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# DO CORPORATE GOVERNANCE MEASURES IMPACT AUDIT PRICING OF SMALLER FIRMS? EVIDENCE FROM THE UNITED STATES AND NEW ZEALAND

Umapathy Ananthanarayanan, New York Institute of Technology

**ABSTRACT**

*Motivated primarily by the claims that audit committee independence and accounting expertise and CEO compensation influence audit fees, this study examines the effect of such factors, on audit fees in two different institutional settings in the post-Sarbanes Oxley Act (SOX) era. The institutional settings are those of the U.S. and New Zealand audit markets, where the U.S. market is more regulated and litigious than the New Zealand market. The study sample comprises firms of similar size from each country. Firms in the U.S. with higher audit committee accounting expertise charge higher audit fees than New Zealand firms. The results also suggest that short-term incentives and total compensation in both the countries are considered as audit risk and priced accordingly even though N.Z. firms operate in a different regulatory environment. Study findings suggest that firms with better corporate governance arrangements in the post-SOX era in the U.S. demand a better audit effort from audit firms and pay higher audit fees.*

**JEL:** M42, M48, M49

**KEYWORDS:** New Zealand, Audit Fees, SOX, IFRS

## INTRODUCTION

The role of audit committee independence and expertise, 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). Major accounting scandals highlighted the importance of managerial incentives to manipulate earnings for personal gain of the Chief Executive Officer (hereinafter CEO) in the U.S. Public Company Accounting Oversight Board (hereinafter PCAOB) had advised auditors to carefully evaluate CEO compensation practices in their audit consideration and processes. The International Federation of Accountants (IFAC), with ultimate jurisdiction over the international accounting and auditing standards employed in N.Z., has specifically noted the need for greater oversight of executive compensation as it relates to firm risk management.

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. Ananthanarayanan et al. (2017) observe that several U.S. studies have emerged to empirically examine the relation between the sensitivity of stock options in executive compensation to stock returns (vega) and stock prices (delta), and audit fees. This small body of research generally suggests that auditors evaluate higher risks when there is greater sensitivity of executive stock option compensation to market-based performance measures (Chen et al. 2015; Kim et al. 2014; Billings et al. 2013; Yezen et al. 2014), albeit with some mixed evidence. They also emphasize that results of the U.S. studies cannot be generalized to N.Z. or many other countries primarily because of differences in the size and nature of CEO compensation. Nuno et al. (2013) find that salaries (base) account for 28% of total pay for CEOs in the U.S., compared to 46% in other countries. Similarly, equity-based pay (consisting of restricted stock, stock

options, and performance shares) account, on average, for 39% of total pay for U.S. CEOs, with non-U.S. countries averaging only 22%.

Several studies have investigated determinants of audit fees using single country samples in different settings. Most of the studies provided mixed evidence on the determinants of audit fees (Hay et al. 2006). Choi et al. (2008) conducted a cross-country study to shed light on such mixed results. Their study (pre-sox period) finds that a country's legal liability regime is an important audit fee increasing factor due to the risks associated with auditing firms in that country mainly in small and medium-sized firms. This study considers the effects across institutional contexts and conducts the study across two countries to examine if institutional contexts affect the determination of audit fees. The two institutional contexts this study consider are those of the U.S. and New Zealand after the implementation of SOX in the U.S. and 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 U.S. audit environment is litigious, whereas the New Zealand audit environment is moderately litigious. These conditions can affect the extent of influence in the audit markets raising concerns for higher audit prices.

The study uses a combined sample of 1170 firm-years from both the U.S. and New Zealand settings for pooled regression analyses. Since the U.S. firms are in a stronger regulatory oversight environment, this study expects that the audit risk signals/variables would lead to higher/lower audit fees in the U.S. as compared to N.Z. Overall, the findings of this study suggest that better corporate governance arrangements in the post-SOX era in the U.S. lead to higher audit fee as audit committee experts demand a better effort from the audit firm. This effect is higher in firms that report strong corporate governance measures. Audit firms in both the countries consider short-term incentive of CEO as a risk factor and charge higher audit fees for firms offering such incentives even though the audit firms in N.Z. face lesser risk due to lower litigation rate. The total compensation of CEO is also considered as a risk factor in both countries. This study is the first to expand the current U.S. CEO compensation and audit fee research to the N.Z. environment specifically, and to non-U.S. settings generally, with evidence suggesting that auditors are pricing client CEO compensation incentives even in a smaller non-U.S. market. Second, this study also finds that mandatory corporate governance is more effective in the U.S. and policymakers in N.Z should consider implementing such measures. The remainder of this paper is organized as follows. The next section provides a review of the prior literature and empirically testable hypotheses. The research method and results discussion follow, and the final section conclude the paper.

## LITERATURE REVIEW

The background settings of both the U.S. and New Zealand identify certain significant factors that are unique to each country. The differences in the institutional settings of the U.S. and New Zealand can have different impacts on the audit price settings in the two markets. With the introduction of SOX, auditing services are under further strain. 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. Therefore, in the U.S. auditors are likely to reduce their audit fees if the auditee has better audit committee independence and expertise (two measures of corporate governance emphasized by SOX), higher, 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 U.S. is low. Thirdly, the penalties of audit failure are far less evident in New Zealand than in the U.S. Fourthly, the New Zealand audit profession is self-regulatory in nature, and is not under any supervisory body like the PCAOB in the U.S. Finally, unlike the U.S. Securities Exchange Commission (hereinafter SEC), the N.Z. stock exchange has no statutory authority to establish financial accounting and

reporting standards for publicly held companies but has Financial Markets Authority (FMA) board to regulate capital market and financial services and audit profession.

First, the U.S. is a highly litigious country, whereas New Zealand is less litigious. In the U.S., the corporate governance codes are mandatory, but in New Zealand, it is optional The SEC in the U.S. has the statutory authority to establish and enforce accounting and reporting standards while NZSC has no such statutory or enforcement authority. The U.S. follows USGAAP as its accounting standards, but New Zealand follows IFRS. The executive compensation arrangements in the U.S. may have a mixed effect on the audit risk unlike New Zealand, which does not have broader incentive schemes.

Auditors evaluate their audit risk by looking at various factors like board independence, audit committee independence, audit committee expertise, and duality. An active 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). Abbott et al. (2003) report that audit committee independence and financial expertise are significant, positively associated with audit fees, which supports the findings of Carcello et al. (2002) to a certain extent. More recent studies direct their attention to the types of financial experts on the audit committee (e.g., Krishnan and Visvanathan 2008; Hoitash et al. 2009). observe that accounting experts (those holding a CPA or with CFO experience) are better monitors of the financial reporting process that are audit committee members with nonaccounting expertise. Vafeas and Waegelein (2007) suggest that audit committee characteristics (size, member expertise, and member independence) are positively associated with audit fees because it complements the external audit in monitoring management. Rainsbury, Bradbury, and Cahan (2009) observe no significant association between the quality of audit committees and the level of fees paid to external auditors in New Zealand firms. The above findings suggest that the board (through its various committees) may influence audit quality through formal and informal means. 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.

