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FINANCIAL REPORTING GAPS AND VALUE RELEVANCE: CHINESE ACCOUNTING STANDARDS AND INTERNATIONAL ACCOUNTING STANDARDS POST-2001

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ABSTRACT

To gauge the effect of the 2001 official "harmonisation" of the Chinese Accounting Standards (CAS) and International Accounting Standards (IAS) regimes, we examine all companies that simultaneously issued both A and B shares in both the SHSE and SZSE using the Weetman, Jones and Gray (1998) Index of Comparability, testing for differences between companies' reported earnings and equities. Ohlson's Value Relevance Model (Ohlson, 1995) is also used, associating stock prices with both earnings and book values of these firms to gauge their relative value relevance. Our findings suggest that reported earnings and equities based on CAS are not significantly different from those based on IAS. We infer from our results that the CAS regime has converged with the IAS more substantially than was previously believed and that most existing literature that involves studying the practical differences of CAS from IAS may have been superseded by these findings. The CAS authorities can be cautiously optimistic about the degree of convergence with IAS.

Keywords: Chinese Accounting Standards, convergence, harmonisation, value relevance, Comparability Index.

INTRODUCTION

The Shanghai Stock Exchange (SHSE) started trading in December 1990, followed by the inauguration of the Shenzhen Stock Exchange (SZSE) in June 1991 in southern China. These Chinese stock markets were multi-tiered, where shares of listed companies were generally divided into different tranches depending on whether the target audience is domestic or foreign. This study was done to address the difficulties of transforming a centrally planned economy to a market-oriented environment. Initially, listed Chinese companies in SHSE and SZSE were only authorised to issue shares in Renminbi Yan to domestic

investors. These were usually designated as A shares. To attract foreign capital, subsequent new listings were offered to foreigners as B shares, quoted in foreign currencies. Some investors were allowed to issue both A and B shares simultaneously to satisfy both domestic and foreign investors. These are known as "AB Companies". There are other share designations for Chinese companies listed in overseas exchanges.

A and B shares of a company may be quoted in different currencies, although they offer similar voting powers and dividend rights. A shares follow the Chinese Accounting Standards (CAS) and B shares, the International Accounting Standards (IAS). Theoretically, A and B shares of a company should have identical values. In fact, the prices of B shares were usually lower than the prices for A shares (Chen, Su & Zhoa, 2001). This anomaly was explained by disparity of reliable information, non-uniform accounting standards, and other risk issues. As long as the market separated the domestic from foreign investors, the effect of the anomaly on market sentiments appeared to be minimal. However, under the Qualified Foreign Institutional Investor (QFII) protocol of 2002, selected B shares were allowed to be traded by both domestic and foreign investors, and A shares trading was thus liberalised as well. By 31 January 2006, 34 institutions were licensed to invest USD$5.6 billion in A shares under the QFII protocol (China View, 2006).

The demand for B shares has since increased dramatically, especially in 2006, resulting in a rapid increase in prices. A reason for this sudden interest was the market expectation that the Chinese government might consolidate A and B shares, making them identical. China's foreign reserves (September 2009) have ballooned, nearing if not exceeding USD$2,000 billion, making the need to partition the market increasingly unnecessary. Purchasing B shares, at discounted prices as compared to corresponding A shares, in anticipation of the expected consolidation, boosted the volume of transactions in most of the stock exchanges.

BREACHING THE ACCOUNTING STANDARDS GAP

Prior to 1 January, 2001, A share companies had to report under the CAS regime and B share companies (e.g., those trading on the SZSE) had to comply with both International Financial Reporting Standards (IFRS) and CAS rules. Although *harmonising* CAS and IFRS rules had been in progress since the early 1990s, previous studies found significant differences between reporting under the CAS and IFRS rules, respectively. Reported earnings based on IAS were found to be significantly higher than those based on CAS (Chen, Gul & Su, 1999; Chen, Sun & Wang, 2002; Lin & Wang, 2001; Bao & Chow, 1999; Wu, Koo & Kao, 2005; Chen, Firth & Kim, 2002; Davey & Wang, 2003). Financial reports based on IAS

appeared more *relevant* to investors than those based on CAS (Bao & Chow, 1999; Chen, Firth & Kim, 2002).

These findings tended to be viewed negatively by potential investors of Chinese stock markets (Lin & Wang, 2001). The potential investors viewed these as evidence of low transparency and weak governance. A share investors seemed to respond to the perceived governance issue by trading on cues derived from the performance of B shares (Chui & Kwok, 1998). Consequently, investors in A shares preferred companies that also had listed H shares or B shares. This preference was an implicit recognition that financial reports under IAS rules were more reliable than those under the previous CAS regime (People Daily Online, 2006).

ONGOING ISSUES IN ACCOUNTING REPORTING STANDARDS

The Chinese MOF exerted considerable effort in unifying its accounting practices, to facilitate its admission into the World Trade Organization (WTO) in 2001. To integrate the CAS with IAS, the Chinese Ministry of Finance (MOF) issued six new Specific Accounting Standards, which include pronouncements on Intangible Assets, Borrowing Costs, Leases, Interim Reporting, Inventories and Fixed Assets. Further, five of the ten existing standards, such as those on Cash Flow Statements, Debt Restructuring, Revenue, Investments, Changes in Accounting Policies and Estimates and Corrections of Accounting Errors, have since been revised.

Similarly, the Chinese MOF also introduced a new comprehensive Accounting System for Business Enterprises (ASBE), along with the Accounting System for Financial Institutions (ASFI) in the same year. In 2003, a further revision to "Events Occurring after the Balance Date" was promulgated. From 2002 to 2004, an educational campaign was conducted by CAS authorities to instruct and to clarify existing practice.

