.81%**	**6**	**2.41%**	**6**	**2.41%**	**5**	**2.01%**	**29**	**2.33%**
TOTAL	**249**	**100.00%**	**249**	**100.00%**	**249**	**100.00%**	**249**	**100.00%**	**249**	**100.00%**	**1245**	**100.00%**

Table 4 Panel E Annual Audit Firm Distribution for S&P SmallCap Firms-*US*

Name of audit firm	2004	%(total)	2005	%(total)	2006	%(total)	2007	%(total)	2008	%(total)	Total	%(total)
ERNST & YOUNG	90	32.26%	86	30.82%	87	31.18%	86	30.82%	86	30.82%	435	31.18%
DELOITTE	62	22.22%	61	21.86%	58	20.79%	57	20.43%	56	20.07%	294	21.08%
KPMG	46	16.49%	46	16.49%	46	16.49%	46	16.49%	44	15.77%	228	16.34%
PWC	69	24.73%	67	24.01%	61	21.86%	61	21.86%	60	21.51%	318	22.80%
BIG4	**267**	**95.70%**	**260**	**93.19%**	**252**	**90.32%**	**250**	**89.61%**	**246**	**88.17%**	**1275**	**91.40%**
BDO	2	0.72%	5	1.79%	7	2.51%	10	3.58%	11	3.94%	35	2.51%
GRANT THORNTON	7	2.51%	11	3.94%	11	3.94%	9	3.23%	12	4.30%	50	3.58%
OTHERS	3	1.08%	3	1.08%	9	3.23%	10	3.58%	10	3.58%	35	2.51%
NON-BIG4	**12**	**4.30%**	**19**	**6.81%**	**27**	**9.68%**	**29**	**10.39%**	**33**	**11.83%**	**120**	**8.60%**
TOTAL	**279**	**100.00%**	**279**	**100.00%**	**279**	**100.00%**	**279**	**100.00%**	**279**	**100.00%**	**1395**	**100.00%**

Table 4 Panel F Audit Firm Distribution (Industry-Wise)-*US*

Audit firm name	Mining and construction		Food		Textiles, Printing/Publishing		Chemicals		Pharmaceuticals		Extractive	
	N	%(total)	N	%(total)	N	%(total)	N	%(total)	N	%(total)	N	%(total)
ERNST & YOUNG	80	61.54%	50	30.30%	75	27.78%	31	17.22%	30	17.14%	55	25.58%
DELOITTE	20	15.38%	21	12.73%	58	21.48%	43	23.89%	34	19.43%	39	18.14%
KPMG	5	3.85%	39	23.64%	45	16.67%	45	25.00%	21	12.00%	57	26.51%
PWC	25	19.23%	50	30.30%	78	28.89%	58	32.22%	66	37.71%	64	29.77%
BIG4	**130**	**100.00%**	**160**	**96.97%**	**256**	**94.81%**	**177**	**98.33%**	**151**	**86.29%**	**215**	**100.00%**
BDO	0	0.00%	0	0.00%	5	1.85%	0	0.00%	11	6.29%	0	0.00%
GRANT THORNTON	0	0.00%	5	3.03%	0	0.00%	0	0.00%	8	4.57%	0	0.00%
OTHERS	0	0.00%	0	0.00%	9	3.33%	3	1.67%	5	2.86%	0	0.00%
NON-BIG4	**0**	**0.00%**	**5**	**3.03%**	**14**	**5.19%**	**3**	**1.67%**	**24**	**13.71%**	**0**	**0.00%**
TOTAL	**130**	**100.00%**	**165**	**100.00%**	**270**	**100.00%**	**180**	**100.00%**	**175**	**100.00%**	**215**	**100.00%**

Table 4 Panel F Audit Firm Distribution (Industry-Wise) (Contd)-*US*

Audit firm name	Durable manufacturers		Transportation		Utilities		Retail		Services		Computers		Total	
	N	%(total)	N	%(total)	N	%(total)	N	%(total)	N	%(total)	N	%(total)	N	%(total)
ERNST & YOUNG	362	31.48%	77	35.81%	43	11.62%	204	33.17%	127	31.75%	158	26.12%	1292	28.78%
DELOITTE	230	20.00%	52	24.19%	179	48.38%	141	22.93%	71	17.75%	121	20.00%	1009	22.47%
KPMG	131	11.39%	56	26.05%	21	5.68%	145	23.58%	94	23.50%	127	20.99%	786	17.51%
PWC	373	32.43%	28	13.02%	127	34.32%	95	15.45%	95	23.75%	180	29.75%	1239	27.59%
BIG4	**1096**	**95.30%**	**213**	**99.07%**	**370**	**100.00%**	**585**	**95.12%**	**387**	**96.75%**	**586**	**96.86%**	**4326**	**96.35%**
BDO	16	1.39%	0	0.00%	0.00	0.00%	20	3.25%	4	1.00%	4	0.66%	60	1.34%
GRANT THORNTON	23	2.00%	0	0.00%	0.00	0.00%	10	1.63%	9	2.25%	9	1.49%	64	1.43%
OTHERS	15	1.30%	2	0.93%	0.00	0.00%	0	0.00%	0	0.00%	6	0.99%	40	0.89%
NON-BIG4	**54**	**4.70%**	**2**	**0.93%**	**0.00**	**0.00%**	**30**	**4.88%**	**13**	**3.25%**	**19**	**3.14%**	**164**	**3.65%**
TOTAL	**1150**	**100.00%**	**215**	**100.00%**	**370**	**100.00%**	**615**	**100.00%**	**400**	**100.00%**	**605**	**100.00%**	**4490**	**100.00**

Table 5 Descriptive Statistics – Dependent and Treatment Variables-*US*

Variable Name	Number	Mean	Median	Std. Dev	Minimum	Maximum	Quartile 1	Quartile 3
AF_t	4490	0.001	0.001	0.001	0.000	0.004	0.000	0.002
$ACINDPER_t$	4490	0.940	1.000	0.131	0.000	1.000	1.000	1.000
$ACEXPPER_t$	4490	0.400	0.330	0.317	0.000	1.000	0.200	0.600
$INST_t$	4490	0.810	1.000	0.395	0.000	1.000	1.000	1.000
$STIP_t$	4490	0.001	0.000	0.001	0.000	0.020	0.000	0.001
$LTIP_t$	4490	0.000	0.000	0.000	0.000	0.000	0.000	0.000
$STOP_t$	4490	0.021	0.002	0.062	0.000	0.350	0.000	0.010
$BSEG_t$	4490	1.684	1.732	0.547	1.000	3.162	1.000	2.000
$GSEG_t$	4490	1.654	1.732	0.672	0.000	2.236	1.414	2.236
$INDS_i$	4490	8.810	8.000	3.040	2.000	13.000	7.000	11.000
$ARINV_t$	4490	0.198	0.174	0.164	0.000	0.823	0.061	0.303
$LOSS_t$	4490	0.043	0.000	0.202	0.000	1.000	0.000	0.000
BIG4	4490	0.964	1.000	0.188	0.000	1.000	1.000	1.000
INDSP	4490	0.320	0.000	0.466	0.000	1.000	0.000	1.000
$BDSIZE_t$	4490	9.370	9.000	2.174	4.000	19.000	8.000	11.000
$ACSIZE_t$	4490	3.790	4.000	1.033	1.000	9.000	3.000	4.000
$LOGMB_t$	4490	0.896	0.876	0.692	-2.270	2.890	0.477	1.313
$LEVERAGE_t$	4490	0.275	0.138	0.359	0.000	1.400	0.016	0.373
NAF_t	4490	0.000	0.000	0.000	0.000	0.001	0.000	0.000
ABSDACC	4490	0.042	0.027	0.053	0.000	0.870	0.012	0.052

Definitions of all variables are in Table1.

Table 6 Pearson (Spearman) Correlation Above (Below) Diagonal-*US*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AF_t (1)	1.00	**0.05**	**0.08**	**0.32**	**0.19**	**-0.05**	**-0.08**	**0.14**	**0.38**	**-0.33**	**-0.19**	**-0.07**	**-0.22**	**0.41**
$ACINDPER_t$ (2)	**0.08**	1.00	0.03	**0.04**	0.00	**-0.03**	0.02	**0.04**	**0.07**	-0.02	0.03	0.00	0.01	0.00
$ACEXPPER_t$ (3)	**0.12**	**0.04**	1.00	-0.01	0.01	**-0.04**	**0.03**	-0.01	**-0.05**	**0.05**	**-0.10**	-0.02	**0.06**	**-0.10**
$STIP_t$ (4)	**0.45**	**0.04**	**0.04**	1.00	**0.15**	-0.01	**-0.14**	-0.02	**0.24**	**-0.23**	**-0.15**	**0.09**	**-0.19**	**0.18**
$STOP_t$ (5)	**0.33**	0.01	**0.09**	**0.32**	1.00	-0.01	**-0.05**	-0.01	**0.15**	**-0.12**	**-0.07**	-0.02	**-0.07**	**0.07**
$LTIP_t$ (6)	**-0.11**	**-0.04**	**-0.06**	**-0.05**	0.01	1.00	**0.11**	0.01	0.02	**0.13**	**0.10**	**0.08**	-0.01	-0.03
$BSEG_t$ (7)	**-0.06**	0.01	0.00	**-0.17**	**-0.09**	**0.16**	1.00	0.00	**-0.09**	**0.29**	**0.21**	**-0.05**	**0.16**	**-0.04**
$GSEG_t$ (8)	**0.23**	**0.04**	0.01	0.02	-0.02	0.00	**0.07**	1.00	**0.12**	-0.01	0.00	0.02	**-0.12**	**0.12**
$ARINV_t$ (9)	**0.53**	**0.06**	**-0.03**	**0.37**	**0.26**	**-0.05**	**-0.08**	**0.14**	1.00	**-0.24**	**-0.14**	**-0.04**	**-0.21**	**0.24**
$BDSIZE_t$ (10)	**-0.34**	-0.02	0.02	**-0.28**	**-0.19**	**0.19**	**0.29**	0.00	**-0.27**	1.00	**0.42**	0.01	**0.24**	**-0.20**
$ACSIZE_t$ (11)	**-0.21**	-0.03	**-0.16**	**-0.17**	**-0.10**	**0.15**	**0.21**	0.00	**-0.16**	**0.44**	1.00	**-0.04**	**0.15**	**-0.16**
$LOGMB_t$ (12)	**-0.03**	-0.01	-0.02	**0.09**	**-0.04**	**0.07**	**-0.05**	**0.07**	-0.02	0.01	**-0.04**	1.00	**-0.35**	**0.05**
$LEVERAGE_t$ (13)	**-0.31**	-0.02	0.02	**-0.28**	**-0.14**	**0.09**	**0.24**	**-0.15**	**-0.22**	**0.32**	**0.23**	**-0.35**	1.00	**-0.21**
NAF_t (14)	**0.43**	0.03	**-0.08**	**0.19**	**0.08**	-0.02	0.01	**0.22**	**0.29**	**-0.17**	**-0.15**	**0.08**	**-0.24**	1.00

Correlations in **bold** are significant at $p < 0.05$, two tailed. Definitions of all variables are in Table1.

Table 7 OLS Regressions of Audit Fees Determinants-*US*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t + \beta_5 STOP_t + \beta_6 LTIP_t + \beta_7 BSEG_t + \beta_8 GSEG_t + \beta_9 INDS_i + \beta_{10} ARINV_t + \beta_{11} LOSS_t + \beta_{12} BIG4 + \beta_{13} INDSP + \beta_{14} BDSIZE_t + \beta_{15} ACSIZE_t + \beta_{16} LOGMB_t + \beta_{17} LEVERAGE_t + \beta_{18} NAF_t + \beta_{19} YEAR_t + \varepsilon$

Variables	**Demand sign**	**Supply sign**	**N =4490**		
Experimental			**Coefficients**	**T value**	**VIF**
$ACINDPER_t$	+	-	0.012	1.058	1.035
$ACEXPPER_t$	+	-	0.005	0.380	1.374
$INST_t$	+	-	-0.023	-2.033**	1.095
$STIP_t$	+/-	+/-	0.139	11.449***	1.229
$STOP_t$	+/-	+/-	0.069	6.135***	1.053
$LTIP_t$			0.006	0.531	1.109
Control					
$BSEG_t$	+	+	0.012	0.968	1.255
$GSEG_t$	+	+	0.029	2.413***	1.191
MINING AND CONSTRUCTION	+/-	+/-	-0.085	-7.256***	1.156
FOOD	+/-	+/-	-0.020	-1.695*	1.163
TEXTILES AND PRINTING/PUBLISHING	+/-	+/-	-0.039	-3.230***	1.204
CHEMICALS	+/-	+/-	0.002	0.144	1.127
PHARMACEUTICALS	+/-	+/-	-0.011	-0.943	1.202
EXTRACTIVE	+/-	+/-	-0.077	-6.339***	1.223
TRANSPORTATION	+/-	+/-	-0.065	-5.292***	1.269
UTILITIES	+/-	+/-	-0.085	-6.155***	1.590
RETAIL	+/-	+/-	-0.125	-9.119***	1.564
SERVICES	+/-	+/-	0.082	6.565***	1.316
COMPUTERS	+/-	+/-	0.026	1.984**	1.470
$ARINV_t$	+	+	0.185	14.784***	1.318
$LOSS_t$	+	+	0.154	13.726***	1.060
BIG4	+	+	-0.070	-6.152***	1.092
INDSP	+	+	0.046	4.047***	1.071
$BDSIZE_t$	+/-	+/-	-0.110	-8.172***	1.518
$ACSIZE_t$	+/-	+/-	-0.023	-1.795*	1.338
$LOGMB_t$	+/-	+/-	-0.083	-6.454***	1.384
$LEVERAGE_t$	+/-	+/-	-0.074	-5.651***	1.458
NAF_t	+/-	+/-	0.296	24.055***	1.270
YEAR 2005	+/-	+/-	-0.243	-15.412***	2.081
YEAR 2006	+/-	+/-	-0.059	-4.160***	1.678
YEAR 2007	+/-	+/-	0.011	0.765	1.641
YEAR 2008	+/-	+/-	-0.015	-1.046	1.748
Intercept			0.001	9.188***	
Adjusted R^2/ F value			0.465	122.931***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years**

Table 8 OLS Regressions of Audit Fees Determinants (Audit Firms)-*US*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t + \beta_5 STOP_t + \beta_6 LTIP_t + \beta_7 BSEG_t + \beta_8 GSEG_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} AUDNAME + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \beta_{18} YEAR_t + \varepsilon$

