Does Regulatory Environment affect Earnings Management in Transitional Economies? An Empirical Examination of the Financial Reporting Quality of Cross-Listed Firms of China and Hong Kong

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Does regulatory environment affect earnings management in transitional economies?
An empirical examination of the financial reporting quality of cross-listed firms
of China and Hong Kong

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Abstract

Purpose: This paper provides evidence on the impact of regulatory environment on financial reporting quality of transitional economies. This study compares the financial reporting quality of Hong Kong firms which are cross-listed in mainland China with those of Hong Kong firms cross-listed in China using specific earnings management metrics (earnings smoothing, timely loss recognition, value relevance and managing towards earnings targets) under pre and post IFRS regimes.

Design/Methodology: The financial reporting quality of Chinese A-share companies and Hong Kong listed companies are examined using earnings management measures. Using 2007 as base year, the study used a cumulative of -5 and +5 years of convergence experience which provide a total of 3,000 firm year observations. In addition to regression analyses, we used the difference-in-difference analysis to check for the impact of regulatory environments on earnings management.

Findings: Through the lens of contingency theory, our results indicate that the adoption of the new substantially IFRS-convergent accounting standards in China results in better financial reporting quality evidenced by less earning management. The empirical results further shows that accounting data are more value relevant for Hong Kong listed firms, and that firms listed in China are more likely to engage in accrual-based earnings management than in real earnings management activities. We established that different earnings management practices that are seemingly tolerable in one country may not be tolerable in another due to level of differences in the regulatory environments.

Research Implications: The findings show that Hong Kong listed companies' exhibit higher level of financial reporting quality than Chinese listed companies, which implies that the financial reporting quality under IFRS can be significantly different in regions with different institutional, economic and regulatory environments. The results implies that contingent factors such as a country's institutional structures, its extent of regulation and the strength of its investor protection environments impact on financial reporting quality particularly in transitional and emerging economies. As such, these factors need be given appropriate considerations by financial reporting regulators and policy makers interested in controlling earnings management practices among their corporations.

Originality/Value: This study is a high impact study considering that China plays a significant role in today's globalized economy. This study is unique as it the first, that we are aware of, to compare real earnings activities against accrual-based earnings management in pre and post IFRS adoption periods within the Chinese and Hong Kong financial reporting environments, distinguishing between cross-listed and non-cross-listed firms.

Key words: Financial, earning, quality, cash flow, emerging markets

1. Introduction

The effect of regulatory environment and the adoption of IFRS on financial reporting quality could vary across different countries. The mixed findings documented by prior studies can be explained by countries' institutional structures. Many studies argue that developing and transitional economies still have ineffective regulatory institutions despite any fast growth in their capital market. China is the largest developing country in the world, yet characterised with concentrated ownership structures, weak legal systems and highly politicised institutional arrangements (Piotroski and Wong, 2011). As a result, prior studies attribute low financial reporting quality to ineffective regulation and infrastructure (Eccher and Healy 2003, Ball et al. 2000).

Whilst both countries share common cultural backgrounds, there is a significant difference in their interpretation of financial results and reporting. While Hong Kong analysts rely more on fundamental and technical analyses in their financial reporting (Wong and Cheung, 1999), the Chinese lean towards portfolio analysis. As a result of significant differences (in terms of the economy, regulatory and legal systems) between mainland China and Hong Kong, this study compares the financial reporting quality of Hong Kong firms which are cross-listed in mainland China with those of Hong Kong firms cross-listed in China using earnings management metrics under IFRS regime. Hong Kong has converged with IFRS since January 1, 2005. To match the post-convergence period with China, the accounting quality is compared for these two key emerging economies in the period from 2007 to 2011.

With the achievements of China's economic reform, their accounting system also has experienced tremendous changes. The earliest effort of converging Chinese domestic accounting system with international practices began in 1979, in which all joint ventures with foreign investments were required to be regulated under a set of accounting regulations. Subsequently, a set of accounting standards based on International Accounting Standards (IAS), known as Accounting Standards for Business Enterprises (ASBE), was released in 1992. This was a historic progress in the transitional reform of China's dogmatic accounting system. Between 1997 and 2001, China attempted to issue a series of new accounting standards to move toward International Accounting Standards (Chen and Peng, 2007).

As the Chinese come under increasing scrutiny by the international investment community, as well as their domestic capital markets, identifying acceptable financial measures of performance could guide benchmarking activities and regulatory monitoring (Avkiran, 2011). Our study provides evidence that substantial convergence of IFRS can improve financial reporting quality in a transitional and emerging economy such as China.

According to prior studies (Lang et al, 2006; Peng, 2005 and Leuz et al, 2003), accounting quality is higher in countries with a common law origin and high shareholder protection. However, in recent years, the Chinese government as well as Chinese listed firms have more incentives and pressures to enhance their financial reporting quality due to the rapid development of their equity markets and their desire to attract capital worldwide (Peng, 2005). By enhancing the efficiency of capital market infrastructure, China has made great efforts towards changing its accounting regulations (Chen, Wang and Zhao, 2009). With the ongoing liberalisation of the Chinese economy and the increasingly competitive business environment, the need for Chinese firms to ensure greater efficiency and improve the quality of their financial reporting have become understandably very high (Laurenceson and Qin, 2008).

Specifically, government regulatory authorities have strengthened the regulation of information disclosure policies of listed companies. Chen and Peng (2007) find that such policy has helped in curbing earnings management opportunism in the application of Chinese accounting standards. This also indicates that effective regulatory enforcement is significant in the harmonisation of China's accounting practices with IFRS. Furthermore, Street and Gray (2002) provide the evidence that there is high compliance with accounting rules due to improved audit regulation and monitoring systems in China.

It is worth mentioning that the new Chinese Accounting Standards (CAS) are not complete translations of IFRS as there are a few differences which represent China's unique environment and business practice. For example, in the new CAS, the reversal of asset impairment charges is prohibited, related party disclosure requirement is revised to reflect the context of state-ownership and the application of fair value is also tailor-made to reflect the need of the Chinese economy (Peng and Smith, 2010). Though there are scepticisms as to whether the Chinese authorities can effectively regulate some aspects of the IFRS (for example, the fair value accounting – FVA), the convergence was regarded by both the Chinese government and the IASB as a significant move towards the development of the Chinese economy and its place in the world's global economy (Zhang et al, 2012).

