

Barhamzaid, Zuhair A. A.

Article

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Unconditional conservatism under the Chinese version of IFRS



Zuhair A.A. Barhamzaid*

Palestine Technical University – Kadoorie, Palestine

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ABSTRACT

This study explores the level of unconditional conservatism (UNCC) in accounting after China's convergence with International Financial Reporting Standards (IFRS). Using the intercept of the Basu (1997) model, an overall reduction is found in UNCC under the Chinese version of IFRS. This study is the first attempt to conduct a comprehensive theoretical comparison between old and new Chinese accounting standards (CAS) in terms of UNCC. Additionally, it is the first study on the impact of convergence with IFRS, not the full adoption of IFRS, on UNCC. Finally, the study covers a relatively more extended period than most previous studies, from 1996 to 2017.

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1. Introduction

Since 2001, more than 120 countries have required or allowed the use of International Financial Reporting Standards (IFRS) (Ball, 2016). In line with this international trend, China conducted four main sets of accounting reforms, in 1992, 1998, 2001, and 2006, with each replacing the preceding reform. The goals of these reforms have been to converge with IFRS (Peng et al., 2008) and attract foreign direct investments as a means of achieving high levels of economic growth (Wu et al., 2007).

The new Chinese accounting standards (CAS) have covered all aspects of IFRS, with great care taken to substantially align with IFRS. However, due to the uniqueness of China's environment, the country has

* Corresponding author at: Department of Accounting Information System, Palestine Technical University – Kadoorie, Tulkarem – Jaffa Street 7, Palestine

E-mail address: z.barham@ptuk.edu.ps

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modified its adoption of IFRS in some respects (Hou et al., 2014). Wu et al. (2014) argue that the economic consequences of convergence with IFRS should differ from those related to the full adoption of IFRS. Indeed, there are many key differences between the Chinese version of IFRS and the standard version. One important difference between them is their position concerning accounting conservatism (AC). In 2010, the International Accounting Standards Board (IASB) removed the term “prudence” (or AC) from its conceptual framework. In contrast, the Ministry of Finance (MOF), which determines the CAS, has adopted the prudence principle as a basic standard in the 2006 accounting reform, stating in article 18 that “an enterprise shall exercise prudence in recognition, measurement, and reporting of transactions or events. It shall not overstate assets or income nor understate liabilities or expenses.” Moreover, IAS 16 and IAS 38 allow both the revaluation model and the cost model, whereas Accounting Standards for Business Enterprises No. 4 – Fixed Assets (ASBE 4) adopts only the cost model, which is in line with AC. More importantly, ASBE 4 prohibits the reversal of impairment losses for most long-term assets, but IAS 36 prohibits this practice only for goodwill. In effect, the prohibition on the reversal of impairment losses works against the recognition of good news, which aligns with conditional conservatism (CC).¹

This study examines the impact of China’s convergence with IFRS, not mandatory IFRS adoption, on UNCC. This study has four main motivations. First, research on IFRS and AC is still limited, and the findings remain unclear (André et al., 2015). In the Chinese context, Hou et al. (2014) confirm that there is still no direct evidence on the impact of China’s convergence with IFRS on AC. Therefore, the impact of convergence with IFRS in China is relatively under-investigated (Li et al., 2018). Second, most studies concerning IFRS and AC largely focus on the impact of mandatory IFRS adoption, not convergence with IFRS. In effect, the impact of convergence with IFRS should differ from the full adoption of IFRS (Wu et al., 2014). However, convergence with IFRS has been considered by relatively few studies (Liu et al., 2016). Third, most studies on IFRS and AC focus on developed countries, and relatively few studies focus on developing countries (Liu et al., 2011). In this respect, Hou et al. (2014) state that developed markets differ from other markets in many significant ways. Fourth, UNCC is not investigated in the literature as much as CC, and UNCC is considered by relatively few studies (Qiang, 2007).

A comprehensive comparison is conducted between old and new CAS, taking account of all the new practices that may affect UNCC. The theoretical comparison suggests that the negative impact of convergence with IFRS is expected to overcome its positive impact on UNCC. As predicted, the findings show that the Chinese capital market has experienced a significant decline in UNCC following convergence with IFRS.

One very recent study that explores the association between mandatory IFRS adoption and UNCC is that of Fullana et al. (2018), which differs from this study in many ways. First, this study deals with the impact that convergence with IFRS has on UNCC, whereas Fullana, González, and Toscano deal with the economic consequences of the full adoption of IFRS on UNCC. Second this study focuses on China, a developing country, whereas Fullana, González, and Toscano focus on Spain, a developed country. Third, this study covers an extended period, from 1996 to 2017, whereas Fullana, González, and Toscano investigate only the period from 2000 to 2009. In this regard, the study addresses serious concerns about the potential effect of the global financial crisis on the results of Fullana, González, and Toscano. Their measure, the MTB ratio, maybe reduced after the adoption of IFRS as a result of a reduction in the market values of firms during the global financial crisis, and not as a result of increases in the book values of firms caused by a reduction in UNCC owing to mandatory IFRS adoption. To isolate the potential effects of the global financial crisis, this study excludes 2008 from the sample period, as 2008 is the year when the impact of the global financial crisis was the strongest in China (Hou et al., 2014). Fourth, this study analyses new practices resulting from convergence with IFRS that might increase or decrease UNCC, whereas Fullana, González, and Toscano consider only some of the key differences between old Spanish GAAP and IFRS. Fifth, to measure UNCC this study uses the intercept of the Basu (1997) model and the cumulative negative accruals measure. whereas Fullana, González, and Toscano use the MTB ratio as a proxy of UNCC. In effect, variations in the MTB ratio can be driven by many factors other than IFRS, such as growth options, financial crises, and inflation. Therefore, the MTB ratio may fail to capture UNCC (Lara and Mora, 2004).

¹ For more detail on the differences between China’s new accounting standards and IFRS, please see Deloitte (2006).

