

## Are IFRS and US-GAAP already comparable?

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*SEC (the U.S. Securities and Exchange Commission) release no. 33-8879 eliminated the need for US-listed foreign companies that prepare financial statements in accordance with IFRS (International Financial Reporting Standards) as issued by the International Accounting Standards Board (IASB) to reconcile their financial statements to US-GAAP (U.S. generally accepted accounting principles). This study updates the literature on changes in the difference between IFRS and US-GAAP and their value relevance. The evidence shows that net income reported per IFRS as endorsed by EU (European Union) has significantly increased in comparability to that per US-GAAP from 2004 to 2006. However, reconciliation from IFRS to US-GAAP for reported net income is still found to be value relevant. In addition, the comparability between net asset per IFRS and that per US-GAAP is yet to be enhanced. Significant difference is found between IASB-IFRS (IFRS as issued by International Accounting Standards Board) and EU-IFRS (IFRS as endorsed by European Union) reported net income in their comparability to US-GAAP reported net income.*

Field of Research: Accounting, International Accounting

### 1. Introduction

US-listed foreign issuers of securities using IAS/IFRS (International Accounting Standards/International Financial Reporting Standards) used to make reconciliation to US-GAAP in Form 20-F. Such reconciliation requirement is often claimed to be costly, unnecessary to protect shareholders' interests, and potentially misleading to investors (Edwards, 1993). SEC (the U.S. Securities and Exchange Commission) release no. 33-8879 took effect to eliminate the requirement for foreign private issuers using IFRS as issued by the IASB to reconcile their financial statements to US-GAAP for years ending after November 15, 2007. Nonetheless, empirical studies found significant value in the reconciliation requirement with data prior to 2005. Harris and Muller (1999) found that US-GAAP and IAS amounts for all US-listed foreign companies adopting IAS from 1992 to 1996 were valued differently by the market. Haverty (2006) found book value reported by 14 US-listed foreign firms from People's Republic of China (P. R. China) for the period 1996-2002 under IASB-IFRS lacked comparability to the book value reconciled to US-GAAP.

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It is, therefore, interesting to find out if IFRS and US-GAAP were already comparable right before the removal of reconciliation requirement and the value relevance of the reconciliation effort. This study answers this question by examining the comparability between IFRS reported net income /asset and US-GAAP reported values for the same company during 2004~2006 period. A sample of US-listed foreign companies using IASB-IFRS and their matched US-listed foreign companies using EU-IFRS from the same industry is studied and compared. These companies prepare their home country financial statements using IASB-IFRS or EU-IFRS and reconcile from IFRS to US-GAAP in their Form 20-F filing for financial years ending before November 15, 2007.

The evidence shows that net income reported per EU-IFRS has significantly increased in comparability to that per US-GAAP from 2004 to 2006. Reconciliation from IFRS to US-GAAP for reported net income is still value relevant. In addition, the comparability between net asset per IFRS and net asset per US-GAAP is still weak. Significant difference is found between IASB-IFRS and EU-IFRS reported net income in their comparability to US-GAAP reported net income.

The remainder of the paper is organized as follows. Section 2 briefs extant research findings in the related subject. Section 3 presents the research methodology. Section 4 provides the results. Section 5 concludes the paper.

## 2. Literature Review

IFRS is found to be accounting standards of high quality (Beneish and Yohn, 2008) and is now used in over 100 countries (Beneish and Yohn, 2008). Some jurisdictions have fully adopted IFRS as issued by IASB such as P. R. China, Peru, South Africa, and Turkey. Others have modified local GAAP to be IFRS equivalent such as EU members using EU-IFRS. In 2002, the Council of the EU issued an order imposing an obligation on companies listed on European stock exchanges to structure their consolidated final accounts according to the EU-IFRS, IFRS as endorsed by the EU starting from the year 2005 at the latest (Strouhal et al., 2008).

