

**Governance regulatory changes, IFRS adoption, and New Zealand audit and non-audit fees:
Empirical evidence**

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Abstract

This study examines the association between overseas and New Zealand governance regulatory reforms in New Zealand public companies' audit and non-audit fees. We state audit and non-audit fee models, and use temporal and IFRS indicator variables to relate the timing of the fee changes with the incidence of the overseas and local governance reforms.

We find that audit fees increased in New Zealand over 2002-2006. Such increases associate reliably with the transition to and adoption of NZ IFRS and not with the overseas governance reforms in the United States and Australia, enacted earlier.

Our results also show a decrease in non-audit fees over the same period but we find no IFRS effect for non-audit fees.

Keywords: Audit fees, auditor independence, governance regulations, International Financial Reporting Standards, non-audit fees, NZ IFRS, Sarbanes-Oxley (SOX).

JEL Classification: C30, K22, L80, M40, M41.

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1. Introduction

The collapse of a public company or large audit firm often exposes shortcomings in how companies account and report to their shareholders. Enron, WorldCom, and Arthur Andersen, for example, highlighted serious accounting and auditing weaknesses in the United States. Similarly, the 2001 collapses of Australian companies HIH Insurance and One.Tel revealed critical accounting and auditing problems in Australia.

The adverse impact of these and other global events prompted several countries to address perceived weaknesses in governance and financial reporting.¹ The *Sarbanes-Oxley Act of 2002* (SOX) was perhaps the most high profile and restrictive regulatory change for U.S. companies and their auditors.² Australia also passed legislation similar to SOX on 30 June 2004, namely, the *Corporate Law Economic Reform Program Act of 2004* (CLERP 9), to improve corporate governance, audit quality, and auditor independence.³ CLERP 9, however, is less prescriptive than SOX. For instance, it does not prohibit the provision of non-audit services; instead, it requires compliance with a general standard of independence imposed by CLERP 9 and directors to attest that the provision of such services does not compromise auditor independence (schedule 1: 91 (11B)).

One consequence of these regulations is that audit fees in the United States and Australia have risen sharply since 2001-2002. Researchers attribute this mainly to the higher levels of audit effort and audit risk induced by the regulations (see Griffin and Lont (2007) in the United States; Salman and Carson (2008) in Australia).⁴ On the other hand, non-audit fees have decreased over the same period. New independence requirements and the restriction or elimination of some consulting services may explain why U.S. and

¹ Appendix 1 summarizes key events from 2001 to 2007.

² SOX created the *Public Company Accounting Oversight Board* to oversee U.S. company audits, gave auditing standards legislative backing (section 103), required auditors to attest to internal controls (section 404), mandated an independent audit committee (section 301), and restricted or eliminated the provision of many non-audit services by the auditor (section 201).

³ CLERP 9 also gave auditing standards legislative backing (schedule 1.2a (227B)), and established a single body—the Financial Reporting Council—to oversee accounting and auditing standard setting. ASX listing rule 12.7 (introduced 1 January 2003, amended 3 May 2004) required the top 500 Australian companies to establish an audit committee for financial years commencing after January 2003.

⁴ Salman and Carson (2008) show that audit fees for Australian companies have increased since 2001; in particular, those listed on a U.S. stock exchange paid an average 36.9% higher audit fees.

Australian auditors have shed much of this work (see Markelevich et al. (2005) in the United States; Salman and Carson (2008) in Australia). Auditing firms, of course, are free to provide consulting services to companies that are not their audit clients.

How have New Zealand auditing firms fared in light of these governance regulatory initiatives? We raise this question because we are interested in knowing whether SOX, CLERP 9, or similar overseas governance initiatives, which have contributed to significant audit and non-audit fee changes in the United States and Australia, might have spilled over to the New Zealand audit market with similar effects. Given a preponderance of smaller and mid-sized companies in New Zealand and other aspects of the New Zealand environment, we would not expect such initiatives to affect the New Zealand audit market directly, unless somehow they prompted New Zealand company boards and auditors to institute higher levels of assurance more generally.

Local reforms, on the other hand, should have a direct impact on auditors' fees, which leads to our second question of whether New Zealand audit and non-audit fee changes might reflect an association, not with SOX or CLERP 9, but with local initiatives such as the New Zealand Stock Exchange (NZX) governance rules in 2004 and, more recently, the adoption of the New Zealand equivalents of International Financial Reporting Standards (NZ IFRS), beginning 1 January 2005 for early adopters. We use New Zealand audit and non-audit fee data from 2002 to 2007 to untangle whether the audit and non-audit fees in those years are better explained by changes in governance regulatory initiatives in general, such as SOX or CLERP 9, or by New Zealand rules in particular, such as the enhanced governance requirements of NZX or the new accounting and reporting standards under NZ IFRS. Sub-section 1.1 discusses other factors that may have affected auditors' fees in the same period.

The impact of new auditing regulations has long been of academic interest. Sub-section 1.2 discusses the relevant literature⁵. The media has also shown a keen interest in answers to help understand reasons for fee changes and possible differential responses by auditors. For example, recent media commentaries that

⁵ A considerable body of research has also studied the behavior of stock prices, securities analysts, and disclosure mechanisms before and after FD to test propositions about the effects of new auditing regulations.

highlight the large audit fee increases experienced by companies since the passage of SOX and related regulations show that arguments persist as to the cause. Regulatory impacts, increased litigation risk, audit scope, loss of non-audit fee work, internal control certifications, IFRS adoption, and changes in materiality thresholds are often cited to explain the fee increases (e.g., Stuart, 2002; Ciesielski and Weirich, 2006; Wilcox, 2007). Most importantly, knowledge of why New Zealand audit fees might have increased should have high relevance to company boards and investors who pay for and, presumably, expect to garner the benefits of those services, such as a higher level of audit quality and assurance and better information for investment decisions reduced by such increased fees.

Our empirical results are also salient more generally to discussions on accounting and auditing regulation that question the appropriateness for New Zealand investors of governance solutions developed for larger economies such as the United States or Australia. Some would contend that with increasingly global markets, New Zealand standards should reflect the increased risks and lessons learned from the overseas collapses, despite the apparent absence of any similar episode in New Zealand (Diplock, 2005). Others counter-argue that a large-economy solution, if mandated, would be too burdensome for New Zealand investors, and endorse an approach that adopts only those international solutions that fit the local economy's interests (Hunt, 2005; Muriwai, 2005). Evidence of higher audit fees in New Zealand soon after the passage of SOX would support the former view, whereas a finding that the higher audit fees align more closely with the adoption of local regulations and standards would be more consistent with the latter view.

Evidence on whether New Zealand audit fees and hence audit quality might have responded to international governance regulatory solutions should also be useful for standard setters in that any "optimal" level of accounting and auditing quality at the local level must necessarily consider the extent to which boards and auditors might have increased assurance voluntarily, or perhaps in anticipation of subsequent regulation. Indeed, such evidence should be relevant not just for New Zealand standard setters but all those in smaller economies whose participants might be subject to U.S. or other larger economy solutions.

To examine how the different regulations might explain audit and non-audit fee changes over 2002-2007, we state an audit fee model and a non-audit fee model, and use temporal indicator variables to relate the timing

of fee changes to the incidence of the overseas and local governance regulations. Since New Zealand permits the early adoption of IFRS, we are able to use event based indicators in calendar time to test the association between NZ IFRS adoption and auditors' fees.

We summarize our results as follows. After controlling for company size, complexity, and risk, we find that New Zealand public company audit fees increased generally from 2002 to 2006 overall. These fee increases associate most significantly with events in 2004-2006, consistent with a positive relation between the audit fee increases and the years of transition to and adoption of NZ IFRS. Non-audit fees paid to auditors, on the other hand, decreased generally over 2002-2007, and significantly in the later years. Local governance regulations such as the auditor independence requirements of NZX, NZSC guidance, and the NZICA code of ethics (2003) provide one explanation of this decline. Unlike audit fees, we find no reliable evidence of a positive relation between the adoption of NZ IFRS and non-audit fees for New Zealand public companies.

1.1 Background

Compared to its American and Australian counterparts, the initial response in New Zealand to strengthen corporate governance and audit quality was limited at best. Marshall (2002), the 2002 president of the New Zealand Institute of Chartered Accountants (NZICA), cited several factors that would mitigate against New Zealand experiencing problems similar to the United States and elsewhere, namely, New Zealand's putative less complex environment, greater board independence, lower fixation on meeting analysts' expectations, and the use of principle-based rules.

In October 2003 (amended 1 May 2004), NZX imposed changes in its listing rules to improve the governance and audit quality of New Zealand public companies, and required compliance within a year of the company's 2003 shareholders' annual meeting. The new rules required the establishment of an audit committee with majority of independent director membership (listing rule 3.6), imposed a minimum quota for independent directors (listing rule 3.3)⁶, and introduced the Corporate Governance Code of Best Practice as an appendix (listing rules, appendix 16). This best practice code, while not mandatory, recommended that

⁶ Listing rule 3.3 requires a company board to have a minimum of two independent directors, or one-third of the board, whichever is greater.

companies formulate a code of ethics (appendix 16.1), further addressed board and audit committee independence (appendix 16.2 and 16.3), and required boards to monitor independence and all non-audit services undertaken by the auditor (appendix 16.4). The code also required companies to disclose in their annual report the extent to which their governance processes materially differ from the principles in the code. In addition, in February 2004, the New Zealand Securities Commission (NZSC, 2004) promoted a set of nine corporate governance principles, which supported the general thrust of the NZX rules; however, the Commission imposed no requirement for companies to follow these principles.