This study covers several gaps in the literature. First, UNCC is seldom investigated in the accounting literature (Lara and Mora, 2004). Moreover, prior studies mainly focus on exploring the economic consequences of mandatory IFRS adoption rather than the economic consequences of convergence with IFRS. Therefore, this study enriches the literature concerning the relationship between convergence with IFRS and UNCC. Second, previous studies on this topic focus on developed countries. Therefore, investigating this issue in China provides the literature with useful sights from the perspective of a major developing country. Policymakers, accounting standards setters, the IFRS Foundation, and IFRS adopters in other countries can all greatly benefit from understanding the Chinese experience.

2. The potential impact of convergence with IFRS on UNCC

The theory of AC suggested by Watts (2003) assumes that accounting regulation can play a role in determining the level of AC. The following two sections discuss the positive and negative effects of China's convergence with IFRS on UNCC.

2.1. The positive impact of convergence with IFRS on UNCC

The new CAS is analyzed, considering 14 cases that are related to 10 new Chinese standards that may lead to an increase in UNCC. These cases concern ASBE 2—Long-Term Equity Investments, ASBE 4—Fixed Assets, ASBE 6—Intangible Assets, ASBE 9—Employee Compensation, ASBE 11—Share-Based Payments, ASBE 13—Contingencies, ASBE 16—Government Subsidies, ASBE 18—Income Taxes, ASBE 20—Business Combinations, and ASBE 27—Exploitation of Petroleum and Natural Gas.

In addition, seven new accounting practices that might increase UNCC are captured, namely increasing expenses and/or liabilities, accelerated depreciation methods, recording accruals for expenses, using the cost method, applying the pooling of interests method, using the output method to compute the depletion of mineral interests, and using balance sheet method for taxation.

The most frequent practice is the wide recognition of liabilities and/or expenses (see, ASBE 4, §8, 13; ASBE 6, §12; ASBE 9, §2, 6; ASBE 11, §4–6, 8, 10–12; ASBE 13, §4,8,10; ASBE 16, §6–8). As is well known, UNCC understates the book value of stockholders' equity (André et al., 2015). This bias can be introduced by overstating expenses and/or liabilities. However, liabilities and/or expenses can be recognized more quickly by using the accrual basis instead of the cash basis. In this respect, the new ASBE 9—Employee Compensation recognizes compensation payable as a liability according to the accrual basis, and not the cash basis (ASBE 9 §4). Accelerated depreciation methods inflate depreciation expenses in early periods (Qiang, 2007), and thus these methods increase UNCC. In this regard, the new ASBE 6—Intangible Assets opens the door to the use of accelerated depreciation methods (ASBE 6 §17). Similarly, the new ASBE 27—Exploitation of Petroleum and Natural Gas allows the use of the output method and the straight-line method, and it allows the computation of mineral interest depletion in proved properties (ASBE 27 §21). The output method probably reports larger depletion expenses than the straight-line method, which is regarded as income-increasing (Scott, 2009). Alternatively, bias resulting from UNCC practice can be introduced by understating assets and/or revenues. Concerning this issue, the new ASBE 13—Contingencies require that obligations related to a contingency must be recognized as estimated liabilities when they are likely to cause economic benefit to flow out (ASBE 13 §4,8,10). However, expected compensation must be recognized as an asset when the inflows are virtually certain, rather than likely (ASBE 13 §7). In this respect, the practice of not recognizing expected assets until the inflows are virtually certain is considered a bias that enhances UNCC. Historical cost accounting supports UNCC. Unlike fair value accounting, historical cost accounting does not allow changes to the book value of assets, even if the real value of such assets changes through time. As a result, historical cost accounting understates the net value of assets. The cost method is an example of historical cost accounting. In this respect, the new ASBE 2—Long-Term Equity Investments requires that a long-term equity investment of an investing enterprise that is able to control the invested enterprise shall be measured by using the cost method (ASBE 2 §5). The pooling of interests method also aligns with historical cost accounting, as this method, when applied during an acquisition or merger, allows the balance sheets of two enterprises to be added together, using their book values rather than their fair values, which results in no goodwill. However,

the non-recognition of goodwill understates the net value of assets, which reflects UNCC. In this regard, the new ASBE 20—Business Combinations adopts the pooling of interests method for evaluating business combinations involving entities that are controlled by the same entities (ASBE 20 §6). Unlike the tax payable method, the balance sheet method recognizes deferred income taxes in the balance sheets as either assets or liabilities. Given the phenomena of tax avoidance and the tendency of firms to pay no more than the tax payable, the majority of deferred income taxes are expected to represent deferred income tax liabilities rather than deferred income tax assets. If this is the case, then the application of the balance sheet method eliminates the non-recognition of deferred income tax liability, and thus enhances UNCC.

2.2. The negative impact of convergence with IFRS on UNCC

In analyzing the new CAS, 26 cases related to 13 new standards that may reduce UNCC are considered, namely ASBE 1—Inventories, ASBE 2—Long-Term Equity Investments, ASBE 3—Investment Real Estates, ASBE 6—Intangible Assets, ASBE 7—Exchange of Non-Monetary Assets, ASBE 10—Enterprise Annuity Fund, ASBE 12—Debt Restructuring, ASBE 14—Revenues, ASBE 16—Government Subsidies, ASBE 17—Borrowing Costs, ASBE 20—Business Combinations, ASBE 21—Leases, ASBE 22—Recognition and Measurement of Financial Instruments.

Eight newly adopted practices that might reduce UNCC are observed, namely fair value accounting, reducing amortization/depreciation, capitalization, and liabilities, increasing gains, using the accrual basis for income, and canceling the Last In First Out (LIFO) method.