Under the policy of one country-two systems, Hong Kong can be considered as a separate market from China. Prior to its IFRS adoption in 2005, Hong Kong applied its own accounting standards, which were independent of mainland China. The aim of the current study is to analyse, through the frame of contingency theory, the effect of the regulatory environments on earnings management and financial reporting quality of firms in the pre and post IFRS adoption periods in both countries. The remainder of this paper is organised as follows: section 2 discusses the study's theoretical framework, contingency theory; section 3 provides a concise review of literature on earnings management within the context of financial reporting while section 4 contains the research methods comprising details of sample selection used in the study, earnings metrics as used in the empirical work and how the study's hypotheses were developed. Section 5 discusses the study's results including those of the sensitivity analyses and further tests conducted while the final section draws the conclusion, summarises the major findings and their implications, identifies the study's limitations and makes suggestions for future research in the subject area.

2. Theoretical framework: The Contingency Theory

Contingency theory was first popularised as a tool to explain organisational differentiation and integration through environmental factors (Lawrence and Lorsch, 1967). It is premised on a heuristic concept that oppose managers' tendency to adopt universalistic solutions and peddling panaceas (Wood, 1979). Contingency theory attempts to explain structural and process differences among organisations with respect to their operating environment,

technology, size, strategy and culture among others (Scott, 1987). Therefore, within an organisational context, the following are the three basic principles of the contingency theory: a) there is no one best way to organise; b) different ways to organise are not equally effective; c) the best way to organise depends on the nature of the environment to which the organisation relates (Scott, 1987; Bartol and Martin, 1994).

The intricacies of adopting, adapting and operating IFRS by different countries make contingency theory a potent framework to diagnose, understand and manage IFRS adoption. As this current study seeks to examine the effects of regulatory environments on earnings management within the context of two related but different countries (China and Hong Kong), the contingency theory is considered the most appropriate framework through which to gain an understanding of different contingent factors that could affect financial reporting quality under an IFRS regime.

The use of the theory is not strange in accounting research as it has been adopted in different areas of the subject because of its versatility. These areas include management accounting (Hayes, 1977; Otley, 1980; Hopwood, 1983; Gul and Chia, 1994); governmental accounting (Luder, 1992; Gupta and Dirsmith, 1994); accounting information systems (Gordon and Miller, 1976; Rayburn and Rayburn, 1991; Nicolaou, 2000); accounting education (Lopez Gavira and Omoteso, 2013) accounting ethics (Schweikart, 1992); auditing (Omoteso, 2013); and financial reporting (Thomas, 1986; Thomas, 1991; Xiao et al., 1996).

3. Earnings Management and Financial Reporting

Leuz, Nanda, and Wysocki (2003) defined earnings management as the alteration of a firm's financial reports by insiders in order to either mislead some stakeholders or to influence contractual outcomes that are dependent on numbers in the financial reports. This can be in the form of a deliberate attempt to distort financial data which may not be very apparent to investors. Earnings management is generally understood to mean attempts by company insiders to protect their positions and benefits by manipulating the financial information provided to outsiders. This often takes the form of income smoothing or income manipulation.

However, measuring the degree of earnings management has presented challenges (Dechow, Sloan, and Sweeney, 1995; Healy and Wahlen, 1999; Dechow and Skinner, 2000), as it is difficult to establish such manipulation. In practice, insiders can "smooth," i.e., reduce the variability of reported earnings, by altering the accruals of revenues and expenses. Thus any indication of a reduction in the variability of earnings, (often called earning smoothing) would suggest that the firm is involved in earnings management. Conversely, a higher earnings smoothing implies that a firm is less likely to manage its earnings effectively.

As Gopalan and Jayaraman (2012) indicate, if the fluctuation of operating earnings is small in comparison to the fluctuation of cash flow from operations, it is likely that management has used discretionary accruals to smooth reported operating earnings. This measure is based on the idea that insiders may attempt to hide reductions in cash flow by manipulating the accruals. The indication is that accruals for firms that wish to manipulate their reported earnings will be large compared to the cash flow from operations (Dechow and Skinner, 2000). As Leuz, Nanda, and Wysocki (2003) argue, firms operating in regulatory environments can retain their ability to consume private benefits by keeping firm disclosures obscure. This allows them to not only extract benefits when the firm performs well but also to keep a poorly performing firm active (Wang and Campbell, 2012; Fang and Zhou, 2012).

The above earnings management practice is usually accrual-based which are otherwise discretionary accruals. In other words, management use their discretion to manipulate the earning in order to avoid reporting huge losses. In practice though, management also engage in real earnings manipulations such as acceleration of the timing of sales through price discounts, reporting of lower cost of costs sold through increased production, and decrease in discretionary expenses such as advertising cost and research and development (Cohen et al, 2008; Dechow and Skinner, 2000). Interestingly, Roychowdhury (2006) adds that some of the real earnings management activities are departures from normal operations activities which do not necessarily contribute to the firm value but may help managers meet up with their reporting goals. Our study makes a significant contribution by examining both earning management practices among Chinese and Hong Kong cross-listed firm. To the best of our knowledge, none of the existing studies on earnings management among Chinese and Hong Kong financial reporting systems has covered both practices.

4. Research Questions

Although several studies have been conducted on the impact of adoption of IFRS on financial reporting quality and earnings management in China, our current study differs substantially in approach and scope in several ways. First, our study examines the effect of regulatory environment on earnings management by comparing firms in one country[2], but under two regulatory environments. This is important because firms operating in China are highly regulated by the state whilst Hong Kong is seen as market oriented with strong equity and transparent reporting environment (Wong and Cheung, 1999; Loh, 2006). Prior studies have established that benefits from mandatory adoption of IFRS are found in countries and regions with certain characteristics such as legal enforcement and transparent reporting environment, none of such studies (Barth et al, 2008; Gordon et al, 2012; Peng and Bewley, 2010) have tested such hypotheses on regions with dual regulatory environments e.g. China and Hong Kong.