Variables	**Demand sign**	**Supply sign**	**N =4490**		
Experimental			**Coefficients**	**T value**	**VIF**
$ACINDPER_t$	+	-	0.011	0.919	1.033
$ACEXPPER_t$	+	-	0.011	0.839	1.370
$INST_t$	+	-	-0.030	-2.551***	1.081
$STIP_t$	+/-	+/-	0.140	11.382***	1.201
$STOP_t$	+/-	+/-	0.070	6.105***	1.052
$LTIP_t$			0.001	0.090	1.089
Control					
$BSEG_t$	+	+	0.034	2.818***	1.169
$GSEG_t$	+	+	0.064	5.504***	1.064
$ARINV_t$	+	+	0.193	15.520***	1.217
$LOSS_t$	+	+	0.167	14.620***	1.031
DELOITTE	+/-	+/-	-0.019	-1.445	1.412
KPMG	+/-	+/-	0.016	1.228	1.380
PWC	+/-	+/-	0.048	3.355***	1.647
BDO	+/-	+/-	0.038	3.252***	1.058
GRANT THORNTON	+/-	+/-	0.037	3.144***	1.071
OTHERS	+/-	+/-	0.059	5.157***	1.048
INDSP	+	+	0.013	0.988	1.285
$BDSIZE_t$	+/-	+/-	-0.135	-9.950***	1.455
$ACSIZE_t$	+/-	+/-	-0.036	-2.768***	1.316
$LOGMB_t$	+/-	+/-	-0.062	-4.747***	1.343
$LEVERAGE_t$	+/-	+/-	-0.088	-6.747***	1.342
NAF_t	+/-	+/-	0.328	26.196***	1.237
YEAR 2005	+/-	+/-	-0.250	-15.422***	2.079
YEAR 2006	+/-	+/-	-0.064	-4.399***	1.679
YEAR 2007	+/-	+/-	0.010	0.691	1.640
YEAR 2008	+/-	+/-	-0.008	-0.520	1.741
Intercept			0.001	4.220***	
Adjusted R^2/ F value			0.432	132.383***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Tables- New Zealand

Table 9 Dependent and Treatment Variables Definitions-*NZ*

AF_t	Audit fees paid by the auditee firm in a year$_t$ scaled by total assets of the firm at the end of the fiscal year;
$ACINDPER_t$	The proportion of independent directors to total directors on the audit committee;
$ACEXPPER_t$	The proportion of independent financial expert directors to total directors on the audit committee;
$INST_t$	The percentage of shares are held by external institutional shareholders in the auditee firm;
$BSAL_t$	CEOs basic pay scaled by the total assets at the end of the fiscal year of the auditee;
$INCEN_t$	Total incentives (short-term, and long-term) paid to CEO scaled by the total assets at the end of the fiscal year of the auditee;
$STOP_t$	Dummy variable expressed as 1 if the CEO is offered stock option by the firm, and 0 otherwise;
$BSEG_t$	The square root of the number of business segments reported by the auditee;
$GSEG_t$	The square root of the number of geographic segments reported by the auditee;
$INDS_i$	Industry of the auditee firm;
$ARINV_t$	Accounts receivable plus inventory scaled by total assets of the firm at the end of the fiscal year;
$LOSS_t$	Measured as equal to 1 if the firm reported a loss in two consecutive years, and 0 otherwise;
BIG4	Measured as 1 if the firm is audited by the Big4 (KPMG, Deloitte, Ernst & Young or PWC), and 0 otherwise;
INDSP	Measured as 1 if the auditor is an industry specialist at the national level based on the total audit fees earned in an industry , and 0 otherwise;
$BDSIZE_t$	The total number of directors on the board of the firm (standardised);
$ACSIZE_t$	The total number of directors in the audit committee (standardised);
$LOGMB_t$	Natural log of the market value of the firm scaled by book value of total assets;
$LEVERAGE_t$	Proportion of long term debt to firm value;
NAF_t	Non-audit service fee paid by the auditee firm in a year$_t$ scaled by total assets of the firm at the end of the fiscal sheet year.
ABSDACC	Absolute values of discretionary accruals (estimated using modified Jones model adjusted ROA (Kothari et al. 2005);

Table 10 Panel A Summary of Sample Selection-*NZ*

Observations	2004	2005	2006	2007	2008	Total
Total listed in Stock exchange and other exchanges in NZ	**264**	**250**	**249**	**236**	**232**	**1231**
Less: Foreign companies	(54)	(42)	(41)	(36)	(35)	(208)
Less: Alternative listing in NZAX	(22)	(25)	(29)	(29)	(31)	(136)
Less: Alternative listing in NZDX	(43)	(45)	(47)	(53)	(54)	(242)
Less: Finance companies	(10)	(10)	(10)	(9)	(4)	(43)
Less: Utility sector	(5)	(5)	(5)	(5)	(5)	(25)
Less: Dual Listing	(3)	(4)	(3)	(3)	(2)	(15)
Less: Companies having less than five observations in the industry	(12)	(12)	(12)	(9)	(9)	(54)
Less: Companies having insufficient information for all the sample years	(25)	(17)	(12)	(2)	(2)	(58)
Less: Extreme outlier	(1)	(1)	(1)	(1)	(1)	(5)
Total Observations dropped	**(175)**	**(161)**	**(160)**	**(147)**	**(143)**	**(786)**
Total sample size	**89**	**89**	**89**	**89**	**89**	**445**

Table 10 Panel B Industry Distributions for the Sample-*NZ*

Industry	Two-digit SIC	Number 2004	Number 2005	Number 2006	Number 2007	Number 2008	Total Number of Firms	Percentage
AGRICULTURE and FISHING	01	11	11	11	11	11	55	12.4
FOOD	06	5	5	5	5	5	25	5.6
INTERMEDIATE and DURABLES	08	10	10	10	10	10	50	11.2
PROPERTY	09	11	11	11	11	11	55	12.4
PORTS and TRANSPORT	11	8	8	8	8	8	40	9.0
LEISURE and TOURISM	12	5	5	5	5	5	25	5.6
CONSUMER	13	17	17	17	17	17	85	19.1
MEDIA and COMMUNICATIONS	14	6	6	6	6	6	30	6.7
HEALTH SERVICES	15	7	7	7	7	7	35	7.9
BIO TECHNOLOGY	16	9	9	9	9	9	45	10.1
Total		**89**	**89**	**89**	**89**	**89**	**445**	**100.0**

Table 11 Panel A Descriptive Statistics (Per Auditee)-*NZ*
(in million $)

Variable Name	YEAR	N	Mean	Std. Dev	Min	Max	Percentiles						
							12.5	25	37.5	50	62.5	75	87.5
AF_t	2004	89	0.18	0.38	0.01	2.55	0.02	0.03	0.04	0.06	0.08	0.16	0.31
	2005	89	0.21	0.47	0.01	2.75	0.02	0.03	0.05	0.07	0.09	0.15	0.33
	2006	89	0.25	0.54	0.01	3.64	0.03	0.05	0.06	0.08	0.12	0.19	0.37
	2007	89	0.27	0.60	0.01	5.00	0.03	0.05	0.08	0.10	0.15	0.23	0.45
	2008	89	0.29	0.59	0.01	4.28	0.04	0.06	0.09	0.11	0.16	0.27	0.50
	Average	**445**	**0.24**	**0.52**	**0.01**	**5.00**	**0.03**	**0.05**	**0.06**	**0.08**	**0.12**	**0.19**	**0.37**
NAF_t	2004	89	0.11	0.24	0.00	1.39	0.00	0.00	0.01	0.03	0.06	0.10	0.19
	2005	89	0.10	0.27	0.00	1.96	0.00	0.00	0.01	0.02	0.04	0.09	0.17
	2006	89	0.09	0.29	0.00	2.42	0.00	0.00	0.01	0.02	0.04	0.06	0.13
	2007	89	0.08	0.20	0.00	1.40	0.00	0.01	0.01	0.02	0.03	0.06	0.14
	2008	89	0.11	0.30	0.00	2.00	0.00	0.00	0.01	0.02	0.04	0.07	0.18
	Average	**445**	**0.10**	**0.26**	**0.00**	**2.42**	**0.00**	**0.00**	**0.01**	**0.02**	**0.04**	**0.08**	**0.16**
$INST_t$	2004	89	0.11	0.19	0.00	0.75	0.00	0.00	0.02	0.04	0.07	0.12	0.27
	2005	89	0.13	0.20	0.00	0.78	0.00	0.00	0.04	0.06	0.09	0.14	0.33
	2006	89	0.13	0.20	0.00	0.74	0.00	0.00	0.04	0.06	0.10	0.13	0.34
	2007	89	0.14	0.19	0.00	0.76	0.00	0.00	0.04	0.07	0.12	0.17	0.37
	2008	89	0.13	0.18	0.00	0.79	0.00	0.00	0.04	0.07	0.10	0.15	0.35
	Average	**445**	**0.13**	**0.19**	**0.00**	**0.79**	**0.00**	**0.00**	**0.03**	**0.06**	**0.10**	**0.14**	**0.33**

Table 11 Panel A Descriptive Statistics (Per Auditee) (in million $) (Contd)-NZ

Variable Name	YEAR	N	Mean	Std. Dev	Min	Max	Percentiles						
							12.5	25	37.5	50	62.5	75	87.5
$BSAL_t$	2004	89	0.49	0.60	0.00	4.00	0.12	0.17	0.24	0.30	0.41	0.55	0.99
	2005	89	0.56	0.71	0.00	4.00	0.10	0.17	0.23	0.31	0.46	0.60	1.13
	2006	89	0.54	0.62	0.00	4.00	0.12	0.19	0.25	0.33	0.47	0.68	1.05
	2007	89	0.54	0.62	0.00	4.00	0.12	0.20	0.26	0.35	0.51	0.64	1.00
	2008	89	0.53	0.59	0.00	4.00	0.12	0.18	0.28	0.35	0.47	0.66	0.99
	Average	**445**	**0.53**	**0.63**	**0.00**	**4.00**	**0.12**	**0.18**	**0.25**	**0.32**	**0.45**	**0.62**	**1.00**
$INCEN_t$	2004	89	0.06	0.24	0.00	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2005	89	0.06	0.25	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2006	89	0.09	0.40	0.00	3.13	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	2007	89	0.08	0.44	0.00	3.88	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	2008	89	0.09	0.43	0.00	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	Average	**445**	**0.08**	**0.36**	**0.00**	**3.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**
$TSAL_t$	2004	89	0.55	0.70	0.00	4.00	0.12	0.17	0.25	0.30	0.43	0.67	1.08
	2005	89	0.62	0.80	0.00	4.00	0.10	0.17	0.24	0.32	0.47	0.70	1.36
	2006	89	0.63	0.81	0.00	4.63	0.12	0.19	0.25	0.35	0.47	0.80	1.07
	2007	89	0.62	0.81	0.00	5.13	0.12	0.21	0.27	0.37	0.53	0.69	1.00
	2008	89	0.62	0.78	0.00	4.79	0.12	0.19	0.29	0.38	0.52	0.70	1.18
	Average	**445**	**0.61**	**0.78**	**0.00**	**5.13**	**0.12**	**0.18**	**0.26**	**0.34**	**0.48**	**0.70**	**1.08**

Table 11 Panel A Descriptive Statistics (Per Auditee) (in million $) (Contd)-NZ

Variable Name	YEAR	N	Mean	Std. Dev	Min	Max	Percentiles						
							12.5	25	37.5	50	62.5	75	87.5
A/R	2004	89	28.28	77.82	0.00	616.00	0.00	0.10	0.96	4.61	8.84	25.63	58.88
	2005	89	32.00	85.50	0.00	703.00	0.00	0.17	1.07	2.73	10.72	30.00	68.05
	2006	89	30.34	88.53	0.00	745.00	0.00	0.23	1.16	3.04	7.13	23.79	56.56
	2007	89	34.73	133.30	0.00	1183.00	0.00	0.17	0.66	2.61	7.32	28.16	50.05
	2008	89	33.57	73.03	0.00	414.00	0.00	0.13	0.52	1.85	6.56	34.81	76.56
	Average	**445**	**31.78**	**93.73**	**0.00**	**1183.00**	**0.00**	**0.17**	**0.86**	**2.85**	**8.30**	**27.14**	**58.88**
INV	2004	89	75.31	230.50	0.00	1581.00	0.90	3.27	5.50	11.40	29.46	52.61	105.00
	2005	89	108.00	285.10	0.14	1590.00	1.06	4.51	6.28	14.57	32.68	56.83	159.00
	2006	89	117.00	336.80	0.00	2280.00	1.33	4.05	8.06	12.30	31.10	60.55	203.00
	2007	89	136.00	546.40	0.00	4508.52	1.32	2.77	6.95	15.17	31.78	43.89	115.00
	2008	89	138.00	342.00	0.00	1877.00	0.65	2.36	5.26	14.55	29.23	88.75	313.00
	Average	**445**	**115.00**	**363.30**	**0.00**	**4508.52**	**1.07**	**3.54**	**6.23**	**13.62**	**30.67**	**55.72**	**145.00**
TA	2004	89	387.00	1062.00	0.29	7500.00	4.20	15.15	36.80	64.90	130.00	262.00	629.00
	2005	89	424.00	1109.00	0.24	7421.00	5.64	14.75	40.52	76.94	152.00	271.00	803.00
	2006	89	503.00	1160.00	0.52	6203.00	6.47	22.73	43.52	105.00	209.00	321.00	1020.00
	2007	89	527.00	1173.00	0.56	8276.00	8.39	21.95	56.84	124.00	227.00	385.00	1230.00
	2008	89	561.00	1221.00	0.81	7405.00	7.10	28.79	52.92	126.00	242.00	407.00	1430.00
	Average	**445**	**480.00**	**1143.00**	**0.24**	**8276.00**	**6.22**	**21.62**	**42.73**	**104.00**	**204.00**	**317.00**	**1010.00**

Table 11 Panel A Descriptive Statistics (Per Auditee) (*in %*) (Contd)-NZ

Variable Name	YEAR	N	Mean	Std. Dev	Min	Max	Percentiles						
							12.5	25	37.5	50	62.5	75	87.5
$ACINDPER_t$	2004	89	0.73	0.19	0.33	1.00	0.50	0.67	0.67	0.67	0.67	1.00	1.00
	2005	89	0.74	0.20	0.33	1.00	0.50	0.67	0.67	0.67	0.75	1.00	1.00
	2006	89	0.80	0.18	0.50	1.00	0.67	0.67	0.67	0.67	1.00	1.00	1.00
	2007	89	0.81	0.17	0.50	1.00	0.67	0.67	0.67	0.75	1.00	1.00	1.00
	2008	89	0.81	0.17	0.50	1.00	0.67	0.67	0.67	0.75	1.00	1.00	1.00
	Average	**445**	**0.78**	**0.18**	**0.33**	**1.00**	**0.67**	**0.67**	**0.67**	**0.67**	**0.80**	**1.00**	**1.00**
$ACEXPPER_t$	2004	89	0.51	0.26	0.20	1.00	0.20	0.33	0.33	0.50	0.67	0.67	0.83
	2005	89	0.51	0.25	0.33	1.00	0.21	0.33	0.33	0.50	0.67	0.67	0.95
	2006	89	0.51	0.25	0.33	1.00	0.27	0.33	0.33	0.50	0.67	0.67	0.75
	2007	89	0.50	0.27	0.33	1.00	0.27	0.33	0.33	0.50	0.62	0.67	0.73
	2008	89	0.51	0.27	0.21	1.00	0.20	0.33	0.33	0.50	0.67	0.67	0.75
	Average	**445**	**0.51**	**0.26**	**0.30**	**1.00**	**0.20**	**0.33**	**0.33**	**0.50**	**0.67**	**0.67**	**0.75**

A/R = Accounts receivable; Inv= Inventory; and TA= Total assets. Definitions of all other variables are in Table 9.

