Convergence of PRC GAAP with IFRS, and the Comparative Value **Relevance Between the Two Sets of Reporting Standards:** The Case of Dual-Listed Chinese Companies

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We evaluate the level of convergence of Chinese accounting standards (PRC GAAP) with International Financial Reporting Standards (IFRS) since the establishment of the "new PRC GAAP" in 2007. Further, wet examine the value relevance of accounting measures under PRC GAAP as compared with IFRS. The tests use data from dual-listed companies on both mainland China's A-share exchange (using PRC GAAP) and Hong Kong's H-share exchange using IFRS. The results indicate that adoption of the new PRC GAAP eliminated significant differences between the two accounting standards. Further, the value relevance of accounting information under PRC GAAP increases through the sample years. The value relevance of PRC GAAP became higher than IFRS for the last two years, implying that current PRC GAAP incorporates the traits of IFRS and Chinese accounting practices that are most useful in Chinese stock markets.

INTRODUCTION

The Chinese Ministry of Finance (MOF) released a set of thirty-eight new Accounting Standards for Business Enterprises (ASBE) in February 2006, which are considered as the "new PRC GAAP." This issuance of new PRC GAAP represents a milestone for Chinese domestic economic development (KPMG 2011). The new standards are mandatory for all Chinese listed companies beginning January 1, 2007. This accounting reform significantly changed the "old PRC GAAP" and covers nearly all topics under IFRS issued by the International Accounting Standards Board (IASB). It is intended to bring about substantial convergence between Chinese accounting standards and International Financial Reporting Standards (IFRS). The issuance of the new PRC GAAP appears to be a significant step for the economic development in China, and enhance its place in the world's increasingly integrated capital markets.

Several significant benefits should accrue to China related to the development of new standards that have greater convergence with IFRS. The new standards will be more familiar to worldwide investors, and bring about greater investor confidence in China's capital markets and financial reporting. This

should increase capital investments in China from both domestic and foreign sources. Global Chinese companies should also see a reduction in compliance costs under accounting regimes of the different jurisdictions in which they operate (Deloitte Touche Tohmatsu 2006).

IFRS are developed by the IASB, primarily based on input influenced by countries with highly developed capital markets, such as UK and other western countries. It has not been determine whether such accounting standards are also optimal for economies such as China's that are developing and transitional, and lack the infrastructure for monitoring managers' financial reporting decisions (Xiao et al. 2004). Further, PRC GAAP is stakeholder-oriented which emphasizes protection of creditors, and tax transparency with relatively conservative accounting practices (Chow et al. 1995). This is different from the shareholder-oriented IFRS. One of the reasons of converging with IFRS is to improve the quality of financial information. Therefore, the primary purpose of this study is to examine the effectiveness on convergence of adopting the new PRC GAAP, and the value relevance of PRC GAAP financial information as compared with IFRS for dual-listed Chinese companies.

Consistent with the purpose of this study, several research questions arise: First, is there a significant difference between PRC GAAP and IFRS pre- and post-convergence? Second, what are the remaining differences between the new PRC GAAP and IFRS? Third, is accounting information under PRC GAAP more value relevant with convergence? Lastly, which set of accounting standards (PRC GAAP or IFRS) provides more relevant accounting information for Chinese companies?

First, we evaluate the effectiveness of applying the new PRC GAAP. We determine whether there is a significant difference between the amounts reported under PRC GAAP and IFRS in both the pre- and post-accounting reform years. More specifically, we compare net income and net asset amounts obtained from the financial reports of Chinese companies that simultaneously issue A-shares in the China's Shanghai market and H-shares in Hong Kong from 2006 to 2011. Although the new PRC GAAP is quite similar to IFRS, there are still several differences in accounting practice, such as safety production fund, government grants, fixed assets revaluation, depreciation and business combinations involving enterprises under common control, etc.

Second, we evaluate the usefulness of PRC GAAP financial information as compared to IFRS reporting. One of the most common methods of examining standards usefulness is to test the value relevance of financial information (Barth et al. 2001; Ewert & Wagenhofer 2005, Agostino et al. 2011; Alali & Foote 2012; Kim 2013). Financial reporting has relevance when it influences the economic decisions of users, such as investors, employees, lenders, suppliers, customers, etc. This paper focuses on investors and attempts to analyze whether relevance of financial information under PRC GAAP has improved with convergence, and as compared with the value relevance of IFRS for the same Chinese companies dual-listed in Shanghai (PRC GAAP) and Hong Kong (IFRS) and for each year from 2006 to 2011.

IFRS are principle-based standards, which allow managers to exercise more reporting judgment to reflect differences in companies' business economics. This flexibility also allows managers more opportunity for earnings management. PRC GAAP, on the other hand, has "bright-line" rules that provide little opportunity for financial reports to reflect individual, company-specific business conditions. Hence, it is reasonable to be expected that financial data based on IFRS is more value relevant than that based on PRC GAAP, and the process of convergence should enhance the value relevance of financial information in the mainland Chinese stock market (Sami & Zhou 2004; Liu & Liu 2007). However, there are also reasons to question such perception (Lin & Chen 2005). China, like other transitional economies, is only beginning to develop the infrastructure to support credible financial reporting. Despite the immature capital market, limited regulation of the financial market and enforcement of regulations, government plays an important role to recover the stock market if the market is highly deviated from the companies' financial performance. In addition, the internal control mechanism which is necessary for IFRS-adopting companies to prevent managers from using financial reporting judgment to promote their own job performance is likely to be inadequate for Chinese companies. Given these limitations, local bright-line rules might be more suitable for Chinese companies and capable to produce more reliable financial information in mainland stock market than IFRS in Hong Kong.

The remainder of this paper is organized as follows: The next section provides a description of previous relevant literature related to international accounting harmonization, and development of PRC GAAP, and includes the development of testable hypotheses. This is followed by a section providing a description of the methodology including research design and sample selection. Next, is a discussion of the results of the data analysis related to the effectiveness of adopting the new PRC GAAP, and the value relevance of financial information under PRC GAAP and IFRS. The last section provides concluding comments including implications drawn from the results.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Development and Reforms of PRC GAAP

A uniform accounting system was adopted in China during the early 1950s. The uniform accounting system was designed to provide information required by government for its central planning and control purposes. The Government took control of enterprises from production lines, to distribution channels and operating costs. Any unauthorized changes in accounting systems were forbidden and may cause serious political consequences (Zhang et al. 2009).

