

# Does NZ IFRS 38 Impact Equity Values and Borrowing Capabilities? Evidence from New Zealand

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## Abstract

This paper explores the impact of NZ IFRS 38 on equity values and borrowing capabilities in publicly listed companies of New Zealand. Compliance with NZ IFRS 38 was expected to significantly alter the values of assets recognised in financial statements from those that were recognised under the NZ GAAP. Empirical data collected from the early adopters of this standard, provided a convenient means to infer the possible impacts that the standard could have had on equity values and borrowing capabilities. Employing Return on Assets (ROA) and Market to Book (MB) ratios as proxies for shareholder values, and Debt to Assets (DA) and current ratio (CA/CL) as proxies for borrowing capabilities of firms, equality of means was tested between the pre adoption period (2002-2004) and the post adoption period (2005-2007). Using non-parametric testing of hypotheses, this research found no evidence to suggest that the post adoption values were any different from the pre adoption values. The findings of this research are expected to be of interest not only to standard setters in New Zealand but also to economies that are yet to adopt the IFRS fully.

**Keywords:** NZ IFRS 38, International Financial Reporting Standards, Intangible assets, Equity, Borrowing capability, New Zealand

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## 1. Introduction

One of the controversial adoptions of the International Financial Reporting Standards (IFRS) to the New Zealand accounting practice is

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the standard on intangibles, namely NZ IFRS 38 - Intangible Assets. With effect from January 1, 2007, New Zealand companies are required to prepare financial reports complying with the new standard, and in preparation for this change, companies were given the option to adopt the standard from as early as January 1, 2005 on a voluntary basis.

Prior to its adoption, the Generally Accepted Accounting Principles (GAAP) of New Zealand permitted the recognition of both internally generated and externally acquired intangibles in statements of financial positions, amortisable over their useful lives not exceeding 20 years. The new standard, amongst other things, specifically prohibits the capitalisation of internally generated intangibles such as brands, mastheads, publishing titles, customer lists and items similar in substance (NZ IFRS 38, paragraphs 63 and 64) mandating a marked departure from the previous practice. The standard however allows for the capitalisation of intangibles in so far as they are part of a business combination in which case the capitalised value can be amortised systematically over the useful life of the asset or be subjected to annual testing for impairment. The requirements of the new standard, especially on the need for impairment testing, is a significant change to the intangible reporting practices of New Zealand which was, at the time of its introduction, expected to have a significant impact on the asset values reported in financial statements.

Extant literature on changes to reporting practices provide conflicting views on their impacts on fundamental values of companies. Studies in Europe (Barth, Landsman and Lang, 2008; Daske, Hail, Leuz and Verdi, 2008; Karampinis and Hevas, 2009; Iatridis and Rouvolis, 2009; Zhou, Xiong and Ganuli, 2009, Chen, Tang, Jiang and Lin, 2010; Karamanou and Nishiotis 2009; Cormier, Demaria, Lapointe-Antunes and Teller, 2009; Armstrong, Barth, Jagolinzer and Riedl, 2010) found accounting changes brought about by the adoption of IFRSs to have increased the quality of information disclosed, suggesting that the fundamental values of firms were positively affected by the adoption. Evidence to the contrary, provided by Huang and Subramanian, (2007), Jeanjean and Stolowy, (2008), and Paananen and Lin, (2009), found the adoption of the standard to have either reduced or to have had no effect on the quality of information provided.

Given that the value relevance of IFRS adoption is irresolute, this research attempts to appraise its impact on equity values and borrowing capacities with specific reference to NZ IFRS 38. There are three basic reasons for this line of investigation. Primarily, specific studies on the

impacts of changes to reporting practices on equity and debt capital have provided mixed results (Chow, 1983; Barth, Clinch, and Shibsano, 1999; Moehrle, Moehrle and Wallace, 2001; Churyk and Chewing, 2003; Myring, Shortridge and Bloom, 2003; Wong and Wong, 2005; Chalmers and Godfrey, 2006; Huang and Subramaniam, 2007; Kohlbeck and Warfiels, 2007; Ernstberger and Vogler, 2008; Karamanou and Nishiotis, 2009; Li, 2010). Secondly, in the context of New Zealand, Wong and Wong, (2005) speculated, using accounting figures of New Zealand companies for the financial year 2003 (before the voluntary adoption came into effect) that the accounting changes could significantly affect firm and equity values of companies. An empirical investigation, using post adoption values would therefore serve to validate this speculation. Thirdly, financial analysts tend to follow firms with more intangibles due to the potential benefits associated with these assets (Barth, Kasznik, and McNichols, 2001) and for this reason an investigation of the impact of NZ IFRS 38 on financial statements would be of specific interest to both equity and debt providers.