The Institute of Chartered Accountants in England and Wales (ICAEW) has published a report for the European Commission on the first year of implementation of IFRS across EU. The study includes a detailed review of the 2005 financial statements of 200 companies from 25 EU member states (ICAEW, 2007). Major differences between EU-IFRS and IASB-IFRS including hedge accounting and business combination were highlighted. In November 2004 the European Commission adopted a Regulation endorsing IAS 39 with the exception of certain provisions on the use of the full fair value option for liabilities and on hedge accounting. Financial statements of companies that chose to rely on this carve-out were not in compliance with IASB-IFRS. The EU-IFRS carved out part of IAS 39 primarily to allow banks to apply fair value hedge accounting to hedges of the interest rate risk of their portfolio of demand or core deposits. Eight companies were found using the EU carve-out for 2005 (ICAEW, 2007). Such carve-out

practice may hinder worldwide consistency in IFRS adoption.

Former research investigating the requirement for reconciliation from IAS/IFRS to US-GAAP found value in such reconciliation. US-GAAP and IAS reported amounts for the same US-listed foreign companies adopting IAS from 1992 to 1996 were found to be valued differently by the market (Harris and Muller, 1999). When 14 US-listed foreign firms from P. R. China were studied for the period 1996-2002, net income per IASB-IFRS was found to be less than net income per US-GAAP for the same company (Haverty, 2006). Reconciliations from IAS to US-GAAP were found to capture information that is reflected in investors' decisions about their stock holdings with data from 1995 through 2004 (Chen and Sami, 2007). When the 2004~2006 reconciliation made by 75 EU cross-listed firms were examined, reported net incomes per EU-IFRS still lacked comparability with US-GAAP (Henry et al., 2009).

The current research extends earlier research by separating IASB-IFRS from EU-IFRS in the analysis of their comparability to US-GAAP with most recent data.

### 3. Methodology

The study is conducted with thirty US-listed foreign companies with IFRS to US-GAAP reconciliation in Form 20-F from 2004 to 2006. Fifteen companies using IASB-IFRS are matched against fifteen companies using EU-IFRS from the same industry and of similar size to allow for the comparison between IASB-IFRS and EU-IFRS.

US-listed foreign companies using IASB-IFRS are identified based on IFRS usage by jurisdiction information from Deloitte IAS Plus website. Companies using IASB-IFRS studied are those with IASB-IFRS to US-GAAP reconciliation data from 2004 to 2006 available from Form 20-Fs for both financial year 2005 and 2006. Release no. 33-8879 exempts such reconciliation for financial statements with financial years ending after November 15, 2007 and makes 2006 reconciliation data the latest data possible. EU companies to be compared against are required to adopt IFRS since the beginning of 2005. Since IAS 1 requires that at least one year of comparative prior period financial information be presented, the earliest EU-IFRS data for comparison is for year 2004. Then, EU-IFRS companies from the same industry and of similar size are selected for the comparison study.

The sample consists of 27 percent mining and construction, 7 percent manufacturing, 53 percent transportation, communication, and utilities, and 13 percent finance, insurance, and real estate enterprises.

Value relevance of IFRS to US-GAAP reconciliation is assessed with Eq. (1) below (Harris and Muller, 1999) for company  $i$  and year  $t$ .

$$MV = a_1 NA_{IFRS} + a_2 NI_{IFRS} + a_3 NA_{US-IFRS} + a_4 NI_{US-IFRS} + \varepsilon \quad (1)$$

where  $MV$  = market value of owners' equity per share for each company  $i$  six months

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after fiscal year-end of period  $t$ ,  $NA_{IFRS}$  = net asset per share under IFRS for company  $i$  at time  $t$ ,  $NI_{IFRS}$  = earnings per share under IFRS for company  $i$  at time  $t$ ,  $NA_{US-IFRS}$  = the difference between US-GAAP and IFRS net asset per share for company  $i$  at time  $t$ ,  $NI_{US-IFRS}$  = the difference between US-GAAP and IFRS earnings per share for company  $i$  at time  $t$ .