Second, our study compares real earnings activities against accrual based earnings management in the pre and post IFRS adoption periods in both regulatory environments. This helps to examine whether firms in the regions are more likely to engage in real or discretionary accruals earnings manipulations in any or both countries, and the impact of IFRS adoption in regulating such practices. Most studies on accounting quality and earnings management among Chinese firms apply the commonly used metrics such as earning smoothing, timely loss recognition and value relevance. In addition to these commonly used measures, our study further adds real earnings management activities metrics such as manipulations in the revenue or sales, production costs and discretionary expenses[3]. We use the abnormal cash flows, abnormal production cost and discretionary expenses by firms in both regions to compare with the accrual-based earnings managements using discretionary accrual metric. This approach allows us to control for any industry-wide changes in economic conditions across the regions. Prior studies on China such as Liu et al (2011), Lin and Chen (2005); Li (2010) did not consider discretionary accruals and real earnings activities of firms in their studies but used the commonly accrual-based measures only. Although these studies focused on Chinese firms, none compared the earnings management activities with Hong Kong firms. Our study therefore fills the gap.

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[2] Hong Kong and China operate a 'one country, two systems' governance model. Although Hong Kong is considered relatively dependent of China, they both have different and independent regulatory, political and institutional frameworks (Loh, 2006).

[3] For details on real and accrual-based earnings management activities metrics by firms, see Cohen et al (2008).

Third, in contrast to previous studies, we distinguish between cross-listed firms and non-cross listed firms. This is important because state controlled firms in China which are not cross-listed are often subjected to government control. Lee (2001) finds that firms receiving more government financial support will have a lower incentive to improve financial reporting even after IFRS adoption. In such cases, government directives are often of more importance than the interest of investors (Kim, 2012).

Such political influence have been found to have far reaching effect on Hong Kong firms that are cross listed in China (Piotroski et al, 2011). Finally, we apply difference-in-difference analysis to compare the impact of differences in regulatory environments on earnings management between China and Hong Kong firms before and after IFRS adoption. These distinctions in our approach and techniques differentiate our paper from previous studies and thus make significant contributions to the earnings management literature.

We formulate three research questions; the first question helps to establish and identify the level of earnings management practices in both countries; and to consider the influence of IFRS adoption in reducing such practices. The research questions are formulated thus:

RQ1: To what extent are the management of earnings by cross listed firms affected by the adoption of IFRS in the two countries?

Some empirical studies suggest that firms are less likely to manage reported earnings toward a positive target after converging with IFRS (Liu et al, 2011; Leuz et al, 2003; Lang et al, 2006). If this argument is correct, it is imperative to distinguish between real and accrual-based earnings management by firms. The distinction between both forms of earnings management is important as this may be influenced by the regulatory environment of both countries. We argue that firms from stronger regulatory environments may curb accrual-based earnings management but may or may not allow real earnings management. Previous studies on China IFRS adoption (Liu et al, 2011; Chin et al, 2009; Liou and Yang, 2008) have not considered such comparisons in earnings management in their sampled firms. Thus, our second research question addressed the following question:

RQ2: To what extent do the regulatory environments affect both real earnings and discretional accruals management by firms in China and Hong Kong?

The study takes into consideration the uniqueness of Chinese adoption of IFRS and compares the effect of IFRS adoption in both environments. Unlike China, Hong Kong is a market-oriented economy, with strong equity market and transparent reporting environment. According to prior studies, benefits from mandatory adoption of IFRS are found only in countries and regions with strong legal enforcement and transparent reporting environment characteristics. For example, Bailey, Harte and Sugden (2000) argue that for financial reporting to be more credible, it should contain complete picture of corporate activity such as the management of earnings, role of accounting information and regulation. This is correct to the extent that accounting reports play important roles in shaping investors views and ideology. Therefore, to investigate the influence of such institutional factors on financial reporting quality, this study also examines the third research question:

RQ3: To what extent does the Chinese financial reporting quality differ from the Hong Kong listed firms under IFRS?

5. Methodology

5.1 Sample selection

To compare the financial reporting quality for Chinese A-share firms and Hong Kong firms under IFRS regime, we first obtained a sample of all Hong Kong cross-listed firms in China and also Chinese A-share firms that are cross-listed in Hong Kong markets. Although, Hong Kong commenced full convergence with IFRS in 2005, we used 2007 as the base year to allow a matched sample for Chinese A-share firms with same mandatory convergence period. We chose cross-listed firms to enable us check for the impact of regulatory environments on the behaviour of the firms in the management of earnings. We also tested our results on a set of non-cross-listed firms of both nations. Further, we selected a matched sample of firms based on key characteristics such as total assets, market capitalisation, sales growth and return on assets. Our final sample consists of 250 Chinese firms listed in Hong Kong market and 100 Hong Kong firms listed in China A-share market.

The empirical analysis straddles two separate periods, one is defined as the post-convergence period from 2007 to 2011 and the other is defined as pre-convergence period from 2002 to 2006, which provides a cumulative of -5 and +5 years of convergence experience 3000 firm-year observations for the study. All financial and accounting data are collected from

Thomson One databases. The sample firms are from a wide range of industries, with most in consumer discretionary, financials, industrials, IT and energy among others.

5.2 Research design

Our design comprises of both accrual-based earnings measures and real earnings activities between the two countries and across the IFRS adoption periods. We differentiate between discretionary accruals and real earnings as these activities may be affected by the regulatory environments existing in both countries. We further applied the difference-in-difference analysis to check the impact of the regulatory environments on earnings management between the two countries. We also mitigated for the impact of cross-listing activities on our result by composing a control group of firms that are indigenous to both China and Hong Kong which are not cross-listed in both countries. This enables us to check for any other factors that might be correlated with cross-listing decision which might affect accounting data (Lang et al, 2006).

5.2.1 Earnings management metrics

We apply earnings smoothing, timely loss recognition, value relevance as well as managing toward earnings targets as measures of earnings management (Lang et al, 2006; Barth et al, 2008; Ball and Shivakumar, 2005).

According to prior research, higher earnings quality is an indication of less earning management or less earnings smoothing. Earnings management can be evaluated from two perspectives: earnings smoothing and managing reported earnings toward a positive objective. Based on Barth et al (2008), we chose control variables that are associated with China convergence with IFRS and that might affect financial reporting. These include firms' size, growth, capital structure, debt and equity issuing and auditors.

Earnings Smoothing

The first earnings smoothing approach is to measure the volatility of earnings. If firms maximise their earnings opportunities, their earning variability should be lower than firms with less earning management. Therefore, following prior studies, the fluctuation in reported

earnings are measured by the change in annual net income (scaled by annual total assets). The reported earnings can be sensitive to a series of other factors that are non-attributable to mandatory introduction of IFRS. Although in this study, a number of control variables and industry fixed effects identified in previous studies (Lang et al. 2006; Barth et al. 2008; Christensen et al. 2008) can mitigate these confounding factors to some extent. However, the effect of those factors may still remain. Therefore, the analysis is mainly focused on the residuals generated from the relevant regression rather than on the reported earnings themselves. This approach further differentiates our study from previous research in earnings management.