Wong and Wong's (2005) conclusion begs revalidation for two reasons: primarily, with the exception of a few, New Zealand companies in general had long ceased recognising internally generated intangibles in their financial statements (Austin, 2007). In that context, the adoption of IFRS 38 is unlikely to alter the values in the statements of financial positions from what was reported previously. Thus, significant changes, if any, could only result from the new requirement of reclassification and the need to continually assess for impairment. Companies that had identifiable intangibles with finite lives would continue to amortise with the proviso that the useful lives of intangibles be evaluated at least annually. Those companies that have identifiable intangibles with indefinite lives would test for impairment, which could result in a charge, if fair values of assets fall below their carrying values, resulting in values that could be significantly different from those that were reported under the previous GAAP. In view of the above, it would therefore be reasonable to expect the changes brought about by IFRS 38 to significantly impact the values of companies. Secondly, some Australian (Cheung, Evans and Wright, 2008, Chalmers, Clinch and Godfrey, 2008) and American studies in this genre (Jennings, LeClere and Thompson, 2001; Moehrle et al., 2001) report that the changes to reporting standards have had no effect on the variables studied. In that context, it would be reasonable to expect New Zealand companies to behave in the same manner as the Australian companies, as IFRS

research undertaken in the Australasian region suggests that country effects of New Zealand are not significantly different to that of Australia (Cheong, Kim and Zurbruegg, 2010). When conjectured, the possible outcomes of the IFRS adoption in New Zealand could either be uneventful as found in Australia, or significant as proposed by Wong and Wong (2005).

The primary aim of this paper therefore, is to test whether a statistically significant variation could be attributed to equity values of companies, owing to the changes that the NZ IFRS 38 had ushered in. Secondly, it is also to test whether such changes could have altered the abilities of companies to borrow. The variations in values, if any, can be empirically tested using market and accounting information of the early adopters whose financial statements had already undergone the transformation.

This research, using accounting data available for early adopters of NZ IFRS 38 found no evidence to support the view that the adoption of NZ IFRS 38 has altered the wealth position of the equity holders or the borrowing capabilities of firms. The findings contribute to the existing literature in three ways. Firstly, the New Zealand government is currently considering the possibility of extending the application of IFRS to small and medium-sized companies which make up the greater proportion of business enterprises in New Zealand. There is considerable apprehension amongst owners and stakeholders of these companies about its impact on their equity values and borrowing capabilities. As this research sheds light on the possible post adoption effects, it would be of immense value to business owners and fund providers. Secondly, the value of this research finding extends to economies that are yet to fully adopt the IFRS, as investors in those nations are likely to be as apprehensive as those from the early adopter nations. Thirdly, this research dispels the myth that early adopters of the standard did so believing that the impact of the standard on their reported values would be insignificant, and that the late adopters delayed adoption for fear of its impact.

In detailing the findings, the rest of this paper will firstly, report some of the recent literature relevant to the issue at hand, followed by a description of the data and methods used in arriving at the above conclusion. The final section of this paper deliberates the findings with a discussion on its possible implications along with a brief note on its limitations, and suggestions for future research.

## 2. Literature review

Much of the research on the IFRSs or equivalents focus on their impact on European and American economies, with only a handful exploring the Australasian setting. In the Australasian context, though the debate on accounting for intangibles had been ongoing, the adoption of the IFRS in itself was consummated only recently compared to its American equivalent, SFAS 142. Australia adopted the accounting standard on intangibles ahead of New Zealand in 2005 while New Zealand's convergence became effective from January 1, 2007. This would explain the lack of New Zealand specific literature on this subject.

Extant literature on the impact of changes in accounting standards on reported financial statements suggests three basic outcomes: increase or decrease in its usefulness or that of no effect. Chow (1983) found the Securities Act (1933-1934), which required financial disclosures while curtailing accounting choices available to accountants in the USA, to have reduced the shareholder wealth and increased bondholder wealth. In corollary studies, (Hung and Subramaniam, 2007, Barth et al., 1999) the impact was found to be the opposite of that of Chow's (1983) for shareholders' and bondholders' wealth respectively.

On its impact on accounting quality, Karampinis and Hevas, (2009) and Iatridis and Rouvolis, (2009), both using data from Greek companies, found the accounting changes to have had a positive impact. Similar conclusions were also reached by Zhou et al., (2009) in China and Chen et al., (2010) in the European Union. However, Paananen and Lin, (2009) using data from German companies, found the changes to have impacted negatively, suggesting there could be country-variations that determine the extent of impact accounting changes bring about.

Of the many value relevance studies involving accounting changes, international studies by Daske et al., (2008) and Karamanou and Nishiotis, (2009) found accounting changes to be value relevant. Similar conclusions were also reached in France (Cormier et al., 2009) and in the European Union (Armstrong et al., 2010). Additionally, IFRS adoption is reported to have reduced the cost of capital in international studies (Daske et al., 2008; Karamanou and Nishiotis, 2009), in German companies (Ernstberger and Vogler, 2008) and in the European Union (Li, 2010), suggesting its favourable impact on equity values. Despite the overwhelming positivity that was found in the above studies, Jeanjean and Stolowy, (2008) reported the introduction of IFRS to have not

declined earnings management practices in Australia, UK and France, suggesting Australia's accounting numbers to have been immune to the changes brought about by the IFRS.