Following these advancements, one could justifiably ask whether there was any improvement in Chinese accounting practices and, in particular, whether the previously perceived gap between reported earnings based on CAS and those based on IAS still exists after 2001. Is the CAS becoming more useful to investors in recent years, i.e., post-2001? To address these issues, we examined whether:

i. Substantial gaps still exist between the reported earnings and equities based on CAS and those based on IAS post-2001; and

ii. The value relevance in equity valuation of the two sets of accounting information that use reports issued by listed Chinese companies has improved since 2001.

We adopted the Index of Comparability of Weetman, Jones & Gray (1998) to test for significant differences (if any exist) between companies' reported earnings and equities, based on CAS and IAS. We further used the Ohlson Valuation Model (Ohlson, 1995) to correlate stock prices with both earnings and book values of sample firms to test for value relevance.

PREVIOUS STUDIES

Empirical studies of Chinese Accounting Standards are summarised in Table 1. Panel A summarises research that has shown statistically significant differences between the CAS and the IAS. A key conclusion is that "the application of current Chinese GAAP for listed companies has produced accounting earnings that are consistently higher than those determined under the IAS" (Chen, Gul & Su, 1999). By examining reports of B share-issuing companies from SHSE (i.e., those prepared under both CAS and IAS rules) from 1994 to 1997, Chen et al. (ibid) reported that earnings based on CAS are significantly higher on average than those based on IAS (20% to 30%). However, there was a lack of comparability of reported accrued expenses and revenues between the two sets of standards.

A similar earnings gap was found by Chen, Sun & Wang (2002) based on the data of 75 B share companies from 1997 to 1999. In these, CAS reported earnings exceeded IAS reported earnings in 80% of the sample in 1997, 58.67% in 1998, and 69.34% in 1999.

Lin & Wang (2001) compared key items based on the two standards by three H share firms from three different industries between 1995 and 1998. They found significant discrepancies in the financial information disclosed under CAS vs., those under IAS. They pointed to a general shortage of information to reconcile the differences. Higher reported earnings (of up to 24%) under CAS were documented by Davey & Wang (unpublished) for 120 listed companies in 2000 and 2001.

Panel B (Table 1) summarises studies on value relevance. Several researchers (Bao & Chow 1999; Wu, Koo & Kao 2005 and Chen, Firth & Kim 2002) found statistically significant differences between earnings per share (EPS) based on the two accounting standards. Average EPS under CAS was ¥0.02 (Yuan) higher (Bao & Chow 1999) and ¥0.05 (Yuan) higher (Chen, Firth & Kim

2002) than that under IAS, respectively. These authors showed that the absence of detailed requirements and specifications for disclosure in CAS, along with lax enforcement by the government of the standards, contributed to the observed earnings gap (Chen, Gul & Su, 1999; Lin & Wang, 2001).

Davey & Wang (unpublished) documented non-significant differences between CAS and IAS earnings in 2002, seemingly reflecting the improvements in CAS after 2001. However, the strength of this perceived improvement needs to be confirmed by a larger dataset.

VALUE RELEVANCE STUDIES

The qualitative differences between CAS and IAS gave rise to doubts about the usefulness of accounting information in the Chinese stock market context (Curran 1994; Aharony, Lee & Wang, 2000; Haw, Qi & Wu, 1999). Several international studies examined the usefulness of accounting information by correlating stock prices with reported values in financial statements (Ball & Brown, 1968; Ohlson 1995; Bernard, 1995; Barth & Clinch, 1998; Lev & Zarowin, 1999). These were used as models for investigating and evaluating the CAS. Whereas "Earning Difference" studies showed consistent results, "Relevance" studies proved somewhat contradictory and inconclusive (see Panel B of Table 2).

Using the Ohlson (1995) model on a sample of 213 AB share observations from 1992 to 1996, Bao & Chow (1999) found that earnings and book value reported on IAS had greater information content than those based on CAS. Their R^2 jointly correlating earnings and book value with share prices was 24% for B shares and 21% for A shares. Chen, Firth & Kim (2002) similarly found that IAS-based reports were more value relevant to both B share prices whose R^2 of earnings and book value jointly explained about 52% of the variation in share prices; B share returns whose R^2 earnings and *changes* in earnings jointly explained about 47% of the variation in share prices. Correspondingly, A share prices based on CAS have R^2 of 24% and returns had R^2 of 39%, respectively. The Chen et al. (2002) study was based on a sample of 82 AB share company data from 1993 to 1997.

Bao & Chow (1999) were criticised by Chen et al. (1999), who argued the "value relevance of accounting information with respect to foreign investor in the B share market does not necessarily imply that domestic investors will respond to accounting information in the same way in A share market" (Chen, Chen & Su, 2001). Since then, studies have used both A and B share prices as dependent variables in regression studies to investigate the value relevance of accounting information. Wu, Koo & Kao (2005) applied Ohlson's (1995)

Valuation Model to 55 AB share firms from 1997 to 2003. They found that CAS was not useful in evaluating B share stocks; neither was IAS to A share stocks. However, B share investors relied on IAS (suggested by R^2 of 62.65%) financial statements more than A share investors relied on CAS reports (suggested by R^2 of 38.43%).

An interpretation of the observed high value relevance of IAS reports to B share prices was that the Chinese language barrier generally limits international investors from accessing local information resources (Chakraverty, Sarkar & Wu, 1998). Furthermore, "most B share investors are large international institutions and there are more expert experienced in analysing accounting information and using it to value companies" (Chen, Firth & Kim, 2002). As for the relatively lower value relevance of CAS information to A share investors, this may have stemmed from their reliance on alternative local information rather than solely on CAS-derived financial reports.