Studies conducted in the U.S. show both positive and negative association between audit fees and executive compensation schemes. Healy (1985) and Holthausen et al. (1995) along with other researchers have documented that bonuses have an influence on managerial accounting and reporting practices. Vafeas and Waegelein (2007) find that CEO long-term pay has a negative association with 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. Engel, Hayes, & Wang (2010) find that there is a positive correlation between total compensation and cash retainers paid to audit committees with audit fees. Wysocki (2010) finds a positive and significant association between total compensation and audit fees. A recent study (ex., Billings et al. 2013; Yezen et al. 2014) investigate the role of managerial incentives to executives (CEO and CFO) and its association with audit fees and find the CFO equity incentives are positively associated with audit fees. Ananthanarayanan et al. (2017) find that short-term incentives and total compensation is positive and significantly associated with audit fees in firms that have weaker corporate governance measures or audited by big four firms. The results of the study show that short-term incentive and total compensation have a positive and significant association with audit fees only when the firm's corporate governance measures are weaker.

In the U.S., 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 (2009) find that many small tier-auditing firms exit the market to avoid the costs of registering with the PCAOB, possibly decreasing competition for small audits, and raising their prices. Beckstead (2006) contends that the PCAOB's one-size-fits-all rules create a barrier to

entry for small tier auditors. Cosgrove and Niederjohn (2008) find evidence of higher audit fees across all firms in the U.S. (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 U.S. 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 and find that audit fees increased between 1985 and 1990 but decreased between 1990 and 1995 due to regulatory changes. 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 the 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 behavior across countries. They examine audit fee differences in a sample from the UK, Australia, New Zealand, Ireland, and the U.S. They observe that there is a great deal of uniformity in major audit firms' audit fees across countries (UK, Australia, New Zealand, and the U.S.) which have similar accounting and auditing environments. Ananthanarayanan et al. (2017) find both short-term incentive and stock option compensation to have a significantly positive impact on audit fees in N.Z.

Hypotheses Development

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 U.S. Therefore, 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, this study hypothesizes for all the firms:

> *H1: There is a positive/negative association between audit fees and the percentage of an audit committee independence.*
> *H2: There is a positive/negative association between audit fees and the percentage of an audit committee financial expert.*

Yezen et al. (2014) observe 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. 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. Yezen (2014) 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 short and long-term incentive plans (STIP/LTIP) and restricted stock plans in his study. A recent study by Billings et al. 2013 and Yezen at al. 2014 investigated the role of managerial incentives (stock options) to executives (CEO and CFO) and its association with audit fees. The audit firms consider executive incentives (long-term incentive plans and stock options) as a risk factor (Yezen et al. 2014). 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 shareholdings 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 are simpler with basic compensation and limited incentives. 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 U.S. However, New Zealand auditors operate in a low-risk environment and executive compensation incentive schemes are not comparable to those of the U.S. 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 but may consider it as a risk when corporate governance measures are weaker. Accordingly, this study proposes the following hypotheses for all the firms:

*H3: There is no association between audit fees and the level of CEO's base compensation.*
*H4: There is a positive association between audit fees and the level of CEO's incentives*
*H5: There is a positive association between audit fees and the level of CEO's stock options.*
*H6: There is a positive association between audit fees and the level of CEO's total compensation*

## DATA AND METHODOLOGY

The study examines the association between executive compensation and audit fees in the post-SOX period data from 2004 to 2012 selecting companies both from the U.S. and New Zealand. This study obtains the financial data for the firms under study from Compustat, and obtain audit fees and executive compensation data from the Audit analytics and ExecuComp &GMI rating database for the U.S. For the New Zealand sample, this study obtains the financial data from Global Vantage database, whereas audit fees and executive compensation were collected from respective company's annual reports. Overall, this study obtains an initial sample of 2276 (1257 and 1019 U.S., and New Zealand) firm-year observations for the period 2004 to 2012. From this sample, this study excludes all the foreign firms, dual listing firms, firms that do not have all years' data and pool the two samples based on total assets. This study selects firms of both the U.S. and New Zealand that have less than $ 400 million total assets for all the years as most of the New Zealand firms are small and medium-sized. The overall sample consists of 1170 firms (576 U.S. firm-years and 594 New Zealand firm-years) for the period 2004 to 2012. The overall sample consists of a balanced panel of 1170 firms (576 U.S. firm-years and 594 New Zealand firm-years) for the years 2004-2012. All the financial data reported in this study is in U.S. dollars. New Zealand firm's financials have been translated to U. S. dollars using appropriate exchange rates for all the years 2004 to 2012. Table 1 summarizes sample selection procedure, and Table 2 provides the sample distribution by the two digits Standard Industrial Classification (SIC) code.

Table 1: Sample Construction

| | |
|---|---|
| Firms listed in S&P 600 and NZX from 2004 to 2012 (less than $400 million) | 2,276 |
| Less: Foreign firms | -121 |
| Less: Dual listing | -257 |
| Less: Firms with incomplete data | -353 |
| Less: Firms with less than five observations in the industry | -375 |
| Total Observations dropped | -1,106 |
| Total Sample Size | 1,170 |

*This table shows sample selection of firms from the United States and New Zealand stock exchanges for the years 2004 to 2012*

Table 2: Sample Distribution by Industry

| Industry Description | Frequency | Percentage |
|---|---|---|
| Food | 108 | 9.23% |
| Textiles, Printing/Publishing | 108 | 9.23% |
| Chemicals | 99 | 8.46% |
| Pharmaceuticals | 117 | 10.00% |
| Durablemanufacturers | 126 | 10.77% |
| Transportation | 189 | 16.15% |
| Retail | 198 | 16.92% |
| Services | 108 | 9.23% |
| Computers | 117 | 10.00% |
| Total | 1170 | 100.00 |

*This table shows sample distribution by Industry and all industry categories are based on two-digit industry SIC code.*

Empirical Model

This study specifies and estimates OLS regression fee models based on prior audit fee research (e.g., Yezen et al. 2014; Hay and Knechel 2010; Venkataraman et al. 2008; Vermeer et al. 2008; Hay et al. 2006). All regressions are based on firm-level clustered robust (heteroscedasticity-consistent) standard errors since analysis includes repeated firm measures over time.

$$AUDFEE = \beta_0 + \beta_1 ACINDEP + \beta_2 ACEXP + \beta_3 Control + \varepsilon \quad \text{Model 1}$$

and

$$AUDFEE = \beta_0 + \beta_1 lnBASE + \beta_2 lnSTIC + \beta_3 STOCK \; \mathbf{or} \; + \beta_1 lnTOTCOMP + \beta_4 Control + \varepsilon \quad \text{Model 2}$$

Dependent Variable: Audit Fees

Following the prior audit fee literature (e.g., Yezen et al. 2014; Hay and Knechel 2010; Venkataraman et al. 2008; Vermeer et al. 2008; Hay et al. 2006), dependent variable of this study is measured as the natural logarithm of audit fees paid to the external auditor (*AUDFEE*).