Subsequently, China initiated significant economic reforms and an "opening-up" policy was established in 1978. Economic development became the focus of the state and the society. A centrally controlled economy was gradually transitioning to a limited market economy. Along with this transition and economic development, the Chinese Ministry of Finance (MOF) became dedicated to the development of accounting standards that improve the quality of Chinese companies' financial reporting. New forms of enterprises emerged (e.g., Sino–foreign joint ventures, joint-stock companies, etc.). The MOF issued the Accounting System for Sino–Foreign Joint Ventures in 1985. This led to the establishment of a project group organized by the Accounting society of China and the MOF for studying accounting standards in 1988 (Xiao et al. 2004), thus paving the way to international accounting harmonization (Xiang 1998).

In 1992, an accounting System for Companies Experimenting with a Shareholding System and the Accounting Standards for Business Enterprises (ASBE) was established by the MOF (Ministry of Finance 1992). Subsequently, the MOF began a three-year standard setting project sponsored by the World Bank, and succeed to issue drafts of thirty-two detailed standards (Xiang 1998). The 1992 ASBE was considered as a revolutionary shift in Chinese accounting since it introduced a market-oriented accounting model (Chen et al. 2002b).

Through the beginning of the early 2000s, rapid development of economic and capital markets caused Chinese listed companies to become involved in complex transactions which were not covered by existing PRC GAAP. This resulted in a demand for specific and detailed guidance in application. The MOF responded in 2001 with a new ASBE issuance including 16 accounting standards, and a combined basic conceptual framework with a chart of accounts and detailed bookkeeping procedures (Xiao et al. 2004).

In 2005, the MOF suggested further convergence between PRC GAAP and IFRS when they stated, "China is adopting three principles for the convergence of its accounting regulations with the IASB's standards: striving for harmonization; permitting difference; and innovating positively" (Ezzamel & Xiao 2007, 109). The efforts of MOF in 2006 are the latest significant move towards accounting harmonization in China. The MOF's 2006 PRC GAAP (new PRC GAAP) was issued in February 2006 and effective on January 1, 2007 for all A-share (mainland China) listed companies. It replaced the 2001 ASBE and 16 accounting standards with a revised basic standard and 38 specific ASBE standards (Peng & Smith 2010). This new PRC GAAP is intended to bring about substantial, but not complete, convergence between PRC GAAP and IFRS.

Peng and Smith (2010) examined the process of convergence of PRC GAAP with IAS/IFRS during the period 1992 to 2006. They conclude that PRC GAAP is (1) progressively converging with IAS/IFRS in terms of changing from a cost basis to a fair value basis, (2) moving from prescribing specific accounting policies to more flexibility in the selection of accounting treatments for companies, and (3) becoming more detailed and enforceable with advanced techniques. The process of convergence with

IAS/IFRS in China mirrors the development of Chinese economic and capital markets, and appears to be progressing towards international accounting harmonization.

Previous Studies of the Value Relevance National Standards versus IFRS

The trend of global convergence with IFRS has created an increasing number of studies that compare the quality of IFRS accounting information with accounting information provided using other standards. The most popular approach to assessing accounting quality is value relevance because higher quality earnings appears to better reflect a firm's underlying economics, resulting in a closer linkage of stock price and earnings or book value of net assets (Barth et al. 2001). Ewert and Wagenhofer (2005) suggest that higher quality accounting standards limit opportunistic discretion, which leads to higher value relevance of accounting earnings. Several empirical studies support this view, and find that higher quality earnings are associated with greater value relevance (Leuz et al. 2003; Lang et al. 2006).

Numerous studies compare the value relevance of accounting information between IFRS and various national accounting standards. Bartov et al. (2005) compare the value relevance of accounting information under German GAAP, US GAAP, and IFRS. The study uses a sample of 417 German listed companies for the period of 1998 to 2000. Their results suggests that US GAAP and IFRS are more value relevant than German GAAP. A comparison of the value relevance of IFRS and that of German GAAP is also studied by Schiebel (2007). They use samples consisting of 24 German listed companies in which 12 prepare their consolidated reports under German GAAP and the other 12 under IFRS for the period 2000 to 2004. The Schiebel study finds greater value relevance for companies using German GAAP. Similar results favoring German GAAP are reported by Hung and Subramanyam (2007), who explore the difference in value relevance of restatements for a sample of 80 Germany companies with voluntary adoption of IFRS.

With respect to comparison with US GAAP, Barth et al. (2006) investigate the comparative value relevance in a sample of 428 companies that prepare financial reporting under IFRS from 1990 to 2004 and equal numbers of US companies that apply US GAAP. They conclude that although IFRS adoption enhances value relevance of accounting information, it is still less than that of US GAAP. Horton and Serafeim (2010) examine the value relevance of accounting information in a sample of 85 UK companies listed on London Stock Exchange FTSE 350. An event study methodology and a market value model are employed. Their results indicate that the reconciliation adjustment from UK GAAP to IFRS is value relevant in terms of earnings but not book value of equity (Horton & Serafeim 2010).

Capkun et al. (2013) addresses the comparative value relevance of IFRS with European accounting standards. They analyze 1,722 European companies during the mandatory transition from local accounting standards to IFRS in 2004 and 2005, and use the Ohlson (1995) model to relate market values to earnings and book value of equity. The results indicate that value relevance of accounting information improved across the EU in the transition year.

Several studies examine Chinese markets, and examine the difference in value relevance between PRC GAAP and IFRS before accounting standard reforms for China in 2006. Eccher and Healy (2009) use a model that relates future cash flow to current cash flow and accruals. They use a sample of 83 Chinese companies that trade both A-shares (reporting using IFRS) and B-shares (reporting using previous PRC GAAP) for the period 1993 to 1997. They find IFRS is not superior to PRC GAAP for international or domestic investors. Sami and Zhou (2004) produce a study that is similar to the Eccher and Healy (2009) study, but with different results. Their study uses a later and longer window of observations (1994 to 2000), and select sample companies using similar criteria. However, they conclude from their results that accounting information under IFRS is more value relevant than accounting information under PRC GAAP.

