IFRS Adoption and Audit Fees – Evidence from New Zealand

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Abstract

Using a sample of 141 firms from New Zealand, this study finds evidence to support the hypothesis that IFRS adoption has a positive effect on audit fees. Given the considerable discussion about mandating IFRS for U.S.A. firms by the Securities and Exchange Commission (SEC), this study's results are both important and well-timed.

Key words: IFRS; New Zealand; audit fees; Big 4

JEL classification: G15; K22; M41

1. Introduction

With increasing globalisation, convergence with the International Financial Reporting Standards (IFRS) is becoming a more widely utilised and necessary option. IFRS are currently required or accepted in over 100 countries worldwide, and it looks certain that the number of countries to embrace IFRS will continue to rise over the coming years (Daske et al., 2008). On 19 December 2002, the Accounting Standards Review Board (ASRB) announced that New Zealand reporting entities should apply IFRS for periods starting on or after 1 January 2007, but reporting entities had the option to apply IFRS voluntarily from 1 January 2005 (Bradbury and van Zijl, 2006). While convergence with IFRS is expected to yield numerous information benefits, it is also argued that audit fees increase with IFRS adoption, particularly for first-time adopters (DeGeorge et al., 2013; Griffin et al., 2009; Kim et al., 2012; Lin and Yen, 2010; Schadewitz and Vieru, 2010).

Several studies (e.g., DeGeorge et al., 2013; Griffin et al., 2009; Kim et al., 2012; Yaacob and Che-Ahmad, 2012) document increased audit fees following the adoption of IFRS. More specifically, Kim et al. (2012) report that audit fees

increased in European Union (EU) countries over 2005-2008 due to the complexity of audit tasks and decreased due to improvement in financial reporting quality following IFRS adoption. On the other hand, Griffin et al. (2009) conclude that audit fees increased significantly in New Zealand over 2004-2006, consistent with an ongoing cost of IFRS (task complexity). Griffin et al. also contend that such higher audit fees may moderate in the future to the extent that they reflect one-time start-up or learning costs (p. 716). However, other scholars argue that, with major regulatory changes such as IFRS adoption, preparers and auditors may incur ongoing incremental costs of continuing to apply the new accounting standards (e.g., Schipper, 2010). Motivated by this argument, this study examines whether audit fees have moderated in recent years as per Griffin et al.'s (2009) contention, or whether audit fees continue to remain high reflecting audit complexity even several years after IFRS adoption (Kim et al., 2012; Yaacob and Che-Ahmed, 2012). Thus, this paper provides evidence on the long-term nature of audit fee premiums associated with IFRS adoption.

This study considered the New Zealand setting because the audit environment in New Zealand offers us the best chance of identifying whether the increased audit fees surrounding IFRS adoption are due to a "learning process" or are a long-term feature of the new audit environment due to audit complexity. Globally, Big 4 auditors enjoy the highest market share in New Zealand. Moreover, Big 4 auditors appear to have better audit quality than non-Big 4 firms. Thus, if the premiums in audit fees reported by Griffin et al. (2009) are limited to the learning process around the transition to IFRS, we would expect to observe the audit premium disappearing over time.

The widespread adoption of IFRS in recent years has spurred a vast literature on the benefits of IFRS adoption (Soderstrom and Sun, 2007). However, research evidence about the costs associated with IFRS adoption is relatively scarce. This study extends the literature on the costs of IFRS adoption by investigating the effect of IFRS adoption on audit fees in New Zealand. The study examines audit fees because they are one of most direct and measurable costs associated with the new reporting environment. As financial reporting standards are changed or new standards adopted, one of the direct consequences (other than on the preparers) would be on the auditors who must evaluate financial reports in light of "new" accounting standards. Preparers and auditors may incur ongoing incremental costs of continuously applying the new accounting standards (Schipper, 2010). Hence, auditors might charge more, or less, audit fees depending on the complexity, audit effort, and audit risk inherent in the new accounting environment (Griffin et al., 2009). Although Griffin et al. (2009) provide evidence of increased audit fees with the transition to and adoption in New Zealand of IFRS, following Schipper (2010), this study argues that it is "an open question as to the time period that should be associated with these costs" (p. 318). This study provides evidence of increased audit fees beyond the transition years, thus suggesting long-term nature of the increased audit fees following IFRS adoption.

As Miller (2004) notes, cross-country studies can have limited sample sizes that do not accurately represent a country's corporate sector. Endogeneity of variables at the country level and noisy variables can omit strongly correlated variables. Miller (2004) calls for accounting research that is conducted at a country- or region-specific level, demonstrating a more focused investigation. Miller (2004, p. 266) argues that a "more focused approach would free authors from needing variables available across a wide range of countries, allowing variables to be designed that more cleanly capture the construct being measured." Miller's (2004) criticisms of the cross-country research approach provided one of the key motivations for this study being conducted at a country-specific level.

In a study that explores the impact of IFRS on accounts and earnings quality in New Zealand, Kabir et al. (2010, p. 353) found that "IFRS firm-years have higher absolute discretionary accruals than non-IFRS firm-years. This suggests that accruals quality is lower under IFRS than under Pre-IFRS NZGAAP". Furthermore, Jeanjean and Stolowy (2008) analysed the effect of mandatory IFRS adoption on earnings quality and earnings management in Australia, France, and the UK. Jeanjean and Stolowy (2008) conclude that the pervasiveness of earnings management did not decline after the introduction of IFRS. These two studies also relate the motivation for this study as it is expected that IFRS adoption leads to improved information quality. Additionally, as previous literature suggests, IFRS adoption also leads to increased audit fees. Therefore it should be expected that an increase in fees coincides with an increase in information quality.

This study uses a sample of 141 firms from several industries in New Zealand such as agriculture, consumer discretionary, consumer staples, energy, financial services, healthcare, industrials, information technology, materials, telecommunications, and utilities. The study spans from 2002 to 2011 and utilises 983 firm-year observations pulled from the IRG database, including 537 IFRS firm-years and 446 Pre-IFRS NZGAAP firm-years. To test for the effects of IFRS adoption on audit fees, this study compiled a set of determinants that are associated with audit fees using prior literature, including Hanlon et al. (2012), Hay et al. (2006), Hay and Knechel (2010), Larker and Richardson (2004), and Simunic (1980).

The main results of the regression analysis support the predictions about the effects of IFRS adoption on audit fees. Using the full sample, we find that IFRS adoption has a positive effect on audit fees, which suggests that IFRS adoption increases audit fees. Overall, these results contribute valuable insights to existing literature on the effects of IFRS adoption on audit fees from a New Zealand perspective.

The remainder of the paper is organised as follows. Section 2 presents the background of accounting standards and IFRS adoption in New Zealand and the development of the New Zealand audit environment. In section 3, the hypothesis is developed. Section 4 describes the sample and data collection procedures, and section 5 provides the model specifications. In sections 6 and 7, the results of the main and additional tests are reported. Section 8 explores potential endogeneity

issues, and section 9 offers conclusions and acknowledges limitations associated with this study.

