COMPARISON BETWEEN NET INCOME PER IASB-IFRS AND NET INCOME PER EU-IFRS

Since November 2007, US-listed foreign companies who prepare financial statements in accordance with IASB-IFRS (International Financial Reporting Standards as issued by the International Accounting Standards Board) are no longer required to reconcile their financial statements to US-GAAP (U.S. generally accepted accounting principles). Companies that used to report with EU-IFRS (European Union IFRS equivalent) claim compliance with IASB-IFRS and stop reconciliation to US-GAAP immediately. This study explores the comparability and convergence between IASB-IFRS and EU-IFRS reported net income till 2007. The evidence shows that net income reported with EU-IFRS were significantly less comparable to net income per US-GAAP than those reported with IASB-IFRS. There is substantial evidence of convergence over time.

Introduction

Most US-listed foreign issuers file their annual reports with the SEC on Form 20-F, which incorporates the reconciliation to US-GAAP (McEnroe & Sullivan, 2006) until November 2007. Since the early 1990s, the New York Stock Exchange (NYSE) has pressured the SEC to permit foreign firms listing on US exchange to either avoid the reconciliation requirement or to reduce their required disclosures (Freund, 1993). To encourage more foreign private issuers to enter the U.S. public markets, to cause more foreign private issuers to adopt IFRS, and to promote the gradual convergence of US-GAAP and IFRS, SEC 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. To avoid the costly reconciliation process, most former EU-IFRS adopters immediately claim IASB-IFRS compliance and stop providing reconciliation to US-GAAP as well.

Little empirical research has been done to measure the level of comparability between IASB-IFRS and EU-IFRS to scrutinize such a claim. A study of correspondence between EU companies and the US SEC available as at August 1, 2007 shows that a recurring question in US SEC comment letters was whether the financial statements per EU-IFRS comply with IFRS issued by the IASB (ICAEW, 2007).

This study explores potential difference in IASB-IFRS vs. US-GAAP comparability and EU-IFRS vs. US-GAAP comparability, major causes for any significant difference, and changes in the difference over time, i.e., convergence. Such a study is possible due to the requirement of the US SEC that foreign firms listed on a US Stock Exchange provide a limited reconciliation of their net income and net assets
financial statements prepared under IFRS to U.S. GAAP, as this requirement creates a quasi-experimental situation in which the company is held constant, and accounting numbers (e.g., net income) are calculated according to IFRS and U.S. GAAP for a given year (Haverty, 2006). The research findings will be of great interest to investors, academics involved in guiding and researching progress with international accounting harmonization and the SEC regulatory authorities since the study provides insight into the comparability of IASB-IFRS and EU-IFRS and their trend of convergence. The findings will also be relevant to international regulators and institutions involved in the process (e.g., European Accounting Regulatory Committee and IASB), since the results highlight major areas of differences hindering consistency between IASB-IFRS and EU-IFRS.

The study reveals significant difference. The results indicate that net income reported with IASB-IFRS is significantly more comparable to net income per US-GAAP than that reported with EU-IFRS. The difference is tempered, however, by evidence of convergence over time.

**Literature Review**

“IFRS” refers to the authoritative standards and interpretations issued by the International Accounting Standards Board (IASB). Many of the standards forming part of IFRS are known by the older name of International Accounting Standards (IAS). Research has compared international and US standards and found that IFRS is a high quality set of accounting standards (Beneish and Yohn, 2008) and is equivalent to US GAAP in terms of reducing information asymmetries (Leuz, 2003) and in terms of value relevance (Bartov et al., 2005). IFRS is now used in over 100 countries (Beneish and Yohn, 2008).

Some jurisdictions have fully adopted IFRS as issued by IASB such as South Africa, Peru, and Turkey. All listed Chinese companies that sold shares (B-shares that trade in the P. R. China but can be held by foreigners and Chinese citizens or N-shares that trade overseas) to foreign investors had had to follow IFRS for a number of years (Haverty, 2006). It became mandatory for all listed Chinese enterprises to follow the Accounting Standards for Business Enterprises (“ASBEs”) in line with IFRS from 1 January 2007.

Others have modified local GAAP to be IFRS equivalent such as EU members using EU-IFRS. 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. Eight companies were found using the EU carve-out for 2005 (ICAEW, 2007). ICAEW research (2007) also identified some instances in which companies appeared not to comply with all the detailed requirements of IFRS 3 on business combination. Additional differences were also identified.