Lin and Chen (2005) examine a sample that consists of companies dual listed on A-share and B-share Chinese mainland stock markets (AB-share companies) for the period from 1995 to 2000. They apply the Ohlson (1995) model coupled with a lagged-price-deflated returns model (Biddle et al. 1995). Companies issuing A-shares prepare their financial statements using Chinese standards, and B- share companies use

IFRS. The results suggest that accounting information based on Chinese accounting standards is more value relevant than under IFRS.

Liu et al. (2011) examine whether improved accounting quality, including value relevance, is associated with the new PRC GAAP. They study 870 sample firms listed on only one market over a period from 2005 to 2008. The results indicate an increase in the value relevance of accounting measures since the adoption of the new PRC GAAP in 2007. Zeng et al. (2012) examine the value relevance of fair value accounting standards for financial assets. Such fair value standards are included in the requirements of the new PRC GAAP beginning in 2007. The study uses a sample of 453 firms from non-financial industries over the period 2004 to 2009. The findings indicate that the new PRC GAAP fair values are more value relevant that the previously reported historical costs.

Hypotheses Development

The studies reviewed above produce mixed findings for determining which accounting standards provide the most value relevance: IFRS (or converging to IFRS) versus national standards. Some studies favor adoption of IFRS or convergence towards IFRS (Sami and Zhou 2004; Bartov et al. 2005; Horton and Serafeim 2010; Liu et al. 2011; Zeng et al. 2012; Capkun et al. 2013), while others indicate that the adoption of IFRS decreases the value relevance of accounting information as compared to domestic accounting standards (Lin and Chen 2005; Barth et al. 2006; Hung and Subramanyam 2007; Schiebel 2007; Eccher and Healy 2009). However, none of these studies specifically address the issue of the value relevance for the new PRC GAAP versus IFRS.

Differences between PRC GAAP and IFRS for Reported Net Income and Assets

Along with the rapid economic and institutional development in China, the MOF has committed to improving the quality of Chinese accounting standards and financial reporting. The MOF's mission before 2005 was convergence of PRC GAAP with internationally recognized accounting standards (Chen et al. 1999). In 2005, the MOF officially clarified its goal as convergence towards IFRS (IASB 2005). To achieve this objective, the MOF has made considerable efforts to tailor high quality Chinese accounting standards that converge towards IFRS, but meet the needs for specific circumstances in China. Therefore, it is reasonable to expect PRC GAAP to move gradually toward convergence with IFRS from the 2006 onwards. Furthermore, the new PRC GAAP in effective since January 1, 2007 has prompted significant changes in accounting practice which are recognized as a substantial convergence with IFRS. Therefore, the current study hypothesizes that the promulgation of the new PRC GAAP reduces any significant differences in net income and net assets between PRC GAAP and IFRS. Specifically, the following hypotheses are suggested:

- H_{1a} : There is a significant difference in the reported net income between PRC GAAP and IFRS pre-convergence (in 2006).
- H_{1b} : There is no significant difference in the reported net income between PRC GAAP and IFRS post-convergence (from 2007 onwards).
- H_{2a} : There is a significant difference in the reported net assets between PRC GAAP and IFRS pre-convergence (in 2006).
- H_{2b} : There is no significant difference in the reported net assets between PRC GAAP and IFRS post-convergence (from 2007 onwards).

Improvements in the Value Relevance of PRC GAAP and IFRS over Time

Continuing accounting reforms of PRC GAAP to converge with IFRS should improve the accounting and auditing functions, increase the amount and relevance of disclosure practices, and benefit investors in making decisions in the Chinese stock markets. Jermakowicz and Gomik-Tomaszewski (1998) studies the

development of new accounting and reporting standards for the Warsaw Stock Exchange as they converged toward EU standards. Their results indicate that there is an enhancement in the usefulness of accounting information for investors' decision making in emerging markets. Similarly, it is expected that there should be an increase in the value relevance of accounting information under PRC GAAP in China's A-share market with the efforts of convergence and economic development. The following hypothesis is suggested:

 H_{3a} : There is an improvement of value relevance of reported net income under PRC GAAP in mainland China's A-share market as it converges with IFRS over the period from 2006 to 2011.

 H_{3b} : There is an improvement of value relevance of reported net assets under PRC GAAP in mainland China's A-share market as it converges with IFRS over the period from 2006 to 2011.

A Comparison of the Value Relevance Between PRC GAAP and IFRS

China's distinctive market segmentation provides a unique opportunity to compare the value relevance of PRC GAAP versus IFRS. The companies which issue both A-shares in China's Shanghai market and H-shares in the Hong Kong market have dual reporting and auditing requirements in the two respective market segments. Companies issuing A-shares in the mainland stock market are required to prepare their accounting statements under PRC GAAP and be audited by local CPA firms. However, the same companies issuing H-shares in the Hong Kong stock market must choose between IFRS or HKFRS for financial reporting (with some exceptions subsequent to December 15, 2010), and are generally audited by international CPA firms. IFRS is often considered to provide higher quality accounting information than PRC GAAP, and international auditors such as the Big 4 firms are commonly considered to be more professional and reliable than local accounting firms (Sami & Zhou 2004). In addition, compared to the mainland stock markets, the Hong Kong stock market is relatively mature, and provides better investor protections in a more transparent competitive environment (Sun & Tong 2000). Accordingly, the financial information prepared under IFRS for Hong Kong's H-share market should be more useful and value relevant to the market price as compared to financial information that is based on PRC GAAP in mainland China's A-share market.

However, as discussed above, the results of prior research are mixed in that some studies favor IFRS while other studies favor China's domestic standards. Although the new PRC GAAP has made significant convergence toward IFRS, the Chinese MOF has retained several exceptions to IFRS due to the unique business environment in China as they aim for more adaptable accounting standards for Chinese companies. Most Chinese listed companies used to be state-owned and the management control mechanisms are relatively weak compared to developed countries. The full adoption of IFRS for Chinese companies may exert a negative impact and lead to a bias in financial information due to possible selfinterest manipulation by management. Given the above discussion, it is expected that the current PRC GAAP is likely to produce more value relevant accounting information than IFRS for Chinese companies. Thus, the following hypothesis is suggested:

H₄: The new PRC GAAP provides more value relevant accounting information in mainland China's A-share market than IFRS in Hong Kong's H-share market.