Table 11 Panel B Descriptive Statistics- Per Auditee (Industry-Wise)-*NZ*
($ in Millions)

Variable Name	Agriculture			Food			Intermediate and Durables			Property		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AF_t	0.02	1.00	0.19	0.01	0.14	0.04	0.01	1.08	0.21	0.02	3.00	0.38
NAF_t	0.00	1.00	0.11	0.00	0.10	0.01	0.00	1.40	0.11	0.00	2.00	0.18
$BSAL_t$	0.07	3.00	0.56	0.00	0.94	0.31	0.15	1.14	0.40	0.00	2.35	0.64
$INCEN_t$	0.00	0.00	0.00	0.00	0.30	0.02	0.00	0.83	0.08	0.00	1.70	0.14
$TSAL_t$	0.07	3.00	0.56	0.00	1.06	0.33	0.15	1.14	0.48	0.00	3.52	0.79

Variable Name	Ports			Leisure			Consumer			Media		
	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AF_t	0.02	1.00	0.26	0.01	1.06	0.30	0.01	0.41	0.11	0.02	5.00	0.57
NAF_t	0.00	1.00	0.14	0.00	2.42	0.33	0.00	0.35	0.03	0.00	0.90	0.08
$BSAL_t$	0.13	3.00	0.66	0.10	1.44	0.57	0.00	2.15	0.42	0.05	1.33	0.52
$INCEN_t$	0.00	1.80	0.08	0.00	0.00	0.00	0.00	3.13	0.06	0.00	3.88	0.34
$TSAL_t$	0.13	3.00	0.75	0.10	1.44	0.57	0.00	4.63	0.49	0.05	5.13	0.86

Variable Name	Health			Biotechnology		
	Min	Max	Avg	Min	Max	Avg
AF_t	0.02	2.72	0.38	0.01	0.51	0.09
NAF_t	0.00	0.80	0.08	0.00	0.48	0.04
$BSAL_t$	0.14	2.62	0.42	0.11	4.00	0.79
$INCEN_t$	0.00	0.24	0.03	0.00	0.02	0.00
$TSAL_t$	0.14	2.62	0.45	0.11	4.00	0.79

Table 11 Panel C Audit Fees Charged by the Audit Firms (Annual)-*NZ*
($ in millions)

Variable Name	Year	Ernst & young			Deloitte			KPMG			PWC		
		Min	**Max**	**Avg**	**Min**	**Max**	**Avg**	**Min**	**Max**	**Avg**	**Min**	**Max**	**Avg**
AF_t	2004	0.01	0.32	0.10	0.01	0.90	0.10	0.01	1.90	0.22	0.01	2.55	0.28
	2005	0.02	0.42	0.12	0.01	1.00	0.12	0.03	2.00	0.21	0.02	2.75	0.33
	2006	0.02	0.67	0.18	0.01	1.00	0.14	0.03	2.00	0.26	0.02	3.64	0.38
	2007	0.03	0.57	0.18	0.01	1.00	0.16	0.05	2.00	0.29	0.02	5.00	0.41
	2008	0.05	0.71	0.22	0.01	1.00	0.17	0.04	3.00	0.34	0.03	4.28	0.41
	Average	**0.01**	**0.71**	**0.16**	**0.01**	**1.00**	**0.14**	**0.01**	**3.00**	**0.27**	**0.01**	**5.00**	**0.36**
NAF_t	2004	0.00	0.20	0.05	0.00	0.58	0.06	0.00	1.00	0.16	0.00	1.39	0.17
	2005	0.00	0.33	0.06	0.00	1.00	0.10	0.00	1.10	0.10	0.00	1.96	0.16
	2006	0.00	0.39	0.07	0.00	0.21	0.02	0.00	0.92	0.11	0.00	2.42	0.15
	2007	0.00	0.31	0.07	0.00	0.39	0.05	0.00	1.00	0.10	0.00	1.40	0.11
	2008	0.00	0.67	0.12	0.00	0.35	0.07	0.00	2.00	0.19	0.00	1.40	0.10
	Average	**0.00**	**0.67**	**0.07**	**0.01**	**0.90**	**0.10**	**0.00**	**2.00**	**0.13**	**0.00**	**2.42**	**0.14**

Table 11 Panel C Audit Fees Charged by the Audit Firms (Annual) ($ in millions) (Contd)-*NZ*

Variable Name	Year	BIG4			Non-BIG4		
		Min	**Max**	**Avg**	**Min**	**Max**	**Avg**
AF_t	2004	0.01	2.55	0.21	0.01	0.23	0.05
	2005	0.01	2.75	0.24	0.01	0.23	0.05
	2006	0.01	3.64	0.28	0.01	0.26	0.06
	2007	0.01	5.00	0.31	0.01	0.30	0.07
	2008	0.01	4.28	0.33	0.01	0.41	0.10
	Average	**0.01**	**5.00**	**0.27**	**0.01**	**0.41**	**0.07**
NAF_t	2004	0.00	1.39	0.13	0.00	0.12	0.01
	2005	0.00	1.96	0.12	0.00	0.09	0.01
	2006	0.00	2.42	0.11	0.00	0.06	0.01
	2007	0.00	1.40	0.09	0.00	0.17	0.02
	2008	0.00	2.00	0.13	0.00	0.28	0.03
	Average	**0.00**	**2.42**	**0.12**	**0.00**	**0.28**	**0.02**

Table 11 Panel D Distribution of Auditees by Audit Firms -*NZ*

Name of Audit Firm	Number Above Total assets median	%(total)	Number Below Total assets median	%(total)	Total	%(total)
ERNST & YOUNG	20	9	15	6.8	35	7.9
DELOITTE	29	13	37	16.7	66	14.8
KPMG	62	27.8	47	21.2	109	24.5
PWC	98	43.9	61	27.5	159	35.7
BIG4	**209**	**93.7**	**160**	**72.1**	**369**	**82.9**
BDO	5	2.2	13	5.9	18	4.0
GRANT THORNTON	4	1.8	2	0.9	6	1.3
OTHERS	5	2.3	47	21.1	52	11.8
NON-BIG4	**14**	**6.3**	**62**	**27.9**	**76**	**17.1**
TOTAL	**223**	**100.00**	**222**	**100.00**	**445**	**100.00**

Table 11 Panel E Distribution of Auditees by Audit Firms (Annual)-NZ

Name of audit firm	2004	%(total)	2005	%(total)	2006	%(total)	2007	%(total)	2008	%(total)	Total	%(total)
ERNST & YOUNG	7	8%	7	8%	7	8%	7	8%	7	8%	35	8%
DELOITTE	15	17%	13	15%	13	15%	13	15%	12	13%	66	15%
KPMG	20	22%	22	25%	22	25%	22	25%	23	26%	109	25%
PWC	32	36%	32	36%	32	36%	32	36%	31	35%	159	36%
BIG4	**74**	**83%**	**74**	**84%**	**74**	**84%**	**74**	**84%**	**73**	**82%**	**369**	**84%**
BDO	4	4%	4	4%	4	4%	3	3%	3	3%	18	4%
GRANT THORNTON	1	1%	1	1%	1	1%	1	1%	2	2%	6	1%
OTHERS	10	12%	10	11%	10	11%	11	12%	11	13%	52	11%
NON-BIG4	**15**	**17%**	**15**	**16%**	**15**	**16%**	**15**	**16%**	**16**	**18%**	**76**	**16%**
TOTAL	**89**	**100%**	**89**	**100%**	**89**	**100%**	**89**	**100%**	**89**	**100%**	**445**	**100%**

Table 11 Panel F Audit Firm Distribution (Industry-Wise)-*NZ*

Audit firm name	***Agriculture***		***Food***		**Intermediate**		**Property**		**Ports**		**Leisure**	
	N	***%(total)***	***N***	**%(total)**	**N**	**%(total)**	**N**	**%(total)**	**N**	**%(total)**	**N**	**%(total)**
ERNST & YOUNG			*5*	1%	5	1%	10	2%	10	2%		
DELOITTE			*5*	1%	15	3%	10	2%	10	2%		
KPMG	*29*	*7%*	*1*	0%			20	5%				
PWC	*16*	*4%*	*14*	4%	20	5%	10	2%	10	2%	15	3%
BIG4	***45***	***11%***	***25***	**5%**	**40**	**9%**	**50**	**11%**	**30**	**6%**	**26**	**3%**
BDO							5	1%				
GRANT THORNTON												
OTHERS												
NON-BIG4	***10***	***1%***			**10**	**2%**	**5**	**1%**	**10**	**3%**	**11**	**2%**
TOTAL	***55***	***12%***	***25***	**6%**	**50**	**11%**	**55**	**12%**	**40**	**9%**	**20**	**5%**

Audit firm name	**Consumer**		**Media**		**Health**		**Biotechnology**		**Total**	
	N	**%(total)**	**N**	**%(total)**	**N**	**%(total)**	**N**	**%(total)**	**N**	**%(total)**
ERNST & YOUNG							5	1%	35	8%
DELOITTE	10	2%			6	1%	10	2%	66	15%
KPMG	28	6%	11	3%	5	1%	10	2%	109	25%
PWC	36	8%	14	3%	19	4%	5	1%	159	36%
BIG4	**74**	**16%**	**25**	**6%**	**30**	**6%**	**30**	**6%**	**369**	**84%**
BDO	5	1%	5	1%	3	1%			18	4%
GRANT THORNTON	6	1%							6	1%
OTHERS			5	1%	2	1%	15	4%	52	11%
NON-BIG4	**11**	**3%**	**10**	**2%**	**5**	**2%**	**15**	**4%**	**76**	**16%**
TOTAL	**85**	**19%**	**35**	**8%**	**35**	**8%**	**45**	**10%**	**445**	**100%**

Table 12 Descriptive Statistics – Dependent and Treatment Variables-*NZ*

Variable Name	Number	Mean	Median	Std. Dev	Minimum	Maximum
AF_t	445	0.000	0.000	0.000	0.000	0.010
$ACINDPER_t$	444	0.750	0.670	0.210	0.000	1.000
$ACEXPPER_t$	445	0.500	0.500	0.270	0.000	1.000
$INST_t$	445	0.129	0.060	0.191	0.000	0.790
$BSAL_t$	445	0.010	0.000	0.010	0.000	0.040
$INCEN_t$	445	0.000	0.000	0.000	0.000	0.010
$STOP_t$	445	0.010	0.000	0.010	0.000	0.042
$BSEG_t$	445	1.250	1.000	0.347	1.000	2.242
$GSEG_t$	445	1.290	1.000	0.400	1.000	2.454
$ARINV_t$	445	2.200	0.250	4.210	0.000	14.926
$LOSS_t$	445	0.160	0.000	0.330	0.000	1.000
BIG4	445	0.830	1.000	0.386	0.000	1.000
INDSP	445	0.350	0.000	0.470	0.000	1.000
$BDSIZE_t$	445	3.800	4.000	1.500	1.000	9.000
$ACSIZE_t$	445	3.250	3.000	0.810	1.000	6.000
$LOGMB_t$	445	0.320	0.260	0.242	0.000	1.964
$LEVERAGE_t$	445	0.460	0.430	0.254	0.000	1.235
NAF_t	445	0.000	0.000	0.000	0.000	0.002
ABSDACC	445	0.130	0.060	0.221	0.000	1.256

Definitions of all variables are in Table 9.

