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Does Convergence of Accounting Standards Lead to the Convergence of Accounting Practices? A Study from China

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Abstract

In this empirical study we examine whether China's efforts to converge domestic accounting standards with International Financial Reporting Standards (IFRS) over the past 15 years have resulted in the successful convergence of Chinese listed firms. This study is unique in that we evaluate convergence of firms' accounting practices from three perspectives: (1) the level of compliance with Chinese GAAP and IFRS, (2) the consistency of accounting choices under Chinese GAAP and IFRS, and (3) identification of significant differences in the net incomes produced under Chinese GAAP and IFRS (earnings gap).

Using the 1999 and 2002 annual reports of 79 Chinese listed firms we find improvement in both compliance with IFRS and in the consistency of the accounting methods used in annual reports prepared under Chinese GAAP and IFRS. We also find a reduction in the earnings gap from 1999 to 2002. However, interestingly we observed that Chinese listed firms' compliance with IFRS is significantly lower than their compliance with Chinese GAAP. Overall we believe that our findings suggest that in China the convergence of accounting standards has been a conduit to the convergence of accounting practices.

Keywords: Accounting convergence; Accounting regulations in China; Capital markets in China; Emerging markets

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1. Introduction

The primary objective of the International Accounting Standard Board (IASB) is to develop a single set of high quality accounting standards for use in global financial reporting. To this end, the IASB and its predecessor have issued 41 International Accounting Standards (IAS) and seven International Financial Reporting Standards (IFRS).[1] As an integral part of its objective the IASB promotes the convergence of national accounting standards and IFRS. The IASB's efforts have resulted in the adoption of IFRS by a considerable number of countries. Among the 99 countries that have either adopted or permitted the use of IFRS for domestic listed companies as of August 2005, 80% are from emerging capital markets (Deloitte & Touche, 2005). Along with the IASB's success, however, there is concern that the convergence of accounting standards may not lead to the convergence of accounting practices if firms do not comply with the standards (Street, Gray, & Bryant, 1999; Street & Bryant, 2000). This concern is accentuated in emerging market economies that may not have the accountants, auditors, and regulators to support compliance. As pointed out by Eccher and Healy, the standards developed by the IASB are "primarily based on those for countries with highly developed capital markets… It is questionable whether such standards are also optimal for developing and transitional economies that lack the infrastructure for monitoring managers' financial reporting decisions" (p. 1).

In this empirical study we use China — as a case of an emerging market economy — to examine whether its efforts to converge domestic standards with IFRS over the last 15 years have been successful, i.e., do Chinese listed firms' accounting practices converge with IFRS? China provides a clear opportunity to evaluate the convergence debate. Since 1992, China has issued four sets of accounting regulations (1992, 1998, 2001, and 2006); each replaced the previous one and was considered to be in greater conformity with IFRS (Chen et al., 2002; Pacter & Yuen, 2001; IASB, 2006). It has been noted in the literature and by the IASB that impressive progress has been made toward the convergence of Chinese accounting standards with IFRS (IASB, 2005; Xiang, 1998). However, Chen, Gul, and Su (1999) and Chen et al. (2002) find that there is a significant difference in both 1992 and 1998 between Chinese GAAP and IFRS-based net incomes of Chinese listed firms. Our study extends Chen et al. (2002) by evaluating the level of and the improvement in the convergence of Chinese listed firms' accounting practices with IFRS since promulgation of the 2001 Chinese GAAP.

In addition, this study contributes to the literature by evaluating the convergence of accounting practices using three evaluation methods: (1) the level of a firm's compliance with accounting regulations, (2) the consistency of firms' accounting choices under two sets of accounting regulations, and (3) whether the net incomes produced by the same firm under different sets of accounting standards are comparable. Each of these methods evaluates different aspects of convergence. No previous study has integrated these three approaches, most likely due to the difficulty in obtaining suitable sample firms. We are able to study these evaluation methods because of China's unique market segmentation which

[1] To simplify the presentation, we use the term IFRS to refer to both International Financial Reporting Standards issued by the IASB and IAS issued by the IASB's predecessor, the International Accounting Standards Committee (IASC).

requires certain firms, those that issue both A and B-shares, to issue two sets of annual reports, one based on Chinese GAAP and the other based on IFRS.

We find that China's efforts to converge Chinese accounting standards with IFRS have been successful in the convergence of Chinese firms' accounting practices with IFRS. We also find that the convergence of accounting practices in China has occurred progressively as evidenced by the improvement in convergence with the issuance of Chinese GAAP in 2001. Although these findings are specific to China, they should also be of interest to regulators in other developing capital markets who seek to improve financial reporting through convergence of their standards with IFRS. Regulators in these countries face many of the same obstacles encountered by China, such as lack of accounting professionals, insufficient resources for regulation and enforcement, and questionable practices of local auditors.

The remainder of this paper is organized as follows: Section II provides the background and Section III presents prior research and hypotheses development. Section IV discusses the research design. Section V presents the results and Section VI provides a summary of the study.

2. Background

2.1. Chinese capital market development and market segmentation

The Chinese capital market developed rapidly since its establishment in the early 1990s. By the end of 2004, China's total market capitalization was approximately RMB3.71 trillion, or approximately $464 billion U.S. dollars. This represents 24% of Gross Domestic Product (GDP).[2] The number of listed firms increased from 14 at the beginning of 1990 to 1377 by the end of 2004 (CSRC, 2005). This rapid market development, and the desire to attract domestic and overseas capital, provided direct incentives and pressures for both the Chinese government and listed firms to improve the quality of financial reporting.

The Chinese domestic capital market is segmented into A-share and B-share markets.[3] A-shares can only be owned and traded by Chinese citizens, while B-shares can only be owned and traded by foreign investors.[4] By the end of 2004, a total of 1463 stock offerings were made by the 1377 listed firms on Chinese capital markets — 1353 A-share issues, 24 B-share issues, and 86 A- and B-share issues (CSRC, 2005).

2.1.1. Accounting regulations

The accounting regulations applicable to a Chinese listed firm depend on the type of security issued, A- or B-shares or both. Firms that issue A-shares are required to comply with Chinese GAAP, while firms that issue B-shares are required to comply with IFRS. Firms that issue both A- and B-shares are required to issue two sets of annual reports, one based on Chinese GAAP and the other based on IFRS. The IFRS-based annual report must be audited by an internationally recognized auditor, but not necessarily a Big 4 firm, while the Chinese GAAP-based annual report may be audited by local accounting firms. Both sets of annual

[2] Chinese 2004 GDP was $1.93 trillion in U.S. dollars (China Daily 2005).

[3] A third type of shares called H-shares are listed in Hong Kong. Unlike A- and B-shares that are traded in mainland China, H-shares are traded in Hong Kong and subject to Hong Kong Accounting Standards (HKAS).

