

# **THE IMPACT OF NZ IAS 38 ON EQUITY VALUES AND BORROWING CAPACITIES OF FIRMS IN NEW ZEALAND**

## **Abstract**

The compliance with IAS 38 was expected to alter asset values recognised in balance sheets with significant implications to both equity holders and borrowing capacities of firms. This research compared the accounting data reported under the NZ GAAP and NZ IAS regimes using data gathered from the early adopters of the standard in New Zealand to infer whether the apprehension was indeed true. Using Wilcoxon Signed Rank test, this research found no evidence to suggest that the post implementation values were any different from the pre adoption values.

## Introduction

One of the most debated adoptions of the International Financial Reporting Standards (IFRS) to the New Zealand accounting practice was the adoption of IAS 38-Intangible Assets. New Zealand companies were required to prepare their financial reports complying with the new standard with effect from January 1, 2007. In preparation for the changes that the new standard was to usher in, companies were given the option to adopt the standard from as early as January 1 2005 on a voluntary basis. The new standard fundamentally altered the way by which asset values were recognised for financial reporting purposes in New Zealand leaving its impact to be empirically assessed.

The IAS 38- Intangible Assets, though was first issued in 1998, had remained only as a general guide with respect to accounting for intangibles in New Zealand. Prior to its adoption, the Generally Accepted Accounting Principles (GAAP) of NZ permitted the recognition of both internally generated and externally acquired intangibles in balance sheets, amortisable over their useful lives, but not exceeding 20 years. The new standard, among other things, specifically prohibits the capitalisation of internally generated intangibles such as brands, mastheads, publishing titles, customer lists and items similar in substance citing the difficulty of distinguishing the costs associated with developing these intangibles from developing the business as a whole ( NZ IAS 38, paragraphs 63 & 64). The standard however allows the capitalization of intangibles insofar as they are part of a business combination. In such instances the standard requires the capitalized value to be amortized systematically over the useful life of the asset or be subjected to annual testing for impairment.

In essence, New Zealand companies with effect from January 2007 are required to (a) de-recognise any internally generated intangibles, (b) reclassify goodwill into identifiable and non-identifiable components, (c) determine whether the lives of intangibles classified in (b) to be finite or indefinite, (d) if finite, to amortise over their useful lives and if indefinite, to subject them to impairment testing annually.

With the exception of a few, New Zealand companies in general had long ceased recognising internally generated intangibles in their financial statements (Austin, 2007). For these companies the adoption of IAS 38 is unlikely to alter the values in balance sheets from what was reported previously. However, it would not be so for those that still held internally generated intangibles. For companies that accounted for 'goodwill' under the NZ GAAP, significant changes would be warranted in the reclassification and continued assessment 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 once annually. Companies with identifiable intangibles with indefinite lives would test for impairment, which could result in a charge or gain depending on whether the asset loses or gains value.

Theoretically, the cumulative effect of the above would be expected to alter balance sheet values and consequently have an effect on the manner in which shareholders and creditors would value their investments. Wong & Wong, 2005 speculated the above using accounting figures of New Zealand companies for the financial year 2003 (before the voluntary adoption came into effect). They concluded that in the absence

of impairment losses, non-amortisation of goodwill and identifiable intangible assets with indefinite lives could significantly overvalue both companies and equity.

### **Motivation**

Wong & Wong's conclusions caution both creditors and shareholders alike of the misleading information that the post IAS regime's accounting figures could possibly reveal if traditional valuation multiples were to be relied upon. They reckon that the non amortisation of goodwill and other intangibles could lead to over valuation of companies in the post IAS adoption era.

While the researchers' cautionary note is valid from an academic an analytical stand point, arguments can also be advanced to the contrary. Primarily, changes proposed by the NZ IAS did not involve cash flows and hence no alteration to the real value of the entity can be expected. The financial reports prepared using the new standard hence are unlikely to affect firm and equity values either positively or negatively. The true value of shares, which is determined by the market, is unlikely to be swayed by the changes in accounting treatment as evidenced by a number of studies that tracked accounting changes to market values. Further, from a market efficiency point of view it could be argued that the market would have assimilated the information on impending change long before the accounting reports actually reflect them.