2. Background

2.1 IFRS Adoption in New Zealand

The aftermath of the share market crash of 1987 prompted New Zealand legislators and accounting policy makers to inspect corporate financial disclosures with greater care and there was a consistently-held view that "the crash itself, or at least the intensity of the crash in New Zealand, was due to poor quality of accounting standards" (Devonport and van Zijl, 2010, p. 10). As a response, numerous reviews were conducted to determine the effectiveness of accounting regulations and their enforcement in New Zealand.[1] Such reviews, with emphasis on creating a more rigorous regulatory climate, led to a rapid increase in the number of accounting standards in the New Zealand accounting environment (Hossain et al., 1995). The statement of concepts was published, and legislative backing emerged through the introduction of the Financial Reporting Act 1993. With the introduction of the Financial Reporting Act 1993, the ASRB was established, which was closely modelled on the corresponding Australian body (van Zijl, 1994).[2]

As Devonport and van Zijl (2010, p. 10) highlight, "[d]uring the 1990s, the New Zealand standard-setting process changed markedly. With the establishment of the [ASRB] accounting standards became mandatory and the accounting profession one step removed from control of regulating external financial reporting". In essence, the function of the New Zealand ASRB largely involved considering proposed accounting standards and both the ASRB and the Financial Reporting Standards Board (FRSB) looked far and wide when reviewing and drafting accounting standards.[3] Standard-setting is a highly technical process and comprises many activities including agenda-building, creating an initial proposal, and developing a final exposure draft (Bradbury and van Zijl, 2006). Once standards were approved, they had the force of law, with necessary provisions put in place for non-compliance by issuers and companies, other than exempt companies (Bradbury and van Zijl, 2006). Additionally, all standards considered and utilised in the New Zealand accounting environment required amendments if they had not been prepared with sector neutrality in mind (Devonport and van Zijl, 2010).[4]

The processes for the review and drafting of accounting standards discussed in the preceding section continued until 1997 when New Zealand accounting bodies resolved to commit to stronger harmonisation with the International Accounting Standards Committee (IASC). From the late 1990s onwards, New Zealand accounting bodies made a conscious effort to ensure all future standards would be based on standards issued by the IASC. For purposes of cohesion, the "FRSB would modify the base standard only to achieve consistency with existing standards, the Statement of Concepts, or New Zealand legal requirements, or to achieve sector neutrality" (Devonport and van Zijl, 2010, p. 11). As the 21st century loomed, a

focus on harmonisation with IASC standards intensified internationally.[5] In line with the directive made to the Australian Accounting Standards Board (AASB) by the Australian Financial Reporting Council, New Zealand also decided to adopt IFRS in 2005 (Bradbury and van Zijl, 2006).[6] Numerous factors filtered into New Zealand's decision to follow Australia by adopting IFRS and developing a policy statement on international harmonisation and convergence of IAS (AASB, 2002). With increasing globalisation, stronger links between New Zealand and Australia, the establishment of the International Federation of Accountants (IFAC) Public Sector Committee, restructuring of the IASC to establish the International Accounting Standards Board (IASB), and the recommendation for adoption of IFRS in Europe from 2005, the decision to adopt IFRS surfaced as the most logical choice for the wellbeing of New Zealand's accounting environment (Bradbury and van Zijl, 2006).

As Bradbury and van Zijl (2006, p. 86) state, "[t]he ASRB announced on 19 December 2002 that New Zealand reporting entities should apply IFRS for periods starting on or after 1 January 2007 but have the option to apply IFRS from 1 January 2005". Since 2007, New Zealand IFRS had applied to large issuers, entities that are subsidiaries of overseas companies and most public sector entities (Devonport and van Zijl, 2010). With high emphasis on sector neutrality, the adoption of IFRS in New Zealand required the ASRB and the FRSB "to make the language and application of the standards sector neutral, try to accommodate differential reporting as per the New Zealand framework, and if necessary, accommodate industry specific issues" (Devonport and van Zijl, 2010, p. 14). Consequently, the adoption of IFRS, in conjunction with a focus on ensuring accounting standards were sector neutral, led to the development of an accounting environment teeming with greater robustness than New Zealand had ever experienced previously (Devonport and van Zijl, 2010). Although the emergence of this new-found robustness clearly improved the accounting environment, New Zealand standards were not necessarily directly comparable to their equivalent international standards. The scope of New Zealand standards sometimes differed from international standards and often did not include alternative methods of measurement and disclosure. While the rejection of several methods of measurement and disclosure by New Zealand, standard-setters demonstrated clear divergence from international standards, such rejection also represented a need to ensure all standards were appropriately developed with a specific focus on the New Zealand accounting environment (Devonport and van Zijl, 2010).

Despite the numerous benefits associated with adopting a set of high-quality international accounting standards, the decision to move to IFRS had a major impact on financial reporting in New Zealand. Specifically, the adoption of IFRS created issues surrounding what was required to be reported and which entities had to report (Bradbury and van Zijl, 2006). "Adopting IFRS also highlighted the problems of accounting for the public sector and different sized entities" (Devonport and van Zijl, 2010, p. 24). There were concerns that the adoption of IFRS would not meet the cost-benefit test for financial reporting for many smaller entities, even with the concessions available under the NZICA Framework for Differential Reporting.

Additionally, the Office of the Auditor-General increasingly expressed concerns about the process and results of attempting to accommodate the public sector in IFRS (Bradbury and van Zijl, 2006). As Devonport and van Zijl (2010, p. 3) reveal "[t]he mode of adoption of IFRS attempted to accommodate the public sector by adding to IFRS certain requirements specific to the public sector. However, the experience with this approach has been one of increasing dissatisfaction by public sector interests."

As IFRS have a primary focus on larger profit-orientated entities, this inevitably conflicts with the policy of designing sector neutral standards in New Zealand (Bradbury and van Zijl, 2006). Consequently, "[t]he FRSB found that there were two aspects to the issue of maintaining sector neutrality in New Zealand accounting standards" (Devonport and van Zijl, 2010, p. 15). These issues largely materialised through the developing complexity of New Zealand entities that produced external financial reports, and concern over the usefulness of New Zealand IFRS for entities that were not large and profit-orientated (Devonport and van Zijl, 2010). Irrespective of efforts to continue with a single set of sector neutral standards,[7] New Zealand accounting bodies eventually discovered the impracticality of applying unmodified IFRS to all entities. Consistent with other IFRS-adopting nations, New Zealand realised that attempting to persist with a single set of sector neutral standards is not possible under IFRS as "the challenges of maintaining sector neutrality in the current internationally focused era of standard setting [are] too great" (Devonport and van Zijl, 2010, p. 26).[8]

With recognition of the diverse and complex nature of entities in the 21st century, and that there is a lack of guidance for entities that do not fit easily into the private and public sector categories, accounting bodies in New Zealand have realised that they can no longer focus solely on the private and public sectors when drafting. Moreover, it has also been recognised that there is a need to move away from integrated financial reporting requirements for the public and private sectors (Devonport and van Zijl, 2010).[9] Accordingly, after a long period of advocating sector neutrality, New Zealand has finally begun to move away from sector neutral standards.[10] In September 2009, the Ministry of Economic Development (MED) released a discussion document along with a companion paper from the ASRB, which proposed three tiers of financial reporting: one for the private sector, one for the public sector, and one for private sector non-profit entities. While the FRSB is not entirely sure what direction New Zealand accounting standards will go in, it has been acknowledged that a three-tier system would better reflect the differences in user needs (Devonport and van Zijl, 2010). Nevertheless, in an increasingly global and competitive economic environment, it is guaranteed that IFRS will continue to remain a vital component for New Zealand reporting.

2.2 Audit Environment in New Zealand

The New Zealand audit market environment shares similar characteristics with those found in other developed economies (such as USA, Australia, UK) and also has some unique characteristics of its own. The audit market in New Zealand is

relatively small, well developed, and sophisticated. Recent studies by Hay and Jeter (2011) show that New Zealand's audit market is similar to other well-developed economies in terms of professional standards, legal requirements, and dominance of Big 4 auditing firms. Cahan et al. (2008) use a sample of 814 New Zealand listed companies over the period 1995 to 2001 and report that over 90% of the firms in their sample are audited by Big 4 audit firms. Moreover, Hay and Jeter (2011) also find that audit fees in New Zealand are compatible with other Western countries in the sense that their primary determinants seem to be audit risk, audit complexity, and client size. However, as previously mentioned, the New Zealand audit market also has some unique features; that is, the audit market in New Zealand is concentrated in the two largest cities of Auckland and Wellington.