In addition to the positive/negative impacts that were generally expected following accounting changes (Chalmers and Godfrey, 2006), a third position of 'no-effect' was also found to exist in the American and Australian settings. Amongst the USA based studies, Jennings et al., (2001), evaluating the usefulness of goodwill amortisation, found, when share valuations are done based on earnings alone, neither the presence nor the absence of goodwill amortisation to be relevant in determining their values and concluded that "at best, the goodwill amortisation can only be viewed as a source of noise". A similar finding was also reported by Moehrle et al., (2001) using the S&P 1500 for years 1988/89. Churyk and Chewing, (2003) on the other hand, though having concluded that markets viewed goodwill as an economic resource that declined in value and that the declination was related to the amortisation methods used by the firms in their sample, failed to establish the post adoption values to be different from that of the pre adoption regime in all cases.

The Australian research findings generally conform to the 'no-effect' hypothesis. Cheung et al., (2008) taking accounting disclosures made by Australian companies for the years 2004/05 and 2005/06, found the adoption of IFRS to have had no impact on the post adoption values. A similar conclusion was also arrived at by Chalmers et al., (2008). They concluded, as found in previous studies, while a positive association was found between share prices and accounting information on goodwill, the information provided on identifiable intangible assets by the post IFRS regime was no better than what was provided by the previous regime.

In New Zealand, Wong and Wong's (2005) study referred to earlier pioneered efforts to speculate the likely effects on fund providers even before the voluntary adoption became effective. The researchers, taking a sample of 45 companies listed on the NZX in 2003, speculated that the accounting changes suggested by the IFRS 38 could significantly affect the valuation multiples and hence the fundamental values of companies. Wong and Wong's (2005) conclusions cautioned both creditors and shareholders alike, of the misleading information that the post IFRS regime's accounting figures could possibly reveal, if traditional valuation multiples were to be relied upon. They reckoned that non-amortisation of goodwill and other intangibles could lead to over valuation of companies in the post IFRS adoption era. While the

researchers' cautionary note supports the value relevance studies referred to earlier, its speculative nature beckons empirical validation.

The need for an empirical revalidation of Wong and Wong's (2005) conclusion stems from the following reasons: (a) the similarity in business practices between Australia and New Zealand (Cheung et al., 2010) prompts one to believe the post adoption effect in New Zealand to be similar to that of Australia, i.e. 'no effect'. (b) Though the researchers' conclusions are valid from an academic and analytical stand point, arguments can also be advanced to the contrary. Firstly, the changes brought about by the NZ IFRS 38 are adjustments that do not involve cash flows and hence no alteration to real values can be expected (Jennings et al., 2001; Moehrle et al., 2001). The changes therefore can be argued to be unlikely to affect shareholders either positively or negatively. Secondly, intrinsic values of shares are unlikely to be swayed by the accounting treatment of intangibles, as efficiency of markets would assimilate information on the impending changes long before the accounting reports actually reflected them as argued by Vincent (1997). Even though event studies surrounding accounting changes are inconclusive<sup>1</sup>, Vincent (1997) notes that "a common result in previous research is that markets adjust share prices to reflect accounting differences, such as goodwill amortisation". Taken together, there are reasonable grounds for empirical revalidation of Wong and Wong's contention.

Similar to the case with equity values, confusion also surrounds the borrowing capabilities of firms. Cheung et al., (2008), while finding no evidence to suggest that the IFRS 38 had any impact on post adoption values of the variables studied, singled out the debt to equity ratio as the only variable to have been significantly affected. If similar impacts were to be found in the New Zealand context, it would have ramifications on the abilities of companies to borrow. On the contrary, arguments also can be advanced to suggest that such ramifications would not eventuate, given that it is rare to find either long or short term funds being advanced to companies, based purely on their strength of intangible assets as collateral (Scott 1976; Myers 1977; Long and Malitz, 1983;

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<sup>1</sup> Schipper and Thompson (1983) examined the market reaction to regulatory changes including the earliest version of goodwill accounting and found the reaction to be insignificant. Subsequent studies on regulatory changes to fair value accounting by Cornett et al., (1996), accounting for Goodwill (SFAS 142) by Gara (2007) and IFRS adoption in general by Armstrong et al., (2010) found significant impact on market values with caveats attached.

Bradley, Jarrell and Kim, 1984; Titman and Wessels, 1988; Hall 1992; Bhagat and Welch, 1995; Alderson and Betker, 1996). In so far as the accounting adjustments required under NZ IFRS 38 steer clear of both cash flows and tangible asset values, there is no reason to believe that lenders would be overly concerned with the accounting treatment.

From the foregoing, it is evident that the extent to which the adoption of NZ IFRS 38 or its equivalents has an impact on the reported results, especially on equity values and borrowing capacities, is subject to considerable debate.

### 3. Data, measurement of variables and method

The data for the analysis herein was collected from the Datastream for the years 2002 to 2007. The rationale of choosing this period was to evenly split the pre and post adoption periods into two equal pools to average out any year-specific accounting effects. Accordingly, the period from 2002 to 2004 was regarded as 'pre' adoption and period from 2005-2007 was regarded as 'post' adoption.