The New Zealand Accounting Standards Review Board announced on 19 December 2002 that all New Zealand listed companies should adopt NZ IFRS for periods commencing on or after 1 January 2007, with early adoption from 1 January 2005. Given New Zealand's policy of harmonization, particularly with Australia, the adoption of IFRS was triggered by the announcement by the Australian Financial Reporting Council to the Australian Accounting Standards Board (AASB) on 3 July 2002, which directed the AASB to require the adoption of IFRS in Australia for periods commencing on or after 1 January 2005 (Bradbury and Van Zijl, 2005). The Australian move was itself influenced by a similar announcement from the European Union (EU), proposed in 2001 and approved in June 2002, requiring EU listed companies to adopt IFRS from 1 January 2005 (Bebbington and Song, 2003; Bradbury and Van Zijl, 2005).

From an auditor's perspective, while some NZ IFRS accounting standards equate broadly to the existing standards, they are in fact more detailed and involve increased disclosure and, thus, impose greater audit effort and audit risk. This would have been especially so in the year of transition and year of adoption (Audit Guidance Statement 1012, 2007). The adoption of NZ IFRS also created more awareness of corporate governance practices generally. For example, the Ministry of Economic Development released the first of three discussion documents in March 2004 to review New Zealand's financial reporting structure. The Ministry cited several reasons for this, "particularly the global trend towards international accounting standards and perceived deficiencies with the regime" (part I, paragraph 2). The review also includes consideration of the costs and benefits of the auditing process and the need for an oversight board.⁷ Decisions from Part III of

⁷ The Financial Reporting Act 1993 was amended by the Financial Reporting Amendment Act 2006 on 15 November 2006;

the review, which includes consideration of an oversight board, have yet to be finalized. However, while Pickens (2005) and Muriwai (2005), representing the NZICA, generally argued in favor of the status quo, they acknowledged the need to review auditor independence and oversight issues. Diplock (2005) also called for increased oversight of the audit profession. Calls for increased audit oversight have also received the support of the NZSC and the Big 4 (NZSC, 2007).⁸

Despite the global initiatives for better governance and audit quality, few New Zealand listed companies were directly affected by SOX or similar overseas reforms; for example, few New Zealand companies dual-list on a U.S. exchange⁹, and New Zealand has no equivalent of section 404 of SOX (on internal control reporting). As such, initial calls for such companies' boards and auditors to increase the quality of auditing assurance as per SOX or similar solutions should have had only a limited impact on New Zealand audit effort and fees. While company boards and auditors are free to set an appropriate level of assurance for their investors, our review of the New Zealand environment suggests a far greater preoccupation by such groups with the adoption and implementation of NZ IFRS than with SOX or CLERP 9. We would expect audit and non-audit fees over our study period of 2002 to 2007 to reflect this preoccupation.

1.2 Prior Literature

Our study builds upon the literature of how regulation might affect audit and non-audit fees. Although such fee issues have been considered in contexts outside of New Zealand (e.g., Griffin and Lont (2007) and Salman and Carson (2008) document the impact of SOX on U.S. and Australian company audit fees, respectively), much less is known about the New Zealand audit market and its possible response to SOX. Hay and Knechel (2006) and Baskerville and Hay (2006) provide pre-SOX evidence of changes in audit fees and suggest that audit fees stabilized prior to 2002, but do not consider more timely fee changes as we do here. We

however, no changes to the filing requirements for issuers resulted from the review.

⁸ No substantial changes to New Zealand auditing standards occurred during the periods we examine; however, there was a convergence programme prior to the decision to adopt formally International Standards on Auditing for New Zealand companies (NZ ISA) (effective for approved NZ ISA standards for periods beginning on or after January 2008). For example, AS 206 and AS 300 (both effective from 1 January 2005) are based on ISA 240 and ISA 300, respectively. AS 545 (effective from 1 January 2004) is consistent with all material aspects of ISA 545 (2002). Private correspondence with senior Big 4 auditors suggests that the impact of these recent auditing standards on audit fees is relatively minor compared to the impact of the introduction of NZ IFRS and New Zealand's auditing-related governance rules.

⁹ In our data sample, only Telecom Corporation of New Zealand was dual listed on a U.S. stock exchange over the entire study period. Two other companies were delisted from a U.S. exchange (in 2002 and 2004).

are the first of which we are aware to examine New Zealand audit fees in the post-SOX era.

Our study also relates to the literature on how auditor independence rules might change audit firms' fees from consulting services. For instance, if the provision of non-audit services threatens auditor independence and audit quality, then non-audit fees should decline following the adoption of stricter rules. Prior empirical evidence yields mixed results in this regard. For instance, some studies suggest that the provision of non-audit services increases the economic bond between the auditor and client, which leads to either actual or perceived impairment of independence (DeAngelo, 1981; Firth, 1997; Frankel et al., 2002; Kinney et al., 2004). Others conclude that the provision of audit and non-audit services to the same client enhances audit effectiveness and efficiency (Antle et al., 1997; Mishra et al., 2005; Joe and Vandervelde, 2007). We extend this idea by considering the provision of non-audit services by auditors in New Zealand. While New Zealand auditors are not specifically restricted in the type of non-audit work they can undertake and, therefore, the impact on this type of work might be less than that reported in the United States, we expect New Zealand auditors' non-audit fees to decline in the post-SOX period following the stricter local independence rules, such as those set forth in the NZX listing rules and the NZICA code of ethics: Independence in Assurance Engagements, effective from 1 January 2004.

However, the transition to and adoption of IFRS could also have an impact on audit and non-audit fees, and we need to incorporate this in our research design. Schadewitz and Vieru (2008) find that small and medium size listed companies in Finland paid higher auditors' fees, particularly non-audit fees, in their first year of IFRS adoption. A report by the Institute of Chartered Accountants in England and Wales discloses that EU companies ranked increased auditing costs as one of the largest IFRS related costs (ICAEW, 2007). That report also listed several types of support and services auditors may offer, suggesting a positive relation between permitted non-audit fees and IFRS adoption.

1.3 Research Issues

Based on the foregoing discussion and literature review, we examine the following issues. Each builds upon the theoretical notion that to the extent that mandated accounting and auditing requirements change the optimal level of audit assurance, they should also change the optimal level of fees. We first predict that audit

fees should *increase* as a reflection of the additional audit effort and risk, and that non-audit fees should *decrease* as the increased assurance is, in part, achieved by stricter independence rules. Also, clients or auditors, particularly some Big 4 auditors may have voluntarily imposed restrictions on themselves regarding the supply of non-audit services. Our first research issue is therefore:

Whether the overseas governance reforms and the New Zealand governance regulatory changes potentially increased audit fees and decreased non-audit fees for New Zealand public companies.

One way the impact of international regulatory change could affect New Zealand audit fees is through listing requirements. While Telecom Corporation of New Zealand is the only company in our sample directly affected by U.S. requirements, several companies in our sample are dual listed in Australia. For example, fees could be impacted if boards and shareholders of dual-listed New Zealand companies impose (in response to the regulations) a higher level of audit effort and risk and auditors increase audit fees to cover these factors, although, ultimately, this is an empirical question. We control for listing status in our research design.

We also contend that such audit and non-audit fee changes should reflect a stronger association with local governance regulations such as the adoption of NZ IFRS and NZX rules, and a weaker association with international regulations such as SOX. SOX is not a requirement in New Zealand (other than for a few companies with a dual-listing); although such reforms could still affect local fees if New Zealand boards and auditors increase audit quality commensurate with the provisions of the overseas rules. On the other hand, regulators and many in the financial press expressed the view that the transition to and adoption of NZ IFRS should be a costly endeavor for New Zealand companies (e.g., Fisher, 2007). The move to NZ IFRS creates extra work and risk for auditors in their preparation of an audit and in the audit itself following the new standards and, therefore, could increase audit fees. While we expect, as per our first issue, non-audit fees to decline generally because of stricter auditor independence rules, such decline could also be offset by a demand by clients for auditors' consulting services to assist in IFRS transition and adoption. Therefore, our second issue is:

Whether the transition to and adoption of NZ IFRS potentially increased audit and non-audit fees for

New Zealand public companies.

The paper continues as follows. Section 2 outlines the methods and data. Section 3 provides descriptive analyses of the level and the change of audit and non-audit fees, and discusses the results from regression analysis. Section 4 examines the robustness of the results to alternative procedures, and section 5 states the major findings and conclusions.

2. Data and Models

2.1 Data

We analyze annual audit fee, non-audit fee, and financial data for companies in the *OSIRIS* database with fiscal year ends from 2002 to 2007. Initially, we obtain a total of 724 company-year observations. To test better how the different regulations might affect audit and non-audit fee changes over our study period, we limit our analysis to companies with at least five years of data. Where necessary, we manually collect missing data from companies' annual reports. This yields a final sample of 653 company-year observations.

2.2 Method

Our basic approach uses an audit fee model with fee determinants as per the prior literature and a series of temporal indicator variables to examine if the higher or lower audit fees correspond with key governance events that may have changed the auditing firm's environment.¹⁰ To determine the potential effect of NZ IFRS on audit fees, we include indicator variables for the year immediately prior to IFRS adoption, the year of adoption, and subsequent years. We control for other fee determinants based on Simunic (1980) and later studies by Maher et al. (1992), Menon and Williams (2001) (U.S. evidence), Carson et al. (2002) (Australian evidence), and Pong (2004) (U.K. evidence). We specify a parsimonious statistical model because of the small number of New Zealand public companies. Since New Zealand companies can adopt IFRS early, we also examine as a robustness test the residual fees from the audit fee model in event time (where year zero is the first year of adoption).