Test Variables: Audit Committee Independence and Expertise, and CEO Compensation

This study uses the proportion of independent directors on the audit committee to the total audit committee members (ACINDEP), the proportion of accounting experts on the audit committee to total audit committee members(ACEXP) in Model 1. The BASE compensation (BASE) is defined as compensation that includes base cash elements and compensation taken as deferred compensation. This study uses lnBASE as BASE compensation measure. This study uses lnSTIC, as measures of total incentives offered to executives. Since most of the firms in New Zealand do not offer much of long-term incentives to chief executives, this study

used only short-term incentives as a variable. However, since some of the U.S. firms offer long-term incentives, this study tests long-term incentives as a variable in sensitivity tests. Most of the New Zealand annual reports do not have detailed reports on the dollar value of different stock options available to the CEO's, and this study measured stock variable as a dichotomous variable. Stock option is a dichotomous variable 1 if the CEO of the company is offered stock options and 0 otherwise. Total compensation (TOTCOMP) is the sum of BASE compensation, and total incentive plans excluding stock option values. This study uses lnTOTCOMP as a measure of total compensation. These are tested in Model 2.

Corporate Governance and Other Control Variables

Carcello et al. (2002) report that corporate governance significantly influences audit fees. Consequently, this study draws on the prior literature (e.g., Vafeas and Waegelein, 2007; Abbott et al. 2003; Carcello et al. 2002; Wysocki. 2010) and include several corporate governance control variables in empirical models, unlike most prior research on executive compensation and audit fees. This study includes board size (BDSIZE = number of directors on the board), audit committee size (ACSIZE = number of directors on the audit committee), and compensation committee size (CCSIZE = number of directors on the compensation committee). This study also includes the proportion of independent directors on the board (BDINDEP), the proportion of independent directors on the compensation committee (CCINDEP). In Model 2, this study also includes audit committee variables (the proportion of independent directors on the audit committee (ACINDEP), and the proportion of accounting experts on the audit committee (ACEXP). Since earlier literature (Vafeas & Waegelein, 2007; Abbott et al. 2003; Carcello et al. 2002; Krishnan and Visvanathan, 2008) provide mixed evidence and most of the firms are medium and small sized, no sign is expected on the above variables.

This study also calculates the corporate governance index using board, audit, and compensation committee independence, audit committee meeting, accounting experts in audit committee, board and audit committee size, and duality (e.g., Bebchuk et al. 2009, Bhagat et al.2008). Based on the prior literature, this study measures these variables individually as 1 if they are above median and 0 otherwise. This study sums up all these measures and creates the CGINDEX which is measured as 1 if it is below the median of the sum of all corporate governance measures (stronger governance), and 0 (poor) otherwise.

This study control for firm size (SIZE = natural log of total assets), number of business and geographical segments (BUSSEG, GEOSEG), and the sum of accounts receivable and inventory scaled by total assets (ARINV). This study predicts a positive association for these variables with audit fees since client size, complexity, and other specific risk factors increases audit effort (Yezen et al. 2014; Hay et al. 2006). This study also includes the proportion of total long-term debt to total assets (LEVERAGE), the presence of an acquisition or merger in the year (MERGER), and the firm's market-to-book value (MB), anticipating a positive association with audit fees due to the effect of such market risks on audit risk (Hay et al. 2006). This study also controls for non-audit service fees (NONAUDFEE) as they have been shown to be positively associated with audit fees (Hay et al. 2006). This study includes audit firm size (BIGFOUR) to capture any associated fee premium and expect it to have a positive association with audit fees (Hay and Knechel, 2010). This study also includes industry (IND_FE), and year (YEAR_FE) indicator variables to control for industry and year fixed effects. This study defines all of these variables in Appendix A.

## RESULTS

Table 3 provides the descriptive statistics for dependent and independent variables used in this study. The average audit fees of the firm (AUDFEE) is 587.64 thousand dollars (median 301.00) suggesting that the audit firms on an average (median) earn five hundred eight seven thousand dollars (301.00) as audit fee. The percentage of independent directors on the audit committee (ACINDEP) of the firm on an average is 0.84 (median 1.0), and the percentage of accounting expertise directors in the audit committee is 0.52

(median 1.0). The base compensation (BASE) earned by the CEO of the firm is 764.36 thousand dollars (median 428.00). Total short-term incentives (STIC) earned by the CEO of a firm on an average is 103.11 thousand dollars (median 52.18) The stock options (STOCK) awarded to the CEO of a firm on an average is 0.47 percentage (median 0.25). The total compensation (TOTCOMP) of the CEO of a firm on an average is 867.47 thousand dollars (median 480.18). Summary statistics on all other control variables are provided in Table 3.

Table 3: Descriptive Statistics (N=1170)

| Variable Name | Mean | Median | Std Dev | Q1 | Q3 |
|---|---|---|---|---|---|
| *AUDFEE ($000)* | 587.64 | 301.00 | 562.61 | 75.67 | 879.00 |
| *AUDFEE* | 8.99 | 5.67 | 4.41 | 4.83 | 13.94 |
| *ACINDEP* | 0.77 | 1.00 | 0.21 | 0.42 | 1.00 |
| *ACEXP* | 0.52 | 1.00 | 0.28 | 0.00 | 0.61 |
| *BASE ($000))* | 764.36 | 428.00 | 548.25 | 212.00 | 646.21 |
| *lnBASE* | 12.62 | 13.51 | 3.11 | 12.68 | 13.91 |
| *STIC ($000))* | 103.11 | 52.18 | 62.28 | 23.21 | 89.74 |
| *lnSTIC* | 3.69 | 0.00 | 4.97 | 0.00 | 9.56 |
| *STOCK* | 0.47 | 0.25 | 0.50 | 0.00 | 1.00 |
| *TOTCOMP ($000)* | 867.49 | 480.18 | 610.53 | 235.21 | 735.95 |
| *lnTOTCOMP* | 16.31 | 13.51 | 8.08 | 12.68 | 23.47 |
| *TA ($mil)* | 181.85 | 168.66 | 142.61 | 42.34 | 299.16 |
| *SIZE* | 4.67 | 5.48 | 1.52 | 3.87 | 5.90 |
| *ARINVTA* | 1.68 | 0.23 | 0.22 | 0.11 | 0.75 |
| *BUSSEG* | 1.33 | 1.00 | 0.43 | 1.00 | 1.73 |
| *GEOSEG* | 1.42 | 1.41 | 0.59 | 1.00 | 2.00 |
| *BDINDEP* | 0.65 | 0.67 | 0.19 | 0.50 | 0.80 |
| *CCINDEP* | 0.58 | 1.00 | 0.41 | 0.33 | 1.00 |
| *BDSIZE* | 2.46 | 2.00 | 2.48 | 2.00 | 4.00 |
| *ACSIZE* | 1.50 | 2.00 | 1.97 | 2.00 | 3.00 |
| *CCSIZE* | 1.50 | 2.00 | 1.88 | 1.00 | 2.00 |
| *NONAUDFEE ($000)* | 74.97 | 26.00 | 128.03 | 3.00 | 90.00 |
| *NONAUDFEE* | 4.34 | 0.13 | 5.48 | 0.01 | 10.85 |
| *MB* | 0.60 | 0.42 | 0.58 | 0.21 | 0.86 |
| *LEVERAGE* | 0.28 | 0.23 | 0.29 | 0.00 | 0.46 |
| *MERGER* | 0.21 | 0.15 | 0.34 | 0.00 | 0.42 |
| *BIGFOUR* | 0.82 | 1.00 | 0.68 | 1.00 | 1.00 |