Table 13 Pearson (Spearman) Correlation Above (Below) Diagonal-*NZ*

Variable name	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AF_t (1)	1.00	**-0.21**	-0.03	**-0.26**	**0.75**	-0.09	**-0.13**	-0.03	**0.43**	**-0.47**	**-0.31**	**0.43**	**0.13**	**0.42**
$ACINDPER_t$ (2)	**-0.16**	1.00	**0.24**	**0.12**	**-0.25**	0.03	0.06	**0.16**	**-0.26**	**0.14**	**0.15**	-0.01	0.06	-0.09
$ACEXPPER_t$ (3)	-0.03	**0.18**	1.00	-0.09	-0.09	0.07	0.02	**-0.10**	-0.09	0.00	0.02	**-0.11**	**0.14**	-0.05
$INST_t$ (4)	**-0.33**	**0.18**	0.01	1.00	**-0.24**	0.02	**0.15**	**0.11**	**-0.19**	**0.19**	-0.02	-0.02	-0.08	**-0.16**
$BSAL_t$ (5)	**0.70**	**-0.15**	-0.03	**-0.31**	1.00	**-0.12**	**-0.20**	-0.03	**0.44**	**-0.40**	**-0.29**	**0.46**	0.00	**0.37**
$INCEN_t$ (6)	**-0.18**	**0.19**	-0.01	**0.18**	**-0.30**	1.00	0.08	**0.14**	**-0.10**	**0.12**	0.01	0.05	0.02	-0.04
$BUSSEG_t$ (7)	**-0.12**	0.05	0.01	**0.13**	**-0.18**	**0.18**	1.00	-0.02	-0.05	**0.19**	**0.11**	**-0.24**	**0.11**	0.01
$GSEG_t$ (8)	**0.10**	**0.13**	-0.04	**0.10**	0.09	**0.37**	0.01	1.00	-0.06	**0.15**	-0.01	**0.11**	**0.17**	0.09
$ARINV_t$ (9)	**0.56**	**-0.28**	0.02	**-0.29**	**0.55**	**-0.41**	**-0.10**	**-0.17**	1.00	**-0.24**	**-0.18**	**0.35**	**-0.12**	**0.25**
$BDSIZE_t$ (10)	**-0.43**	**0.11**	0.02	**0.28**	**-0.40**	**0.31**	**0.17**	0.09	**-0.33**	1.00	**0.41**	**-0.10**	-0.03	**-0.28**
$ACSIZE_t$ (11)	**-0.30**	0.02	-0.03	0.08	**-0.28**	**0.20**	**0.14**	-0.03	**-0.24**	**0.41**	1.00	-0.04	-0.05	**-0.23**
$LOGMB_t$ (12)	**0.35**	-0.01	-0.09	0.07	**0.41**	0.01	**-0.28**	**0.17**	**0.30**	-0.07	-0.03	1.00	**-0.13**	**0.12**
$LEVERAGE_t$ (13)	0.04	0.06	**0.16**	0.01	**-0.10**	**0.15**	**0.18**	**0.19**	**-0.17**	0.00	-0.05	**-0.21**	1.00	0.04
NAF_t (14)	**0.35**	-0.04	**-0.10**	-0.09	**0.29**	0.00	0.04	**0.11**	**0.19**	**-0.10**	**-0.13**	0.06	0.01	1.00

Correlations in **bold** are significant at $p < 0.05$, two tailed. Definitions of all variables are in Table 9.

Table 14 OLS Regressions of Audit Fees Determinants-*NZ*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t$ or $TSAL_t + \beta_5 INCEN_t$ or $STOP_t + \beta_6 BSEG_t + \beta_7 GSEG_t + \beta_8 INDS_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} BIG4 + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \beta_{18} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	N =445			N =445		
			Panel 1			Panel 2		
Experimental			Coefficients	T value	VIF	Coefficients	T value	VIF
$ACINDPER_t$	+/-	+/-	-0.029	-0.941	1.500	-0.037	-1.186	1.553
$ACEXPPER_t$	+/-	+/-	0.034	1.219	1.268	0.037	1.299	1.281
$INST_t$	+/-	+/-	-0.006	-0.190	1.433	-0.005	-0.159	1.417
$BSAL_t$	+/-	+/-	0.380	8.329***	3.334			
$INCEN_t$	+/-	+/-	0.014	0.510	1.171			
$TSAL_t$	+/-	+/-				0.374	8.204***	3.325
$STOP_t$	+/-	+/-				0.042	1.321	1.624
Control								
$BSEG_t$	+	+	0.049	1.721**	1.314	0.043	1.513*	1.322
$GSEG_t$	+	+	0.042	1.363*	1.484	0.036	1.176	1.495
AGIND	+/-	+/-	0.000	-0.016	1.683	0.003	0.100	1.680
FOODIND	+/-	+/-	-0.059	-1.870*	1.568	-0.060	-1.910*	1.561
INTMEIND	+/-	+/-	-0.115	-3.477***	1.740	-0.125	-3.739***	1.793
PROPIND	+/-	+/-	-0.103	-3.280***	1.573	-0.104	-3.327***	1.573
PORTSIND	+/-	+/-	-0.053	-1.721*	1.510	-0.053	-1.743*	1.504
LEIIND	+/-	+/-	-0.057	-1.911*	1.424	-0.057	-1.915*	1.426
MEDIAIND	+/-	+/-	-0.026	-0.823	1.556	-0.022	-0.708	1.554
HEALIND	+/-	+/-	0.038	1.257	1.435	0.034	1.129	1.446
BIOTECHIND	+/-	+/-	0.015	0.412	2.126	0.006	0.159	2.218
$ARINV_t$	+	+	0.065	2.070**	1.594	0.073	2.293**	1.641
$LOSS_t$	+	+	0.148	4.196**	1.989	0.147	4.163***	1.987
BIG4	+	+	-0.147	-4.905***	1.440	-0.151	-5.026***	1.455
INDSP	+	+	-0.075	-2.407***	1.540	-0.084	-2.660***	1.609
$BDSIZE_t$	+/-	+/-	-0.159	-4.785***	1.764	-0.165	-4.934***	1.802
$ACSIZE_t$	+/-	+/-	-0.031	-1.038*	1.453	-0.035	-1.150	1.461
$LOGMB_t$	+/-	+/-	0.183	5.521***	1.763	0.182	5.496***	1.751
$LEVERAGE_t$	+/-	+/-	0.105	3.713***	1.286	0.100	3.490***	1.310
NAF_t	+/-	+/-	0.150	5.106***	1.388	0.155	5.239***	1.400
YEAR 2004	+/-	+/-	0.071	2.172**	1.696	0.055	1.730*	1.635
YEAR2005	+/-	+/-	0.050	1.536	1.668	0.034	1.076	1.622
YEAR 2006	+/-	+/-	0.015	0.478	1.624	-0.014	-0.439	1.618
YEAR 2008	+/-	+/-	-0.039	-1.257	1.610	-0.048	-1.509	1.625
Intercept			0.002	2.708***		0.003	3.186***	
Adjusted R^2/ F value			0.723	40.832***		0.731	42.329***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 15 OLS Regressions of Audit Fees Determinants (IFRS Effect)-*NZ*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t$ or $TSAL_t + \beta_5 INCEN_t$ or $STOP_t + \beta_6 BSEG_t + \beta_7 GSEG_t + \beta_8 INDS_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} BIG4 + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \beta_{18} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	N =445			N =445		
			Panel 1			Panel 2		
Experimental			**Coefficients**	**T value**	**VIF**	**Coefficients**	**T value**	**VIF**
$ACINDPER_t$	+/-	+/-	-0.045	-1.482	1.464	-0.054	-1.720*	1.521
$ACEXPPER_t$	+/-	+/-	0.035	1.211	1.271	0.036	1.265	1.283
$INST_t$	+/-	+/-	0.002	0.067	1.428	0.003	0.115	1.412
$BSAL_t$	+/-	+/-	0.366	7.926***	3.319			
$INCEN_t$	+/-	+/-	0.007	0.268	1.183			
$TSAL_t$	+/-	+/-				0.359	7.808***	3.309
$STOP_t$	+/-	+/-				0.041	1.256	1.633
Control								
$BSEG_t$	+	+	0.041	1.414*	1.333	0.036	1.212	1.341
$GSEG_t$	+	+	0.039	1.278	1.486	0.033	1.075	1.497
AGIND	+/-	+/-	-0.002	-0.053	1.683	0.003	0.077	1.680
FOODIND	+/-	+/-	-0.053	-1.675*	1.575	-0.053	-1.687*	1.565
INTMEIND	+/-	+/-	-0.117	-3.486***	1.749	-0.128	-3.755***	1.801
PROPIND	+/-	+/-	-0.108	-3.381***	1.601	-0.109	-3.405***	1.600
PORTSIND	+/-	+/-	-0.053	-1.695*	1.511	-0.053	-1.702*	1.505
LEIIND	+/-	+/-	-0.057	-1.872*	1.435	-0.056	-1.854*	1.436
MEDIAIND	+/-	+/-	-0.026	-0.815	1.588	-0.021	-0.662	1.584
HEALIND	+/-	+/-	0.036	1.172	1.442	0.032	1.053	1.453
BIOTECHIND	+/-	+/-	0.020	0.536	2.144	0.012	0.310	2.230
$ARINV_t$	+	+	0.072	2.240**	1.594	0.080	2.457***	1.641
$LOSS_t$	+	+	0.157	4.399***	1.994	0.156	4.362***	1.993
BIG4	+	+	-0.149	-4.858***	1.460	-0.154	-5.001***	1.474
INDSP	+	+	-0.070	-2.226***	1.559	-0.079	-2.455***	1.619
$BDSIZE_t$	+/-	+/-	-0.154	-4.565***	1.776	-0.160	-4.704***	1.813
$ACSIZE_t$	+/-	+/-	-0.028	-0.912	1.462	-0.031	-1.019	1.470
$LOGMB_t$	+/-	+/-	0.174	5.163***	1.773	0.172	5.133***	1.763
$LEVERAGE_t$	+/-	+/-	0.123	4.364***	1.240	0.118	4.146***	1.262
NAF_t	+/-	+/-	0.150	5.027***	1.387	0.154	5.158***	1.399
PREIFRS	+/-	+/-	0.010	0.361	1.204	0.008	0.302	1.195
IFRSY1	+/-	+/-	0.011	0.394	1.217	0.011	0.378	1.214
IFRSY234	+/-	+/-	0.016	0.545	1.332	0.012	0.411	1.325
Intercept			0.002	3.117***		0.003	3.243***	
Adjusted R^2/ F value			0.721	41.970***		0.717	40.998***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. *PREIFRS* = equals 1 if company is in year prior to NZ IFRS adoption, and 0 otherwise; *IFRSY1* = equals 1 if company is in first year of adoption of NZ IFRS, and 0 otherwise; *IFRSY234* = equals 1 if company is in second or third or fourth year of adoption of NZ IFRS, and 0 otherwise.
Definitions of all other variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 16 OLS Regressions of Audit Fees Determinants (Audit Firms)-*NZ*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t$ or $TSAL_t + \beta_5 INCEN_t$ or $STOP_t + \beta_6 BSEG_t + \beta_7 GSEG_t + \beta_8 INDS_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} AUDNAME + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \beta_{18} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	N =445 Panel 1			N =445 Panel 2		
Experimental			**Coefficients**	**T value**	**VIF**	**Coefficients**	**T value**	**VIF**
$ACINDPER_t$	+/-	+/-	-0.012	-0.407	1.390	-0.016	-0.538	1.415
$ACEXPPER_t$	+/-	+/-	0.034	1.225	1.190	0.034	1.213	1.192
$INST_t$	+/-	+/-	-0.032	-1.088	1.282	-0.034	-1.146	1.294
$BSAL_t$	+/-	+/-	0.407	9.764***	2.618			
$INCEN_t$	+/-	+/-	0.009	0.335	1.164			
$TSAL_t$	+/-	+/-				0.404	9.647***	2.654
$STOP_t$	+/-	+/-				0.035	1.110	1.519
Control								
$BSEG_t$	+	+	0.072	2.490***	1.246	0.069	2.404***	1.239
$GSEG_t$	+	+	-0.008	-0.290	1.224	-0.016	-0.569	1.263
$ARINV_t$	+	+	0.069	2.204**	1.499	0.075	2.363***	1.532
$LOSS_t$	+	+	0.155	4.385***	1.875	0.150	4.251***	1.889
KPMG	+/-	+/-	0.029	0.790	2.077	0.025	0.669	2.106
DELOITTE	+/-	+/-	-0.034	-0.985	1.823	-0.045	-1.270	1.896
ERNST & YOUNG	+/-	+/-	0.017	0.509	1.663	0.013	0.385	1.687
NON-BIG4	+/-	+/-	0.157	4.004***	2.328	0.155	3.961***	2.323
INDSP	+	+	-0.064	-1.604*	2.387	-0.077	-1.860**	2.566
$BDSIZE_t$	+/-	+/-	-0.142	-4.368***	1.604	-0.146	-4.485***	1.606
$ACSIZE_t$	+/-	+/-	-0.029	-0.983	1.332	-0.031	-1.029	1.339
$LOGMB_t$	+/-	+/-	0.184	5.569***	1.647	0.180	5.435***	1.654
$LEVERAGE_t$	+/-	+/-	0.109	3.875***	1.201	0.107	3.770***	1.211
NAF_t	+/-	+/-	0.145	4.927***	1.304	0.148	5.018***	1.312
YEAR 2005	+/-	+/-	0.071	2.111**	1.687	-0.020	-0.625	1.605
YEAR 2006	+/-	+/-	0.051	1.532	1.662	-0.056	-1.702*	1.633
YEAR 2007	+/-	+/-	0.016	0.488	1.622	-0.070	-2.092**	1.680
YEAR 2008	+/-	+/-	-0.032	-0.992	1.602	-0.104	-3.102***	1.700
Intercept			0.000	0.198***		0.000	1.295	
Adjusted R^2/F value			0.706	47.309***		0.707	47.472***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table-Pooled Regression

Table 17 Pooled Univariate GLM Regressions of Audit Fees Determinants

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t + \beta_5 INCEN_t + \beta_6 STOP_t + \beta_7 USDUMMY*ACINDPER + \beta_8 USDUMMY*ACEXPPER + \beta_9 USDUMMY* INST + \beta_{10} USDUMMY*BSAL + \beta_{11} USDUMMY*INCEN + \beta_{12} USDUMMY* STOP + \beta_{13} BSEG_t + \beta_{14} GSEG_t + \beta_{15} ARINV_t + \beta_{16} LOSS_t + \beta_{17} BIG4 + \beta_{18} INDSP + \beta_{19} BDSIZE_t + \beta_{20} ACSIZE_t + \beta_{21} LOGMB_t + \beta_{22} LEVERAGE_t + \beta_{23} NAF_t + \beta_{24} USDUMMY + \varepsilon$