[4] Since 2001 Chinese citizens have been allowed to purchased B-shares using U.S. dollars.

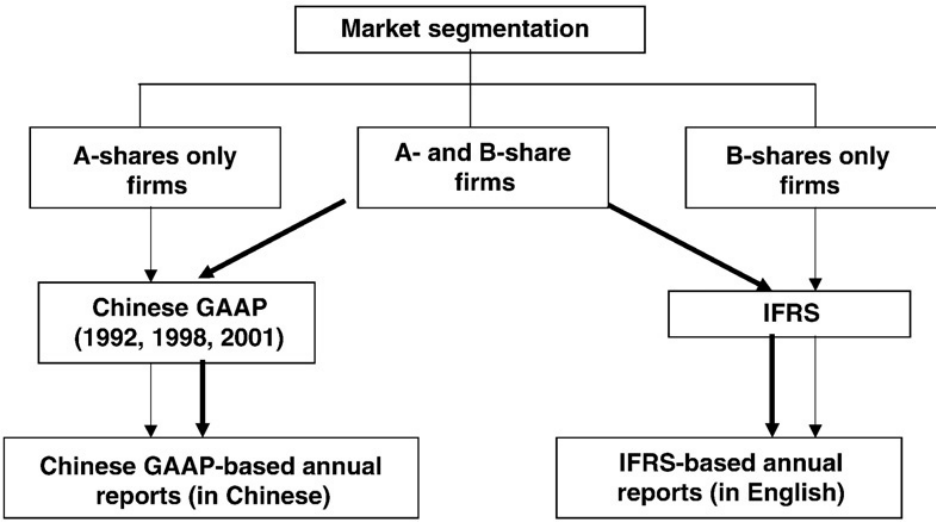

Fig. 1. Market segmentation and applicable accounting regulations in China as of December 31, 2005.

reports must be released to the public simultaneously and any difference in net incomes between Chinese GAAP and IFRS must be reconciled and presented in the financial statement footnotes. Fig. 1 and Table 1 depict the Chinese capital market segmentation and the evolution of accounting regulations for Chinese listed A-share firms as of December 31, 2005.

While B-share firms have historically been required to follow IFRS, the accounting regulations for firms that issue A-shares have evolved in three stages as shown in Table 1. The first stage is from 1992 to 1997. Throughout this stage all listed A-share firms were required to follow the *Experimental Accounting System for Joint Stock Limited Enterprises* (1992

Table 1
Evolution of accounting regulations for listed A-share firms in China as of December 31, 2005

	Stage 1	Stage 2	Stage 3
Period	1992.1.1–1997.12.31	1998.1.1–2000.12.31	2001.1.1–2006.12.31
Accounting regulations in effect throughout the stage	1992 Accounting System [a] Basic Standard [d] CSRC Regulations [e]	1998 Accounting System [b] Basic Standard [d] CSRC Regulations [e] CASs [f] Accounting Law [g]	2001 Accounting System [c] Basic Standard [d] CSRC Regulations [e] CASs [f] Accounting Law [g]
Referred to in the study as	1992 GAAP	1998 GAAP	2001 GAAP

[a] "Experimental Accounting System for Joint Stock Limited Enterprises" issued by the Ministry of Finance of China (MOF) in 1992.
[b] "Accounting System for Joint Stock Limited Enterprises" issued by the MOF in 1998.
[c] "Accounting System for Business Enterprises" issued by the MOF in 2001.
[d] "Accounting Standard for Business Enterprises" issued by the MOF in 1992.
[e] "Form and Content of Information for Disclosure by Companies with Securities Issued to the Public" and other regulations issued by the CSRC.
[f] "Chinese Accounting Standard" issued by the MOF.
[g] "Accounting Law of the People's Republic of China" issued in 1995 and revised in 2000 by the State Council of China.

Accounting System) and the *Accounting Standard for Business Enterprises* (Basic Standard) issued in 1992 by the Ministry of Finance (MOF), as well as accounting regulations issued by the Chinese Securities Regulatory Commission (CSRC). The MOF is the authoritative body which promulgates accounting standards in China. The CSRC, established in 1992, is the capital market regulator in China whose authority and operations are analogous to those of the Securities and Exchange Commission (SEC) in the United States. In this study we refer to the accounting regulations that were issued in 1992 in China and were in effect throughout this period as 1992 Chinese GAAP. The 1992 Chinese GAAP marked a radical change in China's accounting rules and regulations, representing a shift in focus from providing information for a central government-planned economy to a socialist-market economy.

The second stage of regulatory development was from 1998 to 2000 and is represented by the adoption of the *Accounting System for Joint Stock Limited Enterprises* (1998 Accounting System) issued by the MOF. This regulation replaced the 1992 Chinese GAAP and "was issued specifically to eliminate discrepancies between Chinese GAAP and IAS in the 1992 regulation" (Chen et al., 2002, p. 184). In addition, during this period A-share firms were required to follow the *Chinese Accounting Standards* (CAS) issued by the MOF and the accounting law issued by the State Council in 1995. We refer to the accounting regulations that were in effect throughout this stage as 1998 Chinese GAAP.

The third stage of development was from 2001 to 2006,[5] represented by the MOF's issuance of the *Accounting System for Business Enterprises* (2001 Accounting System) effective January 1, 2001, which replaced the 1998 Accounting System. We refer to the accounting regulations that were in effect during this period for A-share firms as 2001 Chinese GAAP. The 2001 GAAP moves Chinese accounting standards further toward convergence with IFRS (Pacter & Yuen, 2001). For example, inventory valuation at lower of cost or market (LCM) was optional in 1998 GAAP but required in 2001 GAAP and recognition of impairment losses was required only for investments in 1998 GAAP, but it was also required for property, plant, and equipment (PP&E), intangible assets, construction in process, and investment property in 2001 Chinese GAAP. These requirements, among others, moved Chinese GAAP toward convergence with IFRS. Table 2 compares the accounting treatment for selected key measurement items under 1998 and 2001 Chinese GAAP with IFRS. This comparison reflects the progress toward convergence.

3. Prior research and hypotheses development

Prior to 2001 the goal of the International Accounting Standards Committee (IASC), the predecessor of the IASB, was harmonization of accounting standards across countries through development of a set of standards that could be used as a model for standard setters in their respective countries. However, in 2001, when the IASB replaced the IASC, its goal became one of "convergence of accounting standards — development of a single set of high quality,

[5] A revised Chinese GAAP effective on January 1, 2007 (2007 Chinese GAAP), was issued in February 2006. The 2007 Chinese GAAP, including revised Basic Standard and 38 CASs, supersedes the 2001 Accounting System and the CASs previously issued. It signifies the beginning of the fourth stage of China's regulatory development. The effect of the 2007 Chinese GAAP on the convergence of Chinese listed firms' practices with IFRS is beyond the scope of this study, as 2007 annual reports were not available at the time of this study.