Similar argument can also be advanced with regards to the valuation for creditors. It is rare to find either long or short term funds being advanced to companies based on their strength of intangible assets as collateral. Insofar as the accounting adjustments required under NZ IAS steer clear of both cash flows and tangibles asset values, there is no reason to believe that creditors would be overly concerned with the accounting treatment.

Hence, the primary aim of this paper was to test whether a statistically significant variation could be found in the share values of companies owing to the changes that the NZIAS had usher in. Secondly, it was also to test whether such changes could have altered the abilities of companies to borrow. The variations in values, if any, could 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 IAS 38 in New Zealand, found no evidence to support the view that the adoption of IAS 38 would alter the wealth position of the equity holders or the borrowing capacities of firms. In detailing the findings, the rest of this research report will discuss some of the recent literature relevant to the issue at hand followed by a description on the data and methods used in arriving at the above conclusion. The final section of this report would deliberate the findings together with a discussion on its possible implications, limitations and suggestions for future research.

## Literature review

The impact of changes brought about by accounting regulations had always been an interesting area of study especially when their adoption was shrouded in controversy. Accounting for intangibles had been one such issue sparking debate over the decades and is not surprising to find voluminous amount of literature on it.

Much of the research in this area however, focuses on the accounting standard's impact on European and American economies with only a handful exploring the Australasian setting. One of major themes that researchers had been concentrating recently had been on the value relevance of the accounting numbers to investors and fund providers in the aftermath of the IAS adoption.

The value relevance of IAS 38 (or its American equivalent, SFAS 142) had been researched extensively by the US researchers, since the SFAS 142 was introduced in 2001 and ample time had lapped since its introduction to evaluate its relevance on value to fund providers.

In the Australasian context, though the debate had been an ongoing phenomenon, the adoption of the IAS consummated only recently. Australia adopted the accounting standard on intangibles ahead of New Zealand in 2005 while New Zealand's convergence became effective from only 2007. This would explain the reason for the lack of New Zealand specific literature on this subject. Wong & Wong's study referred to earlier is a pioneering effort in this regard as they managed to speculate the likely effects on the fund providers even before the voluntary adoption in New Zealand was effective.

The central focus of the debate on the impact of the accounting standard was the treatment of goodwill amortisation. Prior to the adoption of IAS 38 or SFAS 142, goodwill was systematically amortised over its useful life while the standard prescribed that instead it be subjected to an annual impairment test to determine the change in the value of goodwill. It's this fundamental change, along with de-recognition of internally generated intangibles, that distinguished financial statements prepared prior to and after the adoption of IAS.

Based on Australian evidence, the value relevance of the adoption of IAS 38 was not statistically significant. Influenced by the controversy that surrounded the adoption, researchers generally started with a position expecting the changes proposed by the standard to have significant effects on firm and equity values after its adoption. However, empirical findings failed to establish the post adoption values to be different from that of the pre adoption regime.

Cheung et al 2008, taking accounting disclosures made by Australian companies for years 2004/05 and 2005/06 found the adoption of IAS to have had no impact on most variables studied. Similar conclusion was also arrived at by Chalmers et al 2008, studying the usefulness of accounting information provided by the financial statements constructed under the pre/post IAS regimes. They concluded that while a positive association can be found between share prices and accounting information, the information provided by the post IAS regime to be no better than that was provided by the previous regime.

The Australian research findings generally conformed to findings by the USA based researchers who had the timing advantage to test the value relevance due to its earlier adoption in the USA. Jennings et al, 2001, studying the usefulness of amortisation in earnings found that when share valuations were done based on earnings alone; neither the presence nor the absence of goodwill amortisation to be relevant in determining its value. A similar finding was also reported by Moehrl et al 2001.