With the transition to IFRS during the early 21st century, the New Zealand audit environment changed quite severely. Although some IFRS standards are very similar to pre-IFRS NZGAAP, many standards require more detailed disclosure (NZICA, 2007). Consequently, the transition to IFRS imposed greater audit effort and audit risk on the New Zealand auditing environment (Griffin et al., 2009). As the MED (2004) states, the adoption of IFRS allowed for enhanced understandings of the costs and benefits of New Zealand auditing processes. In a report on auditing and assurance standards, issued by the Professional Practices Board in 2005, it was revealed that there were little advantages or benefits to New Zealand in continuing to maintain unique national auditing standards, particularly after the adoption of IFRS (NZICA, 2005). A consensus was reached that New Zealand auditing standards needed to reflect international best practice, with international standards issued by the International Auditing and Assurance Standards Board clearly reflecting widely accepted international best practice (NZICA, 2005). Accordingly, the decision to converge with International Standards on Auditing (ISA) was made, and from October 2009 New Zealand auditors were required to comply with New Zealand equivalence to ISA (Fisher, 2011).[11]

The move to ISA is the most significant change in the New Zealand auditing environment since the introduction of Codified Auditing Standards in 1990 (Fisher, 2011). Compared to their predecessor, ISA are very thorough, containing increased guidance and imposing more specific requirements on New Zealand auditors. Comprising 36 standards and 519 mandatory requirements written in 700 pages, ISA are characterised as being longer and more explicit than the auditing standards they replaced. In contrast, the Codified Auditing Standards comprised 28 standards and 221 mandatory requirements in a 250-page document (Fisher, 2011). Following the numerous corporate collapses and global financial crisis of the early 21st century, adopting the comprehensive set of ISA standards was essential (Xu et al. 2013; Ronen, 2002). Additionally, with increased emphasis on the need for highly effective auditing standards, responsibility for New Zealand ISA has changed from NZICA to the new Crown Entity, the External Reporting Board, which was formed in mid-2011 (Fisher, 2011).

As Marshall (2002) claims, New Zealand should experience fewer governance and audit quality issues than other Western nations, such as the US and Australia.

This claim is substantiated by the fact that New Zealand has a relatively less complex legal, political and economic environment, has common law jurisdiction, greater board independence, lower fixation on meeting analysts' expectations and makes use of principles-based rules. Moreover, New Zealand has one of the lowest corruption rates worldwide, is less secretive than most other OECD countries, and has one of the strongest investor protection regimes internationally, which heavily emphasises enforcement of accounting standards (Jaggi and Low, 2011; Hope et al., 2008; Hope, 2003).[12] The New Zealand auditing environment is also heavily dominated by Big 4 audit firms. Hope et al. (2008) discovered that New Zealand has the 4th highest rate of Big 4 auditor use in the world with only Italy, Canada, and Norway having higher Big 4 user rates. This finding suggests that New Zealand has one of the highest levels of audit quality internationally, as Big 4 auditors are argued to provide the most high-quality assurance services (Francis and Krishnan, 1999; Hope, 2003; Khurana and Raman, 2004; Reynolds and Francis, 2000).

Irrespective of the seemingly clean image of the New Zealand audit environment, auditing standards are very rigorous and strictly enforced. With the adoption of ISA, increased formality of communication with management and the governing body of a firm has been developed. There has also been an increase in planning requirements, documentation expectations and communication between component auditors, more specific wording and care around audit reports, greater effort regarding special purpose entities and finally, there are specific requirements for areas that are deemed to be significant risks (Fisher, 2011). While some changes to the standards applied in the New Zealand audit environment may not be entirely necessary, there is a need to ensure New Zealand does not lag behind internationally. Therefore, in a time when audit assurance is crucial, it is imperative that New Zealand follows the rest of the world and converges with ISA to ensure the credibility of the information reported to stakeholders (NZICA, 2005; NZICA, 2007; Xu et al., 2013).

3. Hypothesis Development

Simunic (1980) has developed models highlighting determinants of audit fees. Accordingly, audit service is viewed as an economic commodity with supply and demand. The demand depends upon various firm-specific elements, namely the clients' business and its complexity, the firm size, and other risk factors. Dye (1993) also examined the association between auditors' exposure to legal liability and audit fees, demonstrating that legal liability may account for a large portion of auditors' wealth. Firm-level factors specify the auditing procedures, the complexity of the audit, and, as a result, the effort the auditors may need to put in and the appropriate audit fees.

There have been several studies attempting to answer the question of accounting harmonisation efforts. There has been mixed evidence on this matter. In addition, this body of research has failed to fully address firm-wide and nation-wide factors, which drive the financial practices reporting across countries (Narktabtee

and Patpanichot, 2011). Narktabtee and Patpanichot conclude that firm characteristics affect the accounting information improvement from IFRS. In particular, firms which allow high managerial discretion showed no significant quality improvement from IFRS adoption. The manager discretion score is computed on the grounds of firm size, cash flow from operation volatility, sales volatility, and incidence of negative earnings. A study by Mitra et al. (2009), on the other hand, found that earnings quality increases with audit fees. The result still persists after the enactment of Sarbanes-Oxley Act 2002, whose provisions are to enhance corporate governance and financial reporting. Hence, we suspect an association between audit fees and firm-specific variables.

From the supply side perspective of audit services, there has been extensive research that directly and indirectly relates the choice of auditors (Big4 and non-Big4 firms) and audit fees. Given the trend of accounting standards harmonisation in recent years, some have attempted to re-examine the magnitude of influence of auditors' choice on audit fees when the legal systems become more stringent.

Several studies worldwide have found evidence supporting the belief that IFRS adoption leads to increased audit fees. Lin and Yen (2010) provide valuable evidence on the effects of IFRS adoption on audit fees from a Chinese perspective. The main results of this study are that audit fees significantly increase for Chinese listed companies in the initial years of IFRS adoption. Lin and Yen (2010) also found that accounting firms affiliated with Big 4 auditing firms charged significantly higher incremental audit fees than domestic accounting firms after the IFRS adoption, providing further support to the belief that IFRS adoption increases audit fees. Additionally, a report by the Institute of Chartered Accountants in England and Wales (2007) found that the EU companies ranked increased auditing costs as one of the largest IFRS-related costs.

In a study into Finnish small and medium-sized listed companies, Schadewitz and Vieru (2010) found that the IFRS adjustments, as a measure of the disparity between Finnish accounting standards and the IFRS, positively and significantly affects fees paid to statutory auditors. The results of this study indicate that the complexity of IFRS transition affects fees paid to auditors. These findings are very useful when considering the New Zealand audit environment as many first-time IFRS-adopting firms in New Zealand are small to medium-sized. Consistent with Schadewitz and Vieru (2010), Griffin et al. (2009) found that audit fees increased in New Zealand over 2002-2006 and that this increase was also associated with the transition to IFRS. This study expects that even after the transition period firm adopted IFRS, the audit firm will spend more audit effort for their assurance and audit work. This is a permanent shift in the effort level of the auditor. In that sense, this study provides further evidence for Griffin et al.'s (2009) claim. Overall, it can be deduced from prior literature that the adoption of IFRS leads to increased auditor fees.