Industry fixed-effect regression is conducted in the estimation (equations (1) to (6)). The firm-year observations are first pooled for the periods between 2002 and 2006 (pre-convergence) and the period between 2007 and 2011 (post-convergence). Then, the regression (Equation 1) is run separately for the firms in both time periods to obtain a set of residuals. Finally, the variance of the residuals (ΔNI^*) are computed for the firms in the two periods and the difference compared with the variance ratio F-Test (Lang et al. 2006).

Regression of ΔNI on the control variables is stated as:

$$\Delta NI_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 DISSUE_{it} + \alpha_5 TURN_{it} + \alpha_6 LEV_{it} + \alpha_7 CFO_{it} + \alpha_8 AUD_{it} + \varepsilon_{it} \quad ....(1)$$

Where for firm i in year t:

ΔNI= change in annual net income scaled by total assets; SIZE = natural logarithm of total assets; GROWTH =percentage change in revenues; EISSUE = percentage change in common shareholders' equity; DISSUE = percentage change in total liabilities; TURN = revenues divided by total assets; LEV = total liabilities divided by book value of equity; CFO = annual net cash flow from operating activities divided by total assets; AUD = dummy variable taking the value of 1 when the firm's auditor is one of the Big Four accounting firms, that is, PwC, KPMG, E&Y, or D&T, and 0 otherwise.

Despite a wide range of control variables included in Equation 1, the variability of earnings may not be captured by those variables. As suggested by Lang et al. (2006), firm-specific factors connected with the underlying volatility of cash flow may still impact on the variance of earnings. Typically, when there are more fluctuated cash flows, firms should expect a more volatile net income. Therefore, the second earnings smoothing measure extends the

analysis of the first measure by benchmarking it against the volatility of cash flows. This involves calculating the ratio of the variability of the change in net income to the variability of cash flow.

Similar to the first measure, the regression of the change in net income scaled by total assets (ΔNI) and the regression of change in operating cash flow scaled by total assets (ΔCF) is run on the same set of control variables identified in the first metric separately. Then, residuals from these two regressions are obtained accordingly. The ratio is based on the variance of those residuals. ΔNI^* is residuals from the regression of ΔNI on the control variables (Equation 1) and ΔCF^* is residuals from the regression of ΔCF on the control variables (Equation 2). The regression of ΔCF on the control variables is represented as:

$\Delta CF_{it}=\alpha 0+\alpha 1SIZE_{it} +\alpha 2GROWTH_{it}+\alpha 3EISSUE_{it}+\alpha 4DISSUE_{it}$

$+\alpha 5TURN_{it}+\alpha 6LEV_{it}+\alpha 7CFO_{it}+\alpha 8AUD_{it}+\varepsilon_{it}$.. (2)

As proposed by Leuz et al. (2003), firms are expected to manipulate reported earnings by utilising accruals and smooth fluctuations of cash flow streams. A negative relationship between accruals and cash flows should exist due to this effect on accounting accruals. Thus, the third earning smoothing metric is the Spearman correlation between accruals and cash flows. Correlations between cash flow residuals (CF*) and accruals residuals (ACC*), rather than correlations between cash flow and accruals, are used in this study. Consistent with the previous two measures, the residuals are regressed from equation (3) and equation (4) on the similar control variables. *Ceteris paribus*, a larger magnitude of negative correlation between accruals and cash flows means earnings smoothing and poor earnings quality.

Equation (3); Regression of CFO on the control variables is represented as:

$CFO_{it}=\alpha 0+\alpha 1SIZE_{it} +\alpha 2GROWTH_{it}+\alpha 3EISSUE_{it}+\alpha 4DISSUE_{it}$

$+\alpha 5TURN_{it}+\alpha 6LEV_{it}+\alpha 7CFO_{it}+\alpha 8AUD_{it}+\varepsilon_{it}$ .... (3)

Equation (4): Regression of ACC on the control variables is represented as:

$ACC\ it=\alpha 0+\alpha 1SIZE_{it} +\alpha 2GROWTH_{it}+\alpha 3EISSUE_{it}+\alpha 4DISSUE_{it}$

$+\alpha 5TURN_{it}+\alpha 6LEV_{it}+\alpha 7CFO_{it}+\alpha 8AUDit+\varepsilon_{it}$.. (4)

Where $ACC_{it}=NI_{it}-CF_{it}$

After generating the residuals of CFO and ACC from above regressions, Spearman correlation *rho* can be computed for the firms in the two periods. Then, the study compares the correlations to evaluate a change in the earnings smoothing behaviour after IFRS convergence and further assesses the level of earnings smoothing in the different economies.

Managing earnings toward a positive target

The last earnings management metric is to test managing toward small positive earnings (SPOS). It is argued that managers have incentive to report small positive earnings instead of negative earnings. Moreover, the frequency of reporting small positive net income is higher for firms operating in poor investor protection environment (Leuz et al. 2003). Following prior studies (Lang et al. 2003; Lang et al. 2006; Barth et al. 2008), we examine the frequency of small positive earnings. Dummy variable for SPOS is set to one if annual net income (scaled by total assets) is between 0 and 0.01, and equal to zero otherwise. We examine the probability of firms reporting small positive earnings change after transiting to IFRS, by interpreting the SPOS coefficient from the following regressions:

$$\text{Period (0,1)}_{it} = \alpha_0 + \alpha_1 \text{SIZE}_{it} + \alpha_2 \text{GROWTH}_{it} + \alpha_3 \text{EISSUE}_{it} + \alpha_4 \text{DISSUE}_{it}$$
$$+ \alpha_5 \text{TURN}_{it} + \alpha_6 \text{LEV}_{it} + \alpha_7 \text{CFO}_{it} + \alpha_8 \text{AUD}_{it} + \alpha_9 \text{SPOS}_{it} + \varepsilon_{it} \text{ .... (5)}$$

$$\text{IFRS (0,1)}_{it} = \alpha_0 + \alpha_1 \text{SIZE}_{it} + \alpha_2 \text{GROWTH}_{it} + \alpha_3 \text{EISSUE}_{it} + \alpha_4 \text{DISSUE}_{it}$$
$$+ \alpha_5 \text{TURN}_{it} + \alpha_6 \text{LEV}_{it} + \alpha_7 \text{CFO}_{it} + \alpha_8 \text{AUD}_{it} + \alpha_9 \text{SPOS}_{it} + \varepsilon_{it} \text{ ....(6)}$$

When comparing pre-convergence and post-convergence period, we analyse the regression of an indicator variables Period and IFRS (0, 1) equals one for the pre convergence period and zero for post convergence period (Equations 5 and 6). A negative coefficient on SPOS would indicate the level at which firms report small positive earnings. When comparing for A-share firms and Hong Kong listed firm in the post-convergence period, IFRS (0, 1) is set to one for Hong Kong listed firms and zero for A-share firms.