The prior literature guides our selection of the variables. In a review of 147 published studies, Hay et al.

¹⁰ Sub-section 2.3 states the models.

(2006a) report client size as the most important determinant of audit fees. That study also suggests that complexity of the client explains audit fees, as auditors must spend more time and effort in planning and coordinating a difficult audit. Audit fees associate positively with a number of risk variables. For example, Simunic (1980) suggests that client leverage, liquidity, and profitability are risk variables that drive audit fee increases, as highly levered, less liquid, and low return companies are more likely to incur losses.

Prior studies also show that Big N firms command a fee premium for reputation and quality (DeAngelo, 1981; Simon and Taylor, 1997; and Hay et al., 2006a). In addition, companies in regulated industries such as finance are easier to audit (Turpen, 1990) and we, therefore, expect lower audit fees for these companies relative to those in other industries. Finally, audit report lag—the period from the balance date to the issuance date of the audit report—is often interpreted as an indicator for audit efficiency, as a longer delay can indicate problems during the course of the audit and difficulties in resolving sensitive audit issues (Knechel and Payne, 2001). We, therefore, expect a positive association between audit report lag and audit fees. We also expect a positive relation between dual-listing and audit fees as these companies often demand increased audit services and require the auditor to increase the scope and complexity of audit procedures (Carson and Fargher, 2007).

We use log of total assets to proxy for client size (*LTA*), the ratio of inventory and receivables to assets to measure client complexity (*INVAR*), the ratio of long-term debt to assets (*DA*), the ratio of earnings before interest and tax to assets (*ROA*) and current ratio (*CURRENT*) to proxy for client risk, log of the number of days between the balance date and auditor signature date (*LAG*) to proxy for audit efficiency, a zero-one indicator variable for auditor quality (*BIG4*), a zero-one indicator variable for companies in the finance and investment services industry (*FINANCE*), and a zero-one indicator variable for dual-listed companies (*DUAL*).¹¹ We also include natural log of non-audit fees (*LNAF*) as prior research shows non-audit fees may be a determinant of audit fees.¹²

We contend that the auditors of NZ IFRS adopters will perform additional work to comply with the new

¹¹ There are 13 dual-listed companies in our sample, all of which are (or have been) listed on the Australia stock exchange; and three of them are/have been listed on both the U.S. and Australia stock exchanges.

¹² We also undertake a two-stage regression approach to correct for possible parameter bias that can result from using a single-stage regression (Whisenant et al., 2003; Antle et al., 2006). Our results are qualitatively unchanged when we use approach. Note 20 comments further on this issue.

standards. The audit fees should be higher in the first year of adoption, when companies need to restate their opening balance sheet and provide prior year comparative figures, and also on an ongoing basis, reflecting the more onerous accounting, measurement, and disclosure requirements of IFRS. Audit fees should also be higher in the transition year (the year prior to NZ IFRS adoption) because of preparatory work related to the move to IFRS. We, therefore, include three IFRS related indicator variables, specifically, *PREIFRS*, *IFRSY1* and *IFRSY2&3* equal one for companies in the year prior to IFRS adoption, the year of adoption, and the second and third year of adoption, respectively, and zero otherwise. We also control for the effect of an auditor change (*AUDCHG*), as previous studies document audit fee differences by new auditors (Simon and Francis, 1988; Turpen, 1990; Pong and Whittington, 1994).

Finally, we include year indicator variables in the audit fee model to adjust for audit fee changes in the 2002-2007 study period not controlled for by the other determinants. To accomplish this, we set *YR2003*, *YR2004*, *YR2005*, *YR2006*, and *YR2007* equal to one for data from fiscal years 2003 to 2007, respectively, zero otherwise. The 2002 effect is reflected in the intercept. These fixed effect variables capture overseas and local governance regulatory changes in general and, also, possible macro trend effects of IFRS. The IFRS variable coefficients are, therefore, incremental to these general effects; and thus more conservative given that we detrend the regression residuals. Overall, we expect positive coefficients for *LTA*, *INVAR*, *DA*, *BIG4*, *FINANCE*, *DUAL*, *LAG*, *LNAF*, the three IFRS variables, and all year indicator variables, and negative coefficients for *CURRENT* and *ROA*. Since we are unable to distinguish between dismissals and resignations, which could have a different impact on audit fees, we make no expectation about the coefficient for *AUDCHG*.

We motivate the variables in our non-audit fee model as follows. We include *LTA*, *INVAR*, *DA*, *ROA*, *BIG4*, *FINANCE*, *DUAL*, *LAF*, three IFRS variables and a series of year indicators. Houghton and Ikin (2001) argue that companies are more likely to engage an auditor viewed as a non-audit services specialist or industry leader to perform non-audit services. We, therefore, include a non-audit services industry leader variable (*INDLEAD*) in the non-audit fee model, and define *INDLEAD* equal to one if an audit firm is the largest supplier of non-audit services (based on total dollar fees) in the industry in which a company operates, and

zero otherwise.¹³ We expect the same signs for the common variables in the non-audit fee model, a positive coefficient for *INDLEAD*, and negative coefficients for the year indicators.

2.3 Models

We specify the following pooled cross-sectional regression models. For convenience, the models omit the time and company subscripts. Our audit fee model is:

$$\begin{aligned}
 LAF = & \alpha + \beta_1 LTA + \beta_2 INVAR + \beta_3 DA + \beta_4 CURRENT + \beta_5 ROA + \beta_6 BIG4 + \beta_7 LNAF + \beta_8 FINANCE \\
 & + \beta_9 LAG + \beta_{10} AUDCHG + \beta_{11} DUAL + \beta_{12} PREIFRS + \beta_{13} IFRS1 + \beta_{14} IFRS2 + 3 + \beta_{15} YR2003 \\
 & + \beta_{16} YR2004 + \beta_{17} YR2005 + \beta_{18} YR2006 + \beta_{19} YR2007 + \varepsilon
 \end{aligned} \tag{1}$$

Our non-audit fee model is:

$$\begin{aligned}
 LNAF = & \alpha + \beta_1 LTA + \beta_2 INVAR + \beta_3 DA + \beta_4 ROA + \beta_5 BIG4 + \beta_6 INDLEAD + \beta_7 LAF + \beta_8 FINANCE \\
 & + \beta_9 DUAL + \beta_{10} PREIFRS + \beta_{11} IFRS1 + \beta_{12} IFRS2 + 3 + \beta_{13} YR2003 + \beta_{14} YR2004 + \beta_{15} YR2005 \\
 & + \beta_{16} YR2006 + \beta_{17} YR2007 + \varepsilon
 \end{aligned} \tag{2}$$

where:

- LAF* = Natural log of audit fee.
- LNAF* = Natural log of non-audit fee.
- LTA* = Natural log of total assets at end of fiscal year.
- INVAR* = Ratio of sum of inventory and receivables to total assets.
- DA* = Ratio of long-term debt to total assets.
- CURRENT* = Ratio of current assets to current liabilities.
- ROA* = Ratio of earnings before interest and tax to total assets.
- BIG4* = Deloitte, Ernst & Young, KPMG, and PriceWaterhouseCoopers = 1, 0 otherwise.
- FINANCE* = Finance and investment services industry (as categorized by NAICS) = 1, 0 otherwise.
- LAG* = Natural log of the number of days between the balance date and auditor signature date.
- AUDCHG* = Auditor change = 1, 0 otherwise.
- DUAL* = Company dual listed in Australia or U.S. stock exchange or both = 1, 0 otherwise.
- INDLEAD* = Company audited by a non-audit services industry leader = 1, 0 otherwise. Non-audit services industry leader is defined as the auditor with the largest non-audit services market share (based on dollar fees) in the industry in which a company operates.

¹³ We determine industry using the two-digit NAICS categories.

PREIFRS = Year prior to NZ IFRS adoption = 1, 0 otherwise.
IFRSY1 = First year adoption of NZ IFRS = 1, 0 otherwise.
IFRSY2&3 = Second or third year of adoption of NZ IFRS = 1, 0 otherwise.
YR200X = Fiscal year 2003 to 2007 = 1, 0 otherwise.
 ε = Random error.

Since the pooling of observations over time for the same companies can lower the power of the statistical tests because of lack of independence, we also examine alternatives to this approach and report the results in section 4 on robustness tests.

3. Results

3.1 Descriptive Statistics

Panel A of table 1 reports descriptive statistics for audit and non-audit fees by year. Mean audit fees increase from \$142,373 in 2002 to \$234,402 in 2007, and over 2002-2007 grow at a constant annual compound growth rate of 7.28 percent.¹⁴ Median audit fees increase also. Mean and median non-audit fees, on the other hand, show an overall decrease. For example, mean non-audit fees experience a compound negative annual growth rate of 2.55 percent over 2002-2007. The mean and median ratios of non-audit fees to total fees also decrease from 2002 to 2007. The mean ratio, for example, drops from 35.7 percent in 2002 to 24.8 percent in 2007.