IFRS net income and net asset, US-GAAP net income and net asset are collected from sample companies' 2005 and 2006 20-F filings available from Edgar database provided by SEC. Stock price, number of shares outstanding, and market value are collected from Compustat. Market value six months after fiscal year-end is used to ensure public access to 20-F filings.

There are a few comparability mechanisms available. H, I, and C indices were developed by van der Tas (1988) and refined by Archer, Delvaille, and McLeay (1995) while a T index was developed by Taplin (2004). These indices measure the concentration of choices made by firms among alternative accounting treatments for a particular issue. They do not, however, measure the financial impact of those choices, nor are they useful to study differences obtained when different accounting systems are applied to the same firm (Haverty, 2006). Eq. (2) and (3) based on Gray's "index of conservatism" (1980) are known as "index of comparability" (Weetman et al., 1998). They can be used to compare accounting numbers reported for the same firm under different accounting regimes (Norton, 1995; Street et al., 2000; Haverty, 2006).

$$\text{Comparability index for net income} = 1 - \frac{\text{Net income}_{\text{USA}} - \text{Net income}_{\text{IFRS}}}{|\text{Net income}_{\text{USA}}|} \quad (2)$$

$$\text{Comparability index for net asset} = 1 - \frac{\text{Net Asset}_{\text{USA}} - \text{Net Asset}_{\text{IFRS}}}{|\text{Net Asset}_{\text{USA}}|} \quad (3)$$

An index value exceeding 1 indicates the IFRS reported value is greater than that reported according to US-GAAP. An index value less than 1 indicates that the IFRS reported value is less than that reported under US-GAAP (or an IFRS loss is larger than a US loss). Audit practice indicates a useful guideline as being 5-10 percent of income before taxation (Grant Thornton, 1990). The SEC asserts that both qualitative and quantitative factors must be considered in determining materiality, SEC Chief Accountant Turner has stated that traditionally, 5 percent of earnings is believed to be the cut-off point for determining if an item is material or not (Burns, 1999). Comparability indexes are measured for each matched pair of sample companies and compared with Wilcoxon Signed Ranks test to identify potential differences between IASB-IFRS and EU-IFRS sample groups.

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In the effort to measure changes in comparability between IFRS and US-GAAP across time, the comparability indexes are modified in Eq. (4) and Eq. (5) to capture the changes in absolute difference between IFRS and US-GAAP without considering if the difference is due to higher or lower IFRS measures in comparison to US-GAAP measures. The less the absolute comparability index value is, the less the comparability while a perfect comparability has an absolute comparability index value of 1.

$$\text{Absolute comparability index for net income} = 1 - \frac{|\text{Net income}_{\text{USA}} - \text{Net income}_{\text{IFRS}}|}{|\text{Net income}_{\text{USA}}|} \quad (3)$$

$$\text{Absolute comparability index for net asset} = 1 - \frac{|\text{Net asset}_{\text{USA}} - \text{Net asset}_{\text{IFRS}}|}{|\text{Net asset}_{\text{USA}}|} \quad (4)$$

The indices measured with Eq. (3) and Eq. (4) are calculated for each company for each year studied. The indexes aren't normally distributed. To compare the indexes of different financial years, Friedman tests, nonparametric test for multiple dependent samples, are conducted to uncover significant differences across three years, 2004, 2005, and 2006. The tests are conducted on the complete sample, companies using IASB-IFRS only, and companies using EU-IFRS only. Significant difference may reveal convergence (decrease in differences) or divergence (increase in differences) over time.

## 4. Findings and Discussions

Table 1 reports the results of the market value regression. The coefficients on the net asset  $NA_{\text{IFRS}}$  and net income reconciliation  $NI_{\text{US-IFRS}}$  are significant, indicating value relevance of the net income reconciliation.