Variables	Demand sign	Supply sign	N =936 (US570+ NZ366)					
			Test 1a	Test 1b	Test 1c	Test 1d	Test 1e	Test 1f
Experimental			T value	T value	T value	T value	T value	T value
$ACINDPER_t$	+/-	+/-	0.825	0.221	-0.287	0.165	0.344	0.243
$ACEXPPER_t$	+/-	+/-	5.159***	4.931***	5.464***	4.932***	4.675***	5.614***
$INST_t$	+/-	+/-	-0.459	-0.443	0.095	-0.360	-0.182	0.022
$BSAL_t$	+/-	+/-	13.800***	13.906***	7.208***	13.781***	14.048***	7.199***
$INCEN_t$	+/-	+/-	0.120	0.161	-1.539	0.459	0.284	-1.590
$STOP_t$	+/-	+/-	2.498**	2.678***	2.576***	2.824***	3.127***	2.269**
Interaction variables								
$USDUMMY * ACINDPER_t$	+/-	+/-	-0.659					-0.197
$USDUMMY * ACEXPPER_t$	+/-	+/-	-1.963**					-2.311**
$USDUMMY * INST_t$	+/-	+/-		0.210				0.319***
$USDUMMY * BSAL_t$	+/-	+/-			-6.063***			-6.066***
$USDUMMY * INCEN_t$	+/-	+/-				-0.740		0.585
$USDUMMY * STOP_t$	+/-	+/-					-1.541	-0.892
Control								
$BSEG_t$	+	+	2.523***	2.518***	2.857***	2.534**	2.502**	2.876***
$GSEG_t$	+	+	2.255**	2.383***	2.331**	2.446**	2.460**	2.109**
$ARINV_t$	+	+	4.057***	4.230***	4.404***	4.202***	4.009***	4.141***
$LOSS_t$	+	+	7.919***	8.039***	7.230***	8.057***	8.107***	7.085***
BIG4	+	+	-4.481***	-4.327****	-4.268***	-4.278***	-4.106***	-4.314***
INDSP	+	+	-0.498	-0.395	-0.286	-0.393	-0.338	-0.338
$BDSIZE_t$	+/-	+/-	-4.485***	-4.341***	-4.308***	-4.301***	-4.270***	-4.440***
$ACSIZE_t$	+/-	+/-	-0.445	-0.569	-0.346	-0.620	-0.535	-0.124
$LOGMB_t$	+/-	+/-	0.987	0.851	1.117	0.854	0.935	1.291
$LEVERAGE_t$	+/-	+/-	5.241***	5.082***	5.630***	5.083***	5.085***	5.816***
NAF_t	+/-	+/-	6.016***	5.897***	6.161***	5.912***	5.895***	6.271***
US DUMMY	+/-	+/-	-0.349	-1.158	-0.421	-0.991	-0.659	-1.044
Intercept			1.382	2.521**	1.063	2.642***	2.181**	-0.010
Adjusted R^2			0.523	0.524	0.539	0.521	0.522	0.543
F value			52.337***	55.194***	58.475***	54.602***	54.780***	47.381***

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. $INST_t$: *US sample:* Measured as 1 if the majority of the percentages of shares are held by institutional shareholders in the auditee firm, and 0 otherwise; *New Zealand sample*: Measured as 1 if the firm in which majority of institutional holdings is above the median (0.06) and, 0 if it is below median; BSAL: CEOs basic pay scaled by the total assets at the end of the fiscal year of the auditee; INCEN: Total incentives as a proportion of total annual salary scaled by the total assets at the end of the fiscal year of the auditee; and STOP: Dummy variable expressed as 1 if the CEO is offered stock option by the firm, and 0 otherwise. Definitions of all other variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Tables for Sensitivity Tests-US

Table 18 OLS Regressions on Discretionary Accruals-*US*

$ABSDACC = \alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t + \beta_5 STOP_t + \beta_6 LTIP_t + \beta_6 LOSS_t + \beta_7 BIG4 + \beta_8 BDSIZE_t + \beta_9 ACSIZE_t + \beta_{10} LOGMB_t + \beta_{11} LEVERAGE_t + \beta_{12} YEAR_t + \varepsilon$ **(2a)**

Variables	**Demand sign**	**Supply sign**	**N =4490**		
Experimental			**Coefficients**	**T value**	**VIF**
$ACINDPER_t$	+	-	-0.012	-0.845	1.011
$ACEXPPER_t$	+	-	0.015	0.849	1.363
$INST_t$	+	-	0.020	1.353*	1.067
$STIP_t$	+/-	+/-	0.058	3.691***	1.138
$STOP_t$	+/-	+/-	0.025	1.646**	1.038
$LTIP_t$			-0.030	-1.959**	1.073
Control					
$LOSS_t$	+	+	0.113	7.581***	1.025
BIG4	+	+	-0.039	-2.612***	1.051
$BDSIZE_t$	+/-	+/-	-0.051	-2.948***	1.375
$ACSIZE_t$	+/-	+/-	-0.003	-0.168	1.296
$LOGMB_t$	+/-	+/-	-0.044	-2.629***	1.316
$LEVERAGE_t$	+/-	+/-	-0.029	-1.727*	1.268
YEAR 2004	+/-	+/-	-0.003	-0.148	1.992
YEAR 2005	+/-	+/-	0.000	-0.016	1.651
YEAR 2006	+/-	+/-	0.027	1.464	1.638
YEAR 2008	+/-	+/-	0.072	3.732***	1.737
Intercept			0.052	6.921***	
Adjusted R^2/ F value			0.035	11.044***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 19 OLS Regressions on Predicted Accruals-*US*

AF_t = $\alpha + \beta_1 PREDICT + \beta_2 RESIDUAL + \beta_3 BSEG_t + \beta_4 GSEG_t + \beta_5 ARINV_t + \beta_6 INDSP_t + \beta_7 NAF_t + \varepsilon$ **(2b)**

Variables	**Demand sign**	**Supply sign**	**N =4490**		
Experimental			**Coefficients**	**T value**	**VIF**
PREDICT	+/-	+/-	0.346	28.108***	1.068
RESIDUAL	+/-	+/-	0.018	1.470	1.004
Control					
$BSEG_t$	+	+	0.010	0.861	1.046
$GSEG_t$	+	+	0.072	5.957***	1.023
$ARINV_t$	+	+	0.233	18.609***	1.110
INDSP	+	+	0.023	1.918**	1.022
NAF_t	+/-	+/-	0.308	24.917***	1.077
Intercept			-0.001	-13.381***	
Adjusted R^2/ F value			0.365	369.598***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively.

PREDICT is the predicted value of 2a (model in Table18), explained quality variables, and *RESIDUAL* is the residual value of 2a (model in Table18), unexplained quality variables. Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 20 OLS Regressions of Audit Fees Determinants (Annual)-*US*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t + \beta_5 STOP_t + \beta_6 LTIP_t + \beta_7 BSEG_t + \beta_8 GSEQ_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} BIG4 + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \varepsilon$

Variables	Demand sign	Supply sign	N= 898	N= 898	N= 898	N= 898	N= 898
			2004	2005	2006	2007	2008
Experimental			T value	T value	T value	T value	T value
$ACINDPER_t$	+	-	0.896	0.286	0.636	-0.310	-0.764
$ACEXPPER_t$	+	-	2.018**	1.306*	-0.020	0.225	-0.798
$INST_t$	+	-	-0.137	-0.623	-0.978	-0.521	-1.206
$STIP_t$	+/-	+/-	3.193***	4.144***	5.231***	5.949***	9.114***
$LTIP_t$	+/-	+/-	1.754*	-0.198	-1.066	0.753	-1.015
$STOP_t$	+/-	+/-	1.807*	2.799***	2.509**	2.830***	3.906***
Control							
$BSEG_t$	+	+	0.322	0.973	2.600***	1.679**	1.163
$GSEQ_t$	+	+	0.627	1.473*	3.630***	2.986***	4.392***
$ARINV_t$	+	+	5.956****	7.038***	8.358***	7.535***	7.494***
$LOSS_t$	+	+	5.816****	6.311****	9.551****	8.357***	4.141***
BIG4	+	+	0.784	-0.516	-2.904***	-3.359***	-4.478***
INDSP	+	+	1.795**	1.462*	0.975	1.874**	-0.047
$BDSIZE_t$	+/-	+/-	-2.709***	-4.507***	-5.172***	-4.850***	-5.548***
$ACSIZE_t$	+/-	+/-	-0.704	-1.015	-1.585	-1.352	-0.791
$LOGMB_t$	+/-	+/-	-0.247	-2.443**	-1.677*	-1.205	-3.193***
$LEVERAGE_t$	+/-	+/-	-1.080	-2.876***	-3.799***	-3.870***	-3.977***
NAF_t	+/-	+/-	18.715***	12.117***	12.125***	11.292***	10.734***
Intercept			-0.597	1.286	1.020	2.133**	2.965***
Adjusted R^2			0.441	0.387	0.451	0.434	0.483
F value			38.267***	30.761***	39.756***	37.256***	47.578***

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 21 OLS Regressions of Audit Fees Determinants (S&P Type Wise)-US

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t + \beta_5 STOP_t + \beta_6 LTIP_t + \beta_7 BSEG_t + \beta_8 GSEQ_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} BIG4 + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \beta_{18} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	N= 1850		N= 1245		N= 1395	
			S&P Super		S&P MidCap		S&P SmallCap	
Experimental			**T value**	**VIF**	**T value**	**VIF**	**T value**	**VIF**
ACINDPER $_t$	+	-	1.265	1.076	0.011	1.058	2.381**	1.071
ACEXPPER$_t$	+	-	3.605***	1.444	1.874**	1.443	0.427	1.420
INST$_t$	+	-	-2.889***	1.084	-0.926	1.125	1.478*	1.100
STIP$_t$	+/-	+/-	4.478***	1.266	2.130**	1.283	3.585***	1.211
LTIP$_t$	+/-	+/-	1.098	1.125	-0.369	1.167	0.216	1.098
STOP$_t$	+/-	+/-	1.120	1.044	0.787	1.045	2.990***	1.023
Control								
BSEG$_t$	+	+	1.758**	1.332	0.361	1.308	4.413***	1.145
GSEQ$_t$	+	+	3.596***	1.198	4.157***	1.223	0.920	1.279
MINING	+/-	+/-	-4.520***	1.201	-3.430***	1.282	-6.168***	1.106
FOOD	+/-	+/-	-3.675***	1.318	-1.712*	1.126	-2.621***	1.160
TEXTILES	+/-	+/-	-3.426***	1.319	-2.664***	1.318	-5.946***	1.339
CHEM	+/-	+/-	-1.827*	1.236	-1.704*	1.239	-1.039	1.140
PHARMA	+/-	+/-	-5.595***	1.237	1.837*	1.256	-0.685	1.216
EXTRA	+/-	+/-	-6.444***	1.379	-4.943***	1.178	-4.429***	1.150
DURABLE	+/-	+/-	-2.034**	1.812	-1.314	1.761	-5.785***	1.818
TRANSP	+/-	+/-	-6.331***	1.322	-3.593***	1.352	-6.143***	1.144
UTIL	+/-	+/-	-7.354***	1.793	-6.159***	1.620	-6.565***	1.605
RETAIL	+/-	+/-	-7.167***	1.600	-6.064***	1.491	-10.194***	1.878
ARINV$_t$	+	+	12.339***	1.306	5.078***	1.395	3.509***	1.389
LOSS$_t$	+	+	3.720***	1.100	3.207***	1.098	9.395***	1.099
BIG4	+	+	2.113**	1.053	-1.084	1.100	-1.720**	1.168
BDSIZE$_t$	+/-	+/-	0.064	1.404	-1.092	1.324	-3.398***	1.471
ACSIZE$_t$	+/-	+/-	1.888*	1.304	-0.372	1.318	-0.720	1.316
LOGMB$_t$	+/-	+/-	2.152**	1.417	0.758	1.558	0.985	1.598
LEVERAGE$_t$	+/-	+/-	-0.438	1.518	-3.077***	1.527	-4.230***	1.429
NAF$_t$	+/-	+/-	15.433***	1.313	13.647	1.278	10.702***	1.209
YEAR$_t$	+/-	+/-	6.127***	1.448	7.727***	1.399	10.843***	1.499
Intercept			6.128***		7.707***		10.826***	
Adjusted R^2			0.410		0.378		0.377	
F value			48.500***		29.004***		32.183***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 22 OLS Regressions of Audit Fees Determinants (Auditor)-*US*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t + \beta_5 STOP_t + \beta_6 LTIP_t + \beta_7 BSEG_t + \beta_8 GSEQ_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} INDSP + \beta_{12} BDSIZE_t + \beta_{13} ACSIZE_t + \beta_{14} LOGMB_t + \beta_{15} LEVERAGE_t + \beta_{16} NAF_t + \beta_{17} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	N= 1292	N= 1009	N= 786	N= 1239	N= 4326	N= 164
			Ernst & young	Deloitte	KPMG	PWC	Big4	Non-BIG4
Experimental			T value	T value	T value	T value	T value	T value
$ACINDPER_t$	+	-	-2.614***	1.505*	2.066**	1.811**	0.583	-0.037
$ACEXPPER_t$	+	-	2.835***	-0.914	0.581	3.384***	4.946***	-0.585
$INST_t$	+	-	-2.701***	-0.502	-1.599*	0.758	-2.194**	-0.090
$STIP_t$	+/-	+/-	7.053***	5.653***	8.299***	4.835***	12.829***	1.724*
$LTIP_t$	+/-	+/-	2.443***	0.323	1.410	-1.260	1.569	-0.682
$STOP_t$	+/-	+/-	2.010**	4.661***	4.888***	2.547***	6.482***	1.429
Control								
$BSEG_t$	+	+	0.647	3.198***	3.319**	-1.921**	2.525***	2.994***
$GSEQ_t$	+	+	2.075**	1.106	5.306***	0.146	5.621***	1.711**
$INDS_i$	+	+	4.721***	2.098**	3.968***	0.568	5.209***	1.720**
$ARINV_t$	+	+	8.228***	6.893***	6.560***	10.536***	16.801***	1.959**
$LOSS_t$	+	+	8.269***	4.871***	5.013***	7.917***	13.985***	2.997***
$INDSP$	+	+	-3.390***	-1.911**	-0.350	6.640***	2.003**	-0.123
$BDSIZE_t$	+/-	+/-	-5.896***	-4.220***	-3.248**	-4.646***	-9.582***	-2.430***
$ACSIZE_t$	+/-	+/-	-1.969**	-1.751*	-0.712	-0.531	-2.040**	-0.125
$LOGMB_t$	+/-	+/-	-3.359***	-3.658**	-3.731***	-2.265**	-4.184***	2.844***
$LEVERAGE_t$	+/-	+/-	-6.152***	-4.677***	-2.906***	-0.684	-8.940***	0.019
NAF_t	+/-	+/-	13.913***	11.836***	6.928****	13.911***	24.629***	2.898***
$YEAR_t$	+/-	+/-	8.435***	6.264***	5.940***	6.846***	12.138***	4.378***
Intercept			-8.430***	-6.264***	-5.950***	-6.848***	-12.132***	-4.389***
Adjusted R^2			0.451	0.442	0.423	0.451	0.417	0.311
F value			54.073	40.842	29.728***	51.840***	155.675***	4.869***