METHODOLOGY

First is a presentation of the methods used to examine the convergence of PRC GAAP with IFRS (H₁ and H₂). This is followed by a review of methods used to examine the value relevance of PRC GAAP, and compare that with the value relevance of IFRS for Chinese companies (H₃ and H_4).

Design of Tests for Convergence of PRC GAAP with IFRS (H₁ and H₂)

Research Design for Convergence

Hypothesis test are applied to examine the harmonization progress in China with the issuance of new PRC GAAP which is intended to achieve substantial convergence with IFRS. A paired *t*-test is employed to investigate if there is a significant difference between the reported net income for dual-listed companies using PRC GAAP for their A-shares in the mainland Chinese markets and IFRS for their H-shares in the Hong Kong market from 2006 to 2011. Similar testing is performed to investigate if there is a significant difference in reported amounts for net assets. The following formulas are used to test for any significant difference between the amounts of net income (and net assets) reported under the two reporting standards:

$$DIF_{it}^{NI} = Net income_{it}^{PRC GAAP} - Net income_{it}^{IFRS}$$
 (1)

$$DIF_{it}^{NA} = \text{Net assets } _{it}^{PRC GAAP} - \text{Net assets } _{it}^{IFRS}$$
 (2)

where DIF_{it}^{NI} is company i's difference between net income per PRC GAAP and per IFRS in the year t (similarly, DIF_{it}^{NA} is the same for differences in net assets). The net income and net assets referred to in this study are specified as net income and net assets attributable to equity shareholders of the Company. The implementation of new PRC GAAP in 2007 should considerably reduce the significance of differences between amounts reported under PRC GAAP and IFRS for both net income and net assets.

A paired, two-tailed t-test is applied with a minimum 95% confidence level for rejection of the null hypotheses. The choice of tests is based on dependant samples with a relatively small sample size. This test assumes of an approximate t-distribution with n-1 degrees of freedom. The test design is similar to the work of Kuan and Noronha (2007) who also apply two-tailed t-test to study the progress of accounting harmonization in China prior to the establishment of new PRC GAAP.

Samples and Data Collection

The *t*-test designed above examines whether there are significant differences in net income and net assets between PRC GAAP and IFRS before and after the convergence towards IFRS. Chinese companies dual listed on mainland and Hong Kong that apply PRC GAAP and IFRS to prepare their financial statements for A-share and H-share markets respectively are selected as samples (AH-share companies).

Numerous studies use AB-share companies to investigate the convergence of PRC GAAP with IFRS (as summarized above) because A-shares companies use PRC GAAP and B-share companies use IFRS. However, due to insufficient market regulation and the lack of understanding of IFRS by local accounting professions, the accounting information for the B-share market appears to be unreliable and lacks comparability (Chen & Zhang 2010). Using H-share companies as representative of IFRS users is more appropriate since they are strictly required to conform to the Hong Kong listing regulations, and most of their annual reports are audited by Big-4 accounting firms that have a better understanding of IFRS and are capable of producing highly reliability of financial information. Similar arguments are made by Lin and Wang (2001) and Kuan and Noronha (2007) who argue that comparative analyses of AH share reports provide more insights on the progress of harmonization in China than adoption of AB-share reports.

The current study samples are selected from the Hang Seng China AH Premium Index (AH Index), which is used to measure the spread between the A-shares and H-shares of dual-listed Chinese companies. The index consists of all Chinese companies listed on one of the Chinese mainland stock exchanges (SHSE or SZSE) and the Hong Kong stock exchange (SEHK). Companies listed on mainland stock exchanges (SHSE or SZSE) are required to apply the new PRC GAAP to prepare their financial statements and are regulated by CSRC, while the Hong Kong Exchange (HKEx) allows mainland issuers to choose either IFRS or HKFRS to prepare their financial statements. Further, as of December 15, 2010, HKEx revised the listing regulations and permits mainland companies to produce their financial

statements based on new PRC GAAP instead of IFRS or HKFRS in order to reduce costs for dual listed companies. As of June 2012, there were 50 dual listed Chinese companies that constitute the AH-Index Of these firms, 12 adopt HKFRS and 10 apply the new PRC GAAP to prepare their financial statements for the SEHK. A maximum of 28 companies remains, but due to the different issuance date and required disclosure years, the sample size varied in the observation period of 2006-2011. Consequently, there are 22 sample companies in 2006, 27 in 2007, and 28 sample companies from 2008 onwards.

The net income and net assets data for sample companies from 2006 to 2011 are available from the companies' annual reports and website of the SHSE, SZSE and SEHK exchanges. Only secondary financial data are used in this study that was manually collected from companies' financial reports or the stock exchanges' websites. The financial statements available online are required to comply with accounting standards and have been audited by accounting firms in accordance with auditing standards to ensure high reliability and comparability.

Design of Tests for Value Relevance of PRC GAAP and IFRS (H₃ and H₄)

Research Design for Value Relevance

The study uses a valuation model in order to explore the value relevance of financial information based on PRC GAAP in the Chinese A-share market with that based on IFRS in the Hong Kong H-share market. The chosen valuation model is based on Ohlson (1995), and reveals how a firm's market value is associated with its book values of equity and earnings. The following models (3) and (4) are used to express a firm's stock price as a linear combination of its reported earnings per share (EPS) and book value per share (BVPS):

$$P_A = \beta_0 + \beta_1 EPS_{PRCGAAP} + \beta_2 BVPS_{PRCGAAP} + e_0$$
(3)

where P_A is a firm's A-share price in the SHSE or SZSE markets on the last trading day of the fourth month of year t+1 (following the end of fiscal year t); EPS_{PRC GAAP} is a firm's reported EPS under PRC GAAP for fiscal year t; BVPS_{PRC GAAP} is a firm's BVPS under PRC GAAP at the end of fiscal year t; and e_0 is other value relevant information of the firm for fiscal year t.

$$P_H = \beta_0 + \beta_1 EPS_{IFRS} + \beta_2 BVPS_{IFRS} + e_0$$
(4)

where P_H is a firm's H-share price in the SEHK market on the last trading day of the fourth month of year t+1 (following the end of fiscal year t); EPS_{IFRS} is a firm's reported EPS under IFRS for fiscal year t; $BVPS_{IFRS}$ is a firm's BVPS under IFRS at the end of fiscal year t; and e_0 is other value relevant information of the firm for fiscal year t.