Timely Loss Recognition

Timeliness implies that once the managers notice economic losses, they should report the losses as soon as possible rather than wait passively and allowing the effect to spread over time. This is an important measurement for accounting quality. Based on Basu (1997) and Lang et al. (2006), our study focus on investigating the relationship between timeliness of accounting income and stock return to determine the timely loss recognition. The underlying concern is to measure whether accounting income can capture the market information in a timely fashion.

Thus, we examine the reverse regressions of reported earnings on a series of independent variables, which include stock return, an indicator variable for negative return and the interaction of return with the indicator variable (Equation 7). The magnitude of the coefficient on the interaction of stock return with indicator variable can be explained as measurement for timeliness of loss recognition (Lang et al., 2006). Comparing pre and post periods, a larger coefficient of the firms will indicate that such firms recognize losses more timely. The regression of earnings on returns is expressed as:

$NIPS_{it} = \alpha_0 + \alpha_1 RETURN_{it} + {}_\alpha 2BAD_{it} + \alpha_3 RETURN_{it} * BAD_{it} + \varepsilon_{it}$ .... (7)

Where: NIPS = net income per share deflated by the price at the beginning of the period;

BAD (0, 1) =dummy variable taking on 1 for firm i with negative returns in year t and 0 otherwise;

RETURN = the natural logarithm of the ratio of the stock price 6 months after fiscal year-end to the stock price 6 months before fiscal year-end, adjusted for dividends and stock splits.

Value Relevance

High value relevance should be reflected as higher association between accounting numbers such as net income, equity book value and market-based information such as share prices, which suggests that accounting data is informative. Following Barth et al. (2001), value relevance is constructed in two metrics; price model and return model.

The first value relevance metric is based upon the explanatory power of the regression of share price on net income and equity book value. This is measured by R^2 value of the price regression (Equation 8). In order to provide sufficient time for accounting and financial information absorbed by market, six months share price after the fiscal year-end is used following prior studies (Barth et al. 2001, Lang et al, 2003). Furthermore, to control the effect of differences across industries which may influence the explanatory power, share price is first regressed on industry fixed effects (SIC codes) to derive the price residuals. Then the regression of price residuals P∗ is run on equity book value per share (BVEPS) and net income per share (NIPS) separately in the pre and post IFRS convergence periods. *Ceteris paribus*, a higher R^2 value would suggest that firms are expected to have a higher association between share price and accounting data. The regression of price residuals P* on BVEPS and NIPS is:

$$P*_{it} = \beta 0 + \beta 1 BVEPS_{it} + \beta 2 NIPS it + \varepsilon_{it}$$ .... (8)

Where:

P = share price six months after the fiscal year-end date;
P* = residuals from a regression of P on industry fixed effects
BVEPS = book value of equity per share;
NIPS = annual net income per share.

The second value relevance metric, the return model, is based on the approach of timely loss recognition to test the association between earnings and returns. In Equation 9, accounting earnings are defined as dependent variable and returns are defined as independent variable. The relationship between these two variables may be strong if firms report losses in timely manner, indicating that more earning information reflects in the market when the losses occur. As suggested by prior studies (Basu 1997; Ball et al. 2000; Barth et al. 2008), the analysis is not limited to the case of losses (negative return). Stock returns are separated into two cases: negative return and non-negative return. Thus, value relevance is examined by comparing explanatory power (R^2 value) from regressions of net income per share on annual stock return for both cases.

Similar to the price model, net income per share divided by beginning of year price (NI/P) is first regressed on industry fixed effects to obtain the residuals of NI/ P ([NI /P]*). Then,

regressions are run separately for companies with ''good news'' (non-negative annual share returns) and companies with ''bad news'' (negative annual share returns) (Basu 1997; Ball et al. 2000; Barth et al. 2008). Good news observations represent those for which RETURN is non-negative while bad news observations represent those for which RETURN is negative. After pooling all observations in relevant groups, regressions are run separately for A-share companies and Hong Kong listed companies for both "good news" and "bad news" in the two respective periods. Higher R^2 values for both cases imply higher level of value relevance.

Where the regression of [NI/P]* on RETURN:

$$[NI/P]*_{it} = \beta 0 + \beta 1 RETURN_{it} + \varepsilon_{it} \qquad ....9$$

Where:

NI/P = annual net income per share scaled by share price at the beginning of fiscal year;

[NI /P]* = residuals from a regression of NI/P on industry fixed effects;

RETURN = the natural logarithm of the ratio of the stock price six months after fiscal year-end to the stock price six months before fiscal year-end, adjusted for dividends and stock splits.

5.2.2 Real earnings management and discretionary accrual management

We further examined whether regulatory environment has an impact on real and accrual-based earnings management of firms in China and Hong Kong by comparing the financial results in pre and post adoption periods. We argue that firms from stronger regulatory environments may curb accrual-based earnings management but may or may not allow real earnings management. Roychowdhury (2006) finds that firms engage in real earnings management to avoid reporting losses. Using similar variables in Roychowdhury (2006) and Cohen and Zarowin (2010), we estimate real earning manipulations using abnormal cash flows from operation, production cost, and discretionary expenses. The cash flow from operation include the annual revenue, the production costs is the sum of goods sold while the discretional expenses comprise advertising expenses, research and development, selling, general and administrative expenses. The abnormality is measured by the deviations in the predicted values of the industry.

We measured discretionary accrual as the difference between total accruals (earnings before extraordinary items and discontinued operations[4]) less normal accruals, defined as

$$DA_{it} = (\frac{TA_{it}}{Assets_{i,t-1}})^{-} \ NA_{it} \ \ ....10$$

Where TA_{it} = is the total accruals which is defined as the $EBXI_{it} - CFO_{it}$ of firm i and time t

DA_{it} = discretionary accrual of firm i and time t. EBXI is the earnings before extraordinary items and continued operations, CFO is the operating cash flows from continuing operations and $Assets_{i,t-1}$ represents total assets.