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 23 OLS Regressions of Audit Fees Determinants (Industry-Wise)-*US*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 STIP_t + \beta_5 STOP_t + \beta_6 LTIP_t + \beta_7 BSEG_t + \beta_8 GSEQ_t + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} BIG4 + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \beta_{18} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	N =130	N =165	N =270	N =180	N =175	N =215
			Mining and construction	Food	Textiles, Printing/Publishing	Chemicals	Pharmaceuticals	Extractive
Experimental			T value	T value	T value	T value	T value	T value
$ACINDPER_t$	+	-	-0.028	-1.122	0.240	0.324	2.217**	-0.458
$ACEXPPER_t$	+	-	1.544*	1.122	3.728***	0.753	-0.990	3.362***
$INST_t$	+	-	0.025	2.923***	-0.217	-2.147**	0.545	-1.461*
$STIP_t$	+/-	+/-	0.727	2.932***	1.274	2.107**	4.731***	1.515
$LTIP_t$	+/-	+/-	0.149	-0.772	0.062	2.393**	-0.350	0.205
$STOP_t$	+/-	+/-	-0.202	0.001	1.539	-0.104	0.644	7.429***
Control								
$BSEG_t$	+	+	-2.257**	2.854***	0.093	-0.032	0.397	0.764
$GSEQ_t$	+	+	0.066	-1.041	0.999	0.251	0.918	1.928**
$INDS_i$	+	+	5.931***	6.859***	2.824***	4.968***	3.113***	7.137***
$ARINV_t$	+	+	-0.622		0.963	1.158	4.974***	-0.421
$LOSS_t$	+	+		3.988***	-3.131***	0.707	-3.056***	
$INDSP$	+	+	-0.752	0.731	0.159	-0.364	0.318	4.286***
$BDSIZE_t$	+	+	-1.824**	-1.355	-1.007	-1.827**	-0.395	-1.368*
$ACSIZE_t$	+/-	+/-	1.725*	-0.984	-0.721	-2.201**	-0.108	1.651*
$LOGMB_t$	+/-	+/-	-0.646	1.692*	-1.125	-0.686	1.057	-0.245
$LEVERAGE_t$	+/-	+/-	-0.996	-1.024	-0.906	-2.718***	-0.405	1.417
NAF_t	+/-	+/-	5.136***	1.994*	7.437***	2.881***	5.613***	5.054***
$YEAR_t$	+/-	+/-	2.116**	1.910*	2.973***	2.796***	2.903***	-0.006
Intercept			-2.109**	-1.932*	-2.962	-2.793***	-2.912***	0.004
Adjusted R^2			0.549	0.491	0.420	0.453	0.508	0.552
F value			10.248***	10.324***	11.842***	9.226***	10.992***	16.489***

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 23 OLS Regressions of Audit Fees Determinants (Industry) (Contd)-*US*

Variables	Demand sign	Supply sign	N =1150	N =215	N =370	N =615	N =400	N =605
			Durable manufacturers	Transportation	Utilities	Retail	Services	Computers
Experimental								
$ACINDPER_t$	+	-	-1.812**	-0.530	-0.104	1.886**	1.539*	-0.526
$ACEXPPER_t$	+	-	2.474***	0.652	1.636*	0.747	0.897	1.227
$INST_t$	+	-	-0.531	-2.623***	-1.836**	-2.100**	-0.066	-0.065
$STIP_t$	+/-	+/-	4.196***	2.264**	3.865***	7.776***	5.459***	6.045***
$LTIP_t$	+/-	+/-	0.391	1.079	1.278	0.335	2.440**	0.047
$STOP_t$	+/-	+/-	2.126**	1.515	1.692*	3.967***	2.171**	2.754***
Control								
$BSEG_t$	+	+	-0.520	-2.836***	-2.696***	5.245***	-0.230	1.379*
$GSEQ_t$	+	+	-2.632***	-0.962	-2.474***	1.752**	4.133***	2.309**
$INDS_i$	+	+	9.610***	5.823***	-0.840	6.555***	3.776***	3.184***
$ARINV_t$	+	+	7.104***	0.218	0.784	2.918***	3.967***	4.781***
$LOSS_t$	+	+	-0.433	-4.806***		-0.870	-2.307**	-4.052***
INDSP	+	+	3.881***	2.462***	-1.026	3.556***	0.380	0.346
$BDSIZE_t$	+	+	-5.327***	-2.818***	-1.966**	-1.887**	-2.018**	-4.865***
$ACSIZE_t$	+/-	+/-	0.341	-3.183***	-1.172	-1.798*	-1.295	-0.813
$LOGMB_t$	+/-	+/-	-3.276***	-1.018	-1.205	-2.122**	-3.493***	-1.164
$LEVERAGE_t$	+/-	+/-	-2.037**	0.300	-1.101	-2.178**	-4.659***	-2.590***
NAF_t	+/-	+/-	10.330***	14.043***	8.044***	7.626***	4.243***	8.261***
$YEAR_y$	+/-	+/-	6.384***	2.374**	2.665***	3.530***	2.932***	6.586***
Intercept			-6.354***	-2.319**	-2.636***	-3.532***	-2.925**	-6.568***
Adjusted R^2			0.354	0.793	0.302	0.429	0.384	0.377
F value			34.098***	46.535***	10.382***	25.273***	14.832***	20.275***

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 1.
Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Tables for Sensitivity Tests-New Zealand and Pooled Regression

Table 24 OLS Regressions on Discretionary Accruals-*NZ*

$ABSDACC = \alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t$ or $TSAL_t + \beta_5 INCEN_t$ or $STOP_t + \beta_6 LOSS_t + \beta_7 BIG4 + \beta_8 BDSIZE_t + \beta_9 ACSIZE_t + \beta_{10} LOGMB_t + \beta_{11} LEVERAGE_t + \beta_{12} YEAR_t + \varepsilon$ **(2a)**

Variables	Demand sign	Supply sign	Panel 1			Panel 2		
			N =445			N =445		
Experimental			**Coefficients**	**T value**	**VIF**	**Coefficients**	**T value**	**VIF**
$ACINDPER_t$	+/-	+/-	0.047	0.981	1.223	0.030	0.601	1.272
$ACEXPPER_t$	+/-	+/-	0.055	1.186	1.123	0.058	1.258	1.129
$INST_t$	+/-	+/-	0.097	2.077**	1.164	0.094	1.999**	1.170
$BSAL_t$	+/-	+/-	0.318	4.810***	2.311			
$INCEN_t$	+/-	+/-	-0.061	-1.352	1.093			
$TSAL_t$	+/-	+/-				0.313	4.706***	2.326
$STOP_t$	+/-	+/-				0.046	0.948	1.243
Control								
$LOSS_t$	+	+	0.184	3.149***	1.817	0.183	3.115***	1.822
BIG4	+	+	0.013	0.279	1.151	0.003	0.062	1.186
$BDSIZE_t$	+	+	0.043	0.814	1.472	0.023	0.438	1.491
$ACSIZE_t$	+	+	0.014	0.274	1.295	0.003	0.067	1.299
$LOGMB_t$	+/-	+/-	0.007	0.142	1.407	0.001	0.013	1.411
$LEVERAGE_t$	+/-	+/-	0.007	0.148	1.111	-0.008	-0.171	1.134
YEAR 2005	+/-	+/-	-0.035	-0.633	1.603	-0.034	-0.621	1.602
YEAR 2006	+/-	+/-	0.040	0.728	1.627	0.040	0.718	1.626
YEAR 2007	+/-	+/-	0.007	0.119	1.674	0.009	0.167	1.668
YEAR 2008			0.042	0.751	1.682	0.043	0.757	1.682
Intercept			-0.057	-0.836		0.020	0.022	
Adjusted R^2/ F value			0.164	6.635***		0.161	6.245***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 25 OLS Regressions on Predicted Accruals-*NZ*

AF_t = $\alpha + \beta_1 PREDICT + \beta_2 RESIDUAL + \beta_3 BSEG_t + \beta_4 GSEQ_t + \beta_5 ARINV_t + \beta_6 INDSP + \beta_7 NAF_t + \varepsilon$ **(2b)**

Variables	Demand sign	Supply sign	Panel 1			Panel 2		
			N =445			N =445		
Experimental			**Coefficients**	**T value**	**VIF**	**Coefficients**	**T value**	**VIF**
PREDICT	+/-	+/-	0.505	13.920***	1.304	0.279	7.403***	1.095
RESIDUAL	+/-	+/-	0.053	1.561	1.010	0.047	1.303	1.011
Control								
$BSEG_t$	+	+	0.001	0.018	1.084	-0.039	-1.053	1.075
$GSEQ_t$	+	+	0.004	0.137	1.066	0.022	0.585	1.063
$ARINV_t$	+	+	0.214	6.223***	1.177	0.311	8.223***	1.102
INDSP	+	+	-0.144	-4.207***	1.158	-0.210	-5.508***	1.120
NAF_t	+/-	+/-	0.208	6.098***	1.154	0.284	7.497***	1.108
Intercept			-0.001	-3.945***		-0.020	-3.623***	
Adjusted R^2/F value			0.568	79..556***		0.426	47.912***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively.

PREDICT is the predicted value of 2a (model in Table 24), explained quality variables, and *RESIDUAL* is the residual value of 2a (model in Table 24), unexplained quality variables.Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 26 OLS Regressions of Audit Fees Determinants (Size Wise)-*NZ*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t$ or $TSAL_t + \beta_5 INCEN_t$ or $STOP_t + \beta_6 BSEG_t + \beta_7 GSEQ_t + \beta_8 INDS_i + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} BIG4 + \beta_{12} INDSP + \beta_{13} BDSIZE_t + \beta_{14} ACSIZE_t + \beta_{15} LOGMB_t + \beta_{16} LEVERAGE_t + \beta_{17} NAF_t + \beta_{18} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	Panel 1				Panel 2			
			BELOW MEDIAN (N= 222)		ABOVE MEDIAN (N=223)		BELOW MEDIAN N= 222		ABOVE MEDIAN N= 223	
Experimental			**T value**	**VIF**	**T value**	**VIF**	**T value**	**VIF**	**T value**	**VIF**
$ACINDPER_t$	+/-	+/-	-0.134	1.588	-0.585	1.170	-0.271	1.644	-0.375	1.216
$ACEXPPER_t$	+/-	+/-	0.605	1.362	1.612	1.223	0.639	1.378	1.793*	1.210
$INST_t$	+/-	+/-	1.217	1.195	-1.216	1.380	1.148	1.218	-1.296	1.360
$BSAL_t$	+/-	+/-	4.848***	2.173	4.372***	1.252				
$INCEN_t$	+/-	+/-	0.058	1.129	2.196**	1.149				
$TSAL_t$	+/-	+/-					4.649***	2.217	4.815***	1.294
$STOP_t$	+/-	+/-					0.646	1.345	-1.145	1.655
Control										
$BSEG_t$	+	+	2.080**	1.161	1.923**	1.422	2.031**	1.146	2.097**	1.410
$GSEQ_t$	+	+	-1.490*	1.190	2.204**	1.654	-1.556*	1.160	2.516***	1.774
$ARINV_t$	+	+	2.188**	1.491	-0.629	1.415	2.229**	1.515	-0.837	1.421
$LOSS_t$	+	+	3.446***	1.810	0.857	1.145	3.255***	1.846	0.839	1.146
BIG4	+	+	-2.492***	1.364	-3.509***	1.313	-2.554***	1.423	-3.544***	1.314
INDSP	+	+	-2.818***	1.506	-0.396	1.370	-2.906***	1.519	-0.162	1.443
$BDSIZE_t$	+/-	+/-	-4.301***	1.402	0.392	1.593	-4.235***	1.400	0.579	1.613
$ACSIZE_t$	+/-	+/-	-0.819	1.313	-1.913*	1.308	-0.837	1.313	-1.610	1.359
$LOGMB_t$	+/-	+/-	3.829***	1.701	4.678***	1.421	3.866***	1.703	5.070***	1.359
$LEVERAGE_t$	+/-	+/-	3.621***	1.193	0.246	1.355	3.585***	1.195	0.395	1.378
NAF_t	+/-	+/-	2.020**	1.240	8.113***	1.567	2.121**	1.280	7.974***	1.581
$YEAR_t$	+/-	+/-	2.795***	1.143	4.847***	1.151	2.806***	1.117	4.834***	1.151
Intercept			-2.782***		-4.837***		-2.792***		-4.828***	
Adjusted R^2			0.623		0.495		0.623		0.497	
F value			22.456***		13.759***		22.396***		13.838***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 27 Panel A OLS Regressions of Audit Fees Determinants (Auditor)-*NZ*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t$ or $TSAL_t + \beta_5 INCEN_t$ or $STOP_t + \beta_6 BSEG_t + \beta_7 GSEQ_t + \beta_8 INDS_i + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} INDSP + \beta_{12} BDSIZE_t + \beta_{13} ACSIZE_t + \beta_{14} LOGMB_t + \beta_{15} LEVERAGE_t + \beta_{16} NAF_t + \beta_{17} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	Panel 1				Panel 2			
			BIG4 N= 369		Non-BIG4 N= 76		PWC N= 159		OTHER AUDITORS N= 286	
Experimental			**T value**	**VIF**	**T value**	**VIF**	**T value**	**VIF**	**T value**	**VIF**
$ACINDPER_t$	+/-	+/-	0.711	1.300	0.640	2.331	1.809*	1.268	0.920	1.496
$ACEXPPER_t$	+/-	+/-	0.822	1.204	2.322**	2.184	2.469**	1.323	0.461	1.265
$INST_t$	+/-	+/-	-1.562	1.256	-0.015	1.691	-2.149**	1.345	-1.948*	1.205
$BSAL_t$	+/-	+/-	10.364***	3.037	3.688***	3.100	8.643***	2.709	7.083***	2.704
$INCEN_t$	+/-	+/-	0.066	1.091	0.265	1.260	0.455	1.144	-0.073	1.122
Control										
$BSEG_t$	+	+	3.420***	1.259	0.163	1.572	4.194***	1.520	1.628*	1.216
$GSEQ_t$	+	+	-0.519	1.284	-1.211	4.745	3.531***	1.450	-1.207	1.364
$ARINV_t$	+	+	0.339	1.683	2.646***	4.204	0.139	2.188	3.193***	1.642
$LOSS_t$	+	+	5.760***	2.182	-0.081	1.576	1.723**	1.581	2.222**	2.082
$INDSP$	+	+	-2.808***	1.234	-5.602***	1.569	-2.758***	1.480	-1.758**	1.167
$BDSIZE_t$	+/-	+/-	-1.013	1.436	-	-	-2.072**	1.546	-4.735***	1.548
$ACSIZE_t$	+/-	+/-	-1.224	1.357	0.895	3.918	-1.333	1.248	-0.694	1.440
$LOGMB_t$	+/-	+/-	6.047***	1.597	0.515	3.936	1.817*	1.742	3.207***	1.924
$LEVERAGE_t$	+/-	+/-	3.075***	1.226	3.034***	1.365	-2.361**	1.604	4.084***	1.245
NAF_t	+/-	+/-	7.827***	1.358	-0.632	2.659	3.151***	1.457	3.641***	1.258
$YEAR_t$	+/-	+/-	4.451***	1.138	0.251	1.236	3.334***	1.158	2.606***	1.090
Intercept			-4.459***		-0.247		-3.341***		-2.600***	
Adjusted R^2			0.771		0.613		0.729		0.683	
F value			78.285***		9.483***		27.512***		39.283***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 27 Panel B OLS Regressions of Audit Fees Determinants (Auditor)-*NZ*