HYPOTHESIS 1: *IFRS adoption has a positive effect on audit fees in New Zealand Companies.*

4. Data

The initial sample comprises firm-year observations available on the IRG database, for the years 2002-2011. For the purposes of this study, 148 New Zealand firms covered by the IRG database were initially identified. From this initial sample, four firms whose financial statements were prepared using foreign GAAP were eliminated. This elimination process was necessary as accounting treatments under non-New Zealand GAAP do not align with the study's focus on evidence from New Zealand. Similarly, three additional firms whose financial statements were prepared using foreign currency were eliminated. This elimination was necessary as the preparation of financial statements using non-New Zealand currency prevents accurate analyses, comparisons, and conclusions with financial statements prepared using New Zealand currency. Thus, a total of 7 firms were removed from the initial sample, leaving 141 New Zealand firms and a total of 1,216 firm-year observations. From the 1,216 firm-year observations, 233 observations had to be removed from the sample as they did not have sufficient data for the purposes of this study. After removing firm-years with missing or incomplete data, the final sample comprised 141 New Zealand firms and 983 firm-year observations.

Table 1

Panel A: Sample

	Firms	Firm-years
Firms covered by IRG database	148	
-Financial institutions, funds, overseas companies		
-Firms whose financial statements were prepared using foreign GAAP	4	
-Firms whose financial statements are using foreign currency	3	
	(7)	
	141	1216
-Firm-years with missing data		(233)
Study sample	141	983

Panel B: Sample by Year and GAAP

Year	All firms	IFRS	Pre-IFRS NZGAAP
2002	55		55
2003	64		64
2004	81		81
2005	105	6	99
2006	111	27	84
2007	120	57	63
2008	128	128	
2009	130	130	
2010	134	134	
2011	55	55	
Total	983	537	446

Panel C: Sample by Industries

Industry	Firms		Firms-years		
	# firms	# VIFRS -firms	# Firm - years	#IFRS firm- years	#Pre-IFRS NZGAAP
Agriculture	9	2	67	32	35
Consumer Discretionary	25	6	191	97	94
Consumer Staples	14	2	85	48	37
Energy	9	2	46	30	16
Financial Services	38	5	228	137	91
Healthcare	10	2	85	42	43
Industrials	21	7	164	84	80
Information Technology	9	-	67	36	31
Materials	3	-	22	14	8
Telecommunications	3	1	21	13	8
Utilities	1	-	7	4	3
Total	141	27	983	537	446

Panel B of Table 1 shows the composition of the final sample of 983 firm-year observations by year and source of GAAP. The study sample comprises firm-year observations from 2002 to 2011. From 2002 to 2004, IFRS adoption was not an option in New Zealand; hence all firms used Pre-IFRS NZGAAP during this time period. In the sample, 55 firms in 2002, 64 firms in 2003, and 81 firms in 2004, used Pre-IFRS NZGAAP. The announcement made by the ASRB in 2002 stated that New Zealand reporting entities should apply IFRS for periods starting on or after 1 January 2007, but have the option to apply IFRS from 1 January 2005. Therefore, in 2005 and 2006 New Zealand firms had the option to voluntarily adopt IFRS. In 2005, of 105 firm-year observations, only six had adopted IFRS voluntarily while the remaining 99 stayed with Pre-IFRS NZGAAP. In 2006, of 111 firm-year observations, 27 had voluntarily adopted IFRS, while the remaining 84 observations retained Pre-IFRS NZGAAP. In 2007, the year of mandatory IFRS adoption, there was a total of 120 firm-year observations. To alleviate the complications of the first-time adoption of IFRS, 2007 was also a concession year. The concessions provided all first-time IFRS adopters some leeway regarding conversion from local GAAP to IFRS. Of the 120 total firm-years in 2007, 57 moved to IFRS, while the remaining 63 appeared more reluctant to make the change, persisting with Pre-IFRS NZGAAP. From 2008 onwards all firms were required to mandatorily adopt and apply New Zealand's equivalent of IFRS. Thus, fall of the firm-years observed from 2008-2011 adopted and applied IFRS – in 2008, 128 firm-years; 2009, 130 firm-years; 2010, 134 firm-years; and in 2011, 55 firm-years. From the total sample of 983, IFRS were used for 537 firm-years and Pre-IFRS NZGAAP was used for 446.

Panel C of Table 1 shows the composition by industry of the final sample of 141 firms and 983 firm-year observations. Of the 141 New Zealand firms identified,

the most heavily represented industries included Financial Services with 38 firms, Consumer Discretionary with 25 firms, Industrials with 21 firms, and Consumer Staples with 14 firms. These four industries also form the largest majority of firm-year observations with Financial Services providing 228 firm-years, Consumer Discretionary providing 191 firm-years, Industrials providing 164 firm-years, and Consumer Staples providing 85 firm-years. Of the 27 firms that voluntarily adopted IFRS, the industries that were most willing to adopt include Industrials with seven firms, followed closely by Consumer Discretionary with six firms, then Financial Services with five. The industries from the sample that had no voluntary IFRS-adopting firms include Information Technology, Materials, and Utilities. Of the 537 total IFRS firm-years observed, the most heavily represented industries include Financial Services with 137 firm-years, Consumer Discretionary with 97 firm-years, Industrials with 84 firm-years, and Consumer Staples with 48 firm-years. Of the 446 total Pre-IFRS NZGAAP firm-years observed, the most heavily represented industries include Consumer Discretionary with 94 firm-years, Financial Services with 91 firm-years, Industrials with 80 firm-years, and Healthcare with 43 firm-years.

5. Model Specifications

The main purpose of this study is to test whether audit fees are affected by IFRS adoption. A study conducted by Griffin et al. (2009) found that audit fees increased in New Zealand over 2002-2006 and that this increase was associated with the transition to IFRS. Similarly, studies by DeGeorge et al. (2013), the Institute of Chartered Accountants in England and Wales (2007), Lin and Yen (2010), Schadewitz and Vieru (2010) also found evidence that IFRS adoption leads to increased auditors' fees. Additionally, Lin and Yen (2010) found that accounting firms affiliated with Big 4 auditing firms charge significantly higher incremental audit fees than domestic accounting firms after IFRS adoption. Several other studies contain similar findings, revealing that Big 4 audit firms charge a premium for higher quality audit services and that audit fees are generally higher when audits are conducted by specialists, such as the Big 4 (Ashbaugh et al. 2003; DeFond et al. 2000; Gul et al. 2009; Houqe et al. 2015). These findings form the basis of the decision to determine the effects of IFRS adoption on audit fees.