The relatively nascent culture of independent auditing by Chinese Certified Public Accountants (CCPA) may also have accentuated the perceived unreliability of CAS-based financial statements. This has been a source of concern to investors (Chen, Su & Zhao, 2001; Aharony, Lee & Wang, 2000). There was evidence of large-scale market manipulation. Most Chinese investors in A share markets tended to follow the posted share prices rather than relying on seemingly dubious financial reports issued by companies (Xiao, Weetman & Sun, 2004). In contrast, IAS financial reports, audited by reputable international accounting firms, were perceived to be more professional and assigned more credibility by investors. Hence, it stands that investors relied less on CAS reports than IAS reports.

Eccher & Healy (2000) found that CAS earnings have a higher correlation (R^2 of 69%) with A share annual stock returns than IAS (R^2 of 63%) with B share returns, replicating the methodology of Easton & Harris (1991) on a sample of 171 observations from 1993 to 1997. Here, there appeared to be no difference in *explanatory power* between IAS and CAS accruals for A and B share stock returns, respectively. However, there was difference between the explanatory power of IAS and CAS accruals for the respective future cash flows. They suggested that A share investors probably read only CAS financial reports in Chinese rather than IAS reports in English. Given the limited freedom and availability of financial publications, it seemed logical that A share investors were more likely to be influenced by CAS reports. Further, A share investors were relatively more familiar with CAS data than with unfamiliar foreign sources and may have been able to discount most inherent CAS inaccuracies. Hence, their dependence on CAS may have been quite logical.

In fact, some early studies did find positive value relevance based on CAS accounting information despite the market's youth and perceived Chinese regulatory inadequacy (Table 3, Panel C). Chen, Chen & Su (2001), using a sample of 2976 observations of A share companies from 1991 to 1998, found positive evidence of value relevance of CAS information in the A share market. Haw, Qi & Wu (1999) found that reported earnings based on CAS were value relevant based on a sample of 1158 observations of A share companies. When A shares-only companies were compared with AB shares companies, reports based on CAS were more value relevant to A share investors than AB shareholders (Chen, Chen & Su, 2001). The authors deduced that AB share investors had access to more alternative sources than A shares-only investors. The former can access both IAS and CAS reports, international and domestic news. The *explanatory power* of earnings and book values based on CAS appeared to have increased over time, as shown in Bao & Chow (1999). This suggests that investors were relying more on CAS reports as radical reforms were progressively made to CAS by the Chinese MOF.

In summary, the above studies generally found that earnings accounted for under CAS were consistently higher than those under IAS. The *explanatory power* (R^2) of CAS reports seemed to be different from that of IAS reports. These comparative studies should assist investors and policy makers in understanding the impact on equity markets of differences between local (CAS) and international (IAS) regulations. More importantly, as local equity markets conform to international norms, confidence in these markets increases. This may result in markets that are more efficient and all attendant benefits.

DATA, METHODOLOGY AND MOTIVATION

We have selected all companies that have simultaneous listings of A and B shares that had published financial reports from 2002 through 2005. The set was obtained from the database of Shenzhen Securities Information Co., Ltd (CNINFO). CNINFO was appointed by the China Securities Regulatory Commission (CSRC) as an official provider of financial information of Chinese listed companies. The total size of the set was 44 listed companies, comprising 12 from SHSE and 32 from SZSE (176 firm years). Net earnings and net equities are extracted from each of the 44 sampled firms' financial reports (i) for each year. We submit that this dataset was adequate because:

i. It contains all available AB shares issuing at that time; and
ii. Compared to the studies listed in Table 1, whose sample sizes range from 12–2976 firm-years (median = 262), our dataset size of 176 firm-years can be reasonably compared.

Table 1
A summary of empirical studies on CAS and IAS.

Panel A			Earning Differences between CAS and IAS		
Authors & Dates	Sample period	Sample Type	Sample Size	Main Topics	Major Results
Lin & Wang (2001)	1995–1998	AH shares	12 firm-year observations	Comparing earning and other reported items differences between IAS and CAS	Significant discrepancies between CAS and IAS
Chen, Sun & Wang (2002)	1997–1999	AB shares	225 firm-year observations	Comparing earning differences between IAS and CAS	On average, the CAS earnings have been higher than IAS earnings by 12% in 1997, 9.33% in 1998, and 13.3% in 1999.
Chen, Gul & Su (1999)	1994–1997	AB shares	165 firm-year observations	Comparing earning differences between IAS and CAS	Reported earnings based on CAS are significantly higher than earnings based on IAS by 20% – 30% on average.
Davey & Wang (2003)	2000–2002	AB, AH, and AN shares	360 firm-year observations	Comparing earning differences between IAS and CAS	Reported earnings based on CAS are significantly higher than earnings based on IAS by 24% on average in 2000 and 2001 but had no significant differences in 2002.

(continued)

Table 1 *(continued)*

Panel B			Value Relevance Differences between CAS and IAS		
Authors & Dates	Sample period	Sample Type	Sample Size	Main Topics	Major Results
Bao & Chow (1999)	1992–1996	AB shares	213 firm-year observations	Comparing the value-relevance differences of accounting information between CAS and IAS	Earnings and book value reported based on IAS have greater information content (R^2 of 24%) than those based on CAS (R^2 of 21%) to B-share Share prices.
Chen, Firth & Kim (2002)	1993–1997	AB shares	298 firm-year observations	Comparing the value-relevance differences of accounting information between CAS and IAS	IAS are more value relevant to both B share price (R^2 of 52%) and B share returns (R^2 of 47%) than those based on CAS to A share price (R^2 of 24%) and returns (R^2 of 39%), respectively.
Wu, Koo & Kao (2005)	1997– 2003	AB shares	385 firm-year observation	Comparing the value-relevance differences of accounting information between CAS and IAS	CAS is not useful in evaluating B share stocks; neither do IAS to A share stocks. B share investors rely on IAS (R^2 of 62.65%) financial statements more than A share investors do to CAS reports (R^2 of 38.43%),
Eccher & Healy (2000)	1993– 1997	A shares and B shares	171 firm-year observation	Comparing the value relevance of accounting earnings and book value in equity valuation and future cash flows between CAS and IAS	CAS earnings have a higher correlation (R^2 of 69%) with A share annual stock returns than IAS (R^2 of 63%) with B share returns