Table 2
A comparison of eight revised accounting methods

Item	1998 Chinese GAAP	2001 Chinese GAAP	IFRS [a]
Inventory valuation	At historical cost or the lower of cost and net realizable value (LCM).	At LCM.	Same as the 2001 Chinese GAAP.
Short-term investments valuation	At historical cost or LCM.	At LCM.	At fair market value.
Bad debt allowance	Allowance either based on a government-approved percentage from 0.3%–0.5% or determined by company.	Determined by company.	Same as the 2001 Chinese GAAP.
Construction in process	At amortized cost.	At amortized cost adjusted for impairment.	[B] Same as the 2001 Chinese GAAP. [A] At fair market value at the date of revaluation adjusted for depreciation and impairment.
Property, plant, and equipment (PP&E) valuation	At amortized cost.	At amortized cost adjusted for impairment.	[B] Same as the 2001 Chinese GAAP. [A] At fair market value at the date of revaluation adjusted for depreciation and impairment.
Intangible assets valuation	At amortized cost.	At amortized cost adjusted for impairment.	[B] Same as the 2001 Chinese GAAP. [A] At fair market value at the date of revaluation adjusted for depreciation and impairment.
Investment property	At amortized cost.	At amortized cost adjusted for impairment.	[B] Same as the 2001 Chinese GAAP. [A] At fair market value at the date of revaluation adjusted for depreciation and impairment.
Pre-operating expense	Deferred as an asset until the entity begins operations, then amortized in no more than five years.	Deferred as an asset until the entity begins operations, then charged to expense at the first month of operation.	Charged to expense when incurred.

[a] For certain IFRS, a benchmark measurement is the preferred measurement, however, an alternate treatment is also permitted. [B] Refers to the benchmark treatment and [A] refers to the alternate treatment.

understandable and enforceable global accounting standards" (Pacter, 2001, p.67). Studies published prior to 2001 used the term "harmonization" when referring to the comparability and compatibility of accounting standards.[6] Published research subsequent to 2001 has frequently used the term "convergence" to describe this process. In this study, for consistency and simplicity, we use the term "convergence" to denote both harmonization and convergence.

[6] A comprehensive review of harmonization studies can be found in Meek and Saudagaran, 1990; Wallace and Gernon, 1991; Gernon and Wallace, 1995; Prather and Rueschhoff, 1996; Saudagran and Meek, 1997.

In 2005, China's regulators stated that the intent of their standard-setting program was convergence with IFRS (IASB, 2005) and, as discussed earlier, each successive stage of the development of Chinese GAAP (1992, 1998, and 2001) has been considered more convergent with IFRS. However, concerns have been raised in prior research over the applicability of IFRS to Chinese accounting practices (Xiang, 1998). Chen et al. (2002) found that convergence under 1998 Chinese GAAP "did not immediately eliminate or significantly reduce the earnings gap [between 1998 Chinese GAAP and IFRS-based net incomes of Chinese listed firms]" (p. 195). Tang (2000) noted "compliance with a set of accounting standards depends not only on the acceptance of the constituency, but also on the competency of the audit profession that makes judgments on how they have been applied… [In China] the independence of the CPA firms is greatly compromised" (p. 98). Concerns have also been expressed over the effect of Chinese preparers' level of competence. Again, as Tang (2000) points out "most accountants working in the industries received education that is not compatible with new approaches. It is more so with the management" (p. 98). These concerns call into question the relevance of China's convergence efforts. In this study we evaluate whether China's efforts to converge 2001 Chinese GAAP with IFRS have resulted in the convergence of Chinese firms' accounting practices with IFRS. To investigate this issue we compare the level of convergence of Chinese listed firms' accounting practices with IFRS in 1999 and 2002. We believe that evidence of improvement in the level of convergence from 1999 to 2002 will provide support for the argument that convergence of accounting standards leads to the convergence of accounting practices.

As mentioned earlier, three methods have been used in prior research to evaluate the convergence of accounting practices. The first method focuses on firms' compliance with accounting standards (compliance). This stream of research is motivated by the concern that converging accounting standards may not lead to converging accounting practices if firms do not comply with the designated standards (Street et al., 1999; Street & Bryant, 2000; Chamisa, 2000; Street & Gray, 1999; Frost & Pownall, 1994; Glaum & Street, 2003; Street & Gray, 2001). Compliance with Chinese GAAP and IFRS is mandatory for Chinese firms that issue both A and B-shares. However, Tay and Parker (1990) remark that "even where compliance with standards is legally required, companies may not comply if it is perceived that the consequences of non-compliance are not serious" (p. 75). Street and Gray (2001) and Xiao (1999) find evidence that Chinese listed firms' compliance with accounting regulations is high. However, neither the Street and Gray nor the Xiao study examine whether a specific firm's compliance with IFRS is the same as its compliance with Chinese GAAP.

The second method used to assess convergence of accounting practices evaluates the consistency of a firm's accounting choices under different sets of accounting regulations (consistency). Research in this area (Van der Tas, 1988; Emenyonu & Gray, 1992, 1996; Archer, Delvaille, & McLeay, 1995; Herrmann & Thomas, 1997) has focused on evaluating the level of convergence in accounting choices for *different* firms *across* countries. Each of these studies used a concentration index to measure convergence and found that the consistency of accounting choices using two sets of accounting regulations was low. None of the studies referenced above evaluated the level of consistency in accounting choices for the *same* firms that prepare annual reports under two sets of accounting standards.

In China, firms that issue both A and B-shares are required to publish Chinese GAAP and IFRS-based annual reports. An inconsistency in accounting choices by these firms may

be due to the flexibility provided to firms in the selection of alternative accounting methods. In such situations, using compliance as the sole criterion to evaluate convergence may be misleading. To address this issue, firms' financial reports prepared under two sets of accounting standards should be reviewed to observe whether firms' actual choices for accounting treatments for similar transactions are consistent.

The third method evaluates the significance of any differences in the net income measures produced by the same firm under different sets of accounting standards (comparability) (Gray, 1980; Weetman & Gray, 1991; Cooke, 1993; Norton, 1995; Rueschhoff & Strupeck, 1998; Street, Nichols, & Gray, 2000). Most studies in this area use the conservatism index developed by Gray (1980) and renamed the "index of comparability" in Weetman, Jones, Adams, and Gray (1998) to measure the differences in financial reporting numbers produced by the same firm under two sets of accounting standards.

As previously discussed, the CSRC requires Chinese firms that issue both A and B-shares to provide a reconciliation schedule of net income between Chinese GAAP and IFRS. The availability of these reconciliation schedules provides for the relatively straightforward examination of the nature and magnitude of any difference between Chinese GAAP and IFRS. The magnitude of the earnings gap (i.e., the difference between Chinese GAAP-based net income and IFRS-based net income) provides a measure of the degree of convergence.