Using prior literature, in addition to the studies mentioned above, this study has identified a set of determinants that are associated with audit fees (Hanlon et al. 2012; Hay et al. 2006; Hay and Knechel, 2010; Larker and Richardson, 2004; Simunic, 1980). These determinants are set out in the regression below. This study is intended to test these determinants for their effect on audit fees in the New Zealand auditing environment. The study is also intended to test whether IFRS adoption and Big 4 auditor choice have an effect on audit fees. In particular, this study seeks to determine whether IFRS adoption and Big 4 auditor choice will generate higher audit fees in New Zealand. To conduct these tests, this study uses the following audit fees model:

$$LNFEES_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 BIG4_{it} + \beta_3 LNASSETS_{it} + \beta_4 LTOA_{it} + \beta_5 ROA_{it}$$
$$+ \beta_6 RECINV_{it} + \beta_7 ISSUE_{it} + \beta_8 ACQN_{it} + \beta_9 LOSS_{it} +$$
$$\beta_{10} SWITCH_{it} + fixed\ effects$$

$LNFEES_{it}$	=	the log of audit fees of firm *i* in year *t*.
$IFRS_{it}$	=	value of 1 if the firms prepare their financial statement under IFRS, and 0 otherwise.
$BIG4_{it}$	=	value of 1 if the firm audited by Big 4 auditor (KPMG, PWC, Deloitte, and EY), and 0 otherwise.
$LNASSETS_{it}$	=	the log of total assets of firm *i* in year *t*.
$LTOA_{it}$	=	the ratio of total long-term debt to total assets of firm *i* in year *t*.
ROA_{it}	=	the return on assets of firm *i* in year *t*.
$RECINV_{it}$	=	receivables plus inventories scaled by total assets for firm *i* in year *t*.
$ISSUE_{it}$	=	value of 1 if firms issue shares and 0 otherwise.
$ACQN_{it}$	=	value of 1 if firms made any business acquisition or merger and 0 otherwise.
$LOSS_{it}$	=	value of 1 if firms incurred loss current year and 0 otherwise.
$SWITCH_{it}$	=	value of 1 if firms change its auditor during the sample period and 0 otherwise.
Industry effects	=	a vector of dummy variables indicating industry sector membership.
Year effects	=	a vector of dummy variables indicating year.

6. Results

6.1 Descriptive Statistics

Using the separated sample, we provide detailed descriptive statistics for all the determinants of audit fees identified for Pre-IFRS firm-years and IFRS firm-years. The Pre-IFRS firm-years sample has an LNFEES (natural logarithm of total audit fees) mean of 11.1314 while the IFRS firm-years sample has an LNFEES mean of 11.6052. Consistent with studies by DeGeorge et al. (2013), Griffin et al. (2009), the Institute of Chartered Accountants in England and Wales (2007), Lin and Yen (2010), Schadewitz and Vieru (2010), these findings suggest that New Zealand firms adopting IFRS are charged higher audit fees than firms using NZGAAP. These findings are also consistent with Jaggi and Low (2011), who found no significant association between audit fees and securities regulations in high investor protection countries, such as New Zealand. "Auditors in these countries generally expend higher audit effort to reduce risk irrespective of the strictness of securities regulations" (Jaggi and Low, 2011, p. 241). Consequently, expending higher audit effort leads to higher audit fees, which is the evidence generated by this study.

Exploring the BIG4 variable, Pre-IFRS firm-years have a mean of 0.82 while IFRS firm-years have a mean of 0.81. Essentially, this indicates that 82% of firms from the Pre-IFRS sample and 81% of firms from IFRS sample are audited by Big 4 audit firms. This finding is intriguing because it suggests that New Zealand firms

tend to be audited by Big 4 audit firms irrespective of the type of accounting standards being applied.[13] Following on from this finding, results also reveal that firms in this study were reluctant to switch auditors during the sample period. Exploring the SWITCH variable, Pre-IFRS firm-years experienced a mean of 0.03 for firms that switched auditors, while IFRS firm-years experienced a mean of 0.02. A probable explanation for the sparse number of firms switching auditors during this time is the fact that a substantial number of firms were already receiving high-quality assurance services from Big 4 audit firms.

Table 2. **Descriptive Statistics**

Variables	IFRS firm-years n=537	Pre-IFRS NZGAAP firm-years n=446
	Mean (SD)	Mean (SD)
LNFEES	11.6052 (1.51531)	11.1334 (1.86188)
LNNAFEES	10.1358 (1.4992)	10.1353 (1.77915)
LNASSETS	11.9861 (2.36102)	11.4193 (2.11575)
LTOA	0.4312 (0.23743)	0.4145 (0.24619)
ROA	-0.0506 (0.35862)	-0.0333 (0.45867)
RECINV	0.2021 (0.20142)	0.2548 (0.23485)
ISSUE	0.65 (0.479)	0.65 (0.477)
ACQN	0.03 (0.170)	0.06 (0.231)
LOSS	0.34 (0.475)	0.21 (0.407)
BIG4	0.81 (0.391)	0.82 (0.383)
SWITCH	0.02 (0.148)	0.03 (0.162)
Listing	11.27 (0.654)	10.57 (0.568)
IFRS	0.55 (0.498)	

IFRS takes the value of 1 if the firms prepare their financial statement under IFRS, and 0 otherwise. *LNFEES* is the log of audit fees of firm *i* in year *t*. *BIG4* takes the value of 1 if the firm audited by Big 4 auditor (KPMG, PWC, Deloitte, and EY), and 0 otherwise. *LNASSETS* is the log of total assets of firm *i* in year *t*. *LTOA* is the ratio of total long-term debt to total assets of firm *i* in year *t*. *ROA* is the return on assets of firm *i* in year *t*. *RECINV* is the receivables plus inventories scaled by total assets for firm *i* in year *t*. *ISSUE* takes the value of 1 if firms issue shares, and 0 otherwise. *ACQN* takes the value of 1 if firms made any business acquisition and 0 otherwise. *LOSS* takes the value of 1 if firms incurred loss current year and 0 otherwise. *SWITCH* takes the value of 1 if firms change its auditor during the sample period and 0 otherwise. *Listing* takes the value of 1 if the firms either listed in Australia or USA or both, and 0 otherwise.

6.2 Correlations

Panel B of Table 2 reports the results of the pairwise correlations using a Pearson correlation matrix. The correlation matrix reveals that IFRS adoption and being audited by a Big 4 auditor (KPMG, PWC, Deloitte, or EY) are significantly correlated with audit fees at the 1% level. As expected, being audited by a Big 4 auditor is more positively correlated to audit fees, with a p-value of 0.378, than IFRS adoption, with a p-value of 0.180. These findings are consistent with discussions by Hope (2003) and Hope et al. (2008), who state that New Zealand has one of the strongest investor protection regimes worldwide. Having such a strong emphasis on the enforcement of accounting standards means there is reduced reliance on auditors to ensure IFRS are applied correctly.[14] Therefore, in a country with strong investor protection and low corruption, such as New Zealand, audit fees are less likely to be influenced by IFRS as there is less investor reliance on such standards to assist in the provision of high-quality information free of material error or misstatement.

Panel B. Correlation Matrix

Variables	LNFEES	LNNAFEES	LNASSETS	LTOA	ROA	RECINV	ISSUE	ACQN	LOSS	BIG4	SWITCH	Listing	IFRS
LNFEES	1												
LNNAFEES	0.345*** (0.000)	1											
LNASSETS	0.303*** (0.000)	0.223*** (0.001)	1										
LTOA	0.262*** (0.000)	0.262*** (0.000)	0.262*** (0.000)	1									
ROA	0.256*** (0.000)	0.267*** (0.000)	0.267*** (0.000)	0.081** (0.011)	1								
RECINV	0.093*** (0.003)	-0.145*** (0.000)	-0.145*** (0.000)	0.235*** (0.000)	0.046 (0.152)	1							
ISSUE	0.107*** (0.001)	0.071** (0.026)	0.071** (0.026)	0.050 (0.121)	-0.065** (0.042)	-0.043 (0.177)	1						
ACQN	0.015 (0.636)	0.007 (0.830)	0.007 (0.830)	0.042 (0.191)	0.035 (0.276)	-0.001 (0.978)	0.154*** (0.000)	1					
LOSS	-0.241*** (0.000)	-0.241*** (0.000)	-0.241*** (0.000)	-0.151*** (0.000)	-0.261*** (0.000)	-0.132*** (0.000)	0.111*** (0.000)	-0.040 (0.208)	1				
BIG4	0.378*** (0.000)	0.233*** (0.000)	0.233*** (0.000)	0.061* (0.061)	0.142*** (0.000)	0.015 (0.645)	-0.013 (0.684)	-0.020 (0.539)	-0.223*** (0.000)	1			
SWITCH	-0.093*** (0.003)	-0.107*** (0.000)	-0.107*** (0.000)	-0.032 (0.318)	-0.051 (0.113)	-0.044 (0.166)	0.006 (0.847)	0.033 (0.302)	0.091*** (0.004)	-0.078** (0.014)	1		
Listing	0.023*** (0.004)	0.210*** (0.006)	0.014** (0.052)	0.001 (0.187)	0.001 (0.254)	0.124** (0.051)	0.001 (0.214)	0.000 (0.351)	0.000 (0.254)	0.004 (0.124)	0.001 (0.154)	1	
IFRS	0.180*** (0.000)	0.124*** (0.000)	0.124*** (0.000)	0.034 (0.282)	-0.021 (0.505)	-0.120*** (0.000)	-0.005 (0.864)	-0.066** (0.038)	0.146*** (0.000)	-0.012 (0.703)	-0.015 (0.631)	0.045** (0.042)	1