The most frequent practice is fair value accounting, which is used in all 13 of the standards investigated (see ASBE 2, §9; ASBE 3, §10–11; ASBE 6, §14; ASBE 7, §3; ASBE 10, §6; ASBE 12, §5–7; ASBE 14, §5, 13; ASBE 20, §13–15; ASBE 21, §11, 32; and ASBE 22, §30). In this regard, [KPMG \(2014\)](#) documents that the new CAS introduces more requirements for fair value accounting at the expense of historical cost accounting. Unlike historical cost accounting, fair value accounting does not understate the net value of assets. Furthermore, it does not ignore the recognition of day one gains or losses. Thus, fair value accounting mitigates UNCC. Regarding the reporting of gains, the new CAS increase the recognition of gains in many cases (see, ASBE 2, §9; ASBE 12, §5–7; ASBE 14, §5; ASBE 16, §7; ASBE 20, §13; ASBE 21, §32). However, the initial recognition of an account as a gain is closed in earnings, instead of being recognized as a liability, or closed in capital reserves. This practice increases earnings and thus reduces UNCC. In terms of reducing amortization/depreciation, the new CAS directly reduce the amount of amortization/depreciation, either directly (see, ASBE 2, §5; ASBE 3, §11; ASBE 6, §17, 19) or indirectly (see, ASBE 6, §18). Specifically, the new ASBE 6—Intangible Assets requires that the expected residual value shall be taken into account in computing the amortization amount of intangible assets (ASBE 6 §18). This new policy reduces the amount of amortization expense, as the deduction of residual value from the cost reduces the amortization expense, and UNCC as a result. Capitalization is adopted in five cases (see, ASBE 6, §9, 17; ASBE 17, §4, 6; ASBE 21, §11, 18). This practice decreases expenses at the initial recognition, as it recognizes expenditures as assets rather than expenses. Therefore, this capitalization policy does not align with UNCC. Liabilities are negatively affected by the new ASBE 21—Leases, as this case states that if a sale and leaseback transaction that results in an operating lease is based on the fair value, then the difference between the sales proceeds and the carrying amount of the asset shall be closed in earnings (ASBE 21 §32), rather than deferred as a liability. Indeed, recognizing an item as a gain instead of treating it as a liability at initial recognition has a positive (negative) effect on both earnings and net assets (UNCC). The new ASBE 16—Government Subsidies adopts the accrual basis in recognizing government grants related to income (ASBE 16 §5), but not on a cash basis. In this matter, accrual basis accounting recognizes government grants quicker than cash basis accounting. Thus, UNCC is negatively affected. Finally, the new ASBE 1—Inventories does not adopt the LIFO method (ASBE 1, §14) which overstates the cost of sales, and thus this case increases UNCC.

3. Literature review

Several studies document an adverse effect of IFRS application on CC. In the European Union context, [Chen et al. \(2010\)](#) consider whether changes in accounting quality can be attributed principally to IFRS

application. They find that CC is significantly reduced after the full adoption of IFRS. [Piot et al. \(2010\)](#) explore the effect of mandatory IFRS adoption on AC in Europe. They report a decrease in CC (but not in UNCC) in the presence of a Big 4 auditor under mandatory IFRS adoption. [Ahmed et al. \(2013\)](#) test the impact of mandatory adoption of IFRS on accounting quality. They observe that CC declines significantly under IFRS in countries with strong enforcement, but countries with weak enforcement experience insignificant declines of CC. [André et al. \(2015\)](#) find an overall reduction in CC after mandatory IFRS adoption in 16 European countries. They document that this decline is less pronounced in countries where compliance with IFRS is strictly enforced.

Some studies suggest an opposite trend. [Gassen and Sellhorn \(2006\)](#) document that CC is significantly higher for IFRS-compliant firms than for German firms applying domestic GAAP. [Barth et al. \(2008\)](#) demonstrate that CC is improved among voluntary adopters relative to non-IAS firms. They note that their results may be not attributable to the application of IAS rather than to the effects of economic environment and firms' incentives. [Günther et al. \(2009\)](#) capture improvements in CC among German firms that adopted IFRS on either a voluntary or a mandatory basis. In comparing the quality of accounting measures used under the United Kingdom GAAP and those used in IFRS, [Iatridis \(2010\)](#) find that IFRS are associated with more timely loss recognition. [Dimitropoulos et al. \(2013\)](#) document that in Greece, CC increased after mandatory IFRS adoption, relative to use of the local GAAP. [Chan et al. \(2015\)](#) find that CC is improved only among IFRS firms that have higher costs of debt, and in European countries that are less dependent on bank financing or private debt.

In China, [Chen et al. \(1999\)](#) find that earnings under the old Chinese GAAP are higher than those reported under IAS, suggesting that IAS are more conservative. In examining the period from 1992 to 1998, [Ball et al. \(2000b\)](#) detect a weak level of CC among Chinese firms, whether they report under the old Chinese GAAP or IAS (although international auditors certify those reporting under IAS). In comparing profits before and after the 1998 accounting reform, [Chen et al. \(2002\)](#) confirm that profits under the old Chinese GAAP are higher than those reported under IAS. [Peng et al. \(2008\)](#) also determine that profits under the 2001 accounting reform are higher than those under IAS. Notably, they point out that the 2001 accounting reform decreased the gap in profits. [Hou et al. \(2014\)](#) find that the positive impact that China's convergence with IFRS has on the use of accounting performance in determining executive compensation is significantly affected by a reduction in AC, as a result of China's convergence with IFRS. However, [Liu et al. \(2016\)](#) concur that Chinese firms recognized losses in a timely manner after 2007. They observe that before 2007, Chinese firms following IFRS were more conditionally conservative than those operating under the old Chinese GAAP. In addition, Liu, Skerratt, and Li note that after 2007, the CC of Chinese firms following the new Chinese GAAP was similar to the CC practiced under the IFRS prior to 2007. [Bradford et al. \(2017\)](#) demonstrate that the governance role that AC plays in the dividend policies of Chinese firms is reduced, because convergence with IFRS tends to reduce CC. In a more recent study, [Li et al. \(2018\)](#) document that the 2001 accounting reform enhances CC significantly. In contrast, the 2006 accounting reform is found to have a negative effect on CC. Notably, Li et al. document that CC has increased since 2011, following the global financial crisis (2007–2009).