Chen et al. (1999, 2002) find that a significant difference exists in reported net income between Chinese GAAP and IFRS-based net incomes. These findings are based on a sample of annual reports issued by Chinese listed firms that issued both A- and B-shares from 1994–1997 (Chen et al., 1999) and 1997–1999 (Chen et al., 2002). However, no empirical evidence exists on the status of the earnings difference since issuance of 2001 Chinese GAAP.

In this study, we evaluate the level of convergence of Chinese listed firms' accounting practices in 1999 and 2002 with IFRS using measurement of compliance, consistency, and comparability. We examine: (1) whether Chinese listed firms that issue both A- and B-shares are in substantial compliance with both Chinese GAAP and IFRS; (2) whether these firms use consistent accounting treatments in their Chinese GAAP-based and IFRS-based annual reports; and, (3) whether the net income measurements produced by the same firm in accordance with Chinese GAAP and IFRS are or are not significantly different.

Mandating convergence of a national GAAP to IFRS should provide strong motivation to a country's accounting professionals to gain experience and familiarity with the IFRS model of accounting. Consequently convergence in standards should lead to convergence in practice. Therefore, given China's convergence efforts as evidenced by the promulgation of 2001 Chinese GAAP, we should find: (1) improved compliance with IFRS, (2) improved consistency of accounting choices under Chinese GAAP-based and IFRS-based annual reports, and (3) improved comparability as evidenced by a reduced earnings gap between Chinese and IFRS-based net incomes. Thus, we develop the following three hypotheses:

H1. For Chinese listed firms that issue both A and B-shares, the level of firms' compliance with IFRS significantly improved with the issuance of 2001 Chinese GAAP.

H2. For Chinese listed firms that issue both A and B-shares, the level of consistency of accounting treatments in firms' Chinese GAAP and IFRS-based annual reports significantly improved with the issuance of 2001 Chinese GAAP.

H3. For Chinese listed firms that issue both A and B-shares, the comparability of firms' Chinese GAAP and IFRS-based net incomes significantly improved with the issuance of 2001 Chinese GAAP.

While empirical evidence does not exist for these hypotheses in prior literature, in regard to H3 Chen et al. (2002) find that improved convergence of 1998 Chinese GAAP with IFRS did not result in reduction in the earnings gap between Chinese GAAP and IFRS-based net income. However, it is not known whether the 2001 Chinese GAAP resulted in improved comparability of net incomes, that is, a reduction in the earnings gap between Chinese GAAP and IFRS-based net incomes.

4. Research design

4.1. Research instrument

A checklist instrument (checklist) containing 77 measurement items based on IFRS 1–40 was developed to evaluate the extent of the convergence of Chinese firms' accounting practices with IFRS. This checklist focuses on the major measurement items for annual reports and incorporates all IFRSs issued as of January 1, 2002. Three criteria were used to screen IFRS items. First, the items had to be required to be disclosed in the footnotes of listed firms' annual reports under both IFRS and Chinese GAAP. Second, information relating to firms' choices about a particular accounting treatment had to be commonly available from the accounting policies section of companies' annual reports or from the notes to their financial statements (similar to the methodology used by Emenyonu and Gray, 1992). Third, these items had to be applicable to Chinese listed firms. Items not applicable to Chinese listed firms were excluded from the checklist. For example, measurement requirements for pension accounting and derivatives were excluded because they were not common practices in China in the years we examined. The final checklist was compared to similar instruments used in prior research to ensure that IFRS were correctly addressed.[7] The final checklist contained 77 items and is presented in Appendix I.

4.2. Sample and data

The 1999 and 2002 annual reports of firms that issue both A and B-shares in China were selected for this study. Complete annual reports of listed firms were not available to the public prior to 1999.[8] Accordingly, our sample did not include annual reports issued

[7] The following studies were reviewed in developing this instrument: Graham and Wang (1995), Chamisa (2000), Street and Gray (2001), Tang (1994), Nair and Frank (1981), Doupnik (1987), Garrido et al. (2002) and Chen et al. (1999).

[8] Before 1999, the only publicly available information was in the form of a summary of the annual reports published in the CSRC-designated newspapers. Alternatively, annual reports of listed firms could be obtained directly from listed firms. However, even though this is a common practice in western countries, it is not an accepted practice in China. As Xiao (1999) points out, "there is no culture of co-operation between companies and researchers" and "the law does not require listed companies to distribute financial reports directly even to shareholders" (p. 350).

under 1992 Chinese GAAP. In addition, this limitation necessitated the use of 1999 annual reports for the evaluation of convergence with 1998 Chinese GAAP. Therefore, for consistency in analysis we used the 2002 annual reports to evaluate convergence with 2001 Chinese GAAP. All annual reports were downloaded from the website designated by the CSRC (www.cninfo.com.cn).

The initial sample consisted of 87 firms that issued both A and B-shares as of December 31, 2002. Eight firms were excluded from the initial sample because either these firms' A-shares or B-shares were issued after 1999. The final sample consists of 79 firms (39 listed on the Shenzhen Stock Exchange and 40 listed on the Shanghai Stock Exchange) that have both 1999 and 2002 annual reports available.

4.3. Data analysis

The data for the analysis was collected by identifying the accounting treatment under Chinese GAAP and IFRS for each of the 77 measurement items included in the checklist.[9] The annual reports were then reviewed to determine if firms' accounting treatments complied with the Chinese GAAP and the IFRS applicable to the given year and if the accounting choices made by each firm were consistent under Chinese GAAP and IFRS.[10] Questions on the applicable accounting treatment that arose in the review process were examined by a second reviewer. The reported net income numbers under Chinese GAAP and IFRS-based annual reports were also collected. Based on this data, the compliance index, consistency index, and index of comparability were calculated for each firm for 1999 and 2002. These indices were used to test the hypotheses applying both univariate and multivariate analyses.

The compliance index is defined as the percentage of specific regulations applicable to a firm with which that firm complied. In order to compute the compliance index, a compliance score is assigned for each measurement item for each firm. A compliance score of one is assigned if a firm reported an item in accordance with the respective standard. Noncompliance receives a score of zero. If the item is not relevant to that company, the item is not included in the calculation. A firm's compliance index is calculated by dividing the sum of its compliance scores by the number of applicable items, as shown in the formula presented below. This index has been widely used in accounting literature to measure the level of compliance with specific accounting regulations (Street et al., 1999; Chamisa, 2000). The compliance index was calculated for both Chinese GAAP and IFRS for 1999 and 2002.

$$\text{A firm}'\text{s compliance index} = \frac{\text{The sum of compliance scores}}{\text{The number of applicable items}} \quad (1)$$

The consistency index is a measure of the consistency or uniformity in a firm's accounting choices for the same transactions in the financial statements it prepares under

[9] The complete checklist detailing the comparison of applicable accounting treatments in 1998 and 2001 Chinese GAAP and IFRS is available from the authors upon request.