Table 1: Reconciliation of Sample

|  |             |
|--|-------------|
| Total number of companies listed in NZX as at January 2008                   | 163         |
| Late adopters  | <u>-114</u> |
| Early adopters (30%)   | 49          |
| Companies that did not report intangibles in each of the years of evaluation | <u>-23</u>  |
| Final sample of early adopters with non zero values for intangibles          | 26          |

The initial sample contained all the 163 companies listed in the NZX as at January 2008. Forty nine (49) companies out of this total (30 per cent) were found to have voluntarily adopted IFRS as of January 2005, of which 26 companies carried a non-zero amount for both goodwill and other intangibles in their accounts for each of the years of evaluation. Table 1 provides a reconciliation of the sample selection and Appendix 1 (panel A) provides details of the companies that constituted the final sample.

In line with the objective of evaluating the impact of the adoption of NZ IFRS 38 on equity values and borrowing capabilities of firms, the following variables were computed for each of the years: Return on assets (ROA) and market to book (MB) ratios to analyse the impact on equity, debt to asset (DA) and current ratios (CA) to assess the impact on borrowing capability. The four variables were then further split into



'pre' and 'post' categories to test for their equality. Table 2 details the descriptive statistics of the raw data and computed variables.

Table 2: Descriptive Statistics: Raw data and computed variables for Early Adopters

|                             | Minimum | Maximum    | Mean    | Std. Deviation |
|-----------------------------|---------|------------|---------|----------------|
| Panel A: Raw data           |         |            |         |                |
| Earnings (pre)              | -4,685  | 172,997    | 18,251  | 42,079         |
| Earnings (post)             | -2,751  | 409,346    | 40,285  | 93,467         |
| Total Assets (pre)          | 3,258   | 7,833,667  | 724,180 | 1,720,505      |
| Total Assets (post)         | 4,842   | 7,300,000  | 912,516 | 1,792,947      |
| Total Debt (pre)            | 0       | 4,910,333  | 327,618 | 992,926        |
| Total Debt (post)           | 0       | 3,408,667  | 332,655 | 734,554        |
| Current Assets (pre)        | 0       | 1,372,667  | 158,906 | 326,263        |
| Current Assets (post)       | 0       | 2,029,000  | 263,459 | 528,112        |
| Current Liabilities (pre)   | 0       | 1,892,000  | 150,969 | 395,402        |
| Current Liabilities (post)  | 0       | 1,862,000  | 207,501 | 440,827        |
| Market value (pre)          | 0       | 10,004,648 | 735,260 | 2,048,990      |
| Market Value (post)         | 4,276   | 10,002,547 | 947,813 | 2,208,137      |
| Panel B: Computed Variables |         |            |         |                |
| ROA (pre)                   | -.38    | .66        | .0714   | .16666         |
| ROA (post)                  | -.23    | .20        | .0309   | .09527         |
| MB (pre)                    | .00     | 10.62      | 1.1544  | 2.01261        |
| MB (post)                   | .03     | 4.44       | 1.1024  | .88102         |
| DA (pre)                    | .00     | .66        | .1883   | .19683         |
| DA (post)                   | .00     | 1.85       | .3197   | .37318         |
| CACL (pre)                  | .00     | 4.42       | 1.3167  | 1.02932        |
| CACL (post)                 | .00     | 4.77       | 1.5164  | 1.07827        |
| Valid N (list wise) 26      |         |            |         |                |

ROA and MB ratios have been popular measures used by researchers to analyse the impact of intangibles on share values (Choi, Kwon and Lobo, 2000; Mortanges and Riel, 2003; Ramachandra, Nassir, Sambasivan and Joher, 2007; Yeung and Ramasamy, 2008). In line with the definitions adopted by the said researchers, the ROA and MB ratios were computed as follows:

ROA = Adjusted earnings per share (EPS) multiplied by the average number of shares in issue during the year divided by the net assets of the firm.

MB = The average market value during the financial year divided by the book value of assets.

In ascertaining the book values of assets, values of both tangible and intangible assets carried by the firms were aggregated due to their inseparability in generating a firm's earnings.

The impact of the accounting standard on the borrowing capability was evaluated by two measures, representing both long and short terms. The long term debt supporting position of a company was reflected by DA while the short term debt capability was inferred using the current ratio (CACL). The following definitions were adopted in constructing these variables:

DA = Total debt of the firm divided by the book value of assets

CACL = Current assets divided by the current liabilities of the firm

In arriving at the values for the above variables, data pertaining to the three year periods, i.e. 2002-2004 and 2005-2007 were averaged into two broad categories of variables to reflect the 'pre' and 'post' positions.

Due to the small sample that resulted, the Wilcoxon Signed-Rank Test, a non-parametric testing method, was selected to assess the equality of the measures. The Wilcoxon Signed-Rank test is an alternative to the correlated samples t-test and has been popularly used in testing for statistical significances of pre and post positions (Cheung et al., 2008). The pre and post positions of all variables used in this research with the exception of ROA were significantly correlated (Appendix 2) which justified the use of the Wilcoxon Signed-Rank test.