Prior to March 4, 2008, US-listed foreign companies prepare their primary financial reports based on IFRS and meet the requirements for U.S. exchange listing by filing reconciliation to US-GAAP. The EU, International Organization of Securities Commissions, American Stock Exchange, and NYSE have all pressured the SEC to allow foreign registrants using IAS/IFRS to list on US stock markets without reconciliation or compliance with US-GAAP (Ndubizu and Sanchez, 2006).
Despite the complaints against US SEC’s requirement for reconciliation to US-GAAP, prior research investigating reconciliation from IAS/IFRS to US-GAAP found support for the hypothesis that such reconciliation is valuable. Harris and Muller (1999)’s study provided evidence for the value of reconciling IAS to US-GAAP. US-GAAP and IAS amounts for all US-listed foreign companies adopting IAS from 1992 to 1996 were found to be valued differently by the market. Harvey (2006) studied the comparability and convergence of IASB-IFRS and US-GAAP based on book value comparison revealed in Form 20-F reported by 14 US-listed foreign firms from P. R. China for the period 1996-2002. Financial information produced under different accounting, disclosure, and/or auditing systems is comparable if it is “... similar in enough ways that financial statement users can compare it (at least along some dimensions) without needing to be intimately familiar with more than one system” (Choi et al., 2001). Comparability was measured by an index of comparability first used by Gray (1980). The term convergence is a strictly mathematical measure of increasing closeness over time of two numbers purporting to measure the same thing. Convergence test was conducted by identifying trend over time for book value differences deflated by net asset value per IASB-IFRS. Harvey’s study found the evidence for lack of comparability and substantial evidence of convergence over time between IASB-IFRS and US-GAAP. For virtually all companies listed in the study, net income per IASB-IFRS was found to be less than net income per US-GAAP. Henry et al. (2007) examined EU-IFRS to US-GAAP reconciliations in 2004 and 2005 for 83 EU companies that are cross-listed in the United States and found that EU-IFRS reported net income was on average 59 (29) percent higher than U.S. reported income in 2004 (2005). Chen and Sami (2007) examined trading volume around 20-F reconciliation filing dates for reconciliations from IAS to US-GAAP and found that reconciliation captures information that is reflected in investors’ decisions about their stock holdings with data from 1995 through 2004. McEnroe and Sullivan (2006) revealed evidence that although U.S. investors are very much in favor of the listing of foreign companies on U.S. exchanges, they also endorse the current rule requiring either employment of US-GAAP or reconciliation to it. Based on such former research findings, the Financial Reporting Policy Committee of the Financial Accounting and Reporting Section of the AAA concluded that it was premature to eliminate the reconciliation requirement (Hopkins et al., 2008). However, continuous harmonization efforts by IASB and national accounting standard boards keep reducing differences and call for update on IFRS to US-GAAP comparability and convergence progress.

On November 15, 2007, the US SEC unanimously approved amendments to its rules and forms that will eliminate the requirement for foreign private issuers using IASB-IFRS to reconcile their financial statements to US-GAAP. On November 19, 2007, the Financial Times wrote: “The goal of a single worldwide accounting language has long been a dream. Today it is fast becoming a reality—and the pace is picking up” (Carmona and Trombetta, 2008). Given the obvious benefits, former EU-IFRS adopters immediately declare compliance with IASB-IFRS to avoid reconciliation as well. The readiness for such reconciliation removal is yet to be documented and supported by empirical data.

The current research extends earlier research by incorporating an assessment of how IASB-IFRS and EU-IFRS differences impact quantitatively on the reconciliation to reported net income per US-GAAP and provides an analysis of whether or not these differences are significantly different over time.

**Research Questions, Design and Methodology**

**Research Questions**

The questions addressed by this research involve the overall comparability and convergence of two sets of accounting standards, IASB-IFRS and EU-IFRS. The relationship between these two sets of accounting standards is examined through the lens of their reconciliation and comparability to US-GAAP.
Research Question 1: Does the EU-IFRS vs. US-GAAP reported net income comparability differ significantly from the IASB-IFRS vs. US-GAAP reported net income comparability?

Research Question 2: Has such difference, if any, decreased through time?