[10] Chinese GAAP and IFRS effective as of January 1, 1998, were used for firms' 1999 annual reports, while Chinese GAAP and IFRS effective as of January 1, 2001, were used for firms' 2002 annual reports.

different sets of accounting standards. A consistency score of "one" is assigned if a firm made the same accounting choice on a specific item in its Chinese GAAP and IFRS-based annual reports. Otherwise a score of "zero" is assigned. If the item was not relevant to that firm, the item was not included in the calculation. A consistency index is then calculated for each firm by dividing the sum of the consistency scores by the number of applicable items, as shown in the following formula. This index ranges from zero to one with one indicating full consistency of a firm's accounting choices between two sets of accounting regulations.

$$\text{A firm}'\text{s consistency index} = \frac{\text{The sum of consistency scores}}{\text{The number of applicable items}} \tag{2}$$

The third index measures the comparability between two sets of accounting standards by comparing specific items presented in the financial statements, such as net income and owners' equity. Unlike the consistency index which only identifies the incidences of accounting treatment differences, the index of comparability quantifies their impact on the financial statement numbers. The formula[11] to calculate the index of comparability is:

$$\text{A firm}'\text{s index of comparability} = 1 - \frac{(\text{IFRS net income} - \text{Chinese GAAP net income})}{|\text{IFRS net income}|} \tag{3}$$

An index value of 1.0 means no difference in reported net income between Chinese GAAP and IFRS. An index value greater than 1.0 means a higher Chinese GAAP net income.

5. Results

5.1. Descriptive statistics

Table 3 presents descriptive statistics for the compliance, consistency, and comparability indices for the 1999 and 2002 annual reports of sample firms. As shown in Table 3, the compliance indices indicate a high level of compliance with Chinese GAAP in both 1999 and 2002. The distributions are asymmetric since a compliance index value of 1.0 is the maximum, as firms cannot exceed full compliance. The mean level of compliance with Chinese GAAP is 0.970 and 0.969 for the 1999 and 2002 annual reports, respectively. However, the mean level of compliance with IFRS is 0.857 and 0.900 for the 1999 and 2002 annual reports, respectively. The compliance with IFRS appears consistently lower than the compliance with Chinese GAAP. For 1999 the minimum is 0.854 for Chinese

[11] We also applied the approach used by Chen et al. (2002) to calculate the earnings gap which is different than the index of comparability. Rather than applying a conservatism index, Chen et al. (2002) directly compared the magnitude of the differences between Chinese GAAP and IFRS-based net incomes. Our results, not reported here, are consistent with our findings and our conclusions remain unchanged.

Table 3
Descriptive statistics for the compliance and consistency indices and the indices of comparability

Index	Standard	Year	*N*	Mean	Std. dev.	Min.	Percentile Values			Max.
							25th	50th	75th	
Compliance	GAAP	1999	79	0.970	0.037	0.854	0.946	0.975	1.000	1.000
	GAAP	2002	79	0.969	0.038	0.823	0.953	0.975	1.000	1.000
	IFRS	1999	72 [a]	0.857	0.105	0.414	0.815	0.873	0.934	0.970
	IFRS	2002	67 [b]	0.900	0.070	0.667	0.865	0.919	0.950	0.976
Consistency		1999	72 [a]	0.690	0.080	0.545	0.636	0.673	0.745	0.900
		2002	67 [b]	0.794	0.060	0.657	0.750	0.793	0.839	0.952
Index of Comparability		1999	79	1.883	3.238	0.355	0.994	1.073	1.641	27.490
		2002	79	1.357	2.381	0.047	0.912	1.000	1.098	21.090

Firm's compliance index = Sum of compliance scores for a given firm / Number of items applicable to this firm.
Firm's consistency index = Sum of consistency scores for a given firm / Number of items applicable to this firm.
Index of comparability = 1 − (IFRS net income − Chinese GAAP net income) / absolute value of IFRS net income.
[a] In 1999, seven firms did not provide the IFRS-based annual reports.
[b] In 2002, 12 firms did not provide the IFRS-based annual reports.

GAAP and 0.414 for IFRS, and the 25th percentile value is 0.946 for Chinese GAAP and 0.815 for IFRS. Note that the 25th percentile values are relatively close to 1.0 for Chinese GAAP, but notably below 1.0 for IFRS. While we believe these statistics indicate substantial compliance with Chinese GAAP in both years we cannot make the same assertion for IFRS compliance.

The consistency indices indicate a moderate level of consistency in accounting treatments between Chinese GAAP and IFRS-based annual reports in both 1999 and 2002. As indicated for the compliance indices, the distributions for the consistency indices are also asymmetric since a consistency index value can fall short of 1.0, but never exceed it. These indices show that, in 1999, the mean level of consistency between Chinese GAAP and IFRS is 0.690 with a range from 0.545 to 0.900. The median, 50th percentile value, is 0.673. In 2002, the mean level of consistency between Chinese GAAP and IFRS is 0.794 with a range from 0.657 to 0.952. The median is 0.793. This implies that there was an improvement in the consistency of application of accounting methods in the 2002 Chinese and IFRS-based annual reports as compared to the 1999 annual reports[AU1]. Content analysis of the consistency index reveals that differences in standards and non-compliance with IFRS were the primary cause of the observed lack of full consistency.

Index of comparability values exceeding 1.0 indicates that Chinese GAAP net income is higher than IFRS net income. The means and medians of the index of comparability are 1.883 and 1.073 in 1999, and 1.357 and 1.0 in 2002, respectively, indicating that Chinese GAAP net income is higher than IFRS net income in these years. This finding is consistent with the findings of Chen et al. (2002) who find that 1998 Chinese GAAP net income is higher than IFRS net income. Both the mean and the percentile values are more divergent from 1.0 in 1999 than 2002, suggesting a reduction in the earnings gap and the convergence of net incomes as reported in firms' Chinese GAAP and IFRS-based annual reports.

Table 4
Univariate tests of hypotheses 1–3

	Difference in	Period	Mean difference [a]	*t*-statistic [b]
H1	IFRS compliance	2002 vs. 1999	0.050	4.22***
H2	Consistency index	2002 vs. 1999	0.098	9.45***
H3	Index of comparability	2002 vs. 1999	−0.447[a]	−3.40***
	GAAP vs. IFRS compliance	1999	0.112	9.52***
		2002	0.064	6.60***

***Statistically significant at the 0.001 level.

[a] The mean values for the variables are calculated on a firm-by-firm basis.