Panel B reports similar statistics by audit firm. Focusing on the most recent 2007 data, the Big 4, collectively, perform more than 82 percent of the audits and receive around 95 percent of combined audit fees.¹⁵ In 2007, PwC captures more than one third of the market followed by KPMG, which comprises 27.5 percent (30/109). However, the market share of all Big 4 firms remains relatively stable over time, with a large increase for KPMG, and decreases for the other firms, including the non-Big 4.

Panel B also shows that audit fees per company, on average, increase each year from 2002, with the

¹⁴ We calculate annual compound growth rate using the LOGEST function in Excel.

¹⁵ Our data shows in 2007, for instance, New Zealand auditors earned total audit fees of \$25.3 million and non-audit fees of \$12.7 million, and Big 4 firms earned total audit fees of \$24.5 million and non-audit fees of \$12.4 million. Overall, 79.2% of audits were undertaken a Big 4 auditor.

exceptions that Deloitte and E&Y experience a decline from 2002 and 2003. Mean KPMG audit fees almost tripled from 2002 to 2007. The large increase for KPMG in 2002-2003 is mainly because the firm acquired several large clients, particularly Telecom Corporation of New Zealand and Vector Ltd. The trend for non-audit fees from audit clients is less uniform. While KPMG achieves a significant increase in its non-audit fee income to become the largest audit firm provider of non-audit services¹⁶, the non-audit fees for E&Y and Deloitte decline significantly. Non-Big 4 audit firms experience a slight increase in non-audit fees, but from a smaller base. The mean ratio of non-audit fees to total fees decreases for all Big 4 audit firms, reflecting mostly the decline in non-audit fees, including a decline for KPMG, whose non-audit fees increase. For the non-Big 4, the non-audit fees to total fees ratio remains relatively constant.

Panel B statistics show some odd variations, particularly the large decrease in non-audit fees for Deloitte from 2002 to 2003. The change of auditor by Tower Ltd from Deloitte to PwC explains most of this drop. For example, Deloitte undertook \$3.44 million of non-audit fee work for Tower Ltd in 2002, impacting on the mean audit fees by approximately \$262,000. Panel C restricts the sample to those companies audited by the same Big 4 auditor over the six year period (i.e., companies with auditor changes are excluded). These results confirm the temporal increase in audit fees for all Big 4 auditors. For non-audit fees, a more tempered increase is observed for KPMG, while E&Y grew its consultancy fees but from a low base, with the loss of key clients explaining the decline reported in panel B. Deloitte is the only Big 4 that shows a clear downward trend in non-audit fees, and it may be that they have voluntarily restricted the non-audit services they provide.

Panel D presents descriptive statistics for the dependent and control variables for the regressions. We use the log of audit and non-audit fees, company size (total assets) and audit lag (the number of days between balance date and auditor signature date) to reduce the effects of outliers in the regression analysis. Companies with a Big 4 auditor represent 79.2 percent of the sample, companies in the finance and investment services industry represent 9.2 percent, 6.3 percent of the companies experience an auditor change, and non-audit service specialists perform 34.7 percent of the audits.

Panel E reports the sample distribution of the adoption of NZ IFRS. Among the 110 companies, 47

¹⁶ In absolute terms, KPMG earned \$6.6 million in non-audit fees in 2007 (or 52% of the market share).

companies (42.7 percent) adopted NZ IFRS between 2005 and 2007, with 5, 24, and 18 companies in each year respectively.¹⁷ There are, therefore, 62 companies that should report under NZ IFRS for their 2008 fiscal year; these companies fall into the *PREIFRS* category in 2007.

3.2 *Univariate Results*

This sub-section documents how companies' audit fees differ on the basis of selected factors. Specifically, we partition the sample based on median company size (*LTA*), company complexity (*INVAR*), company risk (*DA*), and non-audit fee (*LNAF*). We also partition based on IFRS adoption (*IFRS*), auditor change (*AUDCHG*), finance and investment services industry (*FINANCE*), audit firm type (*BIG4*), and dual listing (*DUAL*).

Table 2 shows that mean and median log of audit fees are consistent with our expectations and differ reliably by our key factors. Audit fees are higher for clients that are larger (*LTA*), more complex (*INVAR*), and more risky (*DA*). Audit fees are also higher when clients buy more non-audit services, when clients adopt IFRS early, when a company chooses a Big 4 firm as its audit provider, and when a company lists on an overseas exchange. We also observe lower audit fees for companies in the finance and investment services industry (*FINANCE*) and companies with auditor changes (*AUDCHG*), although the differences are not significant.

3.3 *Regression Results*

Table 3 shows regression estimations for the models of log of audit fees and non-audit fees.¹⁸ Panel A documents the results for the audit fee model (model 1). Regressions 1 and 2 outline results for the combined sample and those audited by a Big 4 auditor, respectively. We also summarize the audit fee regressions for larger and smaller companies (partitioned on median total revenue) in regressions 3 and 4, respectively.

¹⁷ The observations for *PREIFRS* (19 in 2006) and *IFRSYI* (18 in 2007) are different because of a missing observation for a 2007 IFRS adopter in 2007.

¹⁸ A correlation matrix for the audit fee model shows that none of the correlation coefficients is greater than a threshold of 0.500. The correlation matrix for the non-audit fee model reveals that *LAF* is positively associated with *LTA* (the coefficient is 0.793), and no other correlation coefficient is greater than 0.500. The variance inflation (VIF) scores for all variables are below 4 in audit and non-audit fee models, consistent with no significant impact of collinearity among the variables on the results (Neter and Wasserman, 1990).

The combined sample estimation (regression 1), summarized in panel A, explains 74.1 percent of the variation in audit fees. As expected, the coefficients for *LTA*, *INVAR*, and *LAG* are significantly positive, that is, audit fees increase as companies become bigger and more complex. The significant and negative coefficient for *ROA* indicates that audit fees are also higher for riskier clients. We observe that the coefficient for *BIG4* is insignificant and, thus, our results do not provide evidence of a Big 4 premium in New Zealand, consistent with Hay et al. (2006b).¹⁹ Regression 1 also shows that clients with an auditor change (*AUDCHG*) and dual listing (*DUAL*) experience an increase in audit fees, and there is a positive and significant relation between *LAF* and *LNAF*.²⁰ The variables *CURRENT*, *DA* and *FINANCE* are generally not significant in our audit fee model.²¹

We also find significant audit fee increases that coincide with the transition to and adoption of NZ IFRS. Our audit fee model reflects these as positive and significant coefficients for *PREIFRS*, *IFRSY1* and *IFRSY2&3*. For example, the coefficient for *PREIFRS* (0.307) indicates that the mean *LAF* in the year of transition is significantly higher than the mean *LAF* in the years prior to the transition year (the base group, denoted *NONIFRS* in the following discussion) for the IFRS adopters. Likewise, the coefficient estimates for *IFRSY1* and *IFRSY2&3* indicate that the mean *LAF* for the first year of IFRS adoption and the second/third year of adoption are 0.314 and 0.706 higher, respectively, than the mean *LAF* for the *NONIFRS* years.

We illustrate these numerical relationships using the estimated marginal means reported at the bottom of panel A.²² The comparison of the estimated mean *LAF* provides further insight about the fee relationship

¹⁹ We also examined if any of the Big 4 earned higher audit fees than non-Big 4 by replacing the single Big 4 indicator with four individual Big 4 firm indicators and using the non-Big 4 as the base group. We find no evidence that any Big 4 firm charges premium fees compared to non-Big 4 firms, and we also observe no significant fee differences among the Big 4 firms.

²⁰ We also followed a two-stage regression approach by first predicting non-audit fees and including the predicted value as an independent variable in the audit fee regression, similar to the approach adopted by Whisenant et al. (2003) and Antle et al. (2006) to correct for possible parameter bias that can result from using a single-stage approach. Our results, overall, are quantitatively similar except that coefficients for *YR2003*, *YR2004*, and *YR2005* in the audit fee model are no longer significant. However this predicted variable is highly correlated with *LTA*, *BIG4*, and *DA*, and the VIF tolerance levels between these variables exceed acceptable thresholds (30.5, 23.5 and 87.3 respectively). We find a similar problem when we include predicted log of audit fee to estimate the NAF model.

²¹ Since debt is an example of a financial instrument, we interacted *DA* with all three IFRS variables to test if the complexity of NZ IAS 39 (Financial Instruments) corresponded with an increase in audit fees. Our result (unreported) shows that none of the interaction coefficients is statistically significant.

²² We used SPSS's GLM univariate procedure to analyze our covariates and IFRS based grouping variables. This approach allows us to conduct post hoc tests to evaluate differences in our specific means.

among the IFRS indicators. For example, we observe no significant fee increases from the year of transition to the first year of adoption (the means of *LAF* for *PREIFRS* and *IFRSY1* are 11.396 and 11.403 respectively). However, the mean *LAF* is significantly higher for the second and third years of IFRS adoption (mean *LAF* for *IFRSY2&3* is 11.795) compared to the *LAF* in the first year of adoption (*IFRSY1*). In other words, our results suggest that NZ IFRS adopters incurred higher audit fees in their subsequent years of IFRS adoption (second or third year) than in the first or transition year.

Overall, these results support our expectation that companies began their transition to NZ IFRS in the year prior to the adoption, as reflected in a higher audit fee in the transitional period. Audit fees are also higher in the later years of IFRS adoption than the first year of adoption, consistent with an ongoing cost of IFRS. As such, the move to NZ IFRS has coincided with higher audit fees for New Zealand companies in all years identified, from 2005 to 2007. Such higher audit costs, however, may moderate in the future to the extent that they reflect one-time start-up or learning costs.