Research Design

The research questions are addressed with a matched-pair comparison between companies using EU-IFRS and companies using IASB-IFRS from the same industry as defined by SIC code. The comparability between IFRS and US-GAAP is based on reconciliation information reported by each company in Form 20-F available from Edgar database provided by US SEC.

First, US-listed foreign companies using IASB-IFRS are identified based on IFRS usage by jurisdiction information from Deloitte IASPlus website. Next, reconciliation from IASB-IFRS to US-GAAP in Form 20-Fs for financial years 2004 thru 2006 are sought for the companies identified in the first step. Companies that do not have such reconciliation are discarded. The major reason for this screening criterion is to ensure the availability of reconciliation data from IASB-IFRS to US-GAAP for study and comparison. SEC 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. Therefore, companies using IASB-IFRS studied are those with IASB-IFRS to US-GAAP reconciliation data from 2004 to 2006.

Once a US-listed foreign company with reconciliation from IASB-IFRS to US-GAAP is identified, a matched company from the same is randomly selected from US-listed foreign companies with reconciliation from EU-IFRS to US-GAAP for the same period. Edgar database allows the search for companies by industry and facilitates the search process. Sixteen pairs of companies are obtained for study.

The sample consists of 25 percent mining and construction, 12.5 percent manufacturing, 50 percent transportation, communication, and utilities, and 12.5 percent finance, insurance, and real estate enterprises.

Research Methodology

There are a few comparability mechanisms available. H, I, and C indices were developed by van der Tas (1988) and refined by Archer, Delvaille, & 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). Gray’s “index of conservatism” (1980) as illustrated in Eq. (1) has been called an “index of comparability” (Weetman et al., 1998) and used to compare accounting numbers reported for the same firm under different accounting regimes (Norton, 1995, Street et al., 2000, and Haverty, 2006).

\[
1 - \frac{\text{Net income}_{\text{USA}} - \text{Net income}_{\text{IFRS}}}{\text{Net income}_{\text{USA}}} \quad (1)
\]

An index value exceeding 1 indicates the IFRS net income is greater than that reported according to US-GAAP (or an IFRS loss is not as large as a US loss). An index value less than 1 indicates that the IFRS reported net income is less than that reported under US-GAAP (or an IFRS loss is larger than a US loss).
loss). The comparability index carries the disadvantage of reporting extreme index values if US net income/loss approaches zero (Street et al, 2000). Fortunately, such occurrences are rare in the current data set and do not seriously affect interpretation. The index has the advantage of highlighting any material differences between the two net incomes (Haverty, 2006).

This index is calculated for each company for each year of the study. The indices are not normally distributed. To compare the indices of IASB-IFRS companies with the indices of their matched EU-IFRS companies, Wilcoxon Signed Ranks test is used.

Then, the difference in comparability is measured and compared across time to identify changes in such difference across time. In order to correct for the effect of size of the firm on income, the total net income adjustments from IFRS to US-GAAP are deflated by IFRS net assets as suggested by Harris & Muller (1999) and Haverty (2006). Total net income difference measures for companies using IASB-IFRS (DIFFIASB) and for companies using EU-IFRS (DIFFEU) are determined as follows:

\[
\text{DIFF}_{\text{IASB}} = \frac{\text{Net income}_{\text{USA}} - \text{Net income}_{\text{IASB-IFRS}}}{\text{Net assets}_{\text{IASB-IFRS}}}
\]

\[
\text{DIFF}_{\text{EU}} = \frac{\text{Net income}_{\text{USA}} - \text{Net income}_{\text{EU-IFRS}}}{\text{Net assets}_{\text{EU-IFRS}}}
\]

This procedure results in a total net income adjustment between net income per IFRS and net income per US-GAAP expressed as a percentage of IFRS net assets. Given positive IFRS net assets, positive total net income difference measure indicates that net income per US-GAAP is higher than net income per IFRS. The difference in total net income adjustments between companies using IASB-IFRS and those using EU-IFRS is defined as follows:

\[
\text{DIFF}_{\text{NI}} = \text{DIFF}_{\text{IASB}} - \text{DIFF}_{\text{EU}}
\]

DIFF_{NI} is identified for each matched pair of companies for 2004 to 2006. Tests for convergence are conducted in two steps. The first step involves determining the level of independence for DIFF_{NI} across different years. In the second step of the convergence test, the DIFF_{NI} of different years are compared to identify any difference. Significant difference may reveal no change, convergence, or divergence over time.