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t$ or $TSAL_t + \beta_5 INCEN_t$ or $STOP_t + \beta_6 BSEG_t + \beta_7 GSEQ_t + \beta_8 INDS_i + \beta_9 ARINV_t + \beta_{10} LOSS_t + \beta_{11} INDSP + \beta_{12} BDSIZE_t + \beta_{13} ACSIZE_t + \beta_{14} LOGMB_t + \beta_{15} LEVERAGE_t + \beta_{16} NAF_t + \beta_{17} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	Panel 1				Panel 2			
			BIG4 N= 369		Non-BIG4 N= 76		PWC N= 159		OTHER AUDITORS N= 286	
Experimental			**T value**	**VIF**	**T value**	**VIF**	**T value**	**VIF**	**T value**	**VIF**
$ACINDPER_t$	+/-	+/-	0.750	1.336	0.649	2.331	1.588	1.406	0.974	1.467
$ACEXPPER_t$	+/-	+/-	0.713	1.200	2.357**	2.184	2.466**	1.378	0.360	1.271
$INST_t$	+/-	+/-	-1.510	1.253	-0.015	1.691	-2.158**	1.345	-1.956*	1.222
$TSAL_t$	+/-	+/-	10.301***	3.078	3.789***	3.100	8.672***	2.682	6.988***	2.729
$STOP_t$	+/-	+/-	-0.117	1.423	0.011	1.881	0.355	1.924	0.380	1.538
Control										
$BSEG_t$	+	+	3.371***	1.269	0.158	1.572	4.031***	1.575	1.566*	1.216
$GSEQ_t$	+	+	-0.612	1.309	-1.119	4.745	3.112***	1.709	-1.372*	1.337
$ARINV_t$	+	+	5.690***	2.208	2.687***	4.204	0.167	2.194	3.264***	1.685
$LOSS$	+	+	-2.718***	1.314	-0.081	1.576	1.701**	1.555	2.168**	2.099
$INDSP$	+	+	-1.019	1.458	-	-	-2.830***	1.503	-1.765**	1.398
$BDSIZE_t$	+/-	+/-	-1.157	1.372	-5.452***	1.569	-2.120**	1.566	-4.748***	1.574
$ACSIZE_t$	+/-	+/-	1.016	1.584	0.878	3.918	-1.317	1.252	-0.717	1.457
$LOGMB_t$	+/-	+/-	3.081***	1.243	0.525	3.936	1.784*	1.705	3.091***	1.935
$LEVERAGE_t$	+/-	+/-	7.781***	1.377	3.002***	1.365	-2.390**	1.669	4.086***	1.244
NAF_t	+/-	+/-	4.462***	1.135	-0.589	2.659	3.201***	1.468	3.673***	1.265
$YEAR_t$	+/-	+/-	3.371***	1.269	0.225	1.236	3.330***	1.159	2.626***	1.085
Intercept			-4.456***		-0.647		-3.661***		-2.634***	
Adjusted R^2			0.778		0.666		0.749		0.699	
F value			65.024***		9.799**		25.768***		33.894***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 28 OLS Regressions of Audit Fees Determinants-*NZ* (Corporate Holdings)

AF_t = $\alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 CORPPER_t + \beta_5 BSAL_t$ or $TSAL_t + \beta_6 INCEN_t$ or $STOP_t + \beta_7 BSEG_t + \beta_8 GSEG_t + \beta_9 INDS_t + \beta_{10} ARINV_t + \beta_{11} LOSS_t + \beta_{12} BIG4 + \beta_{13} INDSP + \beta_{14} BDSIZE_t + \beta_{15} ACSIZE_t + \beta_{16} LOGMB_t + \beta_{17} LEVERAGE_t + \beta_{18} NAF_t + \beta_{19} YEAR_t + \varepsilon$

Variables	Demand sign	Supply sign	N =445			N =445		
			Panel 1			Panel 2		
Experimental			Coefficients	T value	VIF	Coefficients	T value	VIF
$ACINDPER_t$	+/-	+/-	-0.038	-1.246	1.512	-0.049	-1.578	1.573
$ACEXPPER_t$	+/-	+/-	0.04	1.419	1.272	0.044	1.555	1.288
$INST_t$	+/-	+/-	-0.041	-1.293	1.623	-0.041	-1.310	1.600
$CORPPER_t$	+/-	+/-	-0.098	-3.255***	1.482	-0.104	-3.425***	1.505
$BSAL_t$	+/-	+/-	0.362	7.944***	3.389			
$INCEN_t$	+/-	+/-	0.01	0.384	1.173			
$TSAL_t$	+/-	+/-				0.353	7.779***	3.386
$STOP_t$	+/-	+/-				0.055	1.743*	1.648
Control								
$BSEG_t$	+	+	0.043	1.508*	1.321	0.034	1.207	1.333
$GSEG_t$	+	+	0.043	1.429*	1.484	0.036	1.189	1.495
AGIND	+/-	+/-	0.013	0.392	1.71	0.019	0.586	1.714
FOODIND	+/-	+/-	-0.055	-1.781*	1.57	-0.056	-1.828*	1.563
INTMEIND	+/-	+/-	-0.121	-3.694***	1.746	-0.135	-4.080***	1.808
PROPIND	+/-	+/-	-0.097	-3.115***	1.578	-0.098	-3.166***	1.578
PORTSIND	+/-	+/-	-0.02	-0.617	1.679	-0.018	-0.572	1.677
LEIIND	+/-	+/-	-0.047	-1.579	1.44	-0.047	-1.576	1.441
MEDIAIND	+/-	+/-	-0.013	-0.434	1.579	-0.010	-0.319	1.575
HEALIND	+/-	+/-	0.048	1.625	1.452	0.044	1.472	1.460
BIOTECHIND	+/-	+/-	0.019	0.519	2.128	0.007	0.179	2.218
$ARINV_t$	+	+	0.072	2.312**	1.602	0.084	2.640***	1.656
$LOSS_t$	+	+	0.163	4.631***	2.023	0.162	4.626***	2.022
BIG4	+	+	-0.132	-4.384***	1.477	-0.137	-4.559***	1.484
INDSP	+	+	-0.054	-1.713**	1.608	-0.064	-2.022**	1.664
$BDSIZE_t$	+/-	+/-	-0.156	-4.740***	1.765	-0.165	-4.973***	1.802
$ACSIZE_t$	+/-	+/-	-0.044	-1.476	1.48	-0.049	-1.641*	1.491
$LOGMB_t$	+/-	+/-	0.189	5.749***	1.768	0.187	5.715***	1.755
$LEVERAGE_t$	+/-	+/-	0.098	3.472***	1.295	0.090	3.185***	1.323
NAF_t	+/-	+/-	0.131	4.414***	1.445	0.136	4.570***	1.451
YEAR 2004	+/-	+/-	0.078	2.402**	1.703	-0.023	-0.745	1.604
YEAR2005	+/-	+/-	0.054	1.699*	1.672	-0.058	-1.834*	1.635
YEAR 2006	+/-	+/-	0.02	0.625	1.627	-0.077	-2.383**	1.696
YEAR 2008	+/-	+/-	-0.031	-0.992	1.602	-0.109	-3.375***	1.713
Intercept			0.002	3.586***		0.003	4.815***	
Adjusted R^2/ F value			0.729	40.740***		0.731	41.049***	

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 9. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 29 Pooled Univariate GLM Regressions on Discretionary Accruals

$$ABSDACC = \alpha + \beta_1 ACINDPER_t + \beta_2 ACEXPPER_t + \beta_3 INST_t + \beta_4 BSAL_t + \beta_5 INCEN_t + \beta_6 STOP_t + \beta_7 USDUMMY*ACINDPER_t + \beta_8 USDUMMY*ACEXPPER_t + \beta_9 USDUMMY* INST_t + \beta_{10} USDUMMY*BSAL_t + \beta_{11} USDUMMY*INCEN_t + \beta_{12} USDUMMY* STOP_t + \beta_{13} LOSS_t + \beta_{14} BIG4 + \beta_{15} BDSIZE_t + \beta_{16} ACSIZE_t + \beta_{17} LOGMB_t + \beta_{18} LEVERAGE_t + \beta_{19} USDUMMY + \varepsilon \quad \textbf{2a}$$

Variables	**Demand sign**	**Supply sign**	**N =936 (US570+ NZ366)**					
			Test 1a	**Test 1b**	**Test 1c**	**Test 1d**	**Test 1e**	**Test 1f**
Experimental			**T value**	**T value**	**T value**	**T value**	**T value**	**T value**
$ACINDPER_t$	+/-	+/-	-0.482	1.340	1.409	1.235	1.092	-0.370
$ACEXPPER_t$	+/-	+/-	-0.917	0.123	-0.029	0.020	0.396	-0.573
$INST_t$	+/-	+/-	1.789*	0.253	1.680*	1.846*	1.290	0.248
$BSAL_t$	+/-	+/-	8.534***	8.507***	0.175	8.047***	8.180***	-0.069
$INCEN_t$	+/-	+/-	-0.817	-0.969	-0.776	-0.053	-1.162	0.497
$STOP_t$	+/-	+/-	2.621***	2.230	2.553***	2.825***	0.312	0.466
Interaction variables								
$USDUMMY * ACINDPER_t$	+/-	+/-	1.609					0.985
$USDUMMY * ACEXPPER_t$	+/-	+/-	1.453					1.647*
$USDUMMY * INST_t$	+/-	+/-		1.808*				1.441
$USDUMMY * BSAL_t$	+/-	+/-			0.457			0.678
$USDUMMY * INCEN_t$	+/-	+/-				-1.953*		-3.198***
$USDUMMY * STOP_t$	+/-	+/-					2.965***	3.207***
Control								
$LOSS_t$	+	+	3.746***	3.622***	3.657***	3.686***	3.508***	3.747***
$BIG4$	+	+	-0.004	-0.137	-0.176	-0.012	-0.602	-0.259
$BDSIZE_t$	+/-	+/-	1.067	0.808	0.901	0.986	0.787	0.949
$ACSIZE_t$	+/-	+/-	-0.144	0.064	-0.043	-0.122	-0.118	-0.379
$LOGMB_t$	+/-	+/-	1.092	1.142	1.217	1.197	1.120	0.812
$LEVERAGE_t$	+/-	+/-	0.162	0.270	0.253	0.298	0.272	0.061
US DUMMY			0.481	1.130	1.658*	2.160**	0.929	-0.794
Intercept			0.493	-0.716	-0.999	-1.401	-0.021	1.162
Adjusted R^2			0.226	0.225	0.222	0.225	0.229	0.238
F value			19.177***	20.350***	20.065***	20.401***	20.864***	16.391***

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively. Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Table 30 Pooled Univariate GLM Regressions on Predicted Accruals

AF_t = $\alpha + \beta_1 PREDICT + \beta_2 RESIDUAL + \beta_3 BSEG_t + \beta_4 GSEQ_t + \beta_5 ARINV_t + \beta_6 INDSP + \beta_7 NAF_t + \varepsilon$

Variables	**Demand sign**	**Supply sign**	**N =936 (US570+ NZ366)**					
			Test 1a	**Test 1b**	**Test 1c**	**Test 1d**	**Test 1e**	**Test 1f**
Experimental			**T value**	**T value**	**T value**	**T value**	**T value**	**T value**
PREDICT	+/-	+/-	5.039***	6.362***	5.535***	6.491***	5.709***	3.674***
RESIDUAL	+/-	+/-	0.320	0.298	0.461	0.184	0.310	0.419
Interaction variables								
USDUMMY PREDICT*	+/-	+/-	1.002	0.053	0.709	0.087	-0.827	0.520
USDUMMY RESIDUAL*	+/-	+/-	-0.009	0.000	-0.167	0.104	0.028	-0.053
Control								
$BSEG_t$	+	+	1.542*	1.660**	1.577*	1.676**	1.473*	1.361*
$GSEQ_t$	+	+	2.581***	2.604***	2.612***	2.938***	2.261**	2.823***
$ARINV_t$	+	+	5.817***	5.227***	5.182***	5.226***	6.322***	6.883***
INDSP	+	+	-2.047**	-2.111**	-2.102**	-2.121**	-2.453***	-2.451***
NAF_t	+	+	5.869***	6.118***	5.951***	6.198***	6.316***	6.296***
USDUMMY	+/-	+/-	-9.644***	-9.265***	-9.619***	-9.268***	-7.480***	-7.678***
Intercept			3.576***	2.921***	3.324***	2.806***	2.723***	3.340***
Adjusted R^2			0.419	0.438	0.432	0.435	0.416	0.385
F value			68.777***	73.748***	72.251***	73.019***	67.482***	59.434***

***, **,* represent significance at 0.01, 0.05, and 0.10 levels, respectively.

PREDICT is the predicted value of 2a (model in Table 28), explained quality variables, and *RESIDUAL* is the residual value of 2a (model in Table 28), unexplained quality variables.Definitions of all variables are in Table 1. Directional tests are one–tailed, and two-tailed otherwise. **N stands for firm-years.**