Our results in regression 1 of panel A also indicate that audit fees increased generally between 2004 and 2006, given the positive and significant coefficients for *YR2004*, *YR2005*, and *YR2006* and a negative (but insignificant) coefficient for *YR2007*. The insignificant coefficient for *YR2003* suggests that audit fees did not increase reliably through 2003. In other words, the early effects of SOX do not appear to associate with a similar impact on New Zealand companies' audit fees. However, the significant fee increase in 2004 could reflect a lagged association with SOX and related overseas governance changes in 2003 and 2004, or an anticipatory effect of the New Zealand governance reforms.

The results for companies with Big 4 auditors (regression 2) and smaller New Zealand companies (regression 4) are qualitatively equivalent to those for the combined sample. None of the coefficients for the year indicators and the IFRS variables is significant for the non-Big 4 sample (not reported). Our results also imply that the audit fee increases in the later years for larger firms (regression 3) associate mostly with the transition to and implementation of NZ IFRS rather than more general factors, since none of the coefficients for *YR2005*, *YR2006*, and *YR2007* is significant after we control for IFRS.

Panel B of table 3 summarizes the results of estimating the non-audit fee model (model 2). The panel also

shows the results for the Big 4 and the larger and smaller company samples. We use 513 company-year observations for this analysis, excluding companies with zero non-audit fees. The adjusted R^2 's are approximately 64 percent for the combined and Big 4 samples. The adjusted R^2 's are smaller for the non-Big 4 (not reported) and the larger and smaller company samples. Our results for regression 1 in panel B show that for the most part the model's explanatory power is driven by *LTA*, *INVAR*, *BIG4*, *INDLEAD*, *LAF*, and the time trend in non-audit fees, particularly from 2005 to 2007.

We apply the same method as used in the audit fee model to analyze the association between NZ IFRS adoption and non-audit fees. First, the insignificant coefficients for *PREIFRS*, *IFRSY1*, and *IFRSY2&3* in regression 1 indicate that non-audit fees did not change reliably in relation to IFRS transition or adoption, although the coefficients are positive, consistent with the IFRS results for audit fees. To the contrary, non-audit fees decreased generally over the study period. Indeed, all the year indicator coefficients are negative after we control for the other determinants and the IFRS variables; and significantly so for *YR2005*, *YR2006*, and *YR2007*. We conjecture that these non-audit fee decreases associate with the stricter auditor independence requirements of NZX, NZSC guidance, and the NZICA code of ethics. The results for Big 4 and larger companies (regressions 2 and 3 respectively) show generally similar findings. On the other hand, besides the significantly negative coefficients for *YR2005* and *YR2006*, most coefficients for the smaller company sample are insignificant.²³

In short, we find no evidence of significant non-audit fee increases in the year prior to the IFRS adoption, year of the adoption, and subsequent years. While this is inconsistent with our expectation that auditors may have provided consulting services to audit clients regarding the move to IFRS, it is, on the other hand, broadly supportive of the contention that the stricter rules for auditor independence may have impacted non-audit fees. Indeed, the results for the year indicators show that New Zealand auditors (especially the Big 4) reduced their provision of non-audit services to their audit clients, as the *YR2005*, *YR2006*, and *YR2007* coefficients in panel B are significantly negative at less than one percent. Also, if we focus on the *YR2003* and *YR2004* coefficients,

²³ We also performed an analysis of an alternative to model 2, which partitions the study period into two sub-periods and includes a year indicator, *YR2002-2004* (a variable equal to one for fiscal years 2002 to 2004, zero otherwise) in the non-audit fee model. Our results (unreported) show that non-audit fees are higher in the earlier years than in the later years as reflected in a significantly positive coefficient for *YR2002-2004*.

it is clear that SOX and similar legislation, at least initially, had little impact on New Zealand non-audit fees. The year coefficients are insignificant for all regressions.²⁴

Thus, overall, New Zealand auditors have reduced the provision of non-audit services to their audit clients, which we conjecture could relate to the revised auditor independence standards (including restrictions on the type of service) for New Zealand auditors, as reflected in changes in NZX rules, NZSC guidance, and the NZICA code of ethics. Some New Zealand Big 4 auditors, also, may have been required to follow the rules and guidance from their international affiliate or partner and, thus, provided fewer non-audit services to their audit clients due to those factors as well.²⁵

Finally, we use the coefficients on the year indicator and IFRS variables to approximate an upper bound on the amount of audit fee increase over our study period in general, and the fee increase associated with IFRS adoption in particular. Based on the coefficients in regression 1 of table 3 panel A, we estimate that audit fees increased 21.8 percent from 2002 to 2006. Given an average audit fee of \$142,373 in 2002, the dollar amount of audit fee increase per company is around \$31,000 from 2002 to 2006. After controlling for other determinants of audit fees, including year effects generally, we calculate that companies that adopted NZ IFRS early paid approximately 36 percent higher audit fees in the pre-IFRS period (the transition year) and the first year of IFRS adoption, and an additional 48 percent higher audit fees in their second or third year of IFRS adoption. Similarly, we also estimate that New Zealand companies' non-audit services dropped by 54.8 percent (\$80,200 per company) between 2002 and 2007, in which a 44 percent decrease from 2005-2007.

²⁴ We tested if New Zealand companies with a dual-listing in Australia (13 companies) paid incremental higher audit fees and lower non-audit fees after the passage of CLERP 9 by including an interaction variable $DUAL \times YR2005-2007$ in the audit and non-audit fee models, respectively. Our results show that the coefficients for the interaction variable are insignificant in either the audit or non-audit fee model, which suggests that those companies do not appear to experience incrementally higher audit fees or lower non-audit fees in 2005-2007.

²⁵ We also estimated our audit and non-audit fee models excluding the companies in the finance industry (60 company-year observations) and obtained similar results as shown in table 3. Overall, the coefficients for $PREIFRS$, $IFRSY1$, and $IFRSY2\&3$ are statistically positive with a slightly higher significance for $IFRSY2\&3$ in the audit fee model. The coefficients for the three IFRS variables are also positive and significant in the non-audit fee model. The coefficients for the year indicators support our previous findings. Audit fees do not show a significantly general increase over 2002-2007 (none of the year indicator coefficients is significant). Non-audit fees, on the other hand, decrease significantly over the same period, and are most pronounced in 2005-2007.

4. Robustness tests

4.1 Event Year Analysis of IFRS

Rather than estimate the effects of NZ IFRS in calendar time, as we report in the previous section, an alternative approach estimates the impact of NZ IFRS in event time and, thus, exploits the fact that the initial year of adoption for the companies in our sample could be 2005, 2006, or 2007. Such an approach does not rely on calendar estimates and may reduce calendar year dependence by combining the observations of different years. We define event year 0 as the adoption year. Event year -1 is therefore the year prior to adoption, or the year of transition.

To implement this approach, we first estimate the residuals from the audit fee model (model 1) each year without *PREIFRS*, *IFRSY1*, *IFRSY2&3*, and *YR200X*. The companies are divided according to which event year they belong to relative to IFRS adoption date. We then estimate the mean and median audit fee residual in adoption event years -2 to 2 and compare these data to the mean and median audit fee residual for companies that have yet to adopt IFRS, although by the mechanics of regression estimation such mean of the residuals for non-adopting companies should be near zero. We calculate the individual year t-tests relative to a mean of zero. The residuals for “other years” (all observations other than the IFRS observations) are also tested relative to a mean of zero.

Table 4 presents the results. The combined sample shows positive mean residual audit fees (significant in adoption year -1, 1, and 2), and the trend of mean residual fees generally increases monotonically from event year -2 to 2 (although the results for event year 2 derive from five observations only). Thus, consistent with our results in panel A of table 3, audit fees in the second year of NZ IFRS adoption appear to be higher than those in the first year. We show similar results for larger companies and companies with a Big 4 auditor. The mean residuals for Big 4 companies are significantly greater than zero for each of event years -1, 0, and 1. In other words, clients of the Big 4 appear to pay higher audit fees in the year of transition and the first two years following the adoption of NZ IFRS. These results further hold for median residual fees, so the results are unlikely caused by a few extreme observations. Unreported results also show that the standard deviations of the yearly residuals are essentially constant. In sum, these results are consistent with our earlier evidence of an

increase in New Zealand company audit fees coincident with the adoption of NZ IFRS. The results are most significant for companies with Big 4 auditors.

4.2 Individual Year Analysis

The analysis in table 3 uses a pooled cross-sectional sample to test the impact of NZ IFRS on audit fees. As there is a potential problem of lack of independence of observations for a constant sample, we examine the robustness of our results undertaking individual year audit fee estimations from 2004 to 2007. We omit the results for the individual year analysis in 2002 and 2003 since no companies adopted IFRS until 2005. Our results, presented in table 5, show that *PREIFRS*, *IFRSY1*, and *IFRSY2&3* are uniformly positive and significant for all four years, with exceptions of the coefficients for *PREIFRS* in 2006 and *IFRSY1* in 2007.