**Data analysis and results**

Table 1 summarizes Wilcoxon Signed Ranks test results. Significant difference was identified between IASB-IFRS users and EU-IFRS users. Audit practice indicates a useful guideline as being 5-10 percent of income before taxation (Grant Thorton, 1990). The mean indexed difference between net income per IASB-IFRS and net income per US-GAAP was not material even when the stringent 5% rule was applied. However, the mean indexed difference between net income per EU-IFRS and net income per US-GAAP was material even at the more liberal materiality threshold of 10%.
Table 1

Gray’s Index of Comparability (Wilcoxon Sign-Rank Test, Two-Tailed Test)

<table>
<thead>
<tr>
<th></th>
<th>Mean for IASB-IFRS Companies</th>
<th>Mean for EU-IFRS Companies</th>
<th>Z-Stat</th>
</tr>
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<tbody>
<tr>
<td>Net Income</td>
<td>1.03</td>
<td>1.20</td>
<td>-2.49</td>
</tr>
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</table>

* denotes significant difference at p < 0.05

DIFFNI is identified for each matched pair of companies for 2004 to 2006. DIFFNI does not have normal distribution. Tests for change are conducted in two steps. The first step involves determining the level of independence for DIFFNI across different years. Durbin-Watson coefficient for year 2004 and 2005 is greater than 2.50. Therefore, in the second step, the DIFFNI of different years are compared with a series of Friedman tests, nonparametric test for multiple dependent samples. In the first test, DIFFNI is compared across all years to determine if significant differences exist across the year. Subsequent tests compare DIFFNI between each pair of years (McEwen & Schwartz, 1992). Table 2 presents the test results.

Table 2

Friedman Tests of Index Differences from 2004 to 2006

<table>
<thead>
<tr>
<th></th>
<th>Yearly Mean Rank Values</th>
<th>Chi-square</th>
<th>Asym p. Sig.</th>
</tr>
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<tbody>
<tr>
<td>Across 3 years</td>
<td>2006</td>
<td>2005</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.38</td>
<td>.25</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td></td>
<td>0.009</td>
</tr>
<tr>
<td>Between each pair</td>
<td>2006</td>
<td>2005</td>
<td>2004</td>
</tr>
<tr>
<td>of years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.19</td>
<td>.81</td>
<td>.625</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td></td>
<td>0.012</td>
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<tr>
<td></td>
<td>.19</td>
<td>81</td>
<td></td>
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<td></td>
<td>*</td>
<td></td>
<td>0.012</td>
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<td></td>
<td>.56</td>
<td>44</td>
<td>.25</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>0.617</td>
</tr>
</tbody>
</table>

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

Across all years, a statistically significant difference in the mean ranks of yearly DIFFNI exists. The mean rank of 2004 DIFFNI is highest, followed by 2005, and then 2004. This finding suggests that DIFFNI is not constant across the year. Highest DIFFNI is recognized in 2004. 2006 DIFFNI is significantly lower than any of the other two years. Only 2004 DIFFNI and 2005 DIFFNI do not differ significantly from each other. Significant decrease in DIFFNI indicates evidence of convergence.
Conclusions

This study provides evidence that the US-listed foreign companies using EU-IFRS under study reported materially different measures of net income under EU-IFRS and US-GAAP for 2004 to 2006 period. Such difference is significantly higher than the difference reported by US-listed foreign companies using IASB-IFRS from the same industry in comparison for the same time period. However, the convergence efforts of the IASB, Accounting Standards Board of different jurisdictions such as AASB and US FASB have resulted in increased harmonization, and this is evidenced by the convergence measures in this study.

This study is limited since it is not generalizable beyond the small pairs of sample companies. US-listed foreign companies are most likely different from non-US-listed foreign companies due to the fact that their accounting is subject to US SEC review. In addition, the study only analyses net income. The possibility of differences between IASB-IFRS to US-GAAP reconciliation and EU-IFRS to US-GAAP reconciliation in other accounting measures such as net asset is not addressed in this study. Finally, this study only shows that the accounting numbers produced under the various sets of accounting standards are different. It does not show that the differences are important in the valuation of the firm.

Future research directions suggested by this study include value relevance comparison between IASB-IFRS and EU-IFRS reported net income and major causes of differences. Accounting numbers other than net income, such as net asset and cash flow from operations might be considered in further research.
References