(continued)

Table 1 *(continued)*

Panel C				Value Relevance of CAS	
Authors & Dates	Sample period	Sample Type	Sample Size	Main Topics	Major Results
Haw, Qi & Wu (1999)	1994– 1997	A shares	1158 firm-year observations	Value relevance of CAS	Earnings reported based on CAS are value relevant to A share investors.
Chen, Chen & Su (2001)	1991–1998	A shares and AB shares	2976 firm-year observations	Value relevance of CAS	Earnings and book value of equity reported based on CAS are value relevant to A shares (R^2 of 25%). Comparing A share-only with AB share, CAS is more relevant to A share-only firms.

The environment has changed since the last comparable study by Wu, Koo & Kao (2005) using 1997–2003 data and therefore, the study needs to be revised with data that are more recent.

Data Analysis Method

We adopted the Index of Comparability (IOC) as used in Weetman, Jones & Gray (1998) as a measure of the impact of accounting differences. It differs from other indicators (Van Der Tas, 1988 and Taplin 2004), which tend to be Indices of Harmonisation that quantify the incidence of accounting differences (Haverty, 2006). Indices of Harmonisation have featured in a number of research studies that compared reported profits and equities, viz. Weetman & Gray (1991), Weetman, Adams & Gray (1993), Cooke (1993), Hellman (1993), Adams, Weetman, Jones & Gray, (1999), Norton (1995), Davey & Wang (unpublished), and Haverty (2006).

To compare earnings and net equities reported under CAS with those reported under IAS regimes, respectively, the IOC is expressed and defined by the following formulas:

The Index of Comparability of Earning (ICEA)

$$ICEA = 1 - \left[\frac{NetEarnings_{IAS} - NetEarnings_{CAS}}{\left| NetEarnings_{IAS} \right|} \right]_{(i,j)} \quad (1)$$

where $\left| NetEarnings_{IAS} \right|$ *is the absolute value of IAS net earnings for each company, i, and year, j.*

The Index of Comparability for Equity (ICEQ)

$$ICEQ = 1 - \left[\frac{NetEquity_{IAS} - NetEquity_{CAS}}{\left| NetEquity_{IAS} \right|} \right]_{(i,j)} \quad (2)$$

where $\left| NetEquity_{IAS} \right|$ *is the absolute value of IAS net equity for each company, i, and year,j.*

An index value of 1 implies *neutrality* when CAS values are compared with IAS values. Hence, an index of 1.2 for net earnings may be interpreted as net earnings reported under CAS being 20% greater than that of IAS net earnings or CAS losses are 20% less than those reported under IAS. An index of 0.9 implies that CAS equity is 10% less than those reported under the IAS regime. However, Weetman, Jones & Gray (1998) point out two weaknesses in using the ICEA and the ICEQ. First, when the IAS values are close to zero, the index will be close to extreme values, which may affect the average differences of the two sets of information. Second, the results from the index may include in any given

year a short-term timing difference that reverses in the following year due to a difference in recognition criteria.

For the first weakness, we are reasonably sure that IAS values are not too close to zero to materially affect the results. With regard to the second weakness, we have chosen only companies with both AB shares. There should be no (or only minimal) timing differences because all the shares should have been prepared within the same organisational context. In fact, if the IAS and CAS are harmonised (as was expected), then short-term differences should be minimal and the Comparability Index (CI) should tend to 1. On the contrary, if short-term differences are material, implying IAS and CAS are applied in a non-harmonious way, the anomaly will manifest in a non-neutral CI. While short-term differences may seem to be a weakness where accounting matching is deficient, in our case, it appears not to be material because A and B shares are implicitly matched.

We have kept our statistical tests relatively informal in the sense that we did not use formal hypothesis testing. There is no commonly accepted materiality threshold, inferring significant subjectivity in using these indices. Previous studies have routinely used both 5% and 10% levels of materiality (Gray, 1980; Adams et al. 1999; Street, Nichols & Gray, 2000; Haverty, 2006). We have adopted the 10% level of materiality as a threshold for indicating detected difference to be consistent with these studies. We are, in fact, following a well-trodden path in studies of this genre.

We have also followed the approach used in Adams et al. (1999), by adopting the non-parametric Wilcoxon signed rank test (Siegel & Castellan, 1988) and the parametric Student's t-test to test for significance of whether the CAS earnings are higher or lower than the IAS earnings. Adams et al. (1999) suggested that the Wilcoxon test was useful for ranking the differences in order of absolute magnitude. This test was used frequently in this genre of research (Gray, 1980; Weetman & Gray, 1990; Radebaugh & Gray, 1997). It is a non-parametric alternative to the paired Student's t-test for the case of two related samples, or repeated measurements on a single sample. A parametric Student's t-test was used for comparison but requires more cautious interpretation as the distributions may be skewed (Adams et al. 1999) or unknown.

Studies that rely on the Ohlson Model use R^2, the Coefficient of Determination, to investigate the value relevance of accounting information. The R^2 is derived from the regression of stock prices against various independent variables such as earnings and book value. The R^2 value indicates how much of the variation in prices is explained by variation of EPS and book value per share (BV). Observed differences in R^2 between two sets of sample data would indicate the differences of value relevance between the two sets of accounting reports. An

advantage of this model is that it transforms the dividends discount model into a model based on accounting book value of equity and abnormal earnings and therefore avoids most of the practical difficulties of the other models (Barth, Beaver & Landsman, 2001).