NA_{it} = normal accruals is measured as

$$K_1 \ \frac{1}{Assets_{i,t-1}} + \ K_2 \frac{\Delta Sales_{it}}{Assets_{it}} + \ K_3 \ \frac{PPE_{it}}{Assets_{i,t-1}}$$

Thus, our combined discretionary accrual model is:

$$DA_{it} \ = \ \left(\frac{EBXI_{it} - CFO_{it}}{Assets_{i,t-1}}\right) \ - \ (K_1 \frac{1}{Assets_{i,t-1}} + \ K_2 \frac{\nabla Sales_{it}}{Assets_{it}} + \ K_3 \frac{PPE_{it}}{Assets_{it}}) + SC_{i,t} \ ....11$$

Using discretionary accruals allows us to control for industry wide changes in economic conditions that affect total accruals. Prior studies on earnings management (Dechow et al, 1998; Dicher and Skinner, 2002; Cohen and Zarowin, 2010) have shown that these areas are susceptible to manipulation by firms. For example, Roychowdhury (2006) finds that unusually low cash flow and discretionary expenses (which includes advertising cost) and unusually high production costs exhibited by firms are likely signals of earnings manipulations.

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[4] The discretionary accrual approach applied in our study is consistent with Cohen and Zarowin (2010), we have presented the abridged cross-sectional model (see also Jones, 1991).

5.3 Hypotheses development

Given the rapid development of Chinese economy and capital market, IFRS can be expected to be relevant to China. Regulators expect that IFRS adoption can contribute to great advantages, one of which is improved financial reporting quality[5].

As there are significant differences in terms of economy, regulatory and legal systems between mainland China and Hong Kong, we compare the financial reporting quality of Hong Kong firms listed in mainland China with Chinese listed firms in Hong Kong examine whether there are significant differences in financial reporting quality under IFRS regime operating in different regulatory environments.

According to prior studies, accounting quality is higher in countries with a common law origin and high protection of shareholder. In sum, it is reasonable to hypothesise that the financial reporting quality in terms of earning management, timely loss recognition and value relevance will improve after substantially converging with IFRS. Therefore, the hypotheses are formulated as follow:

H1: Earning management has significantly decreased following substantial convergence with IFRS in China and Hong Kong

H2: The regulatory environments have significant impact on firms' manipulations of real earnings and discretionary accruals in China and Hong Kong.

H3: Financial reporting quality is higher for Chinese companies cross listed in the Hong Kong stock exchange than for Hong Kong companies that are cross listed in mainland China.

6. Discussion of Results

Descriptive results

Table 1 presents the descriptive statistics of the sample variables for Chinese A-share firms and Hong Kong listed firms in the convergence period. A comparison of the sample firms reveals that the mean and median for all non-dummy test variables are significantly different, with the exception of change in operation cash flows (ΔCF). The change in net income (ΔNI)

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[5] See EC Regulation No. 1606/2002.

decreases in Hong Kong listed firms with negative mean and median, which are –0.0141 and -0.0028 respectively. On the contrary, A-share firms have experienced an increase in ΔNI (positive mean). It can be seen also that the book value of equity per share (BVEPS) is substantially larger for Hong Kong sample firms that for A-share sample firms. Both the Hong Kong listed firms and the Chinese A-share firms have negative stock returns of -0.0168 and -0.0151 respectively in the post-convergence period, though the mean difference is not significant.

Although the size of both groups of sample firms is similar, the Hong Kong listed firms have higher growth than the A-shares firms. However, the test statistics do not uncover significant difference in growth between the two groups. Further, the result demonstrates that A-shares firms have higher probability to issue debt than Hong Kong listed firms (median difference is significant). At the same time, it is highly leveraged for the A-shares firms compared to the Hong Kong firms, and the mean of leverage ratio is 1.4280 and 0.9688 respectively (both mean and median differences are significant). Finally, the Hong Kong listed firms are more likely to be audited by the Big four auditors (AUD), which implies that Hong Kong has more professionals and better audit environment.

< Insert Table 1 here>

Empirical results

Table 2 presents a comparison of financial reporting quality metrics using earnings management, timely loss recognition and value relevance for firms listed in Chinese A-share market before and after substantial convergence with IFRS. The results reveal that the firms exhibit less earnings management, more timely loss recognition. Furthermore, the reported accounting and financial figures are more value relevant since 2007 (i.e. after convergence), which is consistent with the predictions. This result makes IFRS adoption itself a contingent factor for obtaining a high quality financial reporting system.

Panel A (Table 2) compares earnings management metrics of A-share firms between pre and post-convergence periods. The first three earnings management measures report on the residuals after regressing each dependent variable on a specific set of control variables. The

first finding suggests that Chinese A-share firms exhibit a substantially higher volatility in net income (ΔNI^*) than in the post period, i.e. 0.0236 versus 0.0058 and the difference is statistically significant at the 0.01 level. This finding is consistent with the prediction that the reporting earnings for Chinese A-share firms are more volatile since 2007.

The second earnings management metric, the volatility of change in operating cash flow is examined on the same controlled variable as the first metric. Similar to the first result, the finding indicates that the ratio of the variability of change in net income, ΔNI^*, to the variability of the change in cash flow, ΔCF^*, is higher in the post-convergence period than that in pre-convergence period. The ratio changes from 0.7749 in pre-adoption period to 2.3561 and cash flow variability is similar for the two samples, which suggests that it is not the higher volatility in cash flows that leads to the higher earnings variability in the post-convergence period. The high difference of 1.5812 confirms the existence of earnings smoothing in the earlier result.

However, the third metric, the correlation between accruals and cash flows after convergence (-0.8214) is more negative than before adoption (-0.7568), though the difference is not significant. This finding contrasts with the prediction that A-shares firms have a significantly less negative correlation between accruals and cash flows in the post-convergence period. This result however indicates that A-firms engage in smoothing as managers increase accruals to make up for poor cash flow (Liu, 2011).

Finally, the fourth earning management metric analyses the regression of small positive net income on control variables. The result reveals that there is a significant negative coefficient (-0.0881) for small positive net income, SPOS, which suggests that A-share firms are more likely to manage earnings toward positive target after substantially converging with IFRS.