*This table shows sample mean. Median. Standard deviation, first quartile and third quartile for main test variables. All variable definitions are provided in Appendix A.*

## Correlation Analysis

Table 4 provides the Pearson and Spearman correlations between the independent variables. The Pearson correlations are reported above the diagonal and Spearman correlations below the diagonal. There are several high and significant Pearson and Spearman correlations, where the correlations are greater than 0.80 and significant at the 5percent level. The lnSTIC and lnTOTCOMP has a high correlation (0.92). Since these variables are of the same construct, they are not used in the same regression model. Variance inflation factors (VIF) (not disclosed) are in the range of 2 to 3 and these values rule out the presence of multicollinearity bias in hypothesis testing. Since the data involve similar companies over a period of nine years, this study also run the time series test for auto serial correlation and find that the Durbin-Watson coefficient is 1.914. Therefore, this study rejects the notion that the data are autocorrelated.

Table 4: Correlations: Pearson (Spearman) Correlation Coefficients in the Upper (Lower) Diagonal

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *AUDFEE (1)* | 1.00 | **0.49** | -0.05 | **0.43** | **0.58** | **-0.31** | **-0.29** | **0.26** | **0.51** | **0.54** | **0.33** |
| *lnBASE (2)* | **0.51** | 1.00 | -0.03 | **-0.30** | **-0.26** | **0.28** | **0.36** | **-0.08** | **-0.22** | **-0.40** | **-0.30** |
| *lnSTIC (3)* | -0.03 | -0.03 | 1.00 | 0.06 | **0.09** | 0.07 | 0.04 | 0.00 | -0.04 | -0.04 | -0.02 |
| *STOCK (4)* | **0.44** | **-0.37** | 0.06 | 1.00 | **0.55** | **-0.58** | **-0.61** | **0.23** | **0.36** | **0.42** | **0.46** |
| *lnTOTCOMP (5)* | **0.61** | **-0.40** | **0.09** | **0.59** | 1.00 | **-0.43** | **-0.48** | **0.24** | **0.30** | **0.36** | **0.43** |
| *BDSIZE (6)* | **-0.31** | **0.35** | 0.07 | **-0.57** | **-0.45** | 1.00 | **0.49** | **-0.15** | **-0.45** | **-0.44** | **-0.55** |
| *ACSIZE (7)* | **-0.33** | **0.42** | 0.04 | **-0.59** | **-0.52** | **0.33** | 1.00 | **-0.14** | **-0.48** | **-0.47** | **-0.56** |
| *CCSIZE (8)* | **0.22** | **-0.12** | 0.00 | **0.19** | **0.19** | **-0.13** | **-0.10** | 1.00 | **0.12** | **0.23** | **0.54** |
| *BDINDEP (9)* | **0.48** | **-0.31** | -0.04 | **0.37** | **0.36** | **-0.45** | **-0.50** | **0.12** | 1.00 | **0.27** | **0.35** |
| *ACINDEP (10)* | **0.53** | **-0.39** | -0.06 | **0.45** | **0.43** | **-0.48** | **-0.53** | **0.15** | **0.28** | 1.00 | **0.44** |
| *CCINDEP (11)* | **0.35** | **-0.37** | -0.04 | **0.49** | **0.48** | **-0.59** | **-0.65** | **0.26** | **0.43** | **0.43** | 1.00 |
| *ACEXP (12)* | **-0.12** | **0.12** | 0.06 | **-0.11** | **-0.12** | **0.21** | **0.22** | 0.03 | **-0.21** | -0.01 | -0.01 |
| *SIZE (13)* | **0.52** | **-0.54** | -0.02 | **0.48** | **0.58** | **-0.41** | **-0.49** | **0.14** | **0.36** | **0.39** | **0.42** |
| *BUSSEG (14)* | **0.29** | **-0.20** | 0.03 | **0.15** | **0.19** | **-0.11** | **-0.11** | **0.10** | **0.10** | **0.13** | **0.09** |
| *GEOSEG (15)* | **0.47** | **-0.21** | 0.00 | **0.32** | **0.40** | **-0.42** | **-0.40** | **0.19** | **0.25** | **0.32** | **0.41** |
| *ARINV (16)* | **-0.24** | **0.46** | -0.08 | **-0.23** | **-0.23** | **0.11** | **0.16** | **-0.10** | **-0.10** | **-0.28** | **-0.14** |
| *MB (17)* | **0.32** | **-0.11** | -0.02 | **0.32** | **0.30** | **-0.43** | **-0.46** | **0.23** | **0.21** | **0.27** | **0.38** |
| *LEVERAGE (18)* | **-0.40** | **0.37** | 0.06 | **-0.48** | **-0.37** | **0.61** | **0.65** | -0.07 | **-0.43** | **-0.39** | **-0.48** |
| *MERGER (19)* | **-0.14** | **0.35** | -0.03 | -0.02 | **-0.14** | -0.02 | 0.00 | -0.04 | 0.01 | -0.06 | -0.06 |
| *NONAUDFEE (20)* | **0.57** | **-0.37** | -0.01 | **0.34** | **0.35** | **-0.49** | **-0.49** | **0.16** | **0.33** | **0.32** | **0.46** |
| *BIGFOUR (21)* | **0.38** | **-0.21** | 0.02 | **0.35** | **0.39** | **-0.20** | **-0.27** | **0.13** | **0.18** | **0.19** | **0.20** |
| **Variable** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** |
| *AUDFEE (1)* | **-0.22** | **0.51** | **0.26** | **0.31** | **-0.36** | **0.43** | **-0.39** | -0.07 | **0.51** | **0.35** | **-0.22** |
| *lnBASE (2)* | 0.07 | **-0.52** | **-0.21** | **-0.12** | **0.51** | **-0.09** | **0.31** | **0.45** | **-0.38** | **-0.20** | 0.07 |
| *lnSTIC (3)* | 0.06 | 0.01 | 0.01 | 0.00 | -0.02 | -0.03 | 0.05 | -0.03 | -0.04 | 0.02 | 0.06 |
| *STOCK (4)* | **-0.11** | **0.43** | **0.17** | **0.21** | **-0.30** | **0.30** | **-0.41** | -0.02 | **0.52** | **0.35** | **-0.11** |
| *lnTOTCOMP (5)* | **-0.15** | **0.40** | **0.18** | **0.28** | **-0.21** | **0.25** | **-0.27** | -0.08 | **0.44** | **0.28** | **-0.15** |
| *BDSIZE (6)* | **0.22** | **-0.37** | **-0.16** | **-0.28** | **0.23** | **-0.43** | **0.50** | -0.02 | **-0.73** | **-0.20** | **0.22** |
| *ACSIZE (7)* | **0.23** | **-0.48** | **-0.18** | **-0.27** | **0.28** | **-0.46** | **0.56** | 0.01 | **-0.75** | **-0.29** | **0.23** |
| *CCSIZE (8)* | **0.10** | **0.15** | **0.09** | **0.16** | **-0.16** | **0.20** | -0.08 | -0.01 | **0.23** | **0.14** | **0.10** |
| *BDINDEP (9)* | **-0.20** | **0.28** | **0.12** | **0.15** | **-0.14** | **0.20** | **-0.39** | 0.01 | **0.44** | **0.16** | **-0.20** |
| *ACINDEP (10)* | 0.01 | **0.41** | **0.14** | **0.21** | **-0.35** | **0.25** | **-0.32** | **-0.11** | **0.41** | **0.16** | 0.01 |
| *CCINDEP (11)* | 0.06 | **0.37** | **0.13** | **0.29** | **-0.35** | **0.32** | **-0.30** | -0.05 | **0.55** | **0.18** | 0.06 |
| *ACEXP (12)* | 1.00 | **-0.10** | -0.06 | -0.02 | -0.02 | **-0.19** | **0.24** | -0.04 | **-0.19** | **-0.12** | 1.00 |
| *SIZE (13)* | **-0.12** | 1.00 | **0.29** | **0.17** | **-0.52** | **0.13** | **-0.39** | **-0.45** | **0.50** | **0.39** | **-0.12** |
| *BUSSEG (14)* | -0.03 | **0.31** | 1.00 | 0.02 | **-0.10** | 0.01 | -0.06 | **-0.15** | **0.24** | **0.12** | -0.03 |
| *GEOSEG (15)* | -0.04 | **0.27** | 0.04 | 1.00 | **-0.11** | 0.04 | **-0.12** | 0.03 | **0.29** | **0.13** | -0.04 |
| *ARINV (16)* | -0.01 | **-0.40** | -0.05 | **-0.15** | 1.00 | -0.06 | **0.15** | **0.18** | **-0.28** | **-0.18** | -0.01 |
| *MB (17)* | **-0.20** | **0.16** | -0.05 | **0.20** | 0.01 | 1.00 | **-0.36** | -0.05 | **0.30** | **0.20** | **-0.20** |
| *LEVERAGE (18)* | **0.24** | **-0.36** | 0.00 | **-0.28** | **0.10** | **-0.45** | 1.00 | 0.07 | **-0.48** | **-0.26** | **0.24** |
| *MERGER (19)* | -0.04 | **-0.34** | **-0.16** | 0.02 | **0.20** | 0.00 | 0.02 | 1.00 | -0.07 | -0.05 | -0.04 |
| *BUSY (20)* | **-0.10** | **0.46** | **0.21** | **0.34** | **-0.19** | **0.17** | **-0.34** | **-0.11** | 1.00 | **0.26** | **-0.10** |
| *NONAUDFEE (21)* | **-0.12** | **0.35** | **0.11** | **0.19** | -0.05 | **0.24** | **-0.28** | -0.05 | -0.08 | 1.00 | **-0.12** |
| *BIGFOUR (22)* | **-0.22** | **0.51** | **0.26** | **0.31** | **-0.36** | **0.43** | **-0.39** | -0.07 | **0.51** | **0.35** | **-0.22** |