Note: p-values are in parenthesis.
LNFEES is the log of audit fees of firm *i* in year *t*. *LNNAFEES* is the natural log of non-audit fees of firm *i* in year *t*. *LNASSETS* is the log of total assets of firm *i* in year *t*. *LTOA* is the ratio of total-long term debt to total assets of firm *i* in year *t*. *ROA* is the return on assets of firm *i* in year *t*. *RECINV* is the receivables plus inventories scaled by total assets for firm *i* in year *t*. *ISSUE* takes the value of 1 if firms issue shares, and 0 otherwise. *ACQN* takes the value of 1 if firms made any business acquisition and 0 otherwise. *LOSS* takes the value of 1 if firms incurred loss current year and 0 otherwise. *BIG4* takes the value of 1 if the firm audited by Big 4 auditor (KPMG, PWC, Deloitte, and EY), and 0 otherwise. *SWITCH* takes the value of 1 if firms change its auditor during the sample period and 0 otherwise. *Listing* takes the value of 1 if the firms either listed in Australia or USA or both, and 0 otherwise. *IFRS* takes the value of 1 if the firms prepare their financial statement under IFRS, and 0 otherwise.
 ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

6.3 Main Results

Table 3 reports the main results of the regression analysis of audit fees with IFRS adoption. Using the full sample, evidence supports the hypothesis that IFRS

adoption has a positive effect on audit fees. The IFRS variable has a coefficient of 0.154 at a 1% level of significance. This finding is consistent with the prediction that IFRS adoption increases audit fees. Similarly, Kabir et al. (2010) find that IFRS has a small effect on New Zealand firms, observing a coefficient of 0.120 for the effect of IFRS on discretionary accruals. These results can be explained by the fact that New Zealand firms are generally smaller; therefore, they are less likely to adopt IFRS as the costs outweigh the benefits (Bradbury and van Zijl, 2006). This explanation is also justified by the descriptive statistics, found in Panel C of Table 1. Of the 141 New Zealand firms identified for this study sample, only 27 voluntarily adopted IFRS before the mandatory IFRS adoption period. Bonding theory may provide an alternative explanation. In a strong investor protection country, such as New Zealand, the benefits of IFRS adoption are marginal because strong investor protection is a sufficient condition to provide more comparable and comprehensive information. Hence, overall effects of IFRS adoption are likely to be low (Hope et al. 2006).

In Table 3, the result of the BIG4 variable is also positive and significant. However, this effect is not large and has less impact on audit fees than IFRS. Regardless of the size of the effect, this finding provides further evidence to support previous literature that Big 4 audit firms provide high-quality audit services and charge higher fees as a direct result of expending increased audit effort. This finding is also consistent with evidence provided by Jaggi and Low (2011), who found that auditors in countries - such as New Zealand - with strong investor protection and low securities regulations generally exert higher audit effort to reduce risk irrespective of the strictness of securities regulations.[15] Overall, these results contribute valuable insights to existing literature on the effects of IFRS adoption and Big 4 auditor choice on audit fees from a New Zealand perspective.

7. Robustness Tests

7.1 Non-Audit Service Fees

To confirm the robustness of the results this study conducted sensitivity analysis by performing a non-audit service fees regression. To determine if the effects observed in the main results are robust, it is important to conduct sensitivity analysis as it is plausible that a change in audit fees could be attributable to changes in the demand for non-audit services. Sensitivity analysis especially necessary as the transition to IFRS during both the voluntary and mandatory adoption periods could have significantly impacted on audit and non-audit service fees. The results of the robustness test reported in Table 4 show that BIG4, with a coefficient of 0.204 and 1% significance, and IFRS, with a coefficient of 0.155 and 5% significance, both have an impact on non-audit service fees. More importantly, BIG4 has almost double the effect on non-audit service fees as it has on audit fees, while IFRS remains constant. Consistent with Griffin et al. (2009), Schadewitz and Vieru (2010) and a report by the Institute of Chartered Accountants in England and Wales (2007),

these results suggest that the transition to IFRS adoption leads to increased demand for consulting and support services to assist a smooth transition from local GAAP to IFRS.

Table 3

Regression Analysis of Audit Fees with IFRS adoption

$$LNFEES_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 LNNAFFES_{it} + \beta_3 LBIG4_{it} + \beta_4 LNASSETS_{it}$$
$$+ \beta_5 LTOA_{it} + \beta_6 ROA_{it} + \beta_7 RECINV_{it} + \beta_8 ISSUE_{it} + \beta_9 ACQN_{it}$$
$$+ \beta_{10} LOSS_{it} + \beta_{11} SWITCH_{it} + \beta_{12} Listing_{it} + fixed\ effects$$

Variables	Coefficients (*p*-value)
Intercept	2.212*** (0.000)
IFRS	0.154*** (0.000)
LNNAFEES	0.045*** (0.005)
BIG4	0.113*** (0.001)
LNASSETS	0.220*** (0.000)
LTOA	0.287*** (0.000)
ROA	-0.028 (0.372)
RECINV	1.097*** (0.000)
ISSUE	0.073*** (0.002)
ACQN	0.000 (0.996)
LOSS	0.034 (0.279)
SWITCH	0.029 (0.680)
Listing	0.021* (0..084)
Year dummies	Yes
Industry dummies	Yes
Adjusted R²	**0.749**

Note: Coefficient p-values applied two-tail.

LNFEES is the log of audit fees of firm *i* in year *t*. *LNNAFEES* is the natural log of non-audit fees of firm *i* in year *t*. *IFRS* takes the value of 1 if the firms prepare their financial statement under IFRS, and 0 otherwise. *BIG4* takes the value of 1 if the firm audited by Big 4 auditor (KPMG, PWC, Deloitte, and EY), and 0 otherwise. *LNASSETS* is the log of total assets of firm *i* in year *t*. *LTOA* is the ratio of total long-term debt to total assets of firm *i* in year *t*. *ROA* is the return on assets of firm *i* in year *t*. *RECINV* is the receivables plus inventories scaled by total assets for firm *i* in year *t*. *ISSUE* takes the value of 1 if firms issue shares, and 0 otherwise. *ACQN* takes the value of 1 if firms made any business acquisition and 0 otherwise. *LOSS* takes the value of 1 if firms incurred loss current year and 0 otherwise. *SWITCH* takes the value of 1 if firms change its auditor during the sample period and 0 otherwise. *Listing* takes the value of 1 if the firms either listed in Australia or USA or both, and 0 otherwise.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

7.2 Audit Fees for Mandatory IFRS Firms and Voluntary IFRS Firms

This study conducted sensitivity analysis by performing separate regressions for voluntary and mandatory adopters of IFRS. Krivogorsky et al. (2010) identified three main purposes of accounting convergence including compatibility, interoperability, and promotion of economies of scale by efficient variety reduction. With these purposes considered, Krivogorsky et al. (2010) identified several main characteristics of firms which would benefit from the adoption of IFRS. These main characteristics include having fewer geographical or sector-related restrictions, being multi-national corporations, having high business complexity, raising capital from multiple stock exchanges, and having rigorous corporate governance practices. It is important to identify firm characteristics as they will largely determine why a firm may seek to adopt IFRS voluntarily or wait until the mandatory adoption period. Logically, a firm that chooses to adopt IFRS voluntarily should experience benefits that outweigh the costs of moving from local GAAP to IFRS.