< Insert Table 2 here>

Taken together, these results are consistent with our predictions, that Chinese listed firms engage less in earnings smoothing in the post-convergence period than in the pre-convergence period. The results depict the positive impact of IFRS in improving the quality of financial reporting.

Panel B (Table 2) compares measures of timely loss recognition between two periods. Based on Lang et al. (2006), reported earnings are regressed on returns, a bad news earnings indicator, and the interaction of the two variables. It is suggested that more timely loss recognition will result in a larger coefficient estimate on bad news earnings in the regression. The coefficient of RETURN * BAD is 0.0292 in the post period, significantly higher than that in pre period (0.0069). This finding indicates that managers in A-shares firms are more likely to report large losses in timely fashion since the companies adopt substantially IFRS-convergent standard.

Panel C presents the results of value relevance tests. The price model is to test the level of association between accounting number and share price. The regression of share price on earnings per share and book value of equity demonstrates a significantly higher R^2 in post-adoption period (24.37%) than pre-convergence period (12.60%). For the return model, the sample is separated into two categories based on good news and bad news. The R^2 of the regression of earnings per share on good news (bad news), 5.73% (0.39%) is also higher in post-adoption period than that in pre-adoption period, 0.09% (0.18%). These findings indicate that value relevance of accounting data has improved after substantially convergent with IFRS for Chinese A-shares firms, which is consistent with our prediction.

< Insert Table 3 here>

Table 3 presents results comparing the quality of financial reporting for firms listed in Hong Kong before and after the IFRS regime. The results are mostly consistent with the prediction that the accounting quality is higher for Hong Kong listed firms than A-share firms. It reveals that Hong Kong listed firms experience less earning management, more timely loss recognition and more value relevance of accounting and financial information.

In terms of earnings management, Hong Kong listed firms exhibit a significantly low variability of change in net income, ΔNI*, a negligible difference of 0.0018 after the IFRS convergence. The second metric of earning management is the ratio of the variance of change in net income, ΔNI*, to variance of change in cash flow, ΔCF*, which shows a difference of 0.031. The negligible figure of the difference indicates that firms engage less in earnings management. This is consistent with the first finding of low volatility in earnings. The

correlation between accruals, ACC*, and cash flow, CFO*, for firms listed in Hong Kong firms is -0.0830, is significantly less negative than the pre adoption ratio (-0.0821). The coefficient on SPOS, -0.3898, is negative, which suggests that Hong Kong firms are less likely to manage earnings in both periods. Overall, the findings for earning management provide evidence that firms listed in Hong Kong have higher accounting quality than A-share firms in the forms of less earnings smoothing behaviour.

Lang et al. (2006) argue that more timely loss recognition will result in a larger coefficient estimate on bad news earnings in the regression of earnings on returns. The coefficient of Return*BAD is larger for Hong Kong listed firms in the post-convergence period, 0.7171 versus 0.0292, suggesting that large losses are reported in timely manner by Hong Kong listed firms in the post-convergence period.

In terms of value relevance, regression of price on net income and equity book value reveal that the R^2 for firms listed in Hong Kong is significantly larger than that for A-shares firms, which are 62.08% and 24.37% respectively. However, contrary to the prediction, the R^2 value for good news and bad news in return model is lower for firms listed in Hong Kong. Thus, the price regression suggests that accounting data are more value relevant for firms listed in Hong Kong than A-share firms while the return model findings do not. Overall, these result lay credence to the contingency theory as the effective management of earnings is, as observed above, contingent upon the regulatory environment and IFRS adoption (post-IFRS).

Sensitivity Analyses - Real versus Accrual-based earnings management

The consideration for the sensitivity analyses is that the regulatory environment may be influential in the earnings management behaviour of firms. Prior studies argue that firms may engage in real earnings management to avoid reporting annual losses (Roychowdhury, 2006), but may not manipulate earnings through discretionary accruals. We argue that firms from stronger regulatory environments may curb accrual-based earnings management and intolerant to real earnings management, which can also be affected by the regulatory environment.

Therefore, segmenting the firms into two regulatory environments i.e. Chinese firms in Hong Kong and vice versa; and differentiating the earnings management practices into real and

accrual-based will help to clarify whether such practices are influenced by the regulatory environments.

The results shown in Table 4 indicate that firms listed in China are more likely to engage in accrual-based earnings management than in real earnings management activities even after the converging with IFRS. Abnormal cash flows from operations and discretionary expenses are significantly negative (-0.025 and -0.040) in both periods indicating that real earnings manipulations are less tolerated particularly after the convergence. Conversely, Hong Kong firms tolerate some forms of real earnings management such as abnormal cash flows from operations and abnormal discretionary expenses as both show positive significance of 0.579 and 0.088 but would not condoned accrual based manipulations such as discretionary accruals. These results indicate that the leverage on forms of earnings manipulations used by firms in the two regions is affected by the operational and regulatory environment. For Hong Kong firms, the negative significance with discretionary accruals earning management activities indicates that such practices remotely occur.

The results demonstrate that different earnings management practices that are tolerable in one country may not be the case in another which is largely affected by the level of regulations. Cross-listed firms tend to imbibe the earnings management culture of their environment. For instance, firms from countries where the regulations are strict, if cross listed in weakly regulated environments are likely to lower their financial reporting quality. Therefore, we can conclude that the control of earning management practices is contingent upon the strength of a country's regulatory environment.

< Insert Table 4 here>

Further Robust Check

To check that our results on real and discretionary earnings management are consistent with our prediction that regulatory environment influence earnings management practices, we run the same regression on set of non-cross listed firms. Lin and Liu (2009) show that regulatory controls can be critical in adhering to financial reporting standards or engaging in earnings manipulation activities. Thus, we argue that non cross listed Chinese firms are more likely to engage in accrual-based earnings manipulation as they operate under a less strict control environment. As such, Chinese firms, cross-listed in Hong Kong and therefore outside the

Chinese regulatory authorities are expected to conform to the standards measurable with Hong Kong firms and thus likely to engage in some forms of real earning management.

The results as presented in Table 5 are consistent with our hypothesis that Chinese indigenous firms are more likely to engage in discretionary accruals than in accrual-based earnings management. Conversely, we find that Hong firms are more prone to engaging in real earnings management though at a lesser degree since the IFRS convergence.