Exhibit

Exhibit1: Summary of Studies Investigating Determinants of Audit Fees

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Simunic (1980)	FEE (audit fees paid in a market transaction) and ICOST (salaries paid by the auditee to its internal auditors).	SIZE, SUBS(subsidiaries number) OPINION(qualified or unqualified) TENURE, BIG8 or NONBIG8, and DIVERSE(industry code)		Theory of Economics Market forces (supply and demand for audit services)	A stratified sample of 1,207 US companies was contacted during 1977 through a questionnaire. 397 usable responses.	OLS regression	Results show that Big Eight firms charge lower audit fees, after the other variables are taken into account, in both large and small auditee segments, although the difference is not significant. Big Eight firms enjoyed economies of scale, which they passed on to their clients.
Taylor and Baker (1981)	Audit fee	----------	----------	Theory of Economics Market forces (Supply and demand for audit services)	Not available	Not available	Find that total assets and the number of subsidiaries are variables explained the most variance in the two factors of size and complexity.
Chow (1982)	AUDIT(External =1 and 0 otherwise)	SIZE, DEBT, MGRSHR		Agency Theory Demand Perspective	165 US firms in the year 1926 (hand collected)	OLS regression	Leverage, number of accounting-based debt covenants, and firm size are positively related to the probability of external auditing.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Taffler and Ramalingg am (1982)	Audit fee	Not Available	Not Available	Theory of Economics Market forces (Supply and demand for audit services)	Not available	Not available	The main determinant of audit fees is company size. Complexity and the auditor variables are also found to be significant.
Francis (1984)	LgAUFEE	SUBS,OPINION, BIG4	-	Theory of Economics Market forces (supply and demand for audit services)	Sample of 150 Australian companies for the years 1974 to 1978. (hand collected)	OLS regression	Author finds that there was also a premium in the large auditee segment, consistent with a differentiated product. Weak evidence that initial audit fees are higher than continuing engagement fee levels.
Firth (1985)	AUFEE	SUBSIDIARIES, LOSS, PROFIT VAR, UNSYSTEMATIC RISK, PROFITABILITY, AUDITOR		Theory of Economics Market forces (supply and demand for audit services)	Sample consists of 96 NZ companies for the year 1981 and 1983 (Annual reports-hand collected)	OLS regression	Company size was by far the most important factor in explaining audit fees. There is a high level of concentration within the auditing profession, but does not appear to lead to monopoly pricing.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Maher et al. (1985)	FEE (audit fees paid in a market transaction) & ICOST (salaries paid by the auditee to its internal auditors).	SUBS, OPINION, TENURE, BIG8 or NONBIG8, DIVERSE, PROFIT /LOSS, TIME		Theory of Economics Market forces (supply and demand for audit services)	109 US companies for the year 1981 (questionnaire and publically available sources)	OLS regression	Results support Simunic's model. Findings consistent with the notion that the greater the loss exposure, the higher the audit fees. Tenure is not significant.
Simon (1985)	DFEE (deflated audit fees), and NONAUD (non-audit fees deflated by the square root of assets).		SUBS = the number of the firm's con-solidated subsidiaries, SEGS = the number of business seg-ments of the firm, SUBJ = Opinion PW = auditor is Price Waterhouse	Theory of Economics Market forces (supply and demand for audit services)	US data on 183 observations for the years 1978 to 1983 from proxy statements. (Hand collected)	OLS regression	Strongly confirms Simunic's results (1980, 1984).Also supported is the finding of a positive relationship between audit fees and non-audit (consulting) fees. Existence of higher than expected audit fees for the firm of PWC.
Francis and Stokes (1986)	logaudfee (log of external audit fee)	SUBS,OPINION, BIG4,LOSS	-	Theory of Economics Market forces Competition Supply side	Sample consists of samples of 96 Australian "small" firms and 96 Australian "large" firms for the year 1983. (database)	OLS regression	No premium in the large auditee segment, consistent with economies of scale. Unlike US, there are no significant differences in observed audit prices between Big Eight and non-Big Eight accounting.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Palmrose (1986)	InAUDFEE (log of audit fees)	NONAUDfee (non-audit services rendered by the incumbent audit firm, (MAS), and non-accounting MAS)	PNP, ST IIV = industry indicator variables.	Theory of Economics Market forces Competition	A Sample of 298 US public and closely-held companies from 12 industries 1980-81. (Questionnaire)	OLS regression	Evidence of a positive relation between fees for audit services and fees for three categories of non-audit services (accounting-related MAS, non-accounting MAS, and tax). The strongest result was for accounting-related MAS.
Francis and Simon (1987)	LOGFEE (the natural logarithm of audit fee)	SQSUBS , FOREIGN, INVREC, OPINION		Theory of Economics Market forces Competition	Sample of 220 US companies for the years 1984 through 1985. (questionnaire and publically available sources)	OLS regression	The study finds that a Big Eight price premium exists with respect to both second-tier national firms. The existence of a price premium implies Big Eight product differen-tiation, at least in the "small" auditee market segment.
Chung and Lindsay (1988)	FEE (audit fees deflated by the square root of assets)	SUBS,AUDITOR, FORG ,LOSS		Theory of Economics Market forces Competition	Sample of 233 Canadian firms for the year 1979. (Questionnaire)	OLS regression	Study finds no significant price difference between Big Eight and non-Big Eight firms.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Haskins and Williams (1988)	AFEE	Client size and Complexity		Institutional settings	Sample of 410 firms (five countries) 1979-81 (database and hand collected)	OLS regression	Client size and complexity are associated with BIG8 firms in all countries.
Anderson and Zeghal (1994)	FEE (the natural log of external audit costs)	COST , QUAL	SUBS, FORG ,LOSS	Theory of Economics Market forces Competition	Sample consists of 172 (374 observations) Canadian firms covering three years 1980, 1982 and 1984 (Questionnaire)	OLS regression	No significant relationship between the firms' audit fees and their profitability. In the large auditee segment, the audit fees in the transportation, communication, and utilities sector are lower.
Johnson et al. (1995)	LNFEES (natural log of audit fee)	SUBS,TENURE, LOSS,OPINION, BIG5		Theory of Economics Market forces Competition	Sample consists of 179 NZ firms for the year 1989 (Questionnaire)	OLS regressio n	Existence of Big 5 fee premium in the New Zealand audit market. The Big 5 received fee premiums companies in New Zealand.
Hay and Lee (1999)	LNFEE(natural log of audit fee)	SUBS, AR, INV , ALNFEE		Regulatory impact and market forces	Sample of 54 NZ firms listed on the NZSE over 11 years (1985 to 1995). (Hand collected data)	OLS regression	Audit fees increased between 1985 and 1990, but decreased later. Reforms in NZ are a possible reason.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Carcello et al. (2002)	LNFEE (the natural log of audit fees)	PCTOUTSIDE, NUMBODMTG, and DIRECTORSHIPS	SEG,SQSUBS,LOSS,	Agency Theory and market factors Demand Perspective	Sample size is 258 US observations for the period April 1992 to March 1993. (Questionnaire)	OLS regression	Significant positive relations between audit fees and board independence, diligence, and expertise. To protect their reputation, board pays more for higher-quality audit services.
Abbott et al. (2003)	LnFEE (Natural log of audit fees)	ACMEET, ACOUT, ACEXP	BDMEET,BDEXP,BDCOMP OPINION	Agency Theory and market factors Demand Perspective	Sample consists of 492 non-regulated, Big 5-audited US firms in the period from February 5, 2001 to June 30, 2001. (database)	OLS regression	They find that audit committee independence) and financial expertise are significantly, positively associated with audit fees.
Kane and Velury (2004)	AUDSIZE	INST	DEBT,SIZE,GROWTH	Agency Theory Demand Perspective	Sample of 7,582 US firms (years 1992 to 1996) (database)	OLS regression	Higher level of institutional ownership, may ask firm to provide audits conducted by a large audit firm.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Ghosh and Lustgarten (2006)	Auditfee (natural logarithm of audit fees) and AUIDT SWITCH	SEG(business segments)	LOSS, BIG4, OPINION, INDUSTRY, and YEAR	Regulatory effect on the supply side of the market	Sample consists of 21,125 US observations for the period 2000 to 2003. (database)	OLS regression	The overall level of rivalry, as measured by client turnover is greater in the atomistic sector than the BIG4.
Krishnan and Visvanatha n (2006)	LAF (natural log of audit fee)	AFINEXP (accounting financial expert)	SPECL, SEGBUS, SEGGEO, OPIN, FORGN	Market factors demand and supply side and firm structure Supply Perspective	Sample consists of Standard & Poor's (S&P) 500 US firms for the years 2000 through 2002. (Database)	OLS regression	Audit fees is negatively related to accounting financial expertise for firms with weak governance
Mitra and Hossain (2006)	Using FEERATIO (Non-audit service fees divided by total client (audit + non-audit) fees)	INST (Percentage of institutional stock ownership)	LEV,LOSS, ALTZ Altman's Z (probability of bankruptcy score) CEOIND, BDIND,ACEXP, ACIND	Agency Theory Demand Perspective	Sample comprises of non-regulated industrial 335 US firms in the year 2000 (database)	OLS regression	Institutional stock ownership is significantly, negatively related to the NAF fee ratio, due to institutional shareholders' monitoring effect on the relative level of NAF fees.
Rama and Read (2006)	RESIGN (1 if auditor resigned, and 0 otherwise)	LNSL , Z = financial condition score from Zmijewski	YEAR, ARINV	Regulatory effect on the supply side of the market	Sample includes 3,664 and 2,747 US observations in 2001 and 2003. (database)	Logistic regression	Big4 firms have become more conservative in their audit client-retention decisions in the post-SOX period.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Carson and Fargher (2007)	LAF (natural log of audit fees	SPECIALIST	SUBS,OPINION, FORG ,LOSS	Theory of Economics Market forces Demand side	Sample consists of 558,548 and 611 Australian non-financial companies for the years 1998, 1999, and 2004, respectively. (database)	OLS regression	Results indicate that in the Australian market, the fee premium attributed to industry specialist audit firms is concentrated in the largest clients in each industry.
Vafeas and Waegelein (2007)	LgAUD(natural log of Audit fees)	Audit committee factors (SIZE, MEETINGS, and EXPERTS) CEO COMPENSATION	LOSS,BDSIZE,SUBS	Market factors demand and supply side and firm structure Supply Perspective	Sample consists of 1332 US firm years for the period 2001 to 2003 (database)	OLS regression	Findings show that audit committee factors are positively associated to audit fees. CEO long-term pay and insider ownership are inversely related to audit fees.
Boo and Sharma (2008)	LAUDFEE	BDIND,BDSIZE,ACSIZE,ACIND	LOSS,SQSUB,LTA	Regulatory effect	Sample 469 US Firms for the year 2001(database)	OLS regression	Weak association between audit fees and board independence for regulated companies.
Cosgrove and Niederjohn (2008)	Inauditfees (log of audit fees)	SOX (a binary variable - complied or not)	Sqrtbus, Sqrtgeo, Year	Regulatory effect on the supply side of the market	Sample consists of 1934 US observations for the period 2003 and 2004 (database)	OLS Regression	Higher audit fees across all firms (both Big4 and non-Big4) resulting from compliance with the law.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Griffin et al. (2008)	LAF (natural log of audit fees)	Corporate Governance	Size, LgNAF,LOSS,	Demand and Supply	Three samples (18,923) (6,448) (5,267) Covering 2000 to 2005(database)	Two Stage model	Audit fees increased in US following SOX. Fees offset possible due to increased CG, which reduces audit fees.
Hamilton et al. (2008)	LnAF (natural log of audit fee)	BigN	SUBS,OPINION, FORG ,LOSS	Market factors supply side	Sample size is 1207 Australian firms and 1229 Australian firms for the years 2000 and 2003, respectively. (database)	OLS regression	Study results indicate that Big N concentration is low in the small client market and high in the large client market in both years 2000 and 2003 and is consistent with Simunic's (1980).
Griffin et al. (2009)	LAF (natural log of audit fees)	IFRS adoption variable (PREIFRS, IFRSY1 and IFRSY2&3)	FINANCE,INDLEAD , LAG,AUDCHANGE	Regulatory effect on the supply side of the market	Sample consists of 653 NZ year observations between 2002 and 2007 (database and hand collected)	Pooled cross sectional regression model	Audit fees increased in New Zealand during the period of study reliably with the transition to and adoption of NZ IFRS. No SOX effect.
Han et al. (2009)	AUDITOR, AFEE	INSTITUTION	ASSETS, EMPLOYEES, INVREC, LOSS	Agency Theory Supply Perspective	Sample of 12,683 US firm/year observations for the period 2001 to 2005(database)	OLS regression	No association between audit fees and long term institutional ownership.

Exhibit 1: Summary of Studies Investigating Determinants of Audit Fees (Contd.)

Study	Dependent Variable	Independent Variables (if any)	Other Main variables	Framework	Sample	Test Technique	Main Findings
Huang et al. (2009)	LgAF (natural log of audit fee)	INITIAL (1 if initial-year audit, else 0)	SQSEG, FOREIGNSEG, GC (modified for going concern,) LOSS, MW, RESTATE , and NAFRATIO	Regulatory effect on the supply side of the market	Sample includes 1,691 and 1,992 US observations for 2001 and 2006 (database)	OLS regression	Significant initial-year audit fees discount in 2001 for clients of the Big 4 audit firms but not in 2006. Big4 have become more conservative post-SOX period.
Kannan (2009)	Lnaudit (natural log of audit fee)	CEO compensation(base salary, incentives, tenure)	LNAUDIT, SOX , DUALITY, ICWEAK, INSTHOLD, GAO measure	Market factors Agency theory Supply Perspective	Sample consists of 5,532 US firm-year observations for the period 2000 through 2005 (Database)	OLS regression	Auditors price CEO incentive pay in the post SOX period. Auditors price CEOs' non-linear incentives from their holdings of stock options.
Rainsbury et al. (2009)	AFEE (audit fee)	AQUAL	PROFIT/LOSS, BIG4.FORGN, SEG	Agency Theory Demand Perspective	Sample of 87 NZ Companies for 2001 (Hand collected data)	OLS regression	Audit committee effectiveness has no significant association with audit fee
Hay and Knechel (2010)	LNFEE	N/A	SQSEG,LOSS,ARINV	Regulatory effect	Sample of NZ 3329 firm years 1980-2001(hand collected)	OLS regression	Regulation affects audit fees determination.
Wysocki (2010)	Total Compensation	AUFEE	ROA, SIZE, RET, BM	Agency theory Demand Perspective	The sample consists of 12,280 firm-year observations between 2000 and 2008(database)	OLS regression	Significant association between the level of CEO and auditor compensation.