Specifically, companies that adopted NZ IFRS in 2005 show statistically significant audit fee increases in 2004 and 2005 and marginal audit fee increases in 2006 and 2007. This is reflected in the coefficients for *PREIFRS* in 2004, *IFRSY1* in 2005, and *IFRSY2&3* in 2006. Similarly, companies that adopted IFRS in 2006 experience higher audit fees for the year prior to IFRS adoption, the year of adoption, and subsequent years. In particular, the fee increases are more significant in the year prior to the adoption and the subsequent years than the year of adoption. Finally, we observe that companies adopting in 2007 appear to have significantly higher audit fees in the year prior to adoption or upon adoption. We suspect this is because auditors reduce audit costs as they become more familiar with the IFRS implementation. Overall, the results for the individual year analysis are qualitatively equivalent to those for the pooled regressions.

4.3 IFRS Page Length Analysis

Our previous regression results document that audit fees increased following NZ IFRS. As a further test of the robustness of this result, we use two alternative measures of the IFRS-related audit effort: the increased page length of audited financial statements after 2005 and the percentage increase in page length.²⁶ We find that the increased page length for all early IFRS adopters varies between 3 and 34 pages, and the percentage increase in page length varies between 24 percent and 193 percent. The results of estimating model 1 with

²⁶ We also created an indicator variable, which is 1 for IFRS adopters with page length increases greater than median, 0 otherwise. The results do not differ.

these alternative IFRS measures show positive and significant coefficients for these variables and, thus, our previous findings regarding the IFRS effect are unchanged.

5. Summary and conclusions

This study examines the effects of overseas and local governance regulatory changes on the audit and non-audit fees of New Zealand audit firms over 2002-2007. Specifically, we use audit and non-audit fee data to assess whether the overseas reforms in corporate governance and reporting beginning in 2002 and the later adoption by New Zealand companies of NZ IFRS and introduction of new NZX governance rules might help explain the variation and trends in audit and non-audit fees over that period. We document the following. First, our results support the view that the audit and non-audit fees paid by New Zealand public companies to their auditors did not change appreciably in 2002-2003 coincident with the passage of SOX and other similar overseas governance and reporting regulations. Interestingly, this result runs counter to published research, which reports an increase in audit fees following the passage of SOX of U.S. companies and Australian companies dual listed on a U.S. stock exchange. The audit and non-audit fees of New Zealand companies did change, however, in the later years. Specifically, we find that audit fees increased significantly in the year prior to IFRS adoption, the year of adoption, and in subsequent years; and we reason that these audit fee changes are best explained by the move to mandate NZ IFRS, with adoption beginning in 2005. We find no similar association between non-audit fees and IFRS. In fact, non-audit fees decreased over the same period; the year indicators for non-audit fees show negative coefficients for the years 2005-2007. Local governance reforms such as the stricter auditor independence requirements of NZX, NZSC guidance, and the NZICA code of ethics provide one potential explanation of this trend.

While, collectively, our results offer little evidence of a reliable association between the passage of SOX and similar overseas regulations and New Zealand auditors' fees since 2002, we cannot rule out the possibility of an indirect relation between the overseas regulations and the fees paid to New Zealand auditors. For example, overseas regulations might influence local rules and practices, which could then affect auditors' fees. Our evidence best interprets this, however, as a secondary influence of the overseas regulations on local rules

and practices rather than a primary effect per se.²⁷ We also cannot eliminate other potential explanations for the fee changes, such as a gradual diminution of auditors' consulting practices for reasons other than auditor independence, other auditing standard releases and amendments in the study period, and other factors that affect the supply of and demand for auditors more generally.

A separate analysis of companies with Big 4 and the non-Big 4 auditors offers further insight into how these governance reforms might have affected different segments of the New Zealand audit market. Big 4 auditors, which economically comprise the bulk of the public company auditing in New Zealand, appear to have spent more time and effort to comply with NZ IFRS and, therefore, show significant fee increases around the year of IFRS adoption. Non-Big 4 firms' fees, on the other hand, show no relation to IFRS adoption and the other reforms.

This study represents an initial attempt to explain whether the audit and non-audit fee changes in New Zealand reflect overseas or local reforms. Using a pooled regression and an event study approach, we exploit the timing difference of these initiatives and their potential impact on fees to conclude that more explanatory power can be attributed to the governance and reporting changes that directly affect New Zealand companies, particularly the impact of the adoption of NZ IFRS, rather than generally non-binding initiatives such as SOX or CLERP 9 from other countries. These findings, however, represent only a statistical association between changes in audit fees and the events of interest, and as such our results are not dispositive of a directional or causal relation.

Finally, while our results are robust to different definitions and methodologies, additional work is warranted, especially if we wish to make more compelling statements about the relations we observe. For example, it would be helpful to know if the reduction in non-audit fees from audit clients is offset by an increase in consulting fees from companies that are not audit clients. It would also be interesting to learn in more detail about how individual boards and auditors make actual decisions to enhance audit fees and/or restrict non-audit fees paid to the auditor. Finally, future work could use longer series to query whether the

²⁷ Another way to examine the relation of SOX to New Zealand audit fees would be to test if New Zealand companies with dual listings on a U.S. stock exchange have higher fees than those without a dual listing. Unfortunately, the small number of New Zealand companies with U.S. dual listings renders such a test unreliable.

higher fees from IFRS as documented in this study represent a shorter-term learning adjustment or a more permanent condition.

Appendix 1
Key auditing, governance, and IFRS events: 2001 to 2007

No.	Event	Key date	Comment
1	European adoption of IFRS	Proposed February 2001	Regulation (EC) No 1606/2002 passed 19 July 2002. EU endorsed IFRS from 1 January 2005.
2	Sarbanes-Oxley Act of 2002	30 July 2002	Presidential sign-off passing SOX into law.
3	SOX 302: SEC Release 33-8124	29 August 2002	
4	AFRC directive for the Australian adoption of IFRS	3 July 2002	Australian endorsed IFRS from 1 January 2005.
5	New Zealand ASRB announces adoption of IFRS	19 December 2002	New Zealand endorsed IFRS for periods commencing on or after 1 January 2007. Early adoption permitted from 1 January 2005.
6	ASX listing rule 12.7 (audit committee)	January 2003	Mandatory for Top 500 ASX listed companies. Amended 3 May 2004.
7	SOX 404:SEC Release 33-8238	5 June 2003	Effective date: 14 August 2003.
8	SOX 404:SEC Release 33-8392	24 February 2004	Extends compliance date to first fiscal year ending on or after 15 November 2004.
9	NZX listing rule 3.6.1 (audit committee); Rule 3.6.3 (auditor or lead partner rotation)	29 October 2003	Amended 1 May 2004.
10	NZX Corporate Governance Code of Best Practice	29 October 2003	Amended 1 May 2004.
11	NZSC Corporate Governance Principles	February 2004	
12	CLERP9	30 June 2004	
13a	Review of the Financial Reporting Act 1993 (three parts)	March 2004	Part I: Financial reporting structure.
		November 2004	Part II: Other aspects including institutional arrangements for financial reporting, enforcement mechanisms and auditing standards. Cabinet Paper: Part I and II recommendation. Passage of Financial Reporting Amendment Act 2006: Reduces number of companies required to comply with the FRA.
		9 December 2005	No changes to the filing requirements for Issuers.
		15 November 2006	Part III: Audit regulation issues (yet to be completed).
13b	Financial Reporting Amendment Act 2006	15 November 2006	Changes from the Review of the Financial Reporting Act 1993 (item 13a), originally part of the Business Law Reform Act were transferred to the Financial Reporting Amendment Bill, passed in November 2006. Most sections do not affect NZX listed companies. Infringement notice for not meeting filing obligations are effective from 18 June 2008)
14	New Zealand adoption of ISA	From 1 January 2008	NZICA had a convergence programme prior to the formal adoption of NZ ISA. For example, AS 206 (2005), AS 300 (2005), and AS 545 (2004) are based on ISA 240 (2004), ISA 300 (2004), and ISA 545 (2002) respectively.

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Table 1
Descriptive Characteristics of Audit Fees, Non-Audit Fees and Control Variables

Panel A: Audit Fees and Non-Audit Fees by Year

Year	2002	2003	2004	2005	2006	2007	All
No. of observations for audit fee	105	110	110	109	110	109	653
No. of obs. for non-audit fee ¹	85	84	82	82	87	90	510
Audit Fees (\$)							
Mean ²	142,373	155,845	165,327	205,843	225,599	234,402	188,485
Median ²	45,000	47,000	58,000	63,000	79,000	97,000	65,000
Std dev	281,413	355,773	328,276	436,328	436,514	396,384	377,456
Median % change from prior year ³		7.6%	9.2%	12.3%	10.0%	8.9%	10.0%
Non-Audit Fees (\$)							
Mean	146,271	118,997	138,088	112,159	113,562	116,870	124,187
Median	29,000	26,000	29,500	19,000	21,500	18,000	25,000
Std dev	394,822	256,116	407,298	255,556	292,161	279,460	318,993
Median % change from prior year		-8.0%	-10.9%	-7.7%	8.0%	1.3%	0.0%
Non-Audit Fees/Total Fees							
Mean	35.7%	32.2%	29.7%	25.3%	24.8%	24.8%	28.7%
Median	37.9%	30.4%	29.9%	26.5%	24.3%	22.8%	27.8%
Constant rate of growth in mean³							
Audit Fees (\$)		9.5%	7.8%	12.4%	12.7%	11.5%	7.3%
Non-Audit Fees (\$)		-18.6%	-2.8%	-6.3%	-5.5%	-4.1%	-2.5%