[b] For the index of comparability, the two most extreme observations (corresponding to the maximum values in Table 2) were excluded from the paired *t*-test, but we obtain a similar test statistic ($z=-2.96$, $p=0.003$) when we include these observations and apply the nonparametric Wilcoxon Signed Rank Test. We also obtain quite similar test statistics when we apply the Wilcoxon Signed Rank Test to the other indices reported in the table.

5.2. Tests of the hypotheses

The tests of the hypotheses evaluate the improvement in the convergence of accounting practices with the issuance of 2001 Chinese GAAP by examining the differences between the 1999 and 2002 IFRS compliance, consistency, and comparability indices. We apply both univariate and multivariate statistical tests to evaluate these hypotheses.

5.2.1. Univariate tests

The results of the univariate tests of the hypotheses are presented in Table 4. As shown therein, paired *t*-tests reveal a significant ($p<0.001$) increase in IFRS compliance indices from 1999 to 2002, with the mean difference in the index of 0.05. This finding supports H1; the level of firms' compliance with IFRS did significantly improve with the issuance of 2001 Chinese GAAP. The mean difference in consistency indices between 1999 and 2002 was 0.098, representing a statistically significant ($p<0.001$) improvement in firms' consistent application of accounting treatments under Chinese GAAP and IFRS. This finding supports H2, the level of consistency of accounting treatments in firms' Chinese and IFRS-based annual reports significantly improved with the issuance of 2001 Chinese GAAP.

Finally, results in Table 4 show a significant reduction in the index of comparability values from 1999 to 2002, supporting the conclusion of a smaller earnings gap between Chinese GAAP and IFRS-based annual reports. This finding supports H3, the difference between firms' Chinese GAAP and IFRS-based net incomes significantly improved with the issuance of 2001 Chinese GAAP.

Table 4 also shows that in 1999 the Chinese GAAP compliance index is, on average, 11.2 percentage points higher than the IFRS compliance index; the mean difference fell to 6.4 percentage points in 2002, which are statistically significant at the 0.001 level. Hence, within firms, the level of compliance with IFRS is significantly lower than the level of compliance with Chinese GAAP in both years.

This finding of higher Chinese GAAP compliance may reflect the learning involved in the convergence process — that is, Chinese listed firms are most familiar with Chinese GAAP and

Table 5
Descriptive statistics for independent variables in Eq. (4)

Variable [a]	1999		2002		Δ1999 to 2002		
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	*t*-statistic
%State ownership	31.164	24.624	35.262	23.507	1.700	11.299	1.16
%Inst. ownership	3.070	2.711	1.920	2.514	−1.200	2.236	−4.12
MNC	0.097	0.298	0.121	0.329	0.017	0.130	1.00
Sales	1.226	1.711	1.917	2.299	0.632	1.328	3.66
ln(*Sales*)	−0.511	1.393	−0.088	1.432	0.365	0.977	2.87
%ROE	1.538	51.791	4.837	34.189	4.278	65.194	0.50
%Intangible assets	0.958	1.998	3.300	5.554	2.235	5.082	3.38
Big 4 auditor B-shares	0.597	0.494	0.318	0.469	−0.254	0.512	−3.81
Big 4 auditor A- & B-shares	0.250	0.436	0.303	0.463	0.085	0.337	1.94
Number of observations	72		66		59		

%State Ownership$_i$ and *%Inst. Ownership*$_i$ — indicates the percentage of state and institutional ownership, respectively, in firm *i*;
MNC$_i$ — an indicator variable equal to one for multinational corporations;
Sales$_i$ — the level of sales, in billions of dollars;
%ROE$_i$ — the return on equity ratio calculated as the net income in a given year divided by end-of-year owners' equity;
%Intangible Assets$_i$ — the percentage of end-of-year intangible assets to end-of-year total assets;
Big 4 Auditor B- Shares$_i$ — an indicator variable equal to one if the firm used a Big 4 auditor for the B-share annual report only;
Big 4 Auditor A- & B- Shares$_i$ — an indicator variable equal to one for firms that used a Big 4 auditor for both A- and B-share annual reports.
[a] *Sales*, *%ROE*, and *%Intangible assets* defined based on B-share annual reports.

as a result it is easier for them to comply with Chinese GAAP than to comply with IFRS. The improvement in the mean difference between Chinese GAAP and IFRS compliance from 1999 to 2002 also indicates that firms' practices are more convergent in 2002 as compared to 1999 providing further support for our hypotheses.[12]

5.2.2. Multivariate tests

A question arises as to whether the univariate test results are due to convergence or to firm characteristics such as firm size, profitability, Big 4 auditing status, percentage of intangible assets, status as a multinational corporation, and level of state and institutional ownership.

[12] The finding of higher Chinese GAAP compliance as compared to IFRS compliance was unexpected since Chinese B-share financial reports are required to be audited by an international accounting firm, whereas A-share financial reports may be audited by local accounting firms. We conduct additional analysis to determine if there is a difference in compliance for companies that have a Big 4 accounting firm audit their B-share financial reports versus a non-Big 4 international accounting firm. We find that the mean IFRS compliance index is higher, albeit still lower than Chinese GAAP compliance, for firms that have a Big 4 accounting firm audit their B-share financial reports. In 1999 mean IFRS compliance was 86.4% for Big 4 audited firms versus 81.9% for other firms; similarly, in 2002 mean IFRS compliance was 91.0% for Big 4 audited firms versus 88.4% for other firms.

Larger and more profitable companies may have the financial resources to invest in a reporting system that meets the requirements of both IFRS and Chinese GAAP. Companies that engage a Big 4 firm to audit both their A and B-share financial reports may have more consistency in interpretation of accounting treatments as well as a greater understanding of the requirements of IFRS. The IFRS rules relative to intangible assets are more complex than Chinese GAAP. Thus, compliance with IFRS may be more difficult to achieve in this area and will negatively affect the IFRS compliance for companies with substantial intangible assets. Finally, the corporate-governance structure (level of state ownership or institutional ownership and/or status as a multinational corporation) may in turn result in different priorities which may in turn result in different levels of compliance with Chinese GAAP and IFRS. Thus, changes in these firm characteristics may account for the observed improvement in IFRS compliance, consistency, and comparability of annual reports. Descriptive statistics for the independent variables are presented in Table 5. We defined the variables, sales, return on equity, and intangible assets using values from B-share annual reports. We chose this definition since we used IFRS as the denominator in the construction of the index of comparability and since our focus is to measure the impact of the convergence of Chinese GAAP with IFRS. We note, however, that our results are essentially similar if we use values from A-share annual reports.