Evidence to the contrary however was reported by Churyk and Chewing 2003, who found goodwill amortisation to have had a significant negative relationship with equity values in some individual years. They 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. A similar conclusion was also arrived at by Kohlbeck and Warfield 2007, who found evidence to suggest that unrecorded intangible assets to be important in understanding the persistence and valuation of abnormal earnings in the banking industry.

From the foregoing, it is evident that the empirical results on the impact of the adoption of IAS 38/SFAS 142 were mixed (see: Gara 2007)

### **Data, Definition 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 the period was to evenly split the pre and post adoption periods into two equal pools to average out any year-specific accounting effects. The initial sample contained 163 companies reported in Datastream as at January 2008. 49 (30% of the total) companies out of this total were found to carry a non-zero amount of both goodwill and other intangibles in their accounts. The sample was further reduced to 26 (16% of the total) companies after eliminating the late adopters. Appendix 1 provides details of the list of companies that made-up the final sample.

In line with the objective of evaluating the impact of the adoption of IAS 38 on equity values and borrowing capacity of firms, data was collected to compute the following variables; return on assets (ROA) and market to book (MB) ratios to analyse the impact on equity, debt to asset (DA) and current (CA) ratios to assess the impact on borrowing capacity. The four variables were further split into 'before' and 'after' categories to test their equality. Table 1, details the descriptive statistics of the chosen variables.

**Table 1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
ROA (before)	26	-.38	.66	.0714	.16666
ROA (after)	26	-.23	.20	.0309	.09527
MB (before)	26	.00	10.62	1.1544	2.01261
MB (after)	26	.03	4.44	1.1024	.88102
DA (before)	26	.00	.66	.1883	.19683
DA (after)	26	.00	1.85	.3197	.37318
CACL (before)	26	.00	4.42	1.3167	1.02932
CACL (after)	26	.00	4.77	1.5164	1.07827
Valid N (list wise)	26				

ROA and MB ratios had been popular measures used by researchers to analyse the impact of intangibles on share values (see Choi et al, 2000; Mortanges & Riel, 2003; Yeung & Ramasamy, 2008). In this research, inline with the definitions adopted by the said researchers, the ROA and MB ratios were computed using the following definitions:

ROA = adjusted earnings per share (EPS) multiplied by the average shares in issue during the year and 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 the inseparability of these assets in generating a firm's earnings.

The impact of the accounting standard on the borrowing capacity was evaluated by two measures, representing both long and short term. The long term debt supporting position of a company was reflected by DA while the short term debt capacity was inferred using the current ratio. 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 that makeup the above variables data pertaining to the three year period<sup>1</sup> before and after the adoption were averaged for the reasons mentioned above. In this manner the 6 firm-year data was reduced to two broad categories of variables to reflect the 'before' and 'after' positions.

Due to the small sample that resulted in, the Wilcoxon Signed-Rank Test, a non-parametric testing method was selected to asses the equality of the measures.

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<sup>1</sup> Period from 2002 to 2004 were regarded as 'before' adoption and period from 2005-2007 was regarded as the period 'after' adoption.

Wilcoxon Signed-Rank test is an alternative to the correlated samples t-test and has been popularly used in testing the statistical significance of before and after positions (see: Cheung et al, 2008). The before and after positions of all variables used in this research with the exception of ROA were significantly correlated (Refer to 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 tested 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 before and after positions of shareholders' wealth based on the proxy measure ROA.

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

H<sub>0</sub> (3): There is no difference between the before and after positions of the long term borrowing capacity of the firm based on the proxy measure DA.

H<sub>0</sub> (4): There is no difference between the before and after positions of the short term borrowing capacity of the firm 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 capacities of firms based on the proxies used.

### **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 1, 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% while the corresponding reduction for MB ratio amounted to only 4.5%. A reduction in values from their pre adoption position could indicate a possible negative impact on equity.