EPS and BVPS are retrieved from the financial reports of sample companies while P_A and P_H are available on the website of the SZSE, SHSE or SEHK. This study uses market share prices from the last trading day of the fourth month of year t+1 (following the end of fiscal year t) because the China Securities Regulatory Commission (CSRC) requires all companies to publish annual reports no later than four months after the end of the fiscal year. This approach is consistent with the specification used in similar studies (e.g., Chen et al. 2002a; Wu et al. 2005).

Share prices are used as dependent variables in this model to represent the value relevance of all information, and to determine the value relevance of accounting information under PRC GAAP and IFRS. The adjusted R²s from regressing stock prices against EPS and BVPS are used to gauge if EPS and BVPS under two sets of accounting standards are relevant in relation to the stock price in respective market.

Sample and Data Collection

The samples used in this study to examine value relevance (H₃ and H₄) rely on the same base of companies used above to examine convergence (i.e., H₁ and H₂). That is, the sample companies include all companies that are included in the AH-Index as of June 2012, so they are required to apply PRC GAAP for financial reporting on the SZSE or SHSE exchanges, and IFRS for the SEHK exchange. This

market segmentation for Chinese companies provides a unique opportunity to compare the value relevance of accounting information under PRC GAAP and IFRS by analyzing financial statements of AH-share companies.

RESULTS AND ANALYSIS

Results of Tests on Convergence of PRC GAAP with IFRS (H₁ and H₂)

Descriptive Statistics

Table 1 provides descriptive statistics for net income and net assets under PRC GAAP and IFRS of sample firms during the testing period from 2006 to 2011.

TABLE 1 **DESCRIPTIVE STATISTICS**

Panel A: CAS Net Income vs. IFRS Net Income							
Fiscal	N	CAS Mean	IFRS Mean	Mean Dif.	Difference as a % of		
Year	11	Net Income	Net Income	(CAS-IFRS)	IFRS Mean Net Income		
2006	21	12,956,931	13,373,771	-416,840	-3.117%*		
2007	27	22,041,032	22,240,457	-199,426	-0.897%		
2008	27	19,993,575	20,000,197	-6,621	-0.033%		
2009	28	24,942,509	25,098,009	-155,500	-0.620%		
2010	28	33,181,743	33,310,727	-128,984	-0.387%		
2011	28	38,877,628	38,994,421	-116,793	-0.300%		

^{*} Difference greater than 1% of IFRS reported amount

Panel B: CAS Net Assets vs. IFRS Net Assets							
Fiscal	N	CAS Mean	IFRS Mean	Mean Dif.	Difference as a % of		
Year	11	Net Assets	Net Assets	(CAS-IFRS)	IFRS Mean Net Assets		
2006	21	93,111,682	94,072,471	-960,789	-1.021%*		
2007	27	150,838,636	150,839,925	-1,289	-0.001%		
2008	27	144,338,792	144,146,554	192,237	0.133%		
2009	28	158,860,180	158,775,244	84,936	0.053%		
2010	28	196,880,592	196,725,768	154,824	0.079%		
2011	28	224,613,777	224,602,897	10,880	0.005%		
* Difference greater than 1% of IFRS reported amount							

Panel A shows the reported net income for sample firms under Chinese Accounting Standards (CAS) in the mainland China A-share market, and under IFRS in the Hong Kong H-share market. The "CAS" net income for 2006 is reported prior to the requirements of the new PRC GAAP. For the same companies, there is over a 3% difference between the net assets reported in the A-share market under CAS, and the amounts reported in the H-share market using IFRS. After the requirements of the new PRC GAAP started in 2007, all yearly differences in reported net assets were less than 1% (from 0.033% to 0.897%). With the exception of 2008, yearly percentage differences in reported net income declined each year. Further, the standard deviation of the differences (not shown in the table) also has a downward trend indicating less variability over time in reported differences. Lastly, the reported net income is lower under CAS than for IFRS every year considered in this study.

Panel B shows the assets under two sets of accounting standards. Similar to the results for net income, the net assets for the same dual-listed companies are over 1% less in the A-share market under CAS reporting as compared to H-shares under IFRS reported net assets. After the requirements of the new PRC GAAP, all yearly differences in reported net assets were less than 0.2% (from 0.001% to 0.133%). Again, the standard deviation of the differences (not shown in the table) has a downward trend indicating less variability over time in reported differences. The reported net assets are slightly higher under CAS than IFRS for all years after 2007.

Results of t-Tests for Convergence

Table 2 shows the results of t-tests that are used to determine the relative convergence of PRC GAAP with IFRS for reported net income and net assets.

TABLE 2 PAIRED SAMPLES t-TESTS FOR CONVERGENCE OF PRC GAAP TOWARDS IFRS

Panel A: Net Income							
Fiscal Year	<i>t</i> -stat.	Critical Value $t_{\alpha=0.05}$	df	P-value (two-tail)			
2006	-2.2595*	2.0860	20	0.035*			
2007	-1.3717	2.0555	26	0.182			
2008	-0.0950	2.0555	26	0.925			
2009	-1.7602	2.0518	27	0.090			
2010	-1.0223	2.0518	27	0.316			
2011	-1.1025	2.0518	27	0.280			

^{*} statistically significant at < 0.05

	Panel B: Net Assets							
Fiscal Year	<i>t</i> -stat.	Critical Value $t_{\alpha=0.05}$	df	P-value (two-tail)				
2006	-1.2889	2.0860	20	0.212				
2007	-0.0053	2.0555	26	0.996				
2008	0.7309	2.0555	26	0.471				
2009	0.7541	2.0518	27	0.457				
2010	0.9955	2.0518	27	0.328				
2011	0.0763	2.0518	27	0.940				

^{*} statistically significant at < 0.05

Panel A indicates that there is a significant negative difference between reported income under PRC GAAP and IFRS for the year before the new PRC GAAP took effect (t = -2.2595; p < 0.035). This result supports hypothesis H_{1a}. No significant differences are found between reported net income under the new PRC GAAP and IFRS subsequent to the requirements of the new PRC GAAP (i.e., after 2006). Therefore, the analysis indicates that there is convergence subsequent to the compulsory adoption of the new PRC GAAP. This result supports hypothesis H_{1b} suggesting that the efforts of convergence made in

the 2007 to change accounting practice was effective in reducing the difference between PRC GAAP and IFRS.