For completeness, in Table 5 we report the mean and standard deviation for the levels of the variables in 1999 and 2002 as well as mean and standard deviation for the firm-by-firm difference in the variables from 1999 to 2002. In the last column of Table 5, we also present

Table 6
Results of the multivariate tests of hypotheses 1–3

	ΔIFRS compliance index [a]	ΔConsistency index [a]	ΔComparability index [a]
Δ%*State ownership*	0.002	0.001	−0.001
	(1.559)	(0.601)	(−0.064)
Δ%*Inst. ownership*	−0.003	0.002	0.014
	(−0.574)	(0.449)	(0.173)
Δ*MNC*	0.055	0.007	0.687
	(0.582)	(0.084)	(0.505)
Δln(*Sales*)	0.012	−0.010	0.130
	(1.009)	(−0.995)	(0.742)
Δ%*ROE*	−5.6E–5	3.6E–4	2.7E–4
	(−0.288)	(2.185)*	(0.095)
Δ%*Intangible assets*	0.004	−0.002	−0.011
	(1.643)	(−1.127)	(−0.317)
Δ*Big 4 auditor B-shares*	0.035	−0.027	0.227
	(1.169)	(−1.061)	(0.516)
Δ*Big 4 auditor A-* & B-shares	−0.051	0.040	0.055
	(−1.148)	(1.063)	(0.082)
Constant	0.045	0.093	−0.335
	(2.854)**	(6.820)***	(−1.435)
R-squared	0.20	0.16	0.02
F statistic	1.56	1.21	0.14
Number of observations	59	59	58

*$p<0.05$, **$p<0.01$, ***$p<0.001$.

[a] Variables are defined in Table 4. *t*-statistics are reported (in parentheses) below coefficient estimates.

paired *t*-statistics for the firm-by-firm differences, which indicate statistically significant changes in the variables, percent institutional ownership, sales (and natural log of sales), percentage intangible assets, and the variable indicating a Big 4 auditor for B-shares.

In Table 6, we present the results of the multivariate tests of hypotheses. The dependent variables in our multivariate tests are the same as those in Table 4: the change in IFRS compliance, consistency, and comparability indices between 1999 and 2002. Because the dependent variables measure the change in the respective indices from 1999 to 2002, the regressors in this equation reflect the change in values from 1999 to 2002 as captured by the following regression model:

$$\begin{aligned}\Delta\text{Index}_i = {} & \beta_0 + \beta_1 \Delta\%\text{State Ownership}_i + \beta_2 \Delta\%\text{Inst. Ownership}_i + \beta_3 \Delta\text{MNC}_i \\ & + \beta_4 \Delta\ln(\text{Sales}_i) + \beta_5 \Delta\%\text{ROE}_i + \beta_6 \Delta\%\text{Intangible Assets}_i \\ & + \beta_7 \Delta\text{Big 4 Auditor B}-\text{Shares}_i + \beta_8 \Delta\text{Big 4 Auditor A}- \text{ \& B}-\text{Shares}_i \\ & + \Delta e_i \end{aligned} \quad (4)$$

where i is an individual firm; $\%State\ Ownership_i$ and $\%Inst.\ Ownership_i$ indicate the percentage of state and institutional ownership,[13] respectively; MNC_i is an indicator variable equal to one for multinational corporations; $Sales_i$, as a proxy for size, is the natural log of sales; $\%ROE_i$, as a proxy for profitability, is the return on equity ratio calculated as the net income in a given year divided by end-of-year owners' equity; $\%Intangible\ Assets_i$ is the percentage of end-of-year intangible assets to end-of-year total assets; $Big\ 4\ Auditor\ B\text{-}Shares_i$ is an indicator variable equal to one if the firm used a Big 4 auditor for the B-share annual report only; $Big\ 4\ Auditor\ A\text{-}\ \&\ B\text{-}Shares_i$ is an indicator variable equal to one for firms that used a Big 4 auditor for both A- and B-share annual reports;[14] and e_i is the error term.[15] We estimate a separate regression for each of the dependent variables reflecting change in IFRS compliance and change in the consistency and comparability indices.

Estimation results for Eq. (4), our multivariate tests of Hypotheses 1–3, are presented in Table 6. Eq. (4) is structured such that the estimates of the constants are directly comparable to the mean differences reported in Table 4. That is, the unconditional estimates of the change (mean differences) in the respective indices from 1999 to 2002 reported in Table 4 are comparable to the constants reported in Table 6 which estimate the identical change after controlling for changes in firm size, profitability, and other firm characteristics. We find that the estimates in Table 6 are remarkably close to the unconditional estimates (mean differences) in Table 4; for example, compare the increase of 0.045 in the IFRS compliance index (the constant) in Table 6 to the mean difference of 0.050 in Table 4. Similarly, the two estimates for the change in the consistency index differ by only 0.005. Hence, the multivariate tests provide support for H1 and H2, confirming the inferences drawn from Table 4 concerning these

[13] Because information on the number of institutional shareholders was unavailable in China until after 2002, we used a proxy for percent institutional ownership, the percentage of institutional shareholders within the top 10 share-holders relative to total shares. Unlike in western countries, the percentage of institutional investors has not been significant for Chinese listed firms.

[14] All of the firms in the sample that use a Big 4 auditor for A-shares also use a Big 4 auditor for their for B-share audits during the period under review.

[15] A variable representing management ownership of shares in China is not included since insider shareholding is extremely limited in China, less than one-tenth of 1% (Firth, Fung, & Rui, 2007).

hypotheses. For the index of comparability, the confirmation is somewhat weaker. Though the estimate of the constant in Table 6, −0.335, is similar to the mean difference in Table 4, −0.447, the estimate of the constant is not statistically significant at conventional levels.

The summary statistics for the regressions reported at the bottom of Table 6 also support the idea that these conditional estimates of the change in compliance indices are consistent with the unconditional estimates (mean differences) of the change in index values reported in Table 4. Note, for example, that the *F*-statistics are all relatively small so that for each of the three regressions we would have little evidence inconsistent with the null hypothesis that the slope parameters for Eq. (4) all equal zero (H_0:$\beta_1=\beta_2=\beta_3=\beta_4=\beta_5=\beta_6=\beta_7=\beta_8=0$). That is, the restrictions in this null hypothesis imply the parsimonious model $\Delta Index_i=\beta_0+\Delta e_i$, which is the model estimated in the univariate tests presented in Table 4.

Given the findings of higher compliance with Chinese GAAP compliance than IFRS compliance we examine the estimates of the Big 4 auditor indicator variables in the regression model for the change in the consistency index. Note that the estimate of the parameter for the variable *Big 4 Auditor B-Shares*, β_7, is −0.027 and the estimate of the parameter for the variable *Big 4 Auditor A-* & B-Shares, β_8, is 0.040. This is consistent with intuition that having a Big 4 auditor for B-shares and a non-Big 4 auditor for A-shares results in lower consistency, but having, presumably, the same Big 4 auditor for both A- and B-shares results in an increase in consistency.