The standard null hypothesis for the above test assumes the two sets of data to be not significantly different from one another. In line with that a-priori position, the following hypotheses were constructed and tested:

*H<sub>0</sub> (1): There is no difference between the pre and post positions of shareholders wealth based on the proxy measure ROA.*

*H<sub>0</sub> (2): There is no difference between the pre and post positions of shareholders wealth based on the proxy measure MB.*

*H<sub>0</sub> (3): There is no difference between the pre and post positions of the long-term borrowing capability of firms based on the proxy measure DA.*

*H<sub>0</sub> (4): There is no difference between the pre and post positions of the short-term borrowing capability of firms based on the proxy measure CACL.*

Rejecting the null hypotheses would permit the acceptance of the alternative, suggesting that there could be a difference between the shareholder wealth and borrowing capabilities of firms based on the proxies used.

#### **4. Analysis and Discussion**

In studies that deal with the evaluation of pre and post aspects of repeated samples, the mean values of variables provide a rough indication of the characters of variables that are being considered. From the descriptive statistics detailed in Table 2, it is evident that the post-adoption mean values of ROA and MB have drastically reduced from that of the pre-adoption values. With respect to ROA, the reduction was in the region of 57 per cent while the corresponding reduction for MB ratio amounted to only 4.5 per cent. A reduction in values from their pre adoption position indicates that there could be a possible impact on equity values as expected by some researchers.

The post-adoption values of the means of variables that were chosen to proxy the borrowing capabilities showed the opposite. Herein the post adoption values for DA and CACL had increased by 70 per cent and 15 per cent respectively, indicating the adoption of the accounting standard having impacted the borrowing capabilities of firms differently.

The mixed signals that the variables provided added strength to the hypotheses tested and specified the directional movements that could be expected.

The results of the Wilcoxon Signed Rank test and statistics provided in Table 3 indicate none of the variables studied in this research to be statistically significant to reject the null hypotheses. At 5 per cent level of significance, p-values for the differences in ROA, MB, DA and CACL were greater than 0.025, with the exception of DA, which could be accepted at a higher level of significance. Based on the findings above, it can be concluded that the adoption of NZ IFRS 38 had not altered the values differently to those of the pre-adoption regime. The conclusions arrived herein, conforms to the Australian and USA based studies that found similar positions with regards to the adoption of IFRS 38 or its

equivalent (Jennings et al., 2001; Moehrle et al., 2001; Churyk and Chewing, 2003; Cheung et al., 2008; Chalmers et al., 2008).

Table 3: Wilcoxon Signed Ranks Test with Test Statistic

|                    |                                     | N  | Mean Rank | Sum of Ranks |
|--------------------|-------------------------------------|----|-----------|--------------|
| ROApost - ROApre   | Negative Ranks (ROApost < ROApre)   | 13 | 15.62     | 203.00       |
|                    | Positive Ranks (ROApost > ROApre)   | 13 | 11.38     | 148.00       |
|                    | Ties (ROApost = ROApre)             | 0  |           |              |
|                    | Z = -.698(a)                        |    |           |              |
|                    | Asymp. Sig. (2-tailed) = .485       |    |           |              |
| MBpost - MBpre     | Negative Ranks (MBpost < MBpre)     | 8  | 13.63     | 109.00       |
|                    | Positive Ranks (MBpost > MBpre)     | 18 | 13.44     | 242.00       |
|                    | Ties (MBpost = MBpre)               | 0  |           |              |
|                    | Z = -1.689(b)                       |    |           |              |
|                    | Asymp. Sig. (2-tailed) = .091       |    |           |              |
| DApost - DApre     | Negative Ranks (DApost < DApre)     | 9  | 8.89      | 80.00        |
|                    | Positive Ranks (DApost > DApre)     | 16 | 15.31     | 245.00       |
|                    | Ties (DApost = DApre)               | 1  |           |              |
|                    | Z = -2.220(b)                       |    |           |              |
|                    | Asymp. Sig. (2-tailed) = .026       |    |           |              |
| CACLpost - CACLpre | Negative Ranks (CACLpost < CACLpre) | 9  | 11.33     | 102.00       |
|                    | Positive Ranks (CACLpost > CACLpre) | 14 | 12.43     | 174.00       |
|                    | Ties (CACLpost = CACLpre)           | 3  |           |              |
|                    | Z = -1.095(b)                       |    |           |              |
|                    | Asymp. Sig. (2-tailed) = .274       |    |           |              |

Note: a is based on positive ranks and b is based on negative ranks.

A number of reasons could be attributed for the above result. Primarily, it is possible that the changes brought about by the NZ IFRS are minimal in comparison to the total values intangible assets reported in statements of financial positions, as was found to be the case in Australia by Cheung et al., (2008), in which case, only companies that anticipated the effect to be marginal would have chosen to adopt the NZ

IFRS early and hence the conclusion of 'no-effect'. This brings about the question, whether the early adopters in New Zealand are a separate group, removed from the late adopters with distinguishable characteristics. If so, the conclusion reached herein cannot be generalised. This point will be discussed later. Secondly, in anticipation of the changes that the NZ IFRS 38 was to bring in, it is also possible that companies could have altered their financing methods to ensure that the equity values are maintained at the same levels as before. Despite its plausibility, this study neither considered the changes in equity issues nor in the debt capital of firms under investigation to draw conclusions in this regard. Thirdly, as evidenced in prior research (Vincent 1997; Chalmers et al., 2008), markets are also known to adjust share prices to reflect accounting differences such as goodwill amortisation. The equality found between the pre and post positions could also be attributed to the efficiency with which markets process information.