Research on IFRS and UNCC is very limited with conflict findings reported by few papers ([Lara and Mora, 2004](#)). Some studies suggest a negative relationship between IAS/IFRS and UNCC. In Germany, [Hung and Subramanyam \(2007\)](#) explore the effects of the voluntary adoption of IAS on financial statements. They provide strong evidence that balance sheets (UNCC) under German GAAP are more conservative than IAS. In a very recent study, [Fullana et al. \(2018\)](#) find that the full adoption of IFRS in Spain leads to significant reductions in UNCC.

Other studies find positive associations between IAS/IFRS and UNCC. [Ball et al. \(2000b\)](#) use the Basu model to observe that the net income reported under IAS has lower intercepts than the net income reported under domestic Chinese GAAP, indicating that IAS income is more unconditionally conservative than Chinese-standard income. [Callao et al. \(2007\)](#) find that the gap between book and market values has been wider since IFRS compliance became mandatory in Spain, suggesting that UNCC has increased after the adoption of IFRS. [Piot et al. \(2010\)](#) find that in the European Union, UNCC (but not CC) is higher after mandatory IFRS adoption in the presence of a Big 4 auditor. [Gastón et al. \(2010\)](#) document that market value is significantly higher than book value following the application of IFRS in Spain and the UK, concluding that UNCC is enhanced under the adoption of IFRS.

In addition, a number of studies support the notion that accounting quality is unlikely to be determined by accounting standards alone. Ball et al. (2000b) find no evidence that Chinese accounting income is conditionally conservative, under either domestic standards or IAS, although the latter was audited by international accounting firms. They suggest that accounting standards per se do not have the main role in determining the timeliness of loss recognition. Ball et al. (2000a) detect that common-law countries are substantially more conditionally conservative than code-law countries. They propose that differences in legal and institutional environments have a dominant influence on the levels of CC across countries. Ball et al. (2003) find that the interactions between accounting standards and preparer incentives generally produce CC. They suggest that the properties of earnings are ultimately determined by the institutional factors that influence the incentives of managers and auditors. Bushman and Piotroski (2006) find that countries with high-quality judicial systems, and countries with strong public enforcement of securities laws, tend to experience high levels of CC. They document that civil law countries with greater state involvement tend to exhibit lesser CC than common law countries with low state involvement. Further, they find that companies in countries with high levels of state involvement in the economy tend to experience lower CC than companies in countries with less state involvement. Moreover, they note that firms in countries with weak investor protections and low-quality judicial systems reflect less CC in their accounting numbers than firms in countries with strong investor protections and high-quality judicial systems. Hung and Subramanyam (2007) find that German firms experience an increase in CC under both IAS and German GAAP, highlighting the significant role of institutional factors in explaining the variation in firms' CC rather than accounting standards. Lara et al. (2008) document that CC is more pronounced in common-law-based developed economies, where enforcement is high. Further, their results reveal that the use of IASB standards does reflect CC in emerging countries with weak enforcement and low investor protection. Concerning Greece, Karampinis and Hevas (2011) fail to find a substantial increase in CC after mandatory IFRS adoption. Accordingly, they recommend that simultaneous infrastructure changes are essential to provide superior financial reporting. He et al. (2012) observe several unintended effects of convergence with IFRS, concluding that incentives and institutional factors play key roles in determining the level of accounting quality. Christensen et al. (2015) capture mixed results concerning CC in Germany. First, they find that CC increased after German firms voluntarily adopted IFRS (prior to the mandatory IFRS adoption). Second, CC is decreased after the adoption of IFRS became mandatory. They conclude that incentives play a main role in determining the relation between IFRS and CC.

4. Hypotheses development

Based on the theoretical analysis of the expected impacts that convergence with IFRS has on UNCC in China, as summarized in Sections 2.1 and 2.2, the negative impact of convergence with IFRS on UNCC (see Section 2.2) is expected (for many reasons) to overcome the positive impact of that convergence (see Section 2.1).

First, Chinese capital market rules provide Chinese firms with incentives to inflate their earnings, which contradicts the concept of AC. For instance, the rules state that a firm will be delisted if it reports losses in three consecutive years. Such rules create strong incentives for Chinese companies to manage earnings in order to maintain their listing status (He et al., 2012). Another example is that Chinese firms commonly inflate their earnings by engaging in abnormal related party transactions before their initial public offering periods (Aharony et al., 2010). Apparently, it is expected that managers will prefer new Chinese standards that have a negative impact on UNCC, at the expense of new Chinese standards that have a positive impact on UNCC.

Second, some cases that have a positive impact on UNCC (see Section 2.1) apply only under certain conditions, which do not occur permanently. For example, a delayed payment for purchasing fixed or intangible assets is subject to being expensed if the payment is delayed (ASBE 4, §8; ASBE 6, §12). In addition, a recognition of compensation for the cancelation of a labor relationship with employees can be applied under certain conditions (ASBE 9 §6).

Third, some cases having a positive impact on UNCC (see Section 2.1) apply due to specific choices, and therefore do not occur permanently. For example, accelerated depreciation methods or the straight-line method can be used to compute the amortization of intangible assets with limited service (ASBE 6 §17).

However, to compute the depletion of mineral interests in proved properties (ASBE 27 §21), either the straight-line or the output method can be used.

Fourth, some cases that have a positive impact on UNCC (see Section 2.1) are associated with abnormal situations. For example, for the recognition of obligations related to a contingency (ASBE 13 §4,8,10) in a case involving government subsidies, they generally arise due to distress. To give another example, cases involving business combinations are relevant only to a limited number of companies.

Fifth, only about half of the cases that have a negative impact on UNCC (see Section 2.2) occur permanently, or under normal situations. Such cases include prohibiting the LIFO method (ASBE 1 §14); cancelling the amortization of “equity investment differences” (ASBE 2 §5), the non-amortization of indefinite life intangible assets (ASBE 6 §19); computing the expected residual value in amortization of intangible assets (ASBE 6 §18); capitalizing development costs (ASBE 6 §9); recognizing financial assets with good liquidity according to fair value (ASBE 10 §6); canceling amortization for positive goodwill (ASBE 6 §19); and recognizing all financial assets and financial liabilities, including derivatives, according to their fair values at initial recognition (ASBE 22 §30).