The post adoption position of the means of variables that were chosen to proxy the borrowing capacity showed the opposite. Herein the post adoption values for DA and CACL had increased by 70% and 15% respectively indicating the adoption of the accounting standard to have positively impacted the borrowing capacities of firms.

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

**Table 2: Wilcoxon Signed Ranks Test**

		N	Mean Rank	Sum of Ranks
RoAa - ROAb	Negative Ranks	13(a)	15.62	203.00
	Positive Ranks	13(b)	11.38	148.00
	Ties	0(c)		
	Total	26		
MBa - MBb	Negative Ranks	8(d)	13.63	109.00
	Positive Ranks	18(e)	13.44	242.00
	Ties	0(f)		
	Total	26		
DAa - DAb	Negative Ranks	9(g)	8.89	80.00
	Positive Ranks	16(h)	15.31	245.00
	Ties	1(i)		
	Total	26		
CACLa - CACLb	Negative Ranks	9(j)	11.33	102.00
	Positive Ranks	14(k)	12.43	174.00
	Ties	3(l)		
	Total	26		

- a RoAa < ROAb  
b RoAa > ROAb  
c RoAa = ROAb  
d MBa < MBb  
e MBa > MBb  
f MBa = MBb  
g DAa < DAb  
h DAa > DAb  
i DAa = DAb  
j CACLa < CACLb  
k CACLa > CACLb  
l CACLa = CACLb

**Test Statistics(c)**

	ROAa - ROAb	MBa - MBb	DAa - DAb	CACLa - CACLb
Z	-.698(a)	-1.689(b)	-2.220(b)	-1.095(b)
Asymp. Sig. (2-tailed)	.485	.091	.026	.274

- a Based on positive ranks.  
b Based on negative ranks.  
c Wilcoxon Signed Ranks Test

The results of Wilcoxon Signed Rank test and statistics provided in table 2 indicate that none of the variables studied in this research to be statistically significant to reject the null hypotheses. At 5% level of significance, the p-values for the differences in ROA, MB, DA and CACL are greater than 0.025 with the exception of DA, which could be accepted at a higher level of significance. Being unable to reject the null hypotheses, it could be concluded that the adoption of IAS 38 to have not provided any additional information than what was available during the pre adoption regime.

The conclusions arrived herein conforms with many studies that found similar positions with regards to the adoption of IAS 38 or its equivalent. A number of reasons could be attributed for the above result. Primarily, it is possible that companies, in anticipation of the changes that the IAS 38 was to bring in, could have altered their financing methods to ensure that equity values are maintained at the same

level as before. Secondly, as evidenced in prior research, markets were also known to adjust share prices to reflect accounting differences such as goodwill amortisation (see Vincent 1997). Hence, the equality found between the pre and post positions could have been due to the efficiency with which market processes information.

On the borrowing capacity of the firm, the proxy variables showed that the new accounting treatment to have impacted no differently from the previous accounting regime. This again was not surprising given that the proposed changes had no impact on the cash flows of firms. It can be argued that as with the case of equity providers, the debt capital providers were also able to ‘see through’ the company’s real potential based on factors that go beyond the books of accounts. Further, traditionally, debt capital providers have been known to rely on tangibles assets as the preferred form of collateral and hence a changed accounting treatment for intangibles could be have had no relevance in this regard. If however a higher level of significance were to be specified than the traditional level of 5%, the null hypothesis relating to long term borrowing capacity could be rejected in preference of the alternative. In which case it would then be concluded that the changed accounting treatment to have had 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.

With the view of determining the robustness of the above analysis, effect-size of variables studied was computed. Field & 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 while ‘n’ denotes the number of data points used in the sample. In the sample under consideration, there were a total of 52 observations for each of the variables ROA, MB, DA and CACL. The calculated Cohen’s r is detailed in table 3.