Panel B: Mean Audit Fees and Non-Audit Fees by Audit Firm

Year	2002	2003	2004	2005	2006	2007	All
Deloitte	Audit fee (\$)	205,279	103,667	119,333	129,500	138,917	143,271
	Non-audit fee (\$)	395,940	134,500	65,067	105,123	27,833	130,380
	Non-audit fee/total fee, %	65.9	56.5	35.3	44.8	16.7	16.7
	Concentration, % ⁴	17.9	7.3	7.9	6.9	6.7	7.4
No. of obs.	13	12	12	12	12	12	73
E&Y	Audit fee (\$)	203,750	183,857	205,820	225,655	251,941	207,970
	Non-audit fee (\$)	174,564	108,750	99,086	106,025	123,889	121,235
	Non-audit fee/total fee, %	46.1	37.2	32.5	32.0	33.0	36.2
	Concentration, %	16.4	12.9	12.4	9.1	9.1	5.8
No. of obs.	12	12	11	9	9	8	61
KPMG	Audit fee (\$)	136,368	192,800	209,125	343,808	354,790	286,429
	Non-audit fee (\$)	159,625	165,079	275,792	176,895	176,895	220,736
	Non-audit fee/total fee, %	53.9	46.1	56.9	33.9	33.3	35.3
	Concentration, %	18.1	21.8	21.8	23.9	25.5	27.5
No. of obs.	19	24	24	26	28	30	151
PwC	Audit fee (\$)	169,500	213,816	217,077	227,474	243,783	216,640
	Non-audit fee (\$)	126,605	156,560	163,912	136,041	142,942	118,993
	Non-audit fee/total fee, %	42.8	42.3	43.0	37.4	37.0	34.4
	Concentration, %	43.1	47.4	46.6	38.5	39.3	34.6
No. of obs.	38	38	39	38	40	39	232
Non-Big 4	Audit fee (\$)	34,937	39,184	41,875	52,875	56,952	47,239
	Non-audit fee (\$)	11,845	10,807	12,803	10,250	17,714	12,662
	Non-audit fee/total fee, %	25.3	21.6	23.4	16.2	23.7	17.6
	Concentration, %	5.4	5.5	5.5	5.7	4.8	4.7
No. of obs.	23	24	24	24	21	20	136

Table 1 continued on the next page.

Table 1, cont'd.

Panel C: Mean Audit Fees and Non-Audit Fees by Big 4 Audit Firms: Constant Sample

Year		2002	2003	2004	2005	2006	2007
Deloitte	Audit fee (\$)	138,329	110,363	127,454	135,818	146,636	168,469
	Non-audit fee (\$)	151,111	142,819	69,619	114,043	30,000	34,561
No. of obs.		11	11	11	11	11	11
E&Y	Audit fee (\$)	88,570	92,183	132,002	163,482	171,000	186,073
	Non-audit fee (\$)	18,643	31,858	42,421	63,462	71,001	76,337
No. of obs.		7	7	7	7	7	7
KPMG	Audit fee (\$)	150,125	167,312	175,562	300,437	327,625	354,000
	Non-audit fee (\$)	182,500	185,813	152,438	179,563	184,188	215,501
No. of obs.		16	16	16	16	16	16
PwC	Audit fee (\$)	123,100	135,200	151,700	143,233	159,733	184,936
	Non-audit fee (\$)	109,467	123,034	186,300	138,700	142,967	110,967
No. of obs.		30	30	30	30	30	30

Panel D: Log of Audit Fees and Non-Audit Fees and Control Variables

Variables	Mean	Median	Std. Dev.	Minimum	Maximum
Continuous					
<i>LAF</i>	11.20	11.08	1.32	6.91	14.91
<i>LNAF</i> ⁵	10.75	10.78	1.61	5.45	15.07
Total Assets (\$)	459,872,017	64,902,000	1,157,653,368	6,000	8,276,000,000
<i>LTA</i>	17.93	17.99	2.23	8.70	22.84
<i>INVAR</i>	0.23	0.17	0.22	0.00	0.98
<i>DA</i>	0.18	0.12	0.28	0.00	4.78
<i>CURRENT</i>	3.95	1.63	18.92	0.00	439.64
<i>ROA</i>	-0.24	0.07	3.67	-60.33	3.31
Audit Lag (days)	66.2	57.00	33.02	24.00	379.00
<i>LAG</i>	4.12	4.04	0.36	3.18	5.94
Nominal % of indicator variables equal to 1					
<i>BIG4</i>	79.17				
<i>FINANCE</i>	9.19				
<i>AUDCHG</i>	6.28				
<i>INDLEAD</i>	34.76				
<i>DUAL</i>	10.87				

Panel E: Sample Distribution of NZ IFRS Adoption

Year	2002	2003	2004	2005	2006	2007	All
PREIFRS no. of obs.							
Indicator = 0	105	110	105	85	91	47	543
Indicator = 1	0	0	5	24	19 ⁶	62	110
IFRSY1 no. of obs.							
Indicator = 0	105	110	110	104	86	91	606
Indicator = 1	0	0	0	5	24	18 ⁶	47
IFRSY2&3 no. of obs.							
Indicator = 0	105	110	110	109	105	80	619
Indicator = 1	0	0	0	0	5	29	34

Notes to table 1:

1. No of observations for non-audit fees are for those with non zero non-audit fees.
2. We calculate all the mean and median non-audit fees in Panel A and B based on 632 observations, which include 127 observations with zero value for non-audit fees. Non-audit fees/total fees is a weighted average.
3. We calculate the median percentage change at the company level, and the compound growth rate using Excel's LOGEST function.
4. We define concentration as the relative market share based on audit fees for each auditor in relation to the entire audit market.
5. We calculate the descriptive statistics of *LNAF* for companies with non zero non-audit fees only.
6. The lagged and concurrent number of observations are different because of a missing observation for a IFRS adopter in

2007. The different lagged and concurrent number of observations for IFRS indicators with differ also because of missing observations.

7. Definitions of the italicized variables in panels D and E:

<i>LAF</i>	=	Natural log of audit fee.
<i>LNAF</i>	=	Natural log of non-audit fee.
<i>LTA</i>	=	Natural log of total assets at end of fiscal year.
<i>INVAR</i>	=	Ratio of sum of inventory and receivables to total assets.
<i>DA</i>	=	Ratio of long-term debt to total assets.
<i>CURRENT</i>	=	Ratio of current assets to current liabilities.
<i>ROA</i>	=	Ratio of earnings before interest and tax to total assets.
<i>LAG</i>	=	Natural log of audit lag (the number of days between the balance date and the auditor signature date).
<i>BIG4</i>	=	Deloitte, Ernst & Young, KPMG, and PriceWaterhouseCoopers = 1, 0 otherwise.
<i>FINANCE</i>	=	Finance and investment services industry (as categorized by NAICS =1), 0 otherwise.
<i>AUDCHG</i>	=	Auditor change = 1, 0 otherwise.
<i>INDLEAD</i>	=	Company audited by a non-audit services industry leader = 1, 0 otherwise. Industry leader is defined as the auditor with the largest non-audit services market share (based on dollar fees) in the industry in which a company operates.
<i>DUAL</i>	=	Company listed in NZX and Australia or U.S. stock exchange = 1, 0 otherwise.
<i>PREIFRS</i>	=	Year prior to NZ IFRS adoption = 1, 0 otherwise.
<i>IFRSY1</i>	=	First year of adoption of NZ IFRS = 1, 0 otherwise.
<i>IFRSY2&3</i>	=	Second and third years of adoption of NZ IFRS = 1, 0 otherwise.

Table 2
Descriptive Statistics for Log of Audit Fees by Independent Variables

Variable	No. of obs.		Mean	Median
Company Size				
<i>LTA</i>	326	Larger	12.11	12.05
	327	Smaller	10.29	10.34
		Difference: t test / median test probability	<.0001	<.0001
Company Complexity				
<i>INVAR</i>	326	More	11.31	11.10
	327	Less	11.09	11.00
		Difference: t test / median test probability	<0.05	<0.05
Company Risk				
<i>DA</i>	326	Higher	11.61	11.51
	327	Lower	10.80	10.78
		Difference: t test / median test probability	<.0001	<.0001
Non-Audit Fees				
<i>LNAF</i>	251	More	12.23	12.14
	254	Less	10.65	10.65
		Difference: t test / median test probability	<.0001	<.0001
Adoption of IFRS				
<i>IFRS</i> ¹	81	Yes	11.93	11.66
	572	No	11.10	10.98
		Difference: t test / median test probability	<.0001	<.0001
Auditor Change				
<i>AUDCHG</i>	41	Yes	11.11	10.97
	612	No	11.21	11.08
		Difference: t test / median test probability	Insig. p=0.68	Insig. p=0.43
Industry				
<i>FINANCE</i>	60	Yes	10.97	10.79
	593	No	11.22	11.08
		Difference: t test / median test probability	Insig. p=0.24	Insig. p=0.07
Audit Firm				
<i>BIG4</i>	517	Big 4	11.45	11.31
	136	Non-Big 4	10.26	10.20
		Difference: t test / median test probability	<.0001	<.0001
Dual Listing				
<i>DUAL</i>	71	Yes	12.90	12.85
	582	No	10.99	10.95
		Difference: t test / median test probability	<.0001	<.0001

Notes to table 2:

1. *IFRS* includes all companies that adopted NZ IFRS in 2005, 2006, and 2007.
2. See table 1 for definitions of the other variables.