In summary, China’s convergence with IFRS is predicted to have a negative impact on UNCC, and the following hypothesis is proposed in the alternative form with a negative direction:

H1: The level of UNCC is significantly reduced under the Chinese version of IFRS.

5. Research design

Consistent with Basu (1997) and Giner and Rees (2001), Basu (2005) documents that the intercept coefficient, β_0 , of the Basu (1997) model can be used to measure UNCC, indicating that the lower the intercept, the greater the UNCC. The model proposed by Basu (1997) is conducted as follows:

$$E_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 R_{it} D_{it} + e_{it} \quad (1)$$

where E_{it} represents net profit after extraordinary items of firm_{*i*} in year_{*t*}, scaled by the market value of firm_{*i*} in year_{*t-1*}. R_{it} represents the adjusted stock return of firm_{*i*} over a year ended April 30. D_{it} is a dummy variable that takes the value of 1 if R_{it} is negative, and 0 otherwise. e_{it} is the error term.

To measure the change in UNCC after convergence with IFRS, the Basu model is transformed by adding another variable, $IFRS_{it}$, as a dummy variable and its interaction effects with stock returns. The transformed model is constructed as follows:

$$E_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 R_{it} D_{it} + \beta_4 IFRS_{it} + \beta_5 IFRS_{it} D_{it} + \beta_6 IFRS_{it} R_{it} + \beta_7 IFRS_{it} D_{it} R_{it} + e_{it} \quad (2)$$

where $IFRS_{it}$ is a dummy variable that equals 1 for years after 2006, and 0 otherwise.

The coefficient β_4 represents the change in the intercept coefficient, β_0 , of the Basu model. A significantly positive (negative) value of β_4 reveals that UNCC is decreased (increased) after convergence with IFRS.

6. Data

6.1. Data selection

Compared with past research, this study covers a relatively more extended period, from 1996 to 2017. Brüggemann et al. (2013) believe that using short periods is one weakness of contemporary IFRS studies and thus call for a re-examination of probable IFRS effects by using longer time series. In this context, Liu et al. (2011) argue that a more comprehensive view of the changes in accounting quality in China could be provided by a longitudinal study of accounting quality over a longer period. In addition, financial regulation changes may need sufficient time to be appropriately practiced in firms. In turn, it is important to update the sample (Liu et al., 2016). Therefore, this study extends the sample period to include the years between 1996 and 2017.

Table 1
Data selection.

Item	Firms	Observations
Firms on CSMAR from 1996 to 2017	3704	40,769
Drop B-listed firms	(114)	(2353)
Drop financial sector firms	(82)	(966)
Drop firms with non-normal status	(316)	(3849)
Drop observations with negative equity or negative total assets	0	(413)
Drop 2006 data	0	(1203)
Drop 2008 data	0	(1359)
Drop observations with incomplete data	(487)	(4818)
Final sample	2705	25,808

Table 1 reports the data collection process. The initial data come from the China Stock Market and Accounting Research (CSMAR) database, consisting of 3704 firms listed on the Shanghai Stock Exchange or the Shenzhen Stock Exchange from 1996 to 2017. As only A-listed firms are heavily influenced by the 2006 accounting reform, all B-listed firms (114 firms) are removed. All firms related to the financial sector (82 firms) are also dropped, as they follow different reporting regulations. Only listed firms with normal status are considered, and firms with other statuses (316 firms) are ignored. Additionally, all observations with

Table 2
Data description.

Panel A. Data description before convergence with IFRS

Variables	<i>N</i>	Mean	Std. Dev.	Min.	<i>p</i> 25%	Median	<i>p</i> 75%	Max.
<i>E</i>	7456	0.0245	0.0307	−0.0357	0.0078	0.0216	0.0398	0.1060
<i>D</i>	7456	0.6882	0.4633	0	0	1	1	1
<i>R</i>	7456	−0.1379	0.2840	−0.7341	−0.3187	−0.1340	0.0450	0.4530
<i>D_R</i>	7456	−0.1944	0.2128	−0.7341	−0.3187	−0.1340	0	0
<i>IFRS</i>	7456	0	0	0	0	0	0	0
<i>IFRS_D</i>	7456	0	0	0	0	0	0	0
<i>IFRS_R</i>	7456	0	0	0	0	0	0	0
<i>IFRS_D_R</i>	7456	0	0	0	0	0	0	0
<i>UNCC_NONACC</i>	4750	−0.0228	0.1440	−0.3686	−0.1063	−0.0127	0.0740	0.2279
<i>UNCC_TACC</i>	4750	−0.0033	0.0424	−0.0967	−0.0299	−0.0017	0.0244	0.0761

Panel B. Data description after convergence with IFRS

Variables	<i>N</i>	Mean	Std. Dev.	Min.	<i>p</i> 25%	Median	<i>p</i> 75%	Max.
<i>E</i>	18,462	0.0289	0.0323	−0.0389	0.0092	0.0233	0.0447	0.1030
<i>D</i>	18,462	0.6032	0.4892	0	0	1	1	1
<i>R</i>	18,462	−0.0935	0.3198	−0.7265	−0.2974	−0.0812	0.1296	0.4681
<i>D_R</i>	18,462	−0.1799	0.2248	−0.7265	−0.2974	−0.0812	0	0
<i>IFRS</i>	18,462	1	0	1	1	1	1	1
<i>IFRS_D</i>	18,462	0.6032	0.4892	0	0	1	1	1
<i>IFRS_R</i>	18,462	−0.0935	0.3198	−0.7265	−0.2974	−0.0812	0.1296	0.4681
<i>IFRS_D_R</i>	18,462	−0.1799	0.2248	−0.7265	−0.2974	−0.0812	0	0
<i>UNCC_NONACC</i>	17,132	−0.0543	0.1513	−0.3686	−0.1454	−0.044	0.0463	0.2279
<i>UNCC_TACC</i>	17,132	−0.0086	0.0444	−0.0967	−0.0368	−0.0076	0.0205	0.0761