There are several reasons why New Zealand firms may choose not to adopt IFRS voluntarily. Firstly, to reduce the risk of an inconsistent application of New Zealand IFRS compared to other countries. Secondly, to allow time for increased shareholder and analyst understandings of the earnings volatility that could result from the transition (Bradbury and van Zijl, 2006). Additionally, firms in New Zealand tend to be smaller; therefore, the costs associated with IFRS adoption will likely be more significant. Consequently, it can be expected that New Zealand firms will tend to wait until the mandatory IFRS adoption period if the benefits are not significant (Bradbury and van Zijl, 2006). If New Zealand firms do adopt IFRS voluntarily, it will usually be because they are larger and can absorb the costs more easily.

Table 5 reports the results of regressing audit fees on mandatory IFRS adoption (MIFRS) and voluntary IFRS adoption (VIFRS). Consistent with the expectations, mandatory adopters of IFRS experience higher audit fees than voluntary adopters. Observing the results of the BIG4 variable, VIFRS experience a coefficient 0.003, but not significant, while MIFRS experience a coefficient of 0.072 at 5% significance. Observing the results of the IFRS variable, VIFRS experience a coefficient of 0.159 with a 5% level of significance, while MIFRS experience a coefficient of 0.171 with a 1% level of significance. These results confirm that irrespective of higher audit costs, a number of New Zealand firms commit to voluntary IFRS adoption. This suggests that higher audit costs associated with voluntarily adopting IFRS are likely to be offset by the expected benefits of early adoption and that such costs can be absorbed relatively easily. Conversely, mandatory IFRS adopters experience higher audit fees, providing evidence to support the belief that they do not experience significant benefits of IFRS adoption to provide incentives to incur higher audit fees. Moreover, these results support the belief that mandatory IFRS adopters in New Zealand cannot absorb audit fees as easily as voluntary adopters.

Table 4

Regression Analysis of Non-audit service fees with IFRS adoption

$LNNAFEES_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 BIG4_{it} + \beta_3 LNASSETS_{it} + \beta_4 LTOA_{it}$
$+ \beta_5 ROA_{it} + \beta_6 RECINV_{it} + \beta_7 ISSUE_{it} + \beta_8 ACQN_{it} + \beta_9 LOSS_{it} + \beta_{10} SWITCH_{it}$
$+ fixed\ effects$

Variables	Coefficients (p-value)
Intercept	1.868***
	(0.001)
IFRS	0.155**
	(0.021)
BIG4	0.204***
	(0.001)
LNASSETS	0.221
	(0.001)
LTOA	0.135
	(0.185)
ROA	0.042
	(0.464)
RECINV	1.002***
	(0.001)
ISSUE	0.146***
	(0.001)
ACQN	0.030
	(0.757)
LOSS	0.024
	(0.659)
SWITCH	0.187
	(0.217)
Year dummies	Yes
Industry dummies	Yes
Adjusted R²	**0.511**

Note: Coefficient p-values applied two-tail.

LNNAFEES is the log of Non-audit service fees of firm *i* in year *t*. *IFRS* takes the value of 1 if the firms prepare their financial statement under IFRS, and 0 otherwise. *BIG4* takes the value of 1 if the firm audited by Big 4 auditor (KPMG, PWC, Deloitte, and EY), and 0 otherwise. *LNASSETS* is the log of total assets of firm *i* in year *t*. *LTOA* is the ratio of total long-term debt to total assets of firm *i* in year *t*. *ROA* is the return on assets of firm *i* in year *t*. *RECINV* is the receivables plus inventories scaled by total assets for firm *i* in year *t*. *ISSUE* takes the value of 1 if firms issue shares, and 0 otherwise. *ACQN* takes the value of 1 if firms made any business acquisition and 0 otherwise. *LOSS* takes the value of 1 if firms incurred loss current year and 0 otherwise. *SWITCH* takes the value of 1 if firms change its auditor during the sample period and 0 otherwise.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

7.3 Excluding Financial Service Companies

To mitigate concern that the uneven sample representation from different industries in the sample might bias the results towards financial services that are more heavily represented, the study additionally examined the sensitivity of the results by excluding financial services with very high numbers of observations. The results (not reported) are robust enough to exclude financial services from the regressions.

8. Endogeneity Issues

Several studies that have explored audit fees have employed a two-stage least squares approach as it is believed endogeneity issues are associated with audit fees. However, based on Redmayne et al. (2011) compelling discussion concerning the numerous problems associated with a two-stage least squares approach, this study has not utilised this approach. Firstly, Redmayne et al. (2011) describe the difficulties associated with classifying each variable in the audit fees model as either exogenous or endogenous.[16] Secondly, "for a particular equation to be identified there needs to be a sufficient number of predetermined variables over all equations relative to slope coefficients for that equation" (Redmayne et al. 2011, p. 311). Thirdly, studies such as Griffin et al. (2009) and Hay et al. (2008) use instrumental variables for the purposes of the two-stage least squares approach, but there is scant literature available to guide the choice of instrumental variables. Fourthly, Griffin et al. (2009) and Hay et al. (2008) do not provide evidence on the fit of their reduced form equations. "Hence, there is no way of knowing whether their instrumental variables are a good fit for the endogenous variables" (Redmayne et al. 2011, p. 311).

Previous literature suggests that audit fees and non-audit fees may be jointly determined (Davis et al. 1993; Palmrose, 1986; Simunic, 1984). As Geiger and Rama (2003) state, several interested parties have asserted that the joint performance of audit and non-audit services leads to more effectual audits. Consequently, they test whether their results are distorted due to possible endogeneity of audit fees and non-audit fees. Consistent with this rationale, this study account for the potential that audit fees and non-audit fees may be jointly determined by conducting sensitivity analysis. After conducting a robustness test, this study does not find any substantial evidence that audit fees and non-audit fees are jointly determined.

Table 5

Regression Analysis of Audit fees with mandatory and voluntary IFRS adoption

$$LNFEES_{it} = \beta_0 + \beta_1 IFRS_{it} \left(MIFRS_{it} \; or \; VIFRS_{it} \right) + \beta_2 BIG4_{it} + \beta_3 LNASSETS_{it}$$
$$+ \beta_4 LTOA_{it} + \beta_5 ROA_{it} + \beta_6 RECINV_{it} + \beta_7 ISSUE_{it} + \beta_8 ACQN_{it} + \beta_9 LOSS_{it}$$
$$+ \beta_{101} SWITCH_{it} + fixed \; effects$$

Variables	MIFRS	VIFRS
	Coefficients (*p*-value)	Coefficients (*p*-value)
Intercept	2.233*** (0.000)	2.165*** (0.000)
IFRS	0.171*** (0.000)	0.159** (0.018)
BIG4	0.072** (0.027)	0.003 (0.927)
LNASSETS	0.218*** (0.000)	0.210*** (0.000)
LTOA	0.322*** (0.000)	0.359*** (0.000)
ROA	-0.066** (0.027)	-0.089*** (0.001)
RECINV	0.532*** (0.000)	0.513*** (0.000)
ISSUE	0.067*** (0.005)	0.049** (0.022)
ACQN	0.017 (0.757)	0.019 (0.705)
LOSS	0.028 (0.394)	0.018 (0.743)
SWITCH	0.021 (0.773)	0.032 (0.624)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
Adjusted R^2	**0.714**	**0.736**

Note: Coefficient p-values applied two-tail.