*This table shows Pearson (upper) and Spearman (lower) correlations diagonally. All variables are defined in Appendix A. Bold coefficients are significant at p<0.05.*

## Test of Hypotheses

In this section, this study report and review the results of OLS regressions followed by sensitivity tests. The first sets of tests are based on hypothesis model. This study test different measures of the chief executive officers' compensation components. Table 5 tests association between natural logs of audit fees and audit committee independence and expertise. The adjusted R2 across all models are similar to prior research (e.g., Choi et al. 2008; Engel et al. 2010; Wysocki, P. 2010) and the all the models are significant (p<0.01).

Hypotheses 1 and 2 -Audit Fees and Audit Committee Independence and Expertise

The coefficient on all audit committee independent percentage (ACINDEP) is not significant suggesting that audit committee independent percentage is not associated with audit fees. The coefficient on audit committee expert percentage (ACEXP) is positive and significant (β=0.154, t=3.425, p<0.01/) in the full sample test indicating that audit committee expert percentage is positively associated with audit fees as reported in earlier studies (e.g., Vafeas and Waegelein (2007). The coefficient on audit committee expert percentage (ACEXP) is positive and significant in the subsample tests. (β=0.112, t=2.605, p<0.01, and β=0.143, t=2.012, p<0.05,) This indicates that even in firms that have strong or poor governance measures the audit committee expert percentage is positively and significantly associated with audit fees. The audit committee experts demand a higher audit effort from the audit firms for the audit fee premium. The coefficients on interaction variable (REGION* ACIND) is not significant in any of the tests suggesting that audit committee independence is not a determinant of audit fees either in the U.S. or New Zealand. The results do not support hypothesis H1. However, the coefficients on (REGION*ACEXP) is positive and significant (β=0.048, t=2.587, p<0.01) in the main sample suggesting that in the U.S. audit committee experts demand a higher effort from the audit firm than their counterparts in New Zealand supporting hypothesis H2. The results are consistent with earlier studies results (Vafeas and Waegelein 2007; Abbott 2003).

Table 5: Regressions of Audit Fees on Audit Committee Independence and Expertise ($AUDFEE = \beta_0 + \beta_1 ACINDEP + \beta_2 ACEXP + \beta_3 Control + \varepsilon$ )

| | Coeff | t Value | Coeff | t Value | Coeff | t Value |
|---|---|---|---|---|---|---|
| INTERCEPT | 3.715 | 21.423*** | 3.767 | 19.810*** | 3.075 | 14.517*** |
| ACINDEP (+/-) | 0.122 | 0.968 | 0.049 | 0.336 | 0.037 | 0.150 |
| ACEXP (+/-) | 0.151 | 3.425*** | 0.112 | 2.605*** | 0.143 | 2.012** |
| REGION × ACIND (?) | -0.017 | -0.608 | -0.031 | -0.961 | 0.062 | 1.117 |
| REGION × ACEXP (?) | 0.048 | 2.587*** | 0.041 | 1.965** | 0.059 | 1.431 |
| SIZE (+) | 0.310 | 3.511*** | 0.271 | 3.401*** | 0.714 | 3.124*** |
| ARINV (+) | 0.002 | 0.375 | 0.001 | 0.094 | -0.005 | -0.435 |
| BUSSEG (+) | 0.178 | 3.583*** | 0.201 | 4.734*** | 0.102 | 1.199 |
| GEOSEG (+) | 0.120 | 1.987** | 0.127 | 2.168** | 0.028 | 0.618 |
| BDSIZE (?) | 0.069 | 3.587*** | 0.071 | 3.657*** | 0.004 | 0.131 |
| ACSIZE (?) | 0.001 | 0.034 | 0.027 | 0.783 | 0.074 | 1.412 |
| BDINDEP (?) | 0.061 | 0.515 | 0.087 | 0.897 | 0.051 | 0.268 |
| NONAUDFEE (+) | 0.017 | 2.321** | 0.015 | 2.179** | 0.039 | 2.812*** |
| MB (+) | -0.148 | -3.610*** | -0.115 | -2.687*** | -0.049 | -0.486 |
| LEVERAGE (+) | 0.391 | 4.341*** | 0.349 | 3.689*** | 0.287 | 1.611 |
| BIG4 (+) | 0.164 | 2.329** | 0.241 | 3.189*** | -0.013 | -0.105 |
| REGION | 0.461 | 5.188*** | 0.318 | 4.180*** | 0.267 | 3.056*** |
| CGIND (?) | 0.171 | 2.817*** | - | - | - | - |
| REG*CGIND ((?) | 0.068 | 3.873*** | - | - | - | - |
| YEAR_FE | YES | | YES | | YES | |
| IND_FE | YES | | YES | | YES | |
| N | 1170 | | 761 | | 409 | |
| F value | 48.611*** | | 25.941*** | | 13.701*** | |
| R Squared | 0.815 | | 0.798 | | 0.774 | |
| Adj. R-Square | 0.801 | | 0.781 | | 0.766 | |