Table 3
Regression Estimation of Log of Audit and Non-Audit Fee

Panel A: Audit Fee Model

Sample	Combined		Big 4		Larger ¹		Smaller ¹	
Regression #	(1)		(2)		(3)		(4)	
No. of observations	653		517		328		325	
Variables	Coeff.	Signif. ²	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.
<i>Intercept</i>	1.347	**	0.023	ns	-0.668	ns	4.409	***
<i>LTA</i>	0.433	***	0.473	***	0.514	***	0.287	***
<i>INVAR</i>	1.177	***	1.163	***	1.667	***	0.851	***
<i>DA</i>	0.011	ns	-0.073	ns	0.126	ns	-0.014	ns
<i>CURRENT</i>	-0.001	ns	0.000	ns	0.000	ns	-0.013	***
<i>ROA</i>	-0.040	***	-0.038	***	-0.486	***	-0.021	*
<i>BIG4</i>	0.015	ns			-0.082	ns	0.056	ns
<i>LNAF</i>	0.039	***	0.040	***	0.050	***	0.030	***
<i>FINANCE</i>	-0.027	ns	0.095	ns	0.273	+	-0.145	ns
<i>LAG</i>	0.281	***	0.435	***	0.405	***	0.134	ns
<i>AUDCHG</i>	0.196	+	0.060	ns	0.003	ns	0.270	*
<i>DUAL</i>	0.634	***	0.562	***	0.413	***	0.757	***
<i>PREIFRS</i>	0.307	**	0.315	**	0.296	*	0.334	*
<i>IFRSY1</i>	0.314	*	0.332	**	0.296	*	0.453	*
<i>IFRSY2&3</i>	0.706	***	0.649	***	0.628	***	0.918	***
<i>YR2003</i>	0.085	ns	0.097	ns	0.108	ns	0.110	ns
<i>YR2004</i>	0.193	*	0.220	*	0.148	ns	0.261	*
<i>YR2005</i>	0.179	+	0.224	*	0.122	ns	0.266	*
<i>YR2006</i>	0.197	*	0.200	+	0.102	ns	0.265	+
<i>YR2007</i>	-0.019	ns	-0.006	ns	-0.101	ns	0.041	ns
Adjusted R ²	74.1%		76.4%		65.6%		45.6%	

Pair-wise Comparison (Estimated Marginal Means) for regression 1.

Dependent variable: LAF			Mean diff	Signif.	
<i>PREIFRS</i>	11.396	<i>NONIFRS</i>	11.089	0.307	**
<i>IFRSY1</i>	11.403	<i>PREIFRS</i>	11.396	0.007	ns
<i>IFRSY2&3</i>	11.795	<i>IFRSY1</i>	11.403	0.392	*

Table 3 continued on the next page.

Table 3, contd.

Panel B: Non-Audit Fee Model

Sample	Combined		Big 4		Larger ¹		Smaller ¹	
No. of observations	513		443		295		218	
Regression #	(1)		(2)		(3)		(4)	
Variables ³	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.
<i>Intercept</i>	-0.216	ns	-0.103	ns	0.252	ns	-1.095	ns
<i>LTA</i>	0.112	**	0.184	***	0.113	ns	0.088	ns
<i>INVAR</i>	-0.535	*	-0.106	ns	-0.745	*	-0.438	ns
<i>DA</i>	0.194	ns	0.004	ns	0.343	ns	0.127	ns
<i>ROA</i>	0.048	ns	0.026	ns	0.122	ns	0.048	ns
<i>BIG4</i>	0.348	*			0.613	+	0.286	+
<i>INDLEAD</i>	0.211	*	0.231	*	0.311	*	0.179	ns
<i>LAF</i>	0.783	***	0.683	***	0.720	***	0.912	***
<i>FINANCE</i>	-0.218	ns	-0.158	ns	-0.832	***	0.285	ns
<i>DUAL</i>	0.103	ns	0.141	ns	0.244	ns	-0.311	ns
<i>PREIFRS</i>	0.099	ns	0.045	ns	-0.109	ns	0.073	ns
<i>IFRSY1</i>	0.230	ns	0.173	ns	0.399	ns	-0.335	ns
<i>IFRSY2&3</i>	0.101	ns	0.139	ns	0.362	ns	-1.019	**
<i>YR2003</i>	-0.094	ns	-0.133	ns	-0.123	ns	-0.059	ns
<i>YR2004</i>	-0.215	ns	-0.209	ns	-0.225	ns	-0.202	ns
<i>YR2005</i>	-0.557	***	-0.532	***	-0.361	***	-0.752	***
<i>YR2006</i>	-0.677	***	-0.689	***	-0.785	***	-0.547	***
<i>YR2007</i>	-0.795	***	-0.802	***	-0.795	***	-0.536	ns
Adjusted R ²	63.8%		62.3%		51.9%		47.3%	

Pair-wise Comparison (Estimated Marginal Means) for regression 2.

Dependent variable: LNAF				Mean diff.	Signif.
<i>PREIFRS</i>	10.790	<i>NONIFRS</i>	10.691	0.099	ns
<i>IFRSY1</i>	10.921	<i>PREIFRS</i>	10.790	0.131	ns
<i>IFRSY2&3</i>	10.792	<i>IFRSY1</i>	10.921	-0.129	ns

Notes to table 3:

1. Larger (smaller) is based on greater (smaller) than median revenue.
2. Tests of significance of coefficients: ***=less than .001, ** =less than .01, *=less than .05, +=less than .10, and ns=not significant. Tests are relative to a zero regression coefficient.
3. *YR200X* = 1 for that year, 0 otherwise. *PREIFRS*, *IFRSY1* and *IFRSY2&3* = 1 for companies with the year prior to the IFRS adoption, with the first year adoption, and with the second and third years' adoption respectively, 0 otherwise. *NONIFRS* represents the years prior to the IFRS transition year. See table 1 for definitions of the other variables. The regressions for panel B only include those companies that paid non-audit fees to the auditor.

Table 4
Residual Audit Fees¹ Relative to NZ IFRS Event Year²

Event Year		-2	-1	0	1	2	Other years ³
Combined sample	Mean	0.097	0.178	0.104	0.299	0.585	-0.061
	Median	0.103	0.144	0.140	0.532	0.597	-0.061
	t statistic	1.211	1.693	1.076	2.412	2.118	-2.104
	t prob. (1 tail)	0.116	0.0487	0.1439	0.0113	0.0508	0.982
	No. of obs.	47	47	47	29	5	478
Revenue above median observations ⁴	Mean	0.184	0.220	0.221	0.294	0.495	0.008
	Median	0.132	0.179	0.140	0.532	0.597	0.004
	t statistic	1.060	0.706	0.097	1.782	1.742	-0.055
	t prob. (1 tail)	0.079	0.024	0.052	0.038	0.090	0.428
	No. of obs.	23	24	24	19	3	235
Big 4 observations	Mean	0.128	0.217	0.149	0.308	0.376	-0.075
	Median	0.075	0.114	0.171	0.532	0.309	-0.070
	t statistic	1.514	1.953	1.453	2.458	1.613	-2.397
	t prob. (1 tail)	0.069	0.029	0.078	0.011	0.103	0.992
	No. of obs.	38	38	38	25	4	374

Notes to table 4:

1. Audit fee residuals from model 1 estimated each year, from 2002 to 2007, excluding year and IFRS indicator variables.
2. Event Year 0 is the first year of adoption of NZ IFRS.
3. Company-year observations other than NZ IFRS event-year observations.
4. Median is based on all company-year observations.

Table 5
Audit Fee Model by Year¹

Year	2004		2005		2006		2007	
Variables ²	Coeff.	Signif. ³	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.
<i>Intercept</i>	0.758	ns	2.854	+	3.374	*	1.387	ns
<i>LTA</i>	0.441	***	0.364	***	0.407	***	0.433	***
<i>INVAR</i>	1.254	***	1.056	***	0.865	*	1.203	***
<i>DA</i>	-0.074	ns	0.077	ns	0.208	ns	0.654	+
<i>CURRENT</i>	-0.008	+	-0.024	**	-0.018	ns	-0.010	ns
<i>ROA</i>	-0.137	**	-0.022	+	-0.242	ns	-0.238	ns
<i>BIG4</i>	0.003	ns	-0.024	ns	-0.054	ns	0.149	ns
<i>LNAF</i>	0.050	***	0.056	***	0.045	*	0.031	+
<i>FINANCE</i>	0.218	ns	0.241	ns	-0.277	ns	-0.374	+
<i>LAG</i>	0.407	+	0.244	ns	-0.001	ns	0.322	ns
<i>AUDCHG</i>	0.409	ns	-0.153	ns	-0.161	ns	0.524	*
<i>DUAL</i>	0.728	***	0.775	***	0.417	ns	0.294	ns
<i>PREIFRS</i>	0.670	*	0.486	**	0.013	ns		
<i>IFRSY1</i>			0.795	*	0.385	*	-0.099	ns
<i>IFRSY2&3</i>					0.681	+	0.475	***
Adjusted R ²	77.6 %		76.0%		66.9%		73.0%	
No. of obs.	110		109		110		109	

Notes to table 5:

1. Results for IFRS transition year (2004) and remaining years (2005-2007) only.
2. See table 1 for definitions of the variables.
3. Tests of significance of t statistic: ***=less than .001, ** =less than .01, *=less than .05, +=less than .10, and ns=not significant. Tests are relative to zero.