Notes: E_{it} represents net profit after extraordinary items of firm_{*i*} in year_{*t*}, scaled by the market value of firm_{*i*} in year_{*t-1*}. R_{it} is the stock return of firm_{*i*} over a year ended April 30. *UNCC_TACC* is a proxy of UNCC, based on cumulative total accruals over the past three years, divided by average total assets, and multiplied by negative 1, where total accruals equal earnings before extraordinary items, less cash flows from operations plus depreciation expense. *UNCC_NONACC* is another proxy of UNCC, based on cumulative nonoperating accruals over the past three years, deflated by beginning total assets, and multiplied by negative 1, where nonoperating accruals = (earnings + depreciation – cash flows from operations) – (Δ Accounts Receivable + Δ Inventories + Δ Prepaid Expenses – Δ Accounts Payable – Δ Taxes Payable). All continuous variables are winsorized at 5%.

negative equity (413 observations) are dropped. Following He et al. (2012) and Li et al. (2018), 2006, the year immediately prior to the 2006 accounting reform, is excluded. Although the 2006 accounting reform took effect in 2007, firm managers may have had incentives to manipulate earnings in 2006, because they were required to disclose earnings for that year (in their 2007 financial statements) based on the new accounting standards (He et al., 2012, Li et al., 2018). In this regard, Zhang et al. (2010) document that Chinese listed firms recognized lower impairment losses during the transition period (after the announcement of the new standard and before the effective date) than in pre-announcement periods. Furthermore, Zhang, Lu, and Ye find that firms with considerably high previous impairment losses tend to reverse more impairment losses in the transition period, in order to achieve certain earnings thresholds. According to Hou et al. (2014), 2008 was the year when the impact of the global financial crisis was strongest in China. To isolate the potential effects of the global financial crisis, 2008 is excluded from the sample (1359 observations). Finally, all observations with incomplete data are also removed (4818 observations). The final sample includes 2705 listed firms (25,808 firm-year observations). To mitigate the possible effect of outliers on inferences, all of the continuous variables are winsorized at 5%.

During the sample period, the Chinese capital market was affected by many significant events. In 1992, the MOF issued the first set of Western-oriented accounting standards for domestic companies. In 1998, the MOF issued a reform to eliminate the differences between the 1992 accounting reform and IAS principles (Chen et al., 2002). Starting from January 1, 2001, all joint stock limited entities were required to follow the 2001 accounting reform (Deloitte, 2005). In 2006, China issued a reform to achieve greater convergence with IFRS, with an effective date starting on January 1, 2007. In 2008, financial markets around the world were affected by the global financial crisis. According to Hou et al. (2014), 2008 was the year when the global financial crisis had the strongest impact on China. In May 2008, China issued the first Basic Standards of Enterprise Internal Control, which were similar those enacted in the US with the Sarbanes–Oxley Act (SOX). In addition, a series of internal control guidelines was issued in April 2010. Since January 1, 2012, all listed firms have been required to adopt Chinese SOX (C-SOX) (Liu et al., 2017).

6.2. Data description

Table 2 reports some of the descriptive statistics from before and after the 2006 accounting reform. As can be noted, the two samples are materially imbalanced. The number of observations is 7456 (18,462) observations in the main model before (after) convergence with IFRS, which reflects the process of development in China. The primary comparison between the two samples shows an increase in the mean (median) value of earnings, E , from 0.0245 to 0.0289 (0.0216 to 0.0233). Specifically, the mean (median) value of the accrual component of earnings (as measured by UNCC_NONACC) increases from 0.0228 (0.0127) to 0.0543 (0.044). In addition, the mean (median) value of the accrual component of earnings (as measured by UNCC_TACC) increases from 0.0033 (0.0017) to 0.0086 (0.0075).² Furthermore, the dependent variable, E , varies from -0.0357 (-0.0389) to 0.1060 (0.1030), with a standard deviation of 0.0307 (0.0323), before (after) the 2006 accounting reform. Table 2 also shows that returns, R , range between -0.7341 (-0.7265) and 0.4530 (0.4681), with an average of -0.1379 (-0.0935), a median of -0.1340 (-0.0812), and a standard deviation of 0.2840 (0.3198), before (after) the 2006 accounting reform. The mean (median) value of returns becomes less negative after the 2006 accounting reform, changing from -0.1379 to -0.0935 (-0.1340 to -0.0812), suggesting that Chinese firms experienced an increase in their market value after convergence with IFRS, again reflecting the process of development in China. The increase in the standard deviation, from 0.2906 to 0.3198 after the 2006 accounting reform, suggests an increase in the volatility and uncertainty in Chinese capital market after the 2006 accounting reform, perhaps as a result of significant events such as the global financial crisis in 2008. However, the comparatively high volatility of returns is characteristic of emerging markets (Ball et al., 2000b). Not surprisingly, the minimum value of D in both samples is 0, and its maximum value is 1. The mean value of D , 0.6882 (0.6032), indicates that 68.82% (60.32%) of the D variable takes the

² The original sign in Table 2, the mean value of UNCC_NONACC (UNCC_TACC), is positive, but the stated value is multiplied by the negative value for easy interpretation of UNCC.

value of one before (after) the 2006 accounting reform, meaning that the frequency of bad news is greater than the frequency of good news in China. Nevertheless, the frequency of bad news is reduced after the 2006 accounting reform, declining from 0.6882 to 0.6032, in favor of more frequent good news. This statistical description aligns with the notion that the Chinese capital market has experienced a positive development in value after convergence with IFRS. The mean (median) value of D_R is increased from -0.1944 (-0.1340) to -0.1799 (-0.0812), which may reflect an improvement in CC after the 2006 accounting reform. Not surprisingly, the maximum value of D_R (in both samples) equals 0, as the maximum value of R is to be multiplied by a D value that equals 0 when R is positive. Not surprisingly, all of the statistics for IFRS variable before 2007 take the value of 0. Further, the interactions between IFRS and the other variables ($IFRS_D$, $IFRS_R$, and $IFRS_D_R$) before the 2006 accounting reform also take the value of 0, because IFRS variable equals 0 before 2007. However, the IFRS variable takes the value of 1 after 2006. Therefore, except for the standard deviation, the statistics for this variable equals 1 after the 2006 accounting reform. In effect, the 0 value of standard deviation indicates that each observation of the IFRS variable equals the mean value, which is 1. As the IFRS variable takes the value of 1 after 2006, all of the statistics in panel B for the other variables multiplied by IFRS ($IFRS_D$, $IFRS_R$, and $IFRS_D_R$), equal the statistics for D , R , and D_R , respectively, in the same period. For example, $IFRS_D$ equals 1 times D , which equals D , and so on.