On the borrowing capabilities of firms, the proxy variables also show the new accounting treatment to have impacted no differently from the previous accounting regime. In addition to the aforesaid reasons, it is possible to conjecture that, as with the case of equity providers, the debt capital providers were also able to distinguish between cash flows and earnings potential based on factors that go beyond the books of accounts. Further, debt capital providers are known to rely on tangibles assets as the preferred form of collateral and hence a changed accounting treatment for intangibles would have had little relevance in this regard. The null hypothesis related to long term borrowing capability however, can be rejected in preference to the alternative, if a higher level of significance is specified, in which case, it would then be concluded that the changed accounting treatment had disseminated significant information to the long term debt capital providers. In this research, such a proposition was disregarded on the grounds that some of the companies in the sample did not have significant amounts of debt capital as evidenced in the descriptive statistics (Table 2).

One of the drawbacks of using non-parametric testing is that the results tend to be sensitive to effect-size. Field and Hole (2003), suggest that the effect-size represented by Cohen's 'r' be computed to determine the power of variables to explain the variation in data. The Cohen's r is computed using the following formula:

$$r = Z / \sqrt{n}$$

Where:

Z refers to the Z statistic computed by the non-parametric test  
 n denotes the number of data points used in the sample.

In this research, the sample contained 52 observations for each of the variables ROA, MB, DA and CACL. The calculated Cohen's r is detailed in Table 4.

Table 4: Cohen's 'r'

| Variable | ROA   | MB    | DA    | CACL  |
|----------|-------|-------|-------|-------|
| 'r'      | 0.097 | 0.234 | 0.310 | 0.152 |

Table 5: Descriptive statistics: Early versus Late adopters

|             | N  | Minimum | Maximum | Mean    | Std. Deviation | % Change in Means (EA) | % Change in Means (LA) |
|-------------|----|---------|---------|---------|----------------|------------------------|------------------------|
| *EA ROApr   | 26 | -.38    | .66     | .0714   | .16666         |                        |                        |
| EA ROApr    | 26 | -.23    | .20     | .0309   | .09527         | -56.8                  |                        |
| LA ROApr    | 19 | -43.11  | .18     | -2.3065 | 9.88182        |                        |                        |
| LA ROApr    | 19 | -2.01   | .56     | -.1783  | .57687         |                        | -92.3                  |
| EA MBpre    | 26 | .00     | 10.62   | 1.1544  | 2.01261        |                        |                        |
| EA MBpost   | 26 | .03     | 4.44    | 1.1024  | .88102         | -4.5                   |                        |
| LA MBpre    | 19 | .00     | 7.70    | 1.5760  | 2.41217        |                        |                        |
| LA MBpost   | 19 | .19     | 15.77   | 3.8748  | 4.78283        |                        | 145.9                  |
| EA DApr     | 26 | .00     | .66     | .1883   | .19683         |                        |                        |
| EA DApr     | 26 | .00     | 1.85    | .3197   | .37318         | 69.8                   |                        |
| LA DApr     | 19 | .00     | .40     | .1125   | .13199         |                        |                        |
| LA DApr     | 19 | .00     | .87     | .2582   | .26372         |                        | 129.6                  |
| EA CACLpre  | 26 | .00     | 4.42    | 1.3167  | 1.02932        |                        |                        |
| EA CACLpost | 26 | .00     | 4.77    | 1.5164  | 1.07827        | 15.2                   |                        |
| LA CACLpre  | 19 | .00     | 8.24    | 1.8151  | 2.21754        |                        |                        |
| LA CACLpost | 19 | .00     | 14.65   | 2.9849  | 3.60576        |                        | 64.5                   |

Note: \*prefixes to the variables, EA and LA denote Early Adopters and Late Adopters respectively

Based on the benchmarks set for Cohen's  $r$ , variable ROA has the least ability to explain the variation in data ( $r < 0.1$ ) while MB and DA measures have medium ability to explain ( $r > 0.3$ ). The increased explanatory power of at least one variable each for the analysis of equity and borrowing capability (MB and DA), coupled with the fact that they are uncorrelated with each other, makes the above analysis and interpretation robust.

Returning to the conjecture that the early adopters could have chosen to adopt the IFRS with prior knowledge that the impact would be insignificant, this research further analysed the data pertaining to companies that chose not to adopt the IFRS 38 early. Of the 114 companies that did not opt to adopt IFRS early, a sample of 23 companies were chosen, after eliminating companies that did not report intangibles. Of this, 4 companies were eliminated for having zero value for variables studied in this research, resulting in a usable sample of 19 companies. (Appendix 1, panel B). As in the case of early adopters, ROA, MB, DA and CACL were computed for the periods 2002-2004 (pre-IFRS) and 2005-2007 (post-IFRS). The descriptive statistics of the chosen variables for early and late adopters are detailed in Table 5.