*This table shows regression results of audit fees on audit committee independence and accounting expertise for the full sample (1170) and partitioned sample for strong (798) and weak (409) governance. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively. Directional tests are one-tailed, otherwise two-tailed. This study estimates the OLS regression models with firm-level clustered robust (heteroscedasticity-consistent) standard errors. All variables are defined in Appendix A.*

In Table 6 this study reports the results of base, incentive and stock option of CEO and audit fees on the main sample and subsamples. The coefficient on BASE payments to executives (lnBASE) is not significant suggesting that base compensation of the chief executive officer is not associated with audit fees. The coefficient on BASE payments to executives in both the countries (REGIONS*lnBASE) is not significant suggesting that base compensation of the chief executive officer is not associated with audit fees in both the countries. Thus, the null hypothesis of H3 cannot be rejected. The coefficient on short-term incentives

(lnSTIC) is positive and significant (β=0.012, t=2.018, p<0.05) is positive and significant indicating that audit firms consider incentives received by the chief executive officer of such firms as an audit risk and charge higher audit fees. Study results are consistent with earlier studies results (e.g., Kim et al. 2014; Yezen et al. 2014). The coefficient on stock payments to executives in both the countries (REGIONS*STOCK) is not significant suggesting that stock options of the chief executive officer are not associated with audit fees in both the countries. Since most of the sample firms are small and medium-sized firms and do not offer much stock options to the executives, the stock option is not a significant determinant of audit fees in this study. The coefficients on the total executive compensation (*TOTCOMP*) is positive and significant (β=0.01, t=2.254, p<0.05). Results for *STIC* is positive and significant in both regions (the U.S., and N.Z) suggesting that this study result may be driven by the short-term incentives and support hypotheses H4, and H6 but reject H5.

Table 6: Regressions of Audit Fees on Base Salary, Short-Term Incentive, and Stock Option Compensation ($AUDFEE = \beta_0 + \beta_1 lnBASE + \beta_2 lnSTIC + \beta_3 STOCK + \beta_5 Control + \varepsilon$)

| Variable (Predicted Sign) | lnBASE, lnSTIC & STOCK Full Sample | | lnBASE, lnSTIC & STOCK CGI =1 (Strong) | | lnBASE, lnSTIC & STOCK CGI = 0 (Weak) | |
|---|---|---|---|---|---|---|
| | **Coeff** | **T Value** | **Coeff** | **t Value** | **Coeff** | **t Value** |
| INTERCEPT | 3.507 | 17.213*** | 3.505 | 13.953*** | 3.873 | 10.440*** |
| lnBASE (?) | 0.008 | 1.101 | 0.006 | 0.637 | -0.019 | -0.784 |
| lnSTIC (?) | 0.012 | 2.018** | 0.011 | 1.981** | 0.013 | 1.254 |
| STOCK (?) | 0.012 | 1.234 | 0.011 | 1.011 | 0.009 | 0.513 |
| REGION*lnBASE (?) | -0.005 | -0.991 | -0.004 | -0.698 | -0.005 | -0.439 |
| REGION * lnSTIC (?) | 0.003 | 0.424 | 0.007 | 0.745 | -0.013 | -0.845 |
| REGION * STOCK (?) | -0.006 | -0.748 | -0.005 | -0.530 | -0.006 | -0.278 |
| SIZE (+) | 0.021 | 4.129*** | 0.020 | 3.663*** | 0.039 | 3.457*** |
| ARINV (+) | 0.000 | 0.097 | 0.001 | 0.157 | 0.000 | 0.038 |
| BUSSEG (+) | 0.019 | 4.079*** | 0.021 | 4.161*** | 0.009 | 0.940 |
| GEOSEG (+) | 0.008 | 2.014** | 0.009 | 1.978** | 0.006 | 0.640 |
| BDSIZE (?) | 0.038 | 3.512*** | 0.043 | 3.350*** | -0.001 | -0.059 |
| ACSIZE (?) | 0.009 | 0.649 | -0.009 | -0.555 | 0.055 | 2.297 |
| BDINDEP (?) | 0.003 | 0.493 | 0.004 | 0.650 | 0.001 | 0.113 |
| ACINDEP (?) | 0.006 | 1.127 | 0.002 | 0.414 | -0.008 | -0.680 |
| ACEXP (?) | 0.015 | 3.164*** | 0.011 | 2.126** | 0.016 | 1.565 |
| CCINDEP (?) | 0.021 | 3.020*** | 0.017 | 2.250** | 0.023 | 1.539 |
| NONAUDFEE (+) | 0.020 | 2.549*** | 0.022 | 2.634*** | 0.054 | 2.956*** |
| MB (+) | -0.020 | -3.752*** | -0.015 | -2.644*** | -0.003 | -0.277 |
| LEVERAGE (+) | 0.023 | 3.911*** | 0.021 | 3.232*** | 0.020 | 1.691* |
| BIG4 (+) | 0.010 | 2.115** | 0.015 | 2.798*** | 0.001 | 0.078 |
| REGION (?) | 0.610 | 8.303*** | 0.049 | 5.450*** | 0.481 | 5.098*** |
| CGIND (?) | 0.244 | 4.376*** | - | - | - | - |
| REG*CGIND (?) | 0.066 | 3.371*** | - | - | - | - |
| YEAR_FE | YES | | YES | | YES | |
| IND_FE | YES | | YES | | YES | |
| N | 1170 | | 761 | | 409 | |
| F value | 79.236*** | | 48.911*** | | 35.248*** | |
| R Square | 0.836 | | 0.829 | | 0.820 | |
| Adj. R-Square | 0.820 | | 0.812 | | 0.809 | |

*This table shows regression results of audit fees on base salary, short-term incentives and stock options for the full sample (1170) and partitioned sample for strong (798) and weak (409) governance. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively. Directional tests are one-tailed, otherwise two-tailed. This study estimates the OLS regression models with firm-level clustered robust (heteroscedasticity-consistent) standard errors. All variables are defined in Appendix A.*