**Table 3: Cohen’s ‘r’**

Variable	ROA	MB	DA	CACL
‘r’	0.097	0.234	0.310	0.152

Based on the benchmarks set for Cohen’s r, it is evident that 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 capacity (MB and DA) coupled with the fact that they are uncorrelated with each other makes the above analysis and interpretation robust.

## **Conclusions Recommendations and Limitations**

This research set out to empirically assess the possible impact that the adoption of IAS 38 could have had on both equity values and borrowing capacities of firms. The conclusions reached based on the accounting information available for early adopters of the standard in NZ suggest that neither the equity values nor borrowing capacities of firms were affected by the adoption. This was somewhat contrary to the expectations of Wong & Wong 2005, who cautioned that a significant effect could be expected on the valuation multiples upon full adoption of the standard. The conclusions arrived herein however do not entirely dispute the findings of Wong & Wong as the valuation multiples that they chose in their study were different from the proxies chosen for this study.

Studies dealing with valuation impacts of accounting standards generally serve two broad purposes. Firstly, they provide the much needed assurance to investors that accounting changes would not alter their wealth positions and if any, would only strengthen their existing position with additional checks and balances. For firms, it provides assurance that their financing positions would not be seriously altered by a new way of constructing accounts. Secondly, they assure the standard setters that fundamental realities of firms remain unaltered even after the adoption of a new standard. This assurance is vital for both the general public and the standard setter as the objective of standard setting is not to reshape company fundamentals but to reinforce its existing reporting mechanism. The conclusions reached in this study while providing assurance to the stakeholders as discussed above, would also lend support to the existing body of literature, from the NZ perspective.

The reported study herein however cannot be generalised as it's fraught with a number of 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 capacities can be criticised for this reason as they were not measured under controlled conditions. Though there are methods available to overcome this problem, they cannot be applied when dealing with a limited sample (as in this research) without losing valuable data points. Hence, it is possible that the variables used are contaminated with extraneous influences.

Non parametric tests are also frequently criticised for being not as powerful as parametric tests. Due to the limited content of data that was available, the method chosen herein employed the non parametric test detailed above. However, the hypotheses of this research can be retested using parametric tests as and when the accounting reports for the year ending 2008 are publicly available. By that date, all companies with intangibles would have complied with the new requirements for at least 1 full year.

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## Appendix 1

### List of sampled companies

	<b>Company</b>	<b>Industry Sector</b>	<b>Year of voluntary adoption</b>
1	Affco Holdings	Agriculture and Fishing	2005
2	Comvita	Consumer	2006
3	Contact Energy	Energy	2005
4	Ebos Group	Intermediate and Durables	2006
5	Finzsoft Solutions	investments	2006
6	Fisher and Paykel Appliances	Intermediate and Durables	2005
7	Fletcher Buildings	Building materials and construction	2005
8	Hellaby Holdings	investments	2005
9	Just Water International	NZAX	2005
10	Methven	Intermediate and Durables	2006
11	New Image Group	Finance and other services	2006
12	New Zealand Wine Company	NZAX	2006
13	Nuplex Industries	Building materials and construction	2006
14	NZF Group	Finance and other services	2006
15	Provencocadmus	Intermediate and Durables	2005
16	Rakon	Intermediate and Durables	2006
17	Richina Pacific	investments	2005
18	Sky City Entertainment Group	Leisure and Tourism	2006
19	Smartpay	Intermediate and Durables	2006
20	Speirs Group	NZAX	2006
21	Steel and Tube Holdings	Building materials and construction	2006
22	Telecom Corporation of NZ	Media and Telecommunications	2005
23	Tourism Holdings	Leisure and Tourism	2005
24	Turners and Growers	Agriculture and Fishing	2005
25	VTL Group	Consumer	2006
26	Wellington Drive Technologies	Intermediate and Durables	2006

## Appendix 2

### Correlations

		ROAb	RoAa	MBb	MBa	DAb	DAa	CACLb	CACLa
ROA (before)	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 (after)	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 (before)	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 (after)	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 (before)	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 (after)	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 (before)	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 (after)	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).