Here, we used the Ohlson (1995) Valuation Model to gauge statistical correlation between stock prices and both earnings and book values of selected firms. Indirectly, we wish to statistically infer if reports under CAS are less (or more) value relevant than those under IAS.

The following models are used to express the value of a firm's market price as a function of its reported earnings and book values:

$$P_A = \beta_0 + \beta_1 E_{CAS} + \beta_2 BV_{CAS} + e_0 \quad (3)$$

Where P_A = firm's A share prices at April 30 of financial year t+1
E_{CAS} = firm's reported EPS under CAS for financial year t.
BV_{CAS} = firm's BV under CAS at the end of financial year t.
e_0= other value relevant information of firm for financial year t orthogonal to earnings.

$$P_B = \beta_0 + \beta_1 E_{IAS} + \beta_2 BV_{IAS} + e_1 \quad (4)$$

P_B = firm's B share prices at April 30th of financial year t+1
E_{IAS} = firm's reported EPS under IAS for financial year t.
BV_{IAS} = firm's BV under IAS at the end of financial year t.
e_1= other value relevant information of firm for financial year t orthogonal to earnings.

EPS and BV were retrieved from the financial reports of all AB share companies in our dataset. In this study, A and B share prices are used as two separate dependent variables in two corresponding regressions to represent the value relevance of accounting information under both CAS and IAS, respectively. Our approach is consistent with the specification used in Chen, Firth & Kim (2002) and Wu, Koo & Kao (2005). The two dependent variables, P_A and P_B, the market prices, are prices of A and B shares, respectively, as of 30th April (balance date of Chinese annual reports) with a 12-month lag. This procedure was suggested previously by both Bao & Chow (1999) and Wu, Koo & Kao (2005).

RESULTS

Difference in Earnings, EPS, BV and Share Prices under CAS and IAS

The average net earnings based on CAS are about 55% higher than those based on IAS over the period 2002 to 2005, and average net equities based on CAS are 1% lower than those based on IAS for the same period (Tables 2 and 3). The higher net earnings under CAS are also reflected in a higher average EPS (¥0.25) compared with IAS (¥0.19). However, the differences between CAS and IAS with regard to pair-wise EPS and BV are insignificant (paired sample, two tailed t-test, $p>.10$).

The average price of A shares is significantly higher than that of B shares over the period (paired sample two tailed t-test, $t=17.82$, $p<.001$). This result is consistent with Chen, Chen & Su (1999) who stated that B shares are generally underpriced due to different accounting standards and other anomalies. Such a significant difference suggests that the policy of allowing A share investors to purchase B shares has not fully resolved the problems of liquidity and confidence in B shares trading.

Table 2
Descriptive statistics for financial statements and market data over the period 2002–2005.

	Net Earning	EPS	BV	Net Equity	Share Price
Panel A		CAS Financial Reports			A share
Mean	283,200,510.6	0.25	2.4	1,692,880,345.0	7.6
Median	52,647,303.5	0.14	2.5	1,080,396,355.0	6.8
Standard Deviation	1083090899.0	0.84	2.2	2,134,966,430.0	4.6
Minimum	–566,485,166.1	–1.96	–5.7	–2,008,625,761.0	0.6
Maximum	9,884,067,686.0	9.71	8.4	9,455,913,000.0	36.0
Observations	176	176	176	176	176
Panel B		IAS Financial Reports			B share
Mean	183,161,066.2	0.19	2.4	1,701,939,132.0	3.3
Median	53,787,500.0	0.15	2.4	1,056,493,000.0	2.7
Standard Deviation	40,257,3461.0	0.45	2.2	2,137,672,187.0	3.5
Minimum	–682,702,000.0	–1.87	–5.7	–2,028,434,000.0	0.2
Maximum	2,807,466,000.0	2.44	8.4	9,613,787,000.0	25.0
Observations	176	176	176	176	176

Note: All variables are in Chinese Yuan except the ratios

Table 3
Test of Significance of Differences in Mean Values of Earnings Per Share (EPS), Book Value per Share (BV), and Share Prices.

Overall	T value	P value (Two-tail)
EPS	1.01	0.31
BV	–0.49	0.62
Share Price	17.82*	0.00

Note: significant at .001 for a two-tailed test*

Differences between Earnings and Equities Based on CAS and Those Based IAS

To evaluate the differences between net earnings and equities based on IAS and those based on CAS, the two indices of comparability (i.e., ICEA & ICEQ) were used. The CAS indices for earnings are consistently higher than IAS ICEAs over the four-year period. In 2002, 2004 and 2005, the CAS ICEAs exceed the 10% materiality threshold level assumed in this study. The results (Table 4) indicate that net earnings reported under CAS are on average 37% higher than IAS-reported earnings. In contrast, the ICEQ did not exceed the materiality threshold (except in one year, 2004). The overall ICEQ was 1.04, which implies that equity reported under CAS is not materially different from that reported under the IAS regime.

Formally, the Wilcoxon test did not detect any significant differences between the results under the CAS regime and the IAS regime. The results of the Wilcoxon test and the magnitude of the t-value produced by a paired t-test on two subsets of data are shown in Table 5. This suggests that the higher index of earnings may be an artefact of a few individual data points having higher earnings rather than a genuine difference between the two sets of data.

Across all of the time periods, the average earnings and equities reported based on CAS are higher than those based on IAS. However, this difference is not statistically significant. This is consistent with Davey and Wang (unpublished), whose study also showed no significant differences between CAS- and IAS-based earnings and equities. Our updated results also suggest that China's efforts in reforming its accounting practices from 2001 appear to be eliminating major disparities between CAS and IAS.

Table 4
Descriptive statistics for index of comparability.