Table 7: Regressions of Audit Fees on Total Compensation ($AUDFEE = \beta_0 + + \beta_1 lnTOTCOMP + \beta_2 Control + \varepsilon$)

| Variable (Predicted Sign) | lnTOTCOMP Full Sample | | lnTOTCOMP CGI =1 (Strong) | | lnTOTCOMP CGI = 0 (Weak) | |
|---|---|---|---|---|---|---|
| | Coeff | t Value | Coeff | t Value | Coeff | t Value |
| INTERCEPT | 3.638 | 24.810*** | 3.721 | 16.287*** | 4.236 | 14.001*** |
| lnTOTCOMP (?) | 0.008 | 1.757* | 0.007 | 1.811* | 0.017 | 1.259 |
| REGION*lnTOTCOMP (?) | -0.005 | -0.991 | -0.004 | -0.698 | -0.005 | -0.439 |
| SIZE (+) | 0.020 | 3.999*** | 0.019 | 3.521*** | 0.037 | 3.364*** |
| ARINV (+) | 0.000 | 0.000 | 0.001 | 0.145 | 0.000 | -0.010 |
| BUSSEG (+) | 0.019 | 4.117*** | 0.022 | 4.273*** | 0.010 | 1.082 |
| GEOSEG (+) | 0.007 | 2.191** | 0.008 | 2.033** | 0.004 | 0.430 |
| BDSIZE (?) | 0.038 | 3.470*** | 0.043 | 3.339*** | 0.005 | 0.245 |
| ACSIZE (?) | 0.008 | 0.636 | -0.009 | -0.566 | 0.050 | 2.125 |
| BDINDEP (?) | 0.002 | 0.369 | 0.003 | 0.482 | 0.001 | 0.110 |
| ACINDEP (?) | 0.007 | 1.253 | 0.004 | 0.641 | -0.008 | -0.662 |
| ACEXP (?) | 0.016 | 3.372*** | 0.012 | 2.327** | 0.017 | 1.685* |
| CCINDEP (?) | 0.021 | 3.009*** | 0.018 | 2.371** | 0.021 | 1.421 |
| NONAUDFEE (+) | 0.019 | 2.429*** | 0.020 | 2.404*** | 0.053 | 2.905*** |
| MB (+) | -0.021 | -3.986*** | -0.018 | -3.079*** | -0.004 | -0.358 |
| LEVERAGE (+) | 0.021 | 3.732*** | 0.019 | 3.000*** | 0.019 | 1.645** |
| BIG4 (+) | 0.012 | 2.615*** | 0.017 | 3.150*** | 0.005 | 0.508 |
| REGION (?) | 0.045 | 8.506*** | 0.51 | 6.325*** | 0.059 | 7.215*** |
| CGIND (?) | 0.235 | 5.126*** | | | | |
| REG*CGIND (?) | 0.068 | 3.214*** | | | | |
| YEAR_FE | YES | | YES | | YES | |
| IND_FE | YES | | YES | | YES | |
| N | 1170 | | 761 | | 409 | |
| F value | 82.112*** | | 49.632*** | | 37.987*** | |
| R Square | 0.840 | | 0.831 | | 0.822 | |
| Adj. R-Square | 0.827 | | 0.816 | | 0.810 | |

*This table shows regression results of audit fees on total compensation for the full sample (1170) and partitioned sample for strong (798) and weak (409) governance. *, **, *** denote significance at the 0.10, 0.05, and 0.01 levels, respectively. Directional tests are one-tailed, otherwise two-tailed. This study estimates the OLS regression models with firm-level clustered robust (heteroscedasticity-consistent) standard errors. All variables are defined in Appendix A.*

Audit Fees and Audit Committee Independence and Expertise, and CEO Compensation in Stronger and Weaker Corporate Governance Environments

Based on earlier discussions that corporate governance codes vary between the U.S. and N.Z, this study considers if the association is conditional on firms' corporate governance. This study calculates the median values for BDSIZE, ACSIZE, CCSIZE, BDINDEP, ACINDEP, CCINDEP, and ACEXP and subtracts them from the actual values for each of these variables. An indicator variable is created with a value of 1 if this difference falls above the median, and 0 otherwise. These indicator variables are aggregated to compute the total corporate governance score for each firm. Similarly, compute the median for this aggregated variable and subtract it from the actual aggregated values to establish Corporate Governance Index (CGI). CGI as 1 is measured as 1 (stronger governance) if the firm's score falls above the median, and 0 otherwise (weaker governance) (e.g., Bebchuk et al. 2009, Bhagat et al. 2008).

This study re-estimates regressions on partitions of sample into stronger and weaker governance clients and present the results side by side in Tables 5 to 7. In Table 5 results indicate that the coefficients on (REGION*ACEXP) are positive and significant ($\beta$=0.041, t=1.965, p<0.01) for firms that have stronger corporate governance measures. Study results suggest that in the U.S. due to stricter regulations in the post-SOX period and risk associated with SOX regulations audit committee experts demand a higher effort from the audit firms by paying a premium for their increased effort. Results for components of CEO compensation base (BASE), short-term incentive (STIC), and stock option (*STOCK*) show mixed results. The coefficients on all base salary measures (*lnBASE, and STOCK*) remain insignificant in both stronger and weaker governance. However, in Table 6, short-term incentives (*lnSTIC)* in the main sample showed

positive and significant results suggesting that incentive payments to executives in both the countries as the coefficients on *REGIONS*lnSTIC* are not significant. This result is evident only in firms that report stronger governance measures (β=0.011, t=1.981, p<0.05). The short-term incentive is considered as audit risk invariably in both the countries.

The coefficient on *TOTCOMP* is positive and significant (β=0.019, t=2.141 p<0.05) for firms that report stronger governance measures suggesting that the audit firms consider total compensation of a firm as a risk factor and charge a premium. This result is contrary to the expectation that poor governance measures of a firm pose a risk to audit firms thereby they charge higher audit fees. In this study, incentives are considered as a risk factor as reported in Table 6. The coefficient on total compensation (*REGION*lnTOTCOMP*) is positive and significant (β=0.008, t=1.757, p<0.10) in the main sample suggesting that in the U.S. audit firms consider total compensation of a firm as a risk factor and charge a premium. For firms that report stronger governance measures (β=0.007, t=1.811, p<0.10) in the U.S. audit firms consider total compensation as an audit risk and charge higher fees. Since the total compensation along with incentives is higher in firms that reported stronger governance measures than the firms that reported weaker governance measures, total compensation shows a positive and significant association with audit fees.