LNFEES is the log of audit fees of firm *i* in year *t*. *MIFRS* takes the value of 1 if the firms prepare their financial statement under IFRS any time after 2007, and 0 otherwise. *VIFRS* takes the value of 1 if the firms prepare their financial statement under IFRS after 2005 but before 2007, and 0 otherwise. *BIG4* takes the value of 1 if the firm audited by Big 4 auditor (KPMG, PWC, Deloitte, and EY), and 0 otherwise. *LNASSETS* is the log of total assets of firm *i* in year *t*. *LTOA* is the ratio of total long-term debt to total assets of firm *i* in year *t*. *ROA* is the return on assets of firm *i* in year *t*. *RECINV* is the receivables plus inventories scaled by total assets for firm *i* in year *t*. *ISSUE* takes the value of 1 if firms issue shares, and 0 otherwise. *ACQN* takes the value of 1 if firms made any business acquisition and 0 otherwise. *LOSS* takes the value of 1 if firms incurred loss current year and 0 otherwise. *SWITCH* takes the value of 1 if firms change its auditor during the sample period and 0 otherwise.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

8. Conclusion

This study investigates the effects of IFRS adoption on audit fees from a New Zealand perspective. The main results of the regression analysis are consistent with the predictions on the effects of IFRS adoption on audit fees. Using the full sample of 141 firms, evidence was found to support the hypothesis that IFRS adoption has a positive effect on audit fees. The IFRS variable has a coefficient of 0.154 at a 1% level of significance, which suggests that IFRS adoption increases audit fees.[17] Overall, this result contributes valuable insights to existing literature of the effects of IFRS adoption on audit fees from a New Zealand perspective.

The main limitation of this study is the fact that the sample size is relatively small, which reflects the small size of the New Zealand corporate sector. Of the 148 firms available on the IRG database, seven firms were omitted, with the remaining 141 as the study sample. While a small sample size may reduce the generalizability of the findings on an international scale, these results are still generalizable to the extent that they provide evidence for the effects of IFRS adoption on audit fees from the perspective of a smaller economic environment. Additionally, these findings provide new evidence on audit fees from a country-specific level, avoiding potential issues that come with cross-sectional research.

This research will shed light for companies and regulators that are presently considering adopting IFRS globally. Given that the results suggest that IFRS adoption increases audit fees in New Zealand, Financial Market Authority in New Zealand and IASB take some initiative how to reduce the costs of IFRS adoption on small firms, as recently done with IFRS requirements for SMEs. These results also provide valuable insights about the adoption of IFRS for future adopters and auditors to better tailor their transition programmes. Finally, given the considerable discussion about mandating IFRS for U.S.A. firms by the Securities and Exchange Commission (SEC), the results of this study are both well-timed and important.

Notes

1. "While the accounting profession was responding to critical review of its performance, the public sector itself was reacting to demands from government for greater accountability and more credible financial reporting" (Devonport & van Zijl, 2010, p. 10).

2. The ASRB was established as a crown entity independent of the accounting profession, with the principle role of approving proposed financial reporting standards (Bradbury & van Zijl, 2006).

3. The ASRB and the FRSB frequently considered and referred to Australian, British, and Canadian standards when reviewing and drafting New Zealand standards (Devonport & van Zijl, 2010). Furthermore, the standards that were used most often were IAS and IFRS issued by the IASC (Kabir et al. 2010).

4. Sector neutral standards are standards that apply to all entities and reflect a focus on the transactions engaged in by the entity rather than the type of entity carrying out the transactions (Devonport & van Zijl, 2010). Specifically, all IAS are developed with a focus on preparation and application by larger profit-orientated entities; thus, IAS are not appropriate for small to medium sized enterprises (SME) and public sector entities.

5. "In compliance with the European Union regulation, listed European firms commenced preparing their consolidated financial statements using IFRS in 2005. Australia adopted IFRS with effect from 2005 and New Zealand followed suit with voluntary early adoption in periods commencing on or after 1 January 2005, and mandatory adoption for periods starting on or after 1 January 2007" (Kabir et al. 2010, p. 343).

6. While the directive came as a surprise to the FRSB and ASRB, it was also a surprise to the AASB (Bradbury & van Zijl, 2006, p. 88).

7. In July 2003, the FRSB, supported by the ASRB, issued the statement "Process for Adoption of IFRS", which set out the process it would follow in adapting IFRS to NZ IFRS. This statement highlighted continued support for having sector neutral standards in the New Zealand accounting environment (Bradbury & van Zijl, 2006).

8. In recent times, there has been a movement away from sector neutral standards with recognition that such standards lack applicability for all forms of entity in the New Zealand context. Specifically, there has been the development of SMEs and the potential for a stand-alone set of public sector accounting standards.

9. A review of the financial reporting framework by the Ministry of Economic Development (MED) and the ASRB will likely lead to a separate set of standards for the private sector and the public sector (Devonport & van Zijl, 2010).

10. This move is also "a consequence of New Zealand's standard setting relationship with Australia, [and] an effect of increasing globalisation in business and the development of credible international accounting standards" (Devonport & van Zijl, 2010, p. 24).

11. As well as converging with ISA, New Zealand adopted the International Auditing Practice Statements and International Standards on Quality Control (NZICA, 2005). "In October 2003, the NZX [also] 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 annual meeting" (Griffin et al. 2009, p. 701). Of several changes made by the NZX, which were further amended in May 2004, the need to establish an audit committee with majority of independent director membership affected the New Zealand audit environment the most (Griffin et al. 2009).

12. Using definitions set out by Hofstede (2001), secrecy is defined by Hope et al. (2008) as uncertainty avoidance + power distance – individualism. Hofstede (1980) defines uncertainty avoidance as society's tolerance for uncertainty and ambiguity. It indicates to what extent a culture programmes its members to feel either uncomfortable or comfortable in unstructured situations. Power distance refers to the extent to which less powerful members of organisations and institutions accept and expect that power is distributed unequally. Individualism, which refers to the degree of integration among members of a society, implies preference for an independent social structure. In individualistic societies, individuals care for themselves, and the environment is more competitive and less secretive.

13. This finding is consistent with evidence found by Hope et al. (2008), who observed that 90% of New Zealand firms in their sample employed the services of Big 4 audit firms.

14. Reduced reliance on auditors to ensure IFRS are applied correctly arises from the fact that a robust investor protection regime should provide firms with enough incentive to report accurate information (Hope et al. 2006).

15. It is also noted by Dunstan et al. (2011) that New Zealand is a low private litigation environment.

16. For full discussion on the difficulties of classifying each variable in the audit fees model as either exogenous or endogenous see Redmayne et al. (2011).
17. These findings may be explained by bonding theory. In a country with strong investor protection and low securities regulations, such as New Zealand, the benefits of IFRS adoption are marginal because strong investor protection is a sufficient condition to provide more comparable and comprehensive information (Dunstan et al. 2011; Hope et al. 2006).

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