The changes to the mean values of pre and post adoption for early and late adopters indicate that the late adopters had a pronounced effect in comparison to the early adopters on the variables studied. This provided sufficient motivation to believe that the conjecture described earlier could be valid. To investigate the statistical significance of the means between early and late adopters, Friedman's test of equality of means was carried out. The results of the test of equality are presented in Table 6.

Table 6: Friedman's test of equality of means

| Variables | LA (Mean Rank) | EA (Mean Rank) | Asymp. Sig. |
|-----------|----------------|----------------|-------------|
| ROA       | 1.37           | 1.63           | 0.251       |
| MB        | 1.47           | 1.53           | 0.819       |
| DA        | 1.45           | 1.55           | 0.637       |
| CACL      | 1.58           | 1.42           | 0.491       |

Despite the magnified changes in means that the late adopters exhibited between their pre and post adoption values, the Friedman's test of equality of means failed to statistically support the hypothesis that there was a significant difference between early adopters and late

adopters. The failure to reject the null hypothesis hence concludes that the early adopters had no distinguishing characteristics compared to the late adopters and can be argued that the conclusions arrived at for early adopters was not due to any unique position of the firms that opted to adopt IFRS early.

## **5. Conclusions, Recommendations and Limitations**

This research set out to empirically assess the possible impact that the adoption of NZ IFRS 38 could have had on both equity values and borrowing capabilities of firms. The conclusions reached based on the accounting information available for early adopters of the standard in New Zealand, suggest that neither the equity values nor borrowing capabilities of firms were affected by the adoption. This was contrary to the expectations of Wong and Wong (2005), who cautioned that significant effects could be expected on the valuation multiples, upon the full adoption of the standard.

Studies dealing with valuation impacts of accounting standards, generally serve two purposes. Firstly, they provide the much needed assurance to investors that accounting changes would not deplete their wealth position and if any, would only strengthen their existing position with additional benefits such as increased quality in accounting reports, value relevance of accounting numbers and reduced cost of capital as found in European studies (Barth, Landsman, and Lang, 2008; Daske, Hail, Leuz and Verdi, 2008; Karampinis and Hevas, 2009; Iatridis and Rouvolis, 2009; Zhou, Xiong and Ganuli, 2009, Chen, Tang, Jiang and Lin, 2010; Karamanou and Nishiotis 2009; Cormier, Demaria, Lapointe-Antunes and Teller, 2009; Armstrong, Barth, Jagolinzer and Riedl, 2010). Secondly, they assure the standard setters that fundamental realities of firms would remain unaltered even after the adoption of a new standard. This is particularly relevant to the standard setters of New Zealand, who are currently considering the possibility of extending the IFRS coverage to small and medium-sized businesses and to the economies that are yet to fully adopt the IFRS, such as countries in the Asian continent. The conclusions reached in this study hence provide assurance to the stakeholders that the fundamental realities of businesses in New Zealand have not been altered by the adoption of IFRS 38.

The reported study herein however cannot be generalised due to its limitations. Accounting numbers typically are aggregated figures that represent many facets of firm characteristics. When they are used to test



one isolated event/phenomenon, the typical problem of 'holding all other factors constant' arises. The measures used in this research as proxies for equity values and borrowing capabilities can be criticised for this reason, as they were not measured under controlled conditions. Hence, it is plausible that the variables used are contaminated by extraneous influences.

Non parametric tests are also frequently criticised for not being as powerful as parametric tests. Due to the limited content of data that was available in the New Zealand market, the method chosen herein employed the non-parametric test detailed above. However, the hypotheses of this research can be retested using parametric tests with an enlarged sample when full convergence is assured.

The conformity of this study with the Australian studies cited under the literature review, beckons further research into the distinguishable characteristics of Australasia, if any, from the rest of the world, in the sphere of IFRS adoption. Future research is therefore recommended, to take this regional factor into consideration when dealing with accounting standard changes in the region.

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## Appendix 1: List of sampled companies

### Panel A: Early Adopters

|    | Company                       | Industry                            | Year of adoption |
|----|-------------------------------|-------------------------------------|------------------|
| 1  | Just Water International      | Beverages                           | 2005             |
| 2  | New Zealand Wine Company      | Beverages                           | 2006             |
| 3  | Fletcher Buildings            | Building materials and construction | 2005             |
| 4  | Steel and Tube Holdings       | Building materials and construction | 2006             |
| 5  | Nuplex Industries             | Chemicals                           | 2006             |
| 6  | Wellington Drive Technologies | Electronic & Electrical Equipments  | 2006             |
| 7  | Contact Energy                | Energy                              | 2005             |
| 8  | New Image Group               | Finance and other services          | 2006             |
| 9  | NZF Group                     | Finance and other services          | 2006             |
| 10 | Speirs Group                  | Finance and other services          | 2006             |
| 11 | Affco Holdings                | Food production                     | 2005             |
| 12 | Comvita                       | Food production                     | 2006             |
| 13 | Turners and Growers           | Food production                     | 2005             |
| 14 | VTL Group                     | Food production                     | 2006             |
| 15 | Ebos Group                    | Intermediate and Durables           | 2006             |
| 16 | Fisher and Paykel Appliances  | Intermediate and Durables           | 2005             |
| 17 | Methven                       | Intermediate and Durables           | 2006             |
| 18 | Provenocadmus                 | Intermediate and Durables           | 2005             |
| 19 | Smartpay                      | Intermediate and Durables           | 2006             |
| 20 | Telecom Corporation of NZ     | Media and Telecommunications        | 2005             |
| 21 | Finzsoft Solutions            | Support Services                    | 2006             |
| 22 | Hellaby Holdings              | Support Services                    | 2005             |
| 23 | Richina Pacific               | Support Services                    | 2005             |
| 24 | Rakon                         | Travel & Leisure                    | 2006             |
| 25 | Sky City Entertainment Group  | Travel & Leisure                    | 2006             |
| 26 | Tourism Holdings              | Travel & Leisure                    | 2005             |