Panel B of Table 2 presents the results for differences in net assets between the two reporting standards. The results indicate that there is no significant difference between reported net assets under PRC GAAP and IFRS for any of the years considered in this study (i.e., before or after the new PRC GAAP took effect. Hypothesis H_{2a} predicts a significant difference for net assets in 2006, and hypothesis H_{2b} predicts no subsequent significant differences. The largest statistical difference did occur in 2006 (t =-1.2889; p < 0.2121), but this is not considered significant for typical hypothesis testing. Using 2006 as a base, it appears that there was little room for convergence since there was minimal difference in reported net assets between PRC GAAP and IFRS before (or after) the requirements of the new PRC GAAP. While the difference between net assets under two sets of accounting standards is relative insignificant, the net assets per PRC GAAP and per IFRS is converging and continues to have progressive changes over time, as shown in the descriptive statistics in Table 1.

The Difference in Reported Amounts Between the New PRC GAAP and IFRS

Chen et al. (1999) suggest that the differences between accounting treatments under PRC GAAP and IFRS are the main reasons for the differences in reported net income and net assets. Table 3 provides nine identifiable accounting issues that cause the difference in net income and net assets of sampled companies, and they are ranked in terms of the number of affected companies for the latest fiscal year 2011. The three most influential factors are (1) the safety production fund, (2) government grants, and (3) fixed assets revaluation and depreciation.

TABLE 3 RANK OF FACTORS THAT CONTRIBUTE TO THE DIFFERENCES BETWEEN PRC GAAP AND IFRS

Rank (in terms of no.		No. of Affected		
of affected companies)	Factors	Companies		
1	Safety Production Fund	7		
2	Government Grants	6		
3	Fixed Assets Revaluation and Depreciation	5		
4	Business Combinations involving Enterprises under Common Control	4		
Provision of Benefits (Post-retirement Benefits, Housing Benefits, et		2		
6	Land Use Rights	2		
7	Circulation Right for Equity Separation	2		
8	Interest Capitalization	2		
9	Foreign Currency Translation	2		
10	Others	3		

The safety production fund. One factor contributed to differences between PRC GAAP and IFRS reported amounts for 7 of the study's sample firms: the provision for safety production fund. Under PRC GAAP, companies involved in mining, construction, production of dangerous goods and the transport industry are required to make provisions for a safety production fund. The safety production fund is established on the basis of production or actual sales. The safety production fund is recognized in profit or loss with a corresponding increase in reserve. Such reserve is reduced for expenses incurred for safety production purposes or, when safety production related fixed assets are purchased it is reduced by the purchased cost. These assets are not depreciated thereafter. However, no safety production fund is needed under IFRS. Safety production expense is recognized in profit or loss when incurred. The yearly provision of safety production fund smoothes the reported net income of financial statements, and directly results in less net profit under PRC GAAP than IFRS.

Government grants. The accounting treatment of government grants caused a difference in reported amounts between PRC GAAP and IFRS for 6 sample companies. Prior to implementation of the new PRC GAAP, such grants were to be recognized in equity and the initial book value of the assets was charged to income statement over the useful life of the asset. From 2007 onwards, in accordance with the new PRC GAAP, government grants are generally recognized as deferred income and then amortized to profit or loss over the useful life of the related assets. IFRS is more flexible than PRC GAAP. According to the IAS 20 (IASB 2008b), there are two optional approaches to the accounting treatment of government grants related to assets. One method is similar to PRC GAAP, and the other requires recognition of government grants as a deduction from the book value of the related asset (KPMG 2011). PRC GAAP and IFRS are not completely converged in terms of the accounting treatment of government grants, but Chinese accounting reforms for this item are progressing towards IFRS. However, in the annual reports of our sample companies, most of the government grants were received before the implementation of the new PRC GAAP, and these grants are recorded in accordance with old PRC GAAP (debited as the relevant assets and credited as capital reserve). No adjustments of consolidated financial statements have been made in latest financial report to comply with the new PRC GAAP. The nonuniform accounting treatments of this item contribute to the difference in the balance of deferred income and the amount of depreciation expense. As a result, financial statements under PRC GAAP present lower net income and higher net assets, compared to those under IFRS.

Fixed assets revaluation and depreciation. The third most significant difference between the new PRC GAAP and IFRS is the accounting measurements for property, plant and equipment (PPE). In China, the state has the sole ownership of land, and companies can only purchase land-use rights (LUR). As a result, land is excluded from the PPE category, and LUR are included in intangible assets (KPMG 2011). The new PRC GAAP and the IAS 16 (IFRS – IASB 2008a) have a common accounting measurement for first recognition, but they differ in after-recognition measurement. Under both accounting standards, initial costs are generally capitalized. However, after-recognition, companies applying IFRS are allowed to choose either the cost method or a revaluation method. Under the new PRC GAAP, only the cost method for fixed assets is permitted. Due to the prohibition of revaluation model under the new PRC GAAP, there is no need to recognize a revalued amount in equity or income. The divergent afterrecognition measurements lead to the difference in financial statements and have an impact on subsequent depreciation expenses under both accounting standards.

Additionally, some differences in depreciation methods exist. IFRS requires each significant part of an item of fixed assets to be depreciated separately while the new PRC GAAP only requires parts with different useful life or economic characteristics to be separately depreciated. Accordingly, the inconsistent depreciation methods have an impact on the depreciation expenses and thus lead to difference in net income and net assets under the new PRC GAAP and IFRS.

Results of Tests on Value Relevance of PRC GAAP and IFRS (H₃ and H₄)

The results of the value relevance tests are provided in this section. First, we estimate the value relevance under PRC GAAP and IFRS for the period of 2006 to 2011 using the Pearson correlations between share price and accounting information on an overall basis (using all six years' data). The results of the overall data correlations are presented in Table 4. Panel A shows that, for firms in China's A-share market, PRC GAAP earnings and book values are highly correlated with stock prices (values). All correlation coefficients are significant at p < 0.001. Similar results are reported for the same companies in the H-share market where accounting information is based on IFRS (i.e., all correlation coefficients are significant at p < 0.001).