6. Conclusion

In this study we examine whether China's efforts over the last 15 years to converge domestic standards with IFRS have been successful in the convergence of Chinese listed firms' accounting practices with IFRS. We use three evaluation methods: the compliance index, the consistency index, and the index of comparability to assess the level of convergence of accounting practices. Our analysis is based on the 1999 and 2002 annual reports of listed firms that are required to follow both Chinese GAAP and IFRS (A- and B-share issuers).

We find significant ($p<0.001$) improvement in IFRS compliance from 1999 to 2002. While this finding supports H1, interestingly we do not find the same level of compliance with IFRS in either year. Mean IFRS compliance indices were 0.857 and 0.900 for the 1999 and 2002 annual reports, respectively, while mean Chinese GAAP compliance indices were.970 and .969, in 1999 and 2002, respectively. Consistent with this observation we also found that firms' compliance with Chinese GAAP is significantly higher ($p<0.001$) than their compliance with IFRS in both 1999 and 2002.

Evaluation and testing of the consistency indices reveal a significant improvement ($p<0.001$), in 2002 as compared to 1999, in the consistency of accounting treatments between Chinese GAAP and IFRS-based annual reports. However, full consistency has not been achieved.

Analysis of the index of comparability reveals an earnings gap between the net income numbers reported in Chinese and IFRS-based annual reports in 1999. This study extends the study by Chen et al. (2002). We extended Chen et al. (2002) and evaluate the effect of convergence of Chinese GAAP with IFRS with the issuance of 2001 Chinese GAAP and find a significant ($p<0.001$) reduction in the earnings gap between firms' Chinese and IFRS-based net incomes in 2002 relative to 1999 annual reports.

Overall, we believe that the significant improvements we observe in the compliance, consistency, and comparability indices from 1999 to 2002 provide evidence that the convergence of Chinese GAAP with IFRS result in firms' accounting practices converging with IFRS.

Certain limitations should be considered. One limitation is the subjectivity inherent in the selection of the accounting measurement treatments included in the measurement instrument, as well as during the data collection process. Another limitation of the study is the small sample size. Only 79 firms are investigated. Although they represent all firms that issue both A- and B-shares, generalization of results to firms that issue A-shares only may not be possible. Finally, this study is subject to the limitation of certain firms' nondisclosures. Notwithstanding these limitations, the findings of this study contribute to the convergence literature and may be of interest to regulators in emerging capital markets.

Appendix I. Research instrument

IAS2: Inventories	
1	Determination of cost of goods sold (CGS)
2	Determination of ending inventory cost
3	Recognition of inventory impairment and reversal of impairment
4	Determination of CGS of low value inventories
IAS 8: Accounting policies, changes in accounting estimates, and errors	
5	Non-mandated changes in accounting policy
6	Mandatory changes in accounting policy
7	Change in accounting estimates
8	Prior period fundamental errors
IAS 10: Events after the balance sheet date	
9	Adjusting event and non-adjusting event
10	Sales return and sales cut-off
11	Dividends declared
IAS11: Construction contracts	
12	Contract revenue
13	Expected loss on a construction contract
14	Borrowing costs incurred for construction contracts
IAS12: Income taxes	
15	Recognition of tax expense or income
16	Treatment for deductible temporary differences
17	Treatment for timing difference when there are changes in tax rates or imposition of new taxes
IAS16: Property, plant and equipment (PP&E)	
18	Determination of depreciation method, estimated useful life, and residual value of PP&E
19	PP&E and construction in process (CIP) on balance sheet date
20	Recognition of impairment of PP&E and CIP
21	Accounting for reversal of impairment
22	PP&E received as a capital contribution
23	Exchange of dissimilar PP&E
24	Exchange of similar PP&E
IAS17 Leases	
25	Operating lease incomes/payments
26	Depreciation method for a leased asset
27	Lessee measurement of assets and related liability acquired from a finance lease
28	Discount rate used to measure the PV of MLP in a finance lease

(continued on next page)

Appendix I (*continued*)

29 Amortization of unrecognized finance charge of a finance lease by lessee
30 Initial direct costs of a finance lease by lessee
31 Initial direct costs of a finance lease by lesser
32 Lessor measurement of a finance lease
33 Lessor measurement of income from a finance lease
IAS20 Accounting for government grants and disclosure of government assistance
34 Government grant received to fund a specific project
IAS21: The effects of changes in foreign exchange rates
35 Initial recognition of foreign currency transaction
36 Monetary items reported on balance sheet date
37 Exchange differences in the normal operation
38 Nonmonetary items reported on balance sheet date
39 Method of translating financial statement of foreign operations
40 Treatment of translation difference
IAS22: Business combinations
41 Recognition of goodwill
42 Measurement of goodwill
43 Amortization of goodwill
44 Amortization of negative goodwill
45 Measurement of minority interest
IAS23: Borrowing costs
46 Accounting for borrowing costs
IAS27: Consolidated and separate financial statements
IAS28: Investments in associates.
IAS31: Interests in joint ventures
47 Consolidation
48 Accounting for investments in subsidiaries and associates
49 Recognition for impairment of subsidiaries and associates
50 Investor has joint control
51 Gain on disposal of a subsidiary as a result of issuance of additional shares by the subsidiary to third parties
IAS37: Provisions, contingent liabilities and contingent assets
52 Measurement of provisions
53 Measurement of contingent assets and liabilities
IAS38: Intangible Assets
54 Amortization of intangible assets
55 Intangible assets on balance sheet date
56 Recognition of impairment
57 Accounting for reversal of impairment
58 Pre-operating expenses
59 Research and development (R&D) costs
60 Intangible asset received as a capital contribution
61 Intangible asset received in a non-monetary transaction
62 Land use rights
IAS39: Financial instruments: Recognition and measurement *
63 Criteria for the determination of bad debt allowance
64 Carrying value of accounts receivable on balance sheet date
65 Short-term investments on balance sheet date
66 Dividends received on short-term investments
67 Long-term investments in equity securities on balance sheet date
68 Long-term investments in debt securities on balance sheet date
69 Amortization of premium or discount on long-term debt investments
70 Carrying value of financial instruments

Appendix I (*continued*)

71	Investment securities received as a capital contribution from owner
72	Investment securities received in a non-monetary transaction
73	Recognition of impairment of financial instruments
74	Accounting for reversal of impairment of financial instruments
75	Debt restructuring
IAS40: Investment property *	
76	Measurement on balance sheet date
Other	
77	Initial recognition of an asset **

* IFRS that were adopted in 2002 but not adopted in 1999.

** Item 77 is a measurement item applicable to IAS 2, 16, 17, 38, and 39. It is listed separately to avoid inappropriate weighting.

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