Index of Earnings ICEA	2002	2003	2004	2005	Overall
Mean	1.53*	1.03	1.27*	1.67*	1.37*
Median	1.00	0.99	1.00	0.99	1.00
Standard Deviation	1.86	0.40	1.44	4.26	2.43
Minimum	0.05	–0.10	0.22	–1.52	–1.52
Maximum	11.42	2.63	10.13	28.54	28.54
Count	44	44	44	44	176
Index of Equities ICEQ	2002	2003	2004	2005	Overall
Mean	0.98	1.00	1.18*	1.01	1.04
Median	1.00	1.00	1.00	1.00	1.00
Standard Deviation	0.17	0.07	1.18	0.12	0.60
Minimum	0.10	0.60	0.62	0.92	0.10
Maximum	1.44	1.17	8.83	1.77	8.83
Count	44	44	44	44	176

Note: Financial Statements prepared under CAS are deemed comparable to those prepared under IAS at a 5% materiality threshold if both the average comparability index and the index for the most recent year in the study were between 0.95 and 1.05.*

Table 5
Test of significance of differences in mean scores of net earnings and net equities.

Year	T test		Wilcoxon Signed Ranks Tests	
	T value	P value (two-tail)	Z value	P value (two-tail)
Panel A		Net Earnings		
2002	1.06	0.29	0.25	0.8026
2003	–0.58	0.57	0.25	0.8026
2004	0.99	0.33	0.25	0.8026
2005	–0.99	0.33	0.25	0.8026
Overall Period	–1.42	0.16	0.13	0.8966
Panel B		Net Equities		
2002	–1.39	0.17	0.25	0.8026
2003	0.71	0.48	0.25	0.8026
2004	1.08	0.29	0.25	0.8026
2005	–0.28	0.78	0.25	0.8026
Overall Period	0.75	0.45	0.13	0.8966

Value Relevance of CAS and IAS Information

Ohlson's (1995) valuation model in the form of a cross-sectional regression expresses the value of the firm's market equity as a function of its earnings and book value equity. The results are summarised in Table 6.

Table 6
Cross-sectional regression results.

Panel A		A share Regression (H_0: $P_A = \beta_0 + \beta_1 E_{CAS} + \beta_2 BV_{CAS} + e_{0)}$			
Year	CAS	Coefficient	Standard Error	T Value	R^2
2002	EPS	1.53	1.01	1.51	0.26
	BV	0.57	0.23	2.41*	
2003	EPS	0.19	0.32	0.57	0.35
	BV	1.01	0.21	4.88*	
2004	EPS	5.10	1.45	3.52*	0.40
	BV	0.41	0.31	1.30	
2005	EPS	7.18	2.77	2.59*	0.23
	BV	0.29	0.43	0.68	
Overall Period	EPS	0.74	0.38	1.93	0.23
	BV	0.89	0.14	6.22*	
Panel B		B share Regression (H_1: $P_B = \beta_0 + \beta_1 E_{IAS} + \beta_2 BV_{IAS} + e_{1)}$			
Year	IAS	Coefficient	Standard Error	T Value	R^2
2002	EPS	0.15	0.56	0.27	0.33
	BV	0.55	0.14	3.99*	
2003	EPS	5.63	1.03	5.49*	0.44
	BV	0.43	0.15	2.92*	
2004	EPS	3.56	1.03	3.47*	0.47
	BV	0.49	0.23	2.12*	
2005	EPS	8.05	1.84	4.38*	0.46
	BV	0.34	0.28	1.20	
Overall Period	EPS	2.81	0.54	5.25*	0.39
	BV	0.56	0.11	5.15*	

Note: significant difference at the 5% for a two-tailed test*

CAS BV in Panel A is statistically significant in 2002 and 2003, as well as in the overall period, for explaining A share prices. In contrast, IAS BV (Panel B) is statistically significant in three of the four years (2002, 2003, 2004) as well as the overall period, suggesting that IAS BV is more value relevant than CAS BV.

CAS EPS is significant in 2004 and 2005, while IAS EPS is significant in 2003, 2004 and 2005, as well as in the overall period. This suggests that IAS BV and EPS are more relevant that CAS BV and EPS. One might state that the onset

of significance in the CAS EPS in the latter part of the study period might be the result of the progressive convergence of CAS with the IAS regimes.

The R^2 of the combined EPS and BV on A share and B share may be of some interest to their respective investors. The R^2 of IAS reports, is consistently higher, for each of the years tested, as well as overall, than that of CAS. It appears from the above that IAS reports consistently have more *explanatory power* in relation to B share prices than CAS reports in relation to A share prices.

While CAS EPS is insignificant until 2004 and CAS BV is not significant after 2003, the adjusted R^2 for IAS reports trend higher, whereas similar CAS R^2 appeared level or decreasing. This apparent decline of CAS-related *explanatory power* may be the result of investors' perception of irrelevance of the CAS reports relative to IAS reports. These findings support existing literature that IAS reports are more value relevant to B share investors than CAS reports are to A share investors (Chen, Sun & Wang, 2002 and Wu, Koo & Kao, 2005).

Possible reasons for this observed higher explanatory power of IAS compared with the CAS regime have been postulated by earlier studies including the following: (i) language barriers may have limited B share investors' information sources; (ii) B share investors are mainly non-Chinese and they tend to rely on English language IAS reports; and (iii) B share investors tend to perceive IAS reports as being more reliable than CAS reports because of more stringent IAS audit and compliance requirements. Consequently, IAS-supported B shares reports are more credible than those of A shares as an equity valuation resource. B share investors are generally considered to have more varied market experience, hence, are more sophisticated than A share investors. Their method of using formal reports as a tool may have further reinforced their value relevance. Conversely, CAS investors may be more likely to prefer other information resources such as news from the local press, information from formal and informal networks, and rumours rather than dubitable official CAS reports. A number of limitations must be acknowledged in this study, most of which are also endemic in other similar studies. These limitations are due to small population size, endogeneity bias and potential measurement errors. The sample period was limited due to the dearth of reliable accounting and financial data. The authors had to rely on the disclosure of accounting information in the financial statements provided by a limited database that contains a contiguous series of companies that issue both A and B shares simultaneously. Additionally, as in other value relevance studies, the models adopted in this study suffer from the same factors of endogeneity (Brown, He & Teitel, 2006).