TABLE 4
PEARSON CORRELATION COEFFICIENTS

Panel A: PRC GAAP	P_A	$EPS_{PRCGAAP}$	$BVPS_{\!PRCGAAP}$
P_{A}	1		
$EPS_{PRCGAAP}$	0.6419***	1	
$BVPS_{PRCGAAP}$	0.6909***	0.7850^{***}	1
Panel B: IFRS	P _H	EPS _{IFRS}	BVPS _{IFRS}
P _H	1		
EPS_{IFRS}	0.6934***	1	
$BVPS_{IFRS}$	0.8029***	0.7532***	1

^{***} Correlation is significant at the 0.001 level (2-tailed)

Notes: P_A is a firm's A-share price in the SHSE or SZSE markets on the last trading day of the fourth month of year t+1 (following the end of fiscal year t); $EPS_{PRC\,GAAP}$ is the firm's reported EPS under PRC GAAP for fiscal year t; $EPS_{PRC\,GAAP}$ is firm's $EPS_{PRC\,GAAP}$ is firm's $EPS_{PRC\,GAAP}$ is firm's $EPS_{PRC\,GAAP}$ at the end of fiscal year t; $EPS_{PRC\,GAAP}$ is firm's reported EPS under the fourth month of year t+1 (following the end of fiscal year t); EPS_{IFRS} is firm's reported EPS under EPS_{IFRS} for fiscal year t; EPS_{IFRS} is firm's EPS_{IFRS} is other value relevant information of firm for fiscal year t.

The largest correlation coefficient is between stock prices and BVPS under IFRS reporting at over 80% (compared to 69% for PRC GAAP). The price associations with EPS under both accounting standards are similar at 64% and 69%. Such findings support the view that IFRS is based on a balance sheet-oriented conceptual framework and the fair value measurement reinforces the value relevance of the balance sheet (Gjerde et al. 2008).

The correlation coefficients between two independent variables of this model are also tested. As can be seen from Table 4, the results reveal that the correlations between EPS and BVPS are 78% for PRC GAAP and 75% for IFRS. Generally, the correlations among the independent variables are not expected to be high. However, in the prior studies (e.g., Sami & Zhou 2004; Hung and Subramanyam 2004; Konstantinos & Athanasios 2011), a similar model is applied and the high correlations are not of concern, and are acceptable without further analysis. Therefore, EPS and BVPS are two potentially significant independent variables that are to be included the valuation model (Sami & Zhou 2004).

Table 5 presents the results of estimating the value relevance of PRC GAAP and IFRS accounting information for our sample companies for each year from 2006 to 2011. The table provides the regression coefficients for each of the two independent variables (EPS and BVPS), the corresponding t-statistics and p-values, and the adjusted R^2 and F-statistic for each model year. A general observation is that for each of the six years examined, both models show a high degree of fit with F-statistics ranging from 11.19 (p < 0.003) to 162.65 (p < 0.000), and adjusted R^2 values ranging from 0.55 to 0.92. This suggests that both PRC GAAP in the A-share market and IFRS in the H-share market provide value relevant accounting information.

TABLE 5
VALUE RELEVANCE OF PRC GAAP VS. IFRS
REGRESSION COEFFICIENTS (t-VALUES), AND (p-VALUES)

	PRC GAAP				IFRS			
	$P_A = \beta_0 + \beta_1 EPS_{PRC GAAP} + \beta_2 BVPS_{PRC GAAP} + e_0$				$P_H = \beta_0 + \beta_1 EPS_{IFRS} + \beta_2 BVPS_{IFRS} + e_0$			
Annual			Adj.				Adj.	
regression	EPS	BVPS	\mathbb{R}^2	F-stat.	EPS	BVPS	R^2	F-stat.
2006	-8.709	11.488	0.545	11.19**	-2.620	5.900	0.726	24.79***
	(-0.808)	(3.118)**			(0.637)	(4.556)***		
	(0.432)	(0.007)			(0.533)	(0.000)		
2007	6.392	2.466	0.531	14.58***	32.371	-0.759	0.835	51.68***
	(0.845)	(1.370)			(3.494)**	(-0.416)		
	(0.407)	(0.184)			(0.003)	(0.683)		
2008	-1.613	3.127	0.703	30.60***	-5.018	4.288	0.840	56.03***
	(-0.841)	(6.328)***			(-2.820)*	(9.278)***		
	(0.409)	(0.000)			(0.011)	(0.000)		
2009	8.471	1.686	0.771	44.68***	19.150	1.093	0.759	37.31***
	(2.770)*	(3.331)**			(4.616)***	(1.946)		
	(0.011)	(0.003)			(0.000)	(0.065)		
2010	8.519	2.197	0.885	104.74***	9.328	3.480	0.829	64.13***
	(3.100)**	(4.392)***			(1.957)	(4.206)***		
	(0.005)	(0.000)			(0.062)	(0.000)		
2011	3.001	1.929	0.923	162.65***	5.178	2.562	0.849	77.10***
	(2.611)*	(7.877)***			(2.185)*	(5.050)***		
	(0.015)	(0.000)			(0.039)	(0.000)		

^{*, **, ***} statistically significant at < 0.05, 0.01, and 0.001 respectively.

Notes: P_A is a firm's A-share price in the SHSE or SZSE markets on the last trading day of the fourth month of year t+1 (following the end of fiscal year t); ; $EPS_{PRC\ GAAP}$ is the firm's reported EPS under PRC GAAP for fiscal year t; $BVPS_{PRC\ GAAP}$ is firm's BVPS under PRC GAAP at the end of fiscal year t; P_H is a firm's H-share price in the SEHK market on the last trading day of the fourth month of year t+1 (following the end of fiscal year t); EPS_{IFRS} is firm's reported EPS under IFRS for fiscal year t; EPS_{IFRS} is firm's BVPS under IFRS at the end of fiscal year t; EPS_{IFRS} is other value relevant information of firm for fiscal year t.

Hypothesis H_{3a} suggests an increase in the value relevance of reported net income under PRC GAAP over the period from 2006 to 2011. The EPS column under the PRC GAAP model shows that EPS is not a significant contributor to sample company A-share stock prices in 2006, 2007, or 2008 (p < 0.432, 0.407, and 0.409, respectively). However, the EPS is a significant factor during 2009, 2010, and 2011 (p < 0.011, 0.005, and 0.015, respectively). Thus, reported earnings are shown to improved value relevance over the testing window of this study, and these results support H_{3a} .