7. Results

Prior to the analysis of multiple regression, several assumptions related to the classical linear regression model are tested. To mitigate homoscedasticity and autocorrelation, standard errors are clustered at the firm level.

7.1. Results of the main model

Table 3 shows the estimated results for the main model, to test the impact of convergence with IFRS on UNCC in China. As can be seen, the model is significant, as the p -value of the computed F -statistic, 140.26, is almost 0, and as a result, the R-squared, 0.0426, is significantly different from 0. The results show that the Chinese non-financial sector experienced a significant reduction in UNCC after convergence with

Table 3
Results of the main model.

Variables E	Expected signs	Coefficients	Standard errors	p -values
D	?	-0.0016	0.0012	0.1710
R	?	0.0401***	0.0048	0.000
D_R	?	-0.0317***	0.0055	0.000
$IFRS$	+	0.0091***	0.0014	0.000
$IFRS_D$?	-0.0008	0.0015	0.575
$IFRS_R$?	-0.0223***	0.0057	0.000
$IFRS_D_R$?	0.0277***	0.0065	0.000
Constant	?	0.0250***	0.0012	0.000
Observations	25,808			
Number of clusters	2705			
R-squared	0.0426			
F-statistic	140.26***			
Prob > F	0.000			

Notes: This table shows the estimated results of OLS regressions, to test the impact of convergence with IFRS on UNCC in China. The sample period spans 1996–2017, excluding 2006 and 2008. The dependent variable, E , represents net profit after extraordinary items of firm $_i$ in year $_t$, scaled by the market value of firm $_i$ in year $_{t-1}$. R represents the adjusted stock return of firm $_i$ over a year ended April 30. D is a dummy variable that takes the value of 1 if R is negative, and 0 otherwise. $IFRS$ is a dummy variable that equals 1 for years after 2006, and 0 otherwise. All continuous variables falling in the top or bottom 5% are winsorized. Standard errors are adjusted for clustering at the firm level. The reported p -values are based on two-tailed significance levels, and on one-tailed levels when the prediction is directional. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively.

IFRS (estimated coefficient IFRS = 0.0091, significant at less than 1%, one-tailed). Specifically, the intercept of the Basu model is significantly increased, by about 0.0091, and it becomes approximately 0.0341 (0.0250 + 0.0091) after 2006, which suggests that UNCC is significantly reduced under the Chinese version of IFRS.

The above results also suggest an increase in CC after China's convergence with IFRS. The coefficient of IFRS_D_R (0.0277) is significantly positive, suggesting that CC increased after 2006. However, this result aligns with the notion that UNCC and CC are negatively related. Accordingly, the amounts of bad prudence in Chinese accounting numbers (resulting from UNCC) are expected to decline. However, the good prudence in Chinese accounting numbers (resulting from CC) is expected to increase.³ In other words, the overall economic efficiency and social welfare can be expected to increase in China after convergence with IFRS.

7.2. Robustness tests

7.2.1. Results excluding the transition year (2007)

This study includes the transition year in its analysis. However, some scholars exclude the transition year in such investigations. To address this concern, the main model is rerun omitting the transition year (2007). The untabulated results show similar findings.

7.2.2. Results using unadjusted returns instead of adjusted returns

This study uses adjusted returns to overcome the effect of macroeconomic news and to capture firm-specific news. As a robustness check, unadjusted instead of adjusted returns are used, and the results are similar.

7.2.3. Results excluding dividends

This study includes dividends in the calculation of returns. However, some researchers, such as [Giner and Rees \(2001\)](#), exclude dividends from the calculation of returns. As predicted, the exclusion of dividends does not affect the inferences of the main model.

7.2.4. Results using earnings before extraordinary items

Earnings after extraordinary items are used in the main model. However, some studies use earnings before extraordinary items in such investigations. Hence the analysis is redone using earnings before extraordinary items, and the results remain the same.

7.2.5. Results using narrower time windows

To reduce the likelihood of other factors confounding the results, prior studies rely on shorter periods. In IFRS studies, short analysis periods generally cover two to three post-adoption years ([Brüggemann et al., 2013](#)). Accordingly, the main model is rerun to cover two to three post-adoption years (2005–2007 and 2004–2009). Again, the obtained results remain similar to those derived from the main model.

7.2.6. Results considering only firms with complete data in both periods

Most studies of this kind do not consider the potential influence of sample firm differences across different periods. To mitigate this effect, [Liu et al. \(2011\)](#) recommend considering only firms with complete data in both periods. As a robustness test, this suggestion is taken into consideration but the results remain the same.

7.2.7. Results including the first accounting reform (1992–1997)

The first accounting reform (1992–1997) is not entirely included in the analysis. As a robustness test, the main model is rerun including the period from 1992 to 1997. As expected, the inclusion of the first accounting reform (1992–1997) does not disturb the initial conclusion.

³ [André, Filip, and Paugam \(2015\)](#) explain in detail that UNCC can be considered as a form of bad prudence, and CC can be considered a form of good prudence.

7.2.8. Results comparing the 2001 reform with the convergence with IFRS

To conduct a comparison between the effects of the 2001 and 2006 accounting reforms on UNCC, the main model is rerun over the period from 2001 to 2017. The inferences remain identical to those reported in the main model.