**Panel B: Late Adopters**

|    | <b>Company</b>                | <b>Industry</b>                  | <b>Year of adoption</b> |
|----|-------------------------------|----------------------------------|-------------------------|
| 1  | Windflow Technology           | Alternative Energy               | 2007                    |
| 2  | Botry-Zen                     | Chemicals                        | 2007                    |
| 3  | Dominion Finance Holdings     | Finance and other services       | 2007                    |
| 4  | Pyne Gould                    | Finance and other services       | 2007                    |
| 5  | Wool Equities                 | Finance and other services       | 2007                    |
| 6  | Sanford                       | Food production                  | 2007                    |
| 7  | Pumpkin Patch                 | General Retailers                | 2007                    |
| 8  | Smiths City Group             | General Retailers                | 2007                    |
| 9  | Fisher and Paykel Healthcare  | Health Care Equipment & Services | 2007                    |
| 10 | Freightways                   | Industrial Transportation        | 2007                    |
| 11 | Infratil                      | Industrial Transportation        | 2007                    |
| 12 | Broadway Industries           | Leisure Goods                    | 2007                    |
| 13 | Sealegs                       | Leisure Goods                    | 2007                    |
| 14 | A2                            | Pharmaceuticals & Biotechnology  | 2007                    |
| 15 | Blis Technologies             | Pharmaceuticals & Biotechnology  | 2007                    |
| 16 | Solution Dynamics             | Support Services                 | 2007                    |
| 17 | Connexionz                    | Technology Hardware & Equipment  | 2007                    |
| 18 | Renaissance                   | Technology Hardware & Equipment  | 2007                    |
| 19 | Restaurant Brands New Zealand | Travel & Leisure                 | 2007                    |

## Appendix 2: Correlations

|             |                     | ROAb   | ROAa    | MBb     | MBa    | DAb    | DAa    | CACLb  | CACLa  |
|-------------|---------------------|--------|---------|---------|--------|--------|--------|--------|--------|
| ROA (pre)   | Pearson Correlation | 1      | .318    | -.425*  | -.146  | .030   | .077   | -.232  | -.459* |
|             | Sig. (2-tailed)     |        | .113    | .030    | .476   | .886   | .708   | .254   | .018   |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |
| ROA (post)  | Pearson Correlation | .318   | 1       | -.553** | -.151  | -.003  | -.403* | -.360  | -.198  |
|             | Sig. (2-tailed)     | .113   |         | .003    | .461   | .987   | .041   | .070   | .333   |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |
| MB (pre)    | Pearson Correlation | -.425* | -.553** | 1       | .819** | -.056  | -.087  | .666** | .625** |
|             | Sig. (2-tailed)     | .030   | .003    |         | .000   | .784   | .673   | .000   | .001   |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |
| MB (post)   | Pearson Correlation | -.146  | -.151   | .819**  | 1      | -.197  | -.307  | .478*  | .663** |
|             | Sig. (2-tailed)     | .476   | .461    | .000    |        | .336   | .128   | .013   | .000   |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |
| DA (pre)    | Pearson Correlation | .030   | -.003   | -.056   | -.197  | 1      | .552** | .118   | -.143  |
|             | Sig. (2-tailed)     | .886   | .987    | .784    | .336   |        | .003   | .565   | .486   |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |
| DA (post)   | Pearson Correlation | .077   | -.403*  | -.087   | -.307  | .552** | 1      | -.093  | -.370  |
|             | Sig. (2-tailed)     | .708   | .041    | .673    | .128   | .003   |        | .652   | .063   |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |
| CACL (pre)  | Pearson Correlation | -.232  | -.360   | .666**  | .478*  | .118   | -.093  | 1      | .683** |
|             | Sig. (2-tailed)     | .254   | .070    | .000    | .013   | .565   | .652   |        | .000   |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |
| CACL (post) | Pearson Correlation | -.459* | -.198   | .625**  | .663** | -.143  | -.370  | .683** | 1      |
|             | Sig. (2-tailed)     | .018   | .333    | .001    | .000   | .486   | .063   | .000   |        |
|             | N                   | 26     | 26      | 26      | 26     | 26     | 26     | 26     | 26     |

\*Correlation is significant at the 0.05 level (2-tailed).

\*\*Correlation is significant at the 0.01 level (2-tailed).