Hypothesis H_{3b} predicts an increase in the value relevance of reported net assets under PRC GAAP over the 2006 to 2011study period. The BVPS column under PRC GAAP indicates that there was a significant relationship between reported net assets and A-share stock prices in 2006 (prior to establishment of the new PRC GAAP) (t=3.118; p<0.007). This was followed by 2007 where the coefficient for BVPS is not significant (p<0.184). The most significant coefficients for BVPS are found in the final four years studied, where all coefficients are significant at p<0.003 or better. Therefore, the results indicate that there is a general improvement in the value relevance of net assets over the study period, although probably not as strong as the improvement for earnings. These results provide some support for H_{3b} .

H₄ suggests a comparison is the value relevance between PRC GAAP and IFRS. It is hypothesized that the new PRC GAAP will provide more value relevant accounting information that IFRS for dual-listed AH-share Chinese companies. The coefficients for PRC GAAP EPS and BVPS are both significant throughout the final three years of the study. In comparison, the level of significance for the EPS and BVPS coefficients under IFRS appear to have less of a trend. At least one of the two coefficients lacks significance in explaining stock prices in four of the six years considered (2006, 2007, 2009, and 2010).

As discussed above, both PRC GAAP in the A-share market and IFRS in the H-share market provide value relevant accounting information based on significant regression F-statistics throughout the years studied. However, an examination of the trend in explanatory power is interesting. For the PRC GAAP regression, the F-statistic for 2006 is 11.194 and increases every year through 2011 where the F-statistic is at 162.654. The F-statistics for the IFRS regressions start at 24.793 in 2006, and increase every year to 77.403 in 2011. It appears that the value relevance of PRC GAAP started below that of IFRS for the sample companies. However, the value relevance grew at a faster rate for PRC GAAP and has surpassed that of IFRS since 2010.

Similar evidence is provided by examining the adjusted R² levels for the two models. The adjusted R² for the PRC GAAP equation starts at 54.5% in 2006 and trends up to 92.3% in 2011. In comparison, the R² for the IFRS equation remains moderately consistent from 72.6% in 2006 to 84.9% in 2011, and no obvious trend noted. Again, it appears that the value relevance for PRC GAAP was less that IFRS before the new PRC GAAP, but it has surpassed that of IFRS over the years covered by this study.

CONCLUSIONS AND IMPLICATIONS

This study investigates three issues and attempts to answer related questions regarding Chinese accounting standards (PRC GAAP): (1) are there significant differences between reported amounts under PRC GAAP and IFRS (before and after the requirements of the new PRC GAAP beginning in 2007? (2) have there been improvements in the value relevance of amounts reported under PRC GAAP over the six-year period from 2006 to 2011, and (3) which accounting standards (new PRC GAAP or IFRS) provide the most value relevance for Chinese AH-share companies? A unique opportunity is provided to examine these issues because of the existence of 28 companies that have stock shares trading in both the mainland Chinese stock markets which uses PRC GAAP for financial reporting, and the Hong Kong stock exchange which allows financial reporting based on IFRS. Thus, the same companies' shares trade on separate markets using separate financial reporting standards.

The results of the study on the first issue of convergence of PRC GAAP with IFRS indicate that there were significant differences between PRC GAAP net income and IFRS net income for the sample firms during 2006. There was also a more than 1% difference in net assets for the same year (although not significant). Beginning in 2007 with the establishment the "new PRC GAAP" and through the end of the study period in 2011, there were no significant differences in reported net income or net assets between the two sets of standards. Thus, there has been substantial convergence of PRC GAAP with IFRS that was brought about by the contributions of the new PRC GAAP. The new PRC GAAP still accommodates the specificities of the Chinese market situation with regard to accounting for the safety production fund, government grants, and fixed assets revaluation and depreciation.

The results related to the second issue of improvements in the value relevance of PRC GAAP accounting information indicate that PRC GAAP has shown improved value relevance over the testing window of this study. In particular, PRC GAAP EPS does not possess significant value relevance during the first three years, but does have significant value relevance during each of the last three years studied. The strongest level of significance for the value relevance of PRC GAAP BVPS was found for each of the last four years of the study. Further, the EPS and BVPS explained an increasing amount of the variance in stock prices every year during the study. Therefore, the evidence supports the existence of an improvement in the value relevance of PRC GAAP over the study period.

The third issue examines the comparative value relevance of PRC GAAP with IFRS. According to the results for value relevance of accounting information under PRC GAAP and IFRS, it can be

concluded that both accounting standards provide useful accounting information and have significant explanatory power. Under each set of standards, EPS and BVPS are useful and relevant to explain the variation in share price, and each has significant value relevance.

A closer examination reveals that H-share investors have a relatively constant reliance on financial information provided under IFRS, which results in the stability of value relevance of accounting information under IFRS during the sample period. Alternatively, it appears that investors in the A-share market have tended to increase their reliance on PRC GAAP accounting information, which has lead to an improvement in the value relevance of PRC GAAP amounts over time. Consequently, since 2010, PRC GAAP has provided more useful and relevant accounting information to the stock market than IFRS for AH-share Chinese companies. These results may be attributable to the features of the Chinese environment, including a taxation-oriented financial system, government interventions, an insufficient market-oriented economy, and an inefficient internal control mechanism within Chinese companies.

The results of this study imply that current PRC GAAP which incorporates both traits of IFRS and features of Chinese accounting practices is more appropriate for Chinese companies at this time. Further research into the effects of other potentially significant variables is suggested to evaluate the convergence level and the effectiveness of the new PRC GAAP.

While the adoption of the new PRC GAAP means great change for Chinese companies, this is not the end of the efforts towards convergence, or to improve upon Chinese accounting standards. In 2010, the MOF has issued a Roadmap of continuous convergence between China Accounting Standards and IFRS (China Accounting Standards Committee 2010). The roadmap does not anticipate adoption of IFRS, but rather a increase in consistency between Chinese standards and IFRS with consideration for China's unique political, economic and legal environments. Also, the roadmap suggests that Chinese accounting professionals should become involved in influencing the IFRS standard setting process.

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