**Table 1: Market Value Regression Results**

Variable	Estimated coefficients	Standard errors	t statistic	Prob.(p -Value)
$NA_{\text{IFRS}}$	6.884	1.563	4.404	0.000 **
$NI_{\text{IFRS}}$	-3.715	5.221	-0.190	0.480
$NA_{\text{US-IFRS}}$	11.726	7.570	1.549	0.127
$NI_{\text{US-IFRS}}$	145.547	42.776	3.403	0.001 **

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**Adjusted R<sup>2</sup>**                      0.503                      **F-stat**                      15.694 \*\*  
 \*\* denotes p < 0.01

Table 2 presents Wilcoxon Signed Ranks test results. Significant difference can be found in the comparability index between IASB-IFRS group and EU-IFRS group. Despite such difference between IASB-IFRS and EU-IFRS groups, the overall IFRS reported net income seems comparable to that of US-GAAP reported net income at 5% level, between 0.95 and 1.05. Though the IFRS reported net asset is not comparable to US-GAAP reported net asset even at the more stringent 10% level, no significant difference in the comparability is found between IASB-IFRS and EU-IFRS groups. The comparability indexes reveal weak comparability between IFRS and US-GAAP reported net asset from 2004 to 2006 even when the more liberal materiality threshold of 10% is applied, lower than 0.90 or higher than 1.10. Such a research finding is in compliance with previous empirical findings (Haverty, 2006; Henry et al., 2007)

**Table 2: Comparability Index Comparison  
Wilcoxon Signed-rank Test Results**

	IASB-IFRS Mean	EU-IFRS Mean	Z-score	p-value
net income	1.010	0.989	-2.509 *	0.012
net assets	1.110	3.054	-1.507	0.132

\* denotes p < 0.05

Table 3 summarizes Friedman test results. The general increase in mean rank values suggest a general increase in the absolute comparability indexes for net asset and net income. Increased absolute comparability index indicates decreased difference between IFRS and US-GAAP measures and a trend of convergence. This convergence trend is found to be significant for reported net income and reported net income per EU-IFRS in particular.

**Table 3: Friedman Tests of Absolute Comparability Index Difference  
from 2004 to 2006**

<u>Net Asset</u>	<u>Yearly Mean Rank Values</u>			<u>Chi-square</u>	<u>Asymp. Sig.</u>
	<u>2006</u>	<u>2005</u>	<u>2004</u>		
Across 3 years	2.30	2.00	1.70	5.40	0.067
Complete sample	2.33	2.00	1.67	3.33	0.189
Companies with IASB-IFRS	2.27	2.00	1.73	2.13	0.344
<u>Net Income</u>					
Complete sample	2.38	1.86	1.76	6.41	0.040 *

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Companies with IASB-IFRS	2.07	2.07	1.86	0.43	0.807
Companies with EU-IFRS	2.67	1.67	1.67	10.00	0.007 **

\* denotes significant difference at  $p < 0.05$ ; \*\* denotes significant difference at  $p < 0.01$

The results reveal that the significant convergence trend for reported net income per EU-IFRS occurred in 2006 when there was a significant increase in net income comparability. On the other hand, the comparability between net income per IASB-IFRS and net income per US-GAAP stayed relatively constant across the three years studied.

## 5. Conclusions and Implications

This study provides evidence that net asset reported per IFRS and net asset per US-GAAP are still weak in comparability right before release no. 33-8879 took effect. However, IFRS reported net income, EU-IFRS reported net income in particular, has experienced significant convergence with net income per US-GAAP during 2004~2006 period. The convergence between IFRS and US-GAAP identified in this study attests to increased harmonization resulted from cooperation between IASB and Accounting Standards Board of different jurisdictions. However, a perfect harmonization and comparability are yet to be achieved with more cooperation effort.

The market value analysis reveals value relevance in IFRS to US-GAAP reconciliation for net income. Such finding seems to imply higher value relevance in US-GAAP reported net income and is in compliance with Barth et al.'s finding (2006) of consistent evidence of greater earnings smoothing for companies using IFRS than companies using US-GAAP. However, no value relevance is identified in IFRS to US-GAAP reconciliation for net asset.

This study is limited since it is not generalizable beyond the small but important pairs of sample companies. In addition, this study only examines differences between IFRS and US-GAAP in reported net income and net asset. Accounting numbers other than net income and net asset, such as cash flow from operations might be considered in further research.

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