Contextual factors, such as regulatory and economic changes, are unobserved elements that may affect the value relevance of earnings. Specifically, in this case, B share prices were increasing at the beginning of 2006 due to market rumours and this may have contributed to endogeneity bias. Any endogeneity bias will have unspecified effects on our coefficient estimates and thus, on the conclusions drawn from the dataset. As a result, we refer to other studies and use our results as a preliminary indicator until further research on the impact of endogeneity on the correlational links between the dependent and the independent variables is undertaken. Finally, the findings and conclusions of this study depend on the fidelity of the dataset. Financial data emanating from an emerging market such as China are likely to have specification and measurement errors, hence caution is recommended.

CONCLUSION

Using post-2001 data, this study examined the statistical differences between the CAS-reported earnings and equities and its IAS counterparts in terms of value relevance in equity pricing according to two simultaneous operating accounting standards. Our findings suggest that reported earnings and equities based on CAS are not significantly different from those based on IAS in the study period. We infer from our results that CAS had substantially converged with the IAS more than was previously believed. Most previous studies on the practical differences of CAS from IAS may have been superseded by our findings. CAS authorities may be cautiously optimistic about the degree of convergence with IAS and, perhaps, revise their prior beliefs about CAS in regulating financial reporting in Chinese stock markets.

This study has provided up-to-date evidence to augment existing literature that IAS reports were more value relevant to B share investors than CAS information to A share investors. This is consistent with Chen, Sun & Wang (2002) and Wu, Koo & Kao (2005). Our analyses find that while the CAS BV reports are significantly associated with the A share prices overall for the study years, CAS EPS is not significant until 2004 and CAS BV is not significant after 2003.

The *explanatory power* of the combination of EPS and BV for A share and B share prices was indicated by R^2. While not much can be gathered from the absolute values of the respective R^2s, the comparative values are charted in Figure 1. The overall trend of the adjusted R^2 appears to be upward for both IAS and CAS reports until 2004. In 2005, while IAS R^2 continued to increase, CAS R^2 declined. This suggests that IAS reports were increasingly relied on while

CAS reports were somewhat abandoned as A share investors became more knowledgeable.

The consistently and relatively higher R^2s of IAS against CAS reports suggest that IAS accounting information is more relevant to the pricing decisions of B share investors than CAS to A share investors. The finding of the change in significance in 2004 for A shares from BV to EPS implies that Chinese investors were becoming more sophisticated in their use of market-related information.

While we cannot draw any *absolute* meaningful inferences from the manifested statistical significance, as statistical significance does not necessarily imply practical significance in the substantive sense, there are *relatively* more significant results manifested in the B shares than A shares. This suggests that B share (IAS-dominant) parameters are more value relevant than A share parameters. This is in line with the a priori belief that reports under the IAS regime are generally more influential than reports under the CAS regime. This empirical evidence has interesting implications for researchers of corporate governance issues. Our findings suggest that investors in firms with stringent reports (IAS) seemed to be consistently more value relevant than those who rely on less stringent reports (CAS), even as the reports are increasingly harmonised and each belong to the same organisation.

REFERENCES

Adams, C. A., Weetman, P. E., Jones, A. E., & Gray, S. J. (1999). Reducing the burden of US GAAP reconciliations by foreign companies listed in the US: The key question of materiality. *The European Accounting Review*, *8*(1), 1–22.

Aharony, J., Lee, C. J., & Wang, T. J. (2000). Financial packaging if IPO firms in China. *Journal of Accounting Research*, *38*(1), 103–126.

Ball, R. & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research*, *6*, 159–178.

Bao, B. H., & Chow, L. (1999). The usefulness of earnings and book value for equity valuation in emerging capital markets: Evidence from listed companies in The People's Republic of China. *Journal of International Management and Accounting*, *10*(2), 85–104.

Barth, M. E., Beaver, W. H., & Landsman, W. R. (2001). The relevance of the value relevance literature for financial accounting standard setting: Another view. *Journal of Accounting and Economics*, *31*(1–3), 77–104.

———. (1993). A structural analysis of pension disclosures under SFAS 87 and their relation to share prices. *Financial Analysts Journal*, *49*(1), 18–26.

Barth, M. E., & Clinch, G. (1998). Revaluated financial, tangible, and intangible assets: Association with share prices and non-market-based value estimates. *Journal of Accounting Research*, 36(Supplement), 199–233

Bernard, V. L. (1995). The Feltham-Ohlson framework: Implication for empiricists. *Contemporary Accounting Research*, *11*(2), 733–747.

Brown, W. D., He, H., & Teitel, K. (2006). Conditional conservatism and the value relevance of accounting earnings: An international study. *European Accounting Review*, *15*(4), 605–626.

Chakravarty, S., Shankar, A., & Wu, L. (1998). Information asymmetry, market segmentation and the pricing of cross-listed shares: Theory and evidence from Chinese A and B shares. *Journal of International Financial Markets, Institutions and Money*, *8* (3&4), 325–356.

Chen, C. J. P., Chen, S., & Su, X. J. (2001). Is accounting information value-relevant in the emerging Chinese stock market? *Journal of International Accounting. Auditing & Taxation*, *10*(1), 1–22.

Chen, C. J. P., Gul, F. A., & Su, X. J. (1999). A comparison of reported earnings under Chinese GAAP vs. IAS: Evidence from Shanghai Stock Exchange. *Accounting Horizons*, *13*(2), 91–111.