7.2.9. Results using fixed and random effects models

Most previous studies on the Basu regression estimator of CC have used the OLS model. Ball et al. (2013) recommend using the fixed effect model (FEM), as this model might reduce the bias in the standard Basu regression estimator. However, using the FEM and the REM both lend support to the initial conclusion derived from the main model.

7.2.10. Results with consideration for possible delays in earnings announcements

Some scholars have taken account of potential delays in earnings announcements, as a way to ensure that the accounting information is in the public domain. Returns are thus recalculated over a year from June 30 of year_t to June 30 of year_{t+1}. The results of this check confirm the main results.

7.2.11. Results using different definitions of returns

This study computes the returns as the natural logarithm of the ratio of the share price. The main model is rerun using two differing definitions of returns (simple returns and cumulative returns), but these alternative definitions yield similar inferences.

7.2.12. Results using different levels of winsorization

In the main model, all continuous variables used in the regressions are winsorized at 5%. As a robustness test, winsorizations are conducted at the 1%, 2%, 3%, 4%, and even 10% levels, and the results are qualitatively similar to those reported in the main model.

7.2.13. Results using alternative specification of the Basu model

The Basu model is used to measure UNCC, with share returns used as a proxy for the flow of value-relevant information over each fiscal year. To retest the study hypothesis based on another specification of the model, changes in income from the previous year (rather than changes in stock returns) are used as a proxy for good news and bad news (Basu, 1997). The results of this alternative specification of the Basu model align with the primary inferences.

7.2.14. Results excluding the effect of the C-SOX

To isolate the influence of the C-SOX on the relationship between convergence with IFRS and UNCC, the main model is repeated excluding all years after adoption of the C-SOX in 2012, and all coefficients of this check are nearly identical to those shown in Table 3.

7.3. Additional test – the negative accruals measure

Givoly and Hayn (2000) claim that AC leads to persistently negative accruals, unlike the expected pattern of accrual reversals. This suggests that the average of accruals over a reasonably extended period can be used as a firm-specific proxy for AC (Ahmed et al., 2002). Following Givoly and Hayn (2000), this study uses cumulative nonoperating accruals (UNCC_NONACC) over the past three years, deflated by beginning-point total assets, multiplied by negative 1, where nonoperating accruals = (earnings + depreciation – cash flows from operations) – (Δ Accounts Receivable + Δ Inventories + Δ Prepaid Expenses – Δ Accounts Payable – Δ Taxes Payable). Chen et al. (2014), among others, use this measure as a proxy for UNCC. In addition, following Ahmad and Duellman (2013) UNCC is measured by defining UNCC (UNCC_TACC) as earnings before extraordinary items, less cash flows from operations, plus depreciation expense, divided by average total assets and averaged over the previous three years, then multiplied by negative 1 for ease of interpretation. A higher value of UNCC_NONACC (UNCC_TACC) suggests a greater degree of UNCC. If convergence with IFRS is

Table 4
Additional tests – the negative accruals measure.

Variables	Observations	Before 2007	After 2007	Differences	<i>t</i> -statistics
<i>UNCC_NONACC</i>	20,621	−0.0204	−0.0554	−0.0350***	(−13.67)
<i>UNCC_TACC</i>	20,770	−0.0053	−0.0090	−0.0037***	(−4.77)

Notes: This table shows the mean values of *UNCC_NONACC* and *UNCC_TACC* before and after convergence with IFRS, and compares them using the two-sample *t*-test. The sample period spans 1996–2017, excluding 2006 and 2008. *UNCC_NONACC* = cumulative nonoperating accruals over the past three years, deflated by beginning total assets, and multiplied by negative 1, where nonoperating accruals = (earnings + depreciation – cash flows from operations) – (Δ Accounts Receivable + Δ Inventories + Δ Prepaid Expenses – Δ Accounts Payable – Δ Taxes Payable). *UNCC_TACC* = earnings before extraordinary items, less cash flows from operations, plus depreciation expense, divided by average total assets, averaged over the previous three years, and multiplied by negative 1. Following Bradford et al. (2017), 2007 and 2008 are excluded as they mix old and new standards in the computed variables (*UNCC_NONACC*, *UNCC_TACC*). The variables are winsorized at 5% to eliminate the influence of abnormal values. *t*-statistics are in parentheses. *p*-values are based on one-tailed levels, as the prediction is directional. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels respectively.

associated with a lower mean of UNCC than that associated with the previous Chinese GAAP, then it can be concluded that UNCC was reduced after China's convergence with IFRS.

As shown in Table 4, *UNCC_NONACC* (*UNCC_TACC*) is reduced from −0.0204 to −0.0554 (−0.0053 to −0.0090), resulting in a significant reduction, −0.0350 (−0.0037), at less than 1% significance, indicating that UNCC significantly decreased after 2006. These results further confirm the main results.

8. Conclusion

This study tests the effect that convergence with IFRS has had on UNCC in China. A sample of 25,808 firm-year observations is considered over the period from 1996 to 2017. Using the intercept of the Basu model, the study finds a significant reduction in UNCC after 2006 in China. Robustness tests are conducted, and yield similar results.

This study fills several gaps in the literature. First, UNCC has not been adequately investigated in the previous accounting literature (Qiang, 2007). Moreover, prior studies mainly examine mandatory IFRS adoption, rather than convergence with IFRS. Therefore, this study enriches the literature by clarifying the relation between convergence with IFRS and UNCC. Second, previous research mainly focuses on developed countries. By exploring the issue in relation to China, this study provides useful sights from the perspective of a developing country.

Nevertheless, this study has some limitations, which are suggestive of future research directions. First, this study examines the impact that China's convergence with IFRS has had on UNCC, but not on CC. Second, the study focuses on only one country, namely China. Hence, its inferences may not fit other countries. Accordingly, future research should investigate this topic in other countries, such as pre-emerging countries. Third, the study is limited to the non-financial sector. Future research should consider the impact of convergence with IFRS on UNCC within the financial sector.

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