Sensitivity Tests

For greater confidence in results, this study conducts several sensitivity analyses. First, given auditors may learn more about CEO compensation risks over the course of the current year audit that could impact the following year's audit pricing, this study re-performs all of the regressions using audit committee independence and accounting expertise and current year compensation measures and next year audit fees. The results are not tabulated. This study partitions the sample into Big4 and non-Big4 auditors and the results (not reported) are inconsistent with results reported in Table 5 to 7 and are as expected with earlier studies results (Choi et al. 2008). The Big4 audit firms in both the countries charge audit premium when the audit firm's expertise percentage is higher in the post-SOX period. Post Sox Big4 firms in both the countries have increased the audit effort at a premium. Similarly, the incentives show a positive and significant association with audit fees for firms that are audited by Big4 firms. The firms of this study are mostly small firms and audit firms consider incentives offered as a greater audit risk and thereby charge higher audit fees. This study does not find any evidence for Big4 firms charging premium mainly in the U.S. as evidenced in Choi et al. (2008).

This study conducts further tests to test the association audit fees with chief executive officers' compensation components by replacing the log measure with *ABASE, ASTIC, ATOTCOMP* (average industry measures) *MBASE, MSTIC, MTOTCOMP* (median measures). The results (not reported) are inconsistent with results reported earlier in Tables 5 to 7, but the significance level varies (p<0.10). Similarly, this study tested long-term incentives (*LNLTINC*) as a test variable along with other incentives and results are insignificant due to low incidence. Such results are on the expected lines as many smaller firms do not offer long-term incentives to their CEO's. The results of this study are consistent across current audit fees and next year audit fees for all the audit committee independence and expertise, base, incentive, stock options, and total compensation measures. The results of endogeneity tests are also largely consistent with the main results. The consistency in the results strengthens the validity of the results and inferences drawn thereupon.

To sum up, the results of audit committee expertise suggest that in the U.S. the audit committee experts demand a better audit to cover the enhanced risk on the board of directors and pay a premium. Moreover, as expected the corporate governance measures are more effective in for the U.S. firms as this study find the *REGION*CGI* is positive and significant in most of the Tables (5 to 7). This study provides evidence

to the findings of Vafeas and Waegelein, 2007 and host of other researchers (e.g., Choi et al. 2008; Engel at al. 2010; Kim et al. 2014; Anthony et al.2014; Yezen et al.2014).

## CONCLUSION

Corporate governance measures in the U.S. vary from other countries due to its mandatory nature. In such setting, audit firms exercise care as any mistake may affect their reputation. Moreover, audit committees also play an important role in the determination of audit and non-audit work. The increasing focus on executive compensation in the U.S. and N.Z has highlighted the risk attached to the various CEO compensation. The audit firms are also advised by PCAOB and IFAC to carefully evaluate client executive compensation arrangements in the context of the financial statement audit. A stream of research studies also provide evidence to support the views expressed by the regulators (Chen et al. 2015; Kim et al. 2014; Billings et al. 2013; Yezen et al. 2014; Ananthanarayanan et al. 2017).

This study investigates the audit fee determinants in countries that have a similar background in accounting and auditing standards but vary in regulations. Observing 1170 small and medium-sized firms in both U.S., and New Zealand this study empirically tests the model used by Choi et al. (2008). Results suggest that in the U.S. firms the corporate governance measures are stronger than similar firms of New Zealand. Moreover, firms with stronger governance audit committee experts demand a better-quality audit from audit firms by paying a premium. Short-term incentives are construed as an audit risk factor in both the countries probably due to the size of the firms. This study does not find any evidence for Big4 segmentation premium as Big4 firms in both countries charge a higher audit fee when incentives are offered to the CEO in the post-SOX period, and the results are consistent with earlier studies (Choi et al. 2008: Winsocki 2010; Ananthanarayanan et al. 2017).

This study extends both the U.S. and New Zealand literature on audit fee determinants. This study is the first to expand the current U.S. CEO compensation and audit fee research to the N.Z. environment specifically, and to non-U.S. settings generally, with evidence suggesting that auditors are pricing client CEO compensation incentives even in a smaller non-U.S. market. Second, this study also finds that mandatory corporate governance is more effective in the U.S. and policymakers in N.Z should implement such measures. Third, this study informs N.Z. stakeholders of the relative importance of corporate governance measures in mitigating their concerns surrounding CEO compensation, with results supporting arguments for greater corporate governance reform. A point of interest of this study is to see how the enhanced audit and governance regulations under SOX affect audit fees through their effects on audit risk in two different settings for small and medium-sized companies.

The scope of this study is mainly limited to three issues. First, the study focuses on the effects of audit committee independence and expertise, 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; Griffin et al. 2008; Choi.et al 2008). Second, the study examines the effects of these corporate governance measures on audit fees in the post-SOX era. Finally, the sample of this study consists of small firms based on a relative measure namely value of total assets. In sum, results suggest that future studies should pay more attention to country level specifics and include such variables in their audit fee settings. Studying firms of countries which have similar auditing and accounting backgrounds over a longer period would be productive.

## APPENDIX

Appendix A: Operational Definition of Variables

| | | |
|---|---|---|
| **Dependent Variables** | | |
| *AUDFEE* | = | natural logarithm of total audit fees paid by the client to the external auditor |
| **Test Compensation Variables** | | |
| *lnTOTCOMP* | = | natural logarithm of total CEO compensation |
| *lnBASE* | = | natural logarithm of CEO base salary compensation |
| *lnSTIC* | = | natural logarithm of CEO short-term incentive compensation, including annual bonus, spot rewards, and retention bonus |
| *STOCK* | = | 1 if the firm provides CEO stock option compensation, 0 otherwise |
| *ACINDEP* | = | the proportion of independent directors on the firm's Audit Committee |
| *ACEXP* | = | the proportion of accounting experts on the firm's Audit Committee |
| **Governance Variables** | | |
| *BDSIZE* | = | number of directors on the firm's Board of Directors |
| *ACSIZE* | = | number of directors on the firm's Audit Committee |
| *CCSIZE* | = | number of directors on the firm's Compensation Committee |
| *BDINDEP* | = | the proportion of independent directors on the firm's Board of Directors |
| *CCINDEP* | = | the proportion of independent directors on the firm's Compensation Committee |
| **Additional Control Variables** | | |
| *SIZE* | = | natural logarithm of firm's total assets |
| *GEOSEG* | = | number of firm's geographic segments |
| *BUSSEG* | = | number of firm's business segments |
| *ARINV* | = | the sum of accounts receivable and inventory scaled by total assets |
| *MB* | = | firm's market price per share to book value per share ratio |
| *LEVERAGE* | = | total long-term debt scaled by total assets |
| *MERGER* | = | 1 if the firm had a merger or an acquisition during the year, 0 otherwise |
| *NONAUDFEE* | = | natural logarithm of total non-audit fees paid by the firm to the auditor |
| *BIGFOUR* | = | 1 if the client's external auditor is a Big 4 auditor, 0 otherwise |
| *YEAR_FE* | = | year fixed-effects indicator variable |
| *IND_FE* | = | industry fixed-effects indicator variable |
| *REGION* | = | 1 if the firm is from the U.S. and 0 otherwise |

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## DATA AVAILABILITY

All data are publicly available from sources identified in the text.

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## BIOGRAPHY

Dr. Umapathy Ananthanarayanan is an Assistant Professor of Accounting at the New York Institute of Technology. He can be contacted at: School of Management, 26, 61st West Street, School of Management Building, Manhattan, New York, 10023. Phone No: 646-273-6184.