Chen, C. J. P., Su, X. J., & Zhao, R. (2001). An emerging market's reaction to initial modified audit opinions: Evidence from the Shanghai Stock Exchange. *Contemporary Accounting Research*, *17*(3), 429–455.

Chen, G. M., Firth, M., & Kim, J. B. (2002). The use of accounting information for the valuation of dual-class shares listed on China's stock markets. *Accounting and Business Research*, *32*(3), 123–131.

Chen, S., Sun, Z., & Wang, Y. (2002). Evidence from China on whether harmonised accounting standards harmonise accounting practices. *Accounting Horizons*, *16(3)*, 183–197.

China View. (2006). *Future changes ahead for stock exchanges.* Retrieved 10 March, 2007, from http://news.xinhuanet.com/english/2006-01/27/content_4106608.htm

Chui, A. C. W., & Kwok, C. C. Y. (1998). Cross-autocorrelation between A shares and B shares in the Chinese stock market. *The Journal of Financial Research*, *21*(3), 333–353.

Cooke, T. E. (1993). The impact of accounting principles on profits: The US versus Japan. *Accounting and Business Research*, *23(Autumn)*, 460–476.

Curran, J. (1994). China's investment boom. *Fortune*, *3*(7), 116–122.

Davey, H., & Wang, L. (unpublished). *The convergence of China's GAAP with IAS*. New Zealand: The University of Waikato.

Easton, P. D., & Harris, T. S. (1991). Earnings as an explanatory variable for returns. *Journal of Accounting Research*, *29(1)*, 19–36.

Eccher, E. & Healy, P. M. (2000). *The role of International Accounting Standards in transitional economies: A study of The People's Republic of China* (Working Paper). Retrieved 10 March, 2007, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=233598

Feltham, G. A., & Ohlson, J. A. (1995). Valuation and clean surplus accounting for operating and financial activities. *Contemporary Accounting Research*, *11*(2), 689–732.

Gray, S. J. (1980). The impact of international accounting differences from a security-analysis perspective: Some European evidences. *Journal of Accounting Research*, *18*(1), 64–76.

Haw, I. M., Qi, D. Q., & Wu, W. (1999). Value relevance of earnings in an emerging capital market: The case of A-shares in China. *Pacific Economic Review*, *4*(3), 337–347.

Haverty, J. L. (2006). Are IFRS and US GAAP converging? Some evidence from The People's Republic of China companies listed on the New York Stock Exchange. *Journal of International Accounting and Taxation*, *15*(1), 48–71.

Hellman, N. (1993). A comparative analysis of the impact of accounting differences and return on equity. *European Accounting Review*, *2*(3), 495–530.

Lev, B., & Zarowin, P. (1999). The boundaries of financial reporting and how to extend them. *Journal of Accounting Research*, *37*(2), 353–385.

Lin, Z. J., & Wang, L. (2001). Financial disclosure and accounting harmonisation: Cases of three listed companies in China. *Managerial Auditing Journal*, *16*(5), 263–273.

Norton, J. (1995). The impact of accounting practices on the measurement of profit and equity: Australia versus the US. *ABACUS*, *3*(3), 178–200.

Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, *18(1)Spring*, 667–687.

People Daily Online, (2006, February 16). *New accounting rules may prompt big profits.* Retrieved 10 March 2007, from http://english.people.com.cn/200602/17 /eng20060217_243549.html

Peter, D. E., Trevor, S. H. (1991). Earnings as an explanatory variable for returns. *Journal of Accounting Research*, *29*(1), 19–36.

Radebaugh, L. H., & Gray, S. J. (1997). *International Accounting and Multinational Enterprises* (4th ed.). New York: John Wiley and Sons Inc.

Siegel, S., & Castellan, N. J. (1988). *Non-parametric statistics for behaviour sciences*. New York: McGraw-Hill.

Street, D. L., Nichols, N. B., & Gray, S. J. (2000). Assessing the acceptability of international accounting standards in the US: An empirical study of the materiality of US GAAP reconciliations by non-US companies complying with IASC standards. *The International Journal of Accounting*, *35*(1), 27–63.

Taplin, R. H. (2004). A unified approach to the measurement of international accounting harmony. *Accounting and Business Research*, *34*(10), 57–73.

Van Der Tas, L. G. (1988). Measuring harmonisation of financial practice. *Accounting and Business Research*, *18*(7), 157–169.

Weetman, P., Adams, C. A., & Gray, J. S. (1993). Issues in intentional accounting Harmonization. *Research Report of Chartered Association of Certified Accountants*.

Weetman, P., & Gray, S. J. (1991). A comparative international analysis of the impact of accounting principles on profits: The USA versus the UK, Sweden, and the Netherlands. *Accounting and Business Research*, *21*(84), 363–379.

———. (1990). International financial analysis and comparative accounting performance: The impact of UK versus US accounting principles on earnings. *Journal of International Financial Management and Accountin*g, *2*(2&3), 111–130.

Weetman, P., Jones, E. A. E., & Gray, S. J. (1998). Profit measurement and UK accounting standards: A case of increasing disharmony in relation to US GAAP and IASs. *Accounting and Business Research*, *28*(3), 189–208.

Wu, S. H., Koo, M., & Kao, T. (2005). *Comparing the value relevance of accounting information in China: Standard and factors Effects*. Retrieved 6 March 2007, from http://www.business.uiuc.edu/accountancy/research/vkzcenter/conferences/france/papers/ Wu_Koo_Kao.pdf.

Xiao, J. Z. Z., Weetman, P., & Sun, M. (2004). Political influence and coexistences of a uniform accounting system and accounting standard: Recent development in China. *ABACUS*, *40*(2), 193–217.