< Insert Table 5 here>

Difference-in-difference analysis

To further examine the impact of the regulatory environment on IFRS adoption between China and Hong Kong, we conduct a difference-in-difference (DID) test. The DID test is applied here for three reasons: first to compare the influence of IFRS on the management of earnings in the pre and post IFRS adoption in both countries. Second, it allows us to cater for differences in regulatory environments in the two countries and third, it is used to check for the endogeneity problem of omitted variables associated with our sample selection[6].

The DID analysis is based on the mean aggregate of the earnings management variables and the result presented in Table 6 shows a greater reduction in the earnings management of Chinese firms more than in Hong Kong firms. This is remarkable as the mean difference shows a remarkable significance of 0.36, indicating the positive influence of IFRS on the quality of financial reporting in China than in Hong Kong.

< Insert Table 6 here>

7. Conclusion

Our results reveal that Chinese firms exhibit less earning management, more timely loss recognition and the reported accounting and financial figures are more value relevant since 2007, which is consistent with the predictions. The results are consistent with prior studies which indicate that Chinese listed firms engage less in earnings smoothing in the post-convergence period than in the pre- convergence period. The results depict the positive

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[6] Gordon et al (2012) apply similar approach in testing the endogeneity issues of self –selection of adoption of IFRS adoption between developed and developing economies.

impact of IFRS in improving the quality of financial reporting thereby making IFRS adoption (post-IFRS) a strong contingent factor for high quality financial reporting (with effective control of earning management). This is also consistent with prior studies which suggest that there is more earning management and lower value relevance in weaker investor protection environments (Leuz et al, 2003).

The findings are also consistent with the prediction that the accounting quality is higher for Hong Kong listed firms than for Chinese firms. It shows that Hong Kong listed firms experience less earning management, more timely loss recognition and more value relevance of accounting and financial information. Our results suggest that large losses are reported in timely manner by Hong Kong listed firms in the post-convergence period. Similarly, the results of real and discretionary accrual measures reveal that different earnings management practices can be tolerable in one country and not in another, largely due to the level of regulations. In addition, cross-listed firms tend to follow culture in their environment.

Our study reveals that the regulatory environment influence earnings management practices as firms from strong and stricter regulatory environments are seen to be tolerant to certain earnings manipulations if cross listed in less regulatory environments. The DID analysis indicates a greater reduction in the earnings managements of Chinese firms after the IFRS convergence indicating the positive impact of the IFRS on the quality of financial reporting in China than in Hong Kong. Through the frame of the contingency theory, therefore, these results confirm a country's institutional structures, its extent of regulation and the strength of its investor protection environments as strong contingent factors that determine the quality of financial reporting capable of effectively controlling earning management practices. The foregoing results and the emerging contingent factors should be able to guide financial reporting regulators and standard setters as well as policy-makers within relevant government agencies in their efforts in curbing the incidence of earnings management practices. They will also guide government policies, as in the case of China, towards strengthening financial reporting systems.

Notwithstanding the relevance and adoption of the contingency theory in this study, the theory has been criticised by a number of writers. For example, Schoonhoven (1981) opined that contingency theory is an orienting strategy (or meta-theory) rather than a theory in the conventional sense. He therefore suggested its use as an underlying conceptual framework

upon which other perspectives can be applied. Similarly, Scott (1987: 507-509) observed that unless combined with another theory, contingency theory standing alone cannot offer a whole understanding of the different roles carried out by various management practices (in the forms of control and coordination) that are used in modern organisations. As such, we suggest that future research could explore combining institutional theory with the contingency theory with a view to drawing out institutional factors that may influence the effectiveness of the contingent factors identified in the current study. Also, it will be interesting to see how these results might change if the earning management metrics are altered – an idea that might worth exploring by future studies on the subject.

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Appendix

Table 1 : **Descriptive Statistics of A-share firms in pre and post period**

	Chinese A-shares firms			Hong Kong listed firms		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
Test Variables						
ΔNI	0.0005	-0.0003	0.1563	-0.0141*	-0.0028*	0.2083***
ΔCF	-0.0051	-0.0058	0.1295	0.0001	-0.0009	0.0975***
CFO	0.0424	0.0441	0.1030	0.0306	0.0289***	0.0855***
ACC	-0.0044	-0.0131	0.1283	0.7155***	0.0041***	4.0143***
SPOS	0.1330	0.0000	0.3397	0.1425	0.0000	0.3498
Price	11.8801	9.3050	8.2173	15.0745**	2.7200***	26.6984***
BVEPS	3.3512	2.8050	2.1672	14.6308***	3.2012	25.8241***
NIPS	0.3046	0.2050	0.4278	1.4776***	0.1766	13.1752***
NI/P	0.0242	0.0236	0.0517	1.7059***	0.0713***	12.4935***
RETURN	-0.0151	-0.0326	0.3757	-0.0168	-0.0140**	0.3903
Control Variables						
SIZE	8.4664	8.4033	1.1976	8.7979	8.4212	2.1624***
GROWTH	0.2618	0.1393	0.9417	0.3870	0.0691***	2.5063***
EISSUE	0.2416	0.0783	2.0944	0.2210	0.0885	1.0666***
DISSUE	0.3150	0.1259	2.6644	0.5560	0.0582***	3.9273***
TURN	0.7650	0.5762	0.7534	0.3916***	0.1947***	0.5097***
LEV	1.4280	1.1860	2.9218	0.9688**	0.4723***	6.3831***
CFO	0.0424	0.0441	0.1030	0.0306	0.0289***	0.0855***
AUD	0.1250	0.0000	0.3309	0.6800***	1.0000***	0.4671***

Table 2: Financial Reporting Quality Measures Analysis of Chinese A-share Firms

Panel A: Earning Management Metrics -				
	Predict	**Pre**	**Post**	**Diff.**
Variability of ΔNI*	Post>Pre	0.0236	0.0058***	0.0178
Variability of ΔNI*/ΔCF*	Post>Pre	0.7749	2.3561	1.5812
Correlation of ACC* and CFO*	Post>Pre	-0.7568	-0.8214	-0.0646
Small positive net income (SPOS)		-0.0881##		
Panel B: Timely Loss Recognition Metrics				
Return*BAD coefficient	Post>Pre	0.0069	0.0292**	0.0223
Panel C: Value Relevance Metrics (R^2)				
Price Model	Post>Pre	0.1260	0.2437*	0.1177
Return Model				
Good news	Post>Pre	0.0009	0.0573*	0.0564
Bad news	Post>Pre	0.0018	0.0039	0.0021

*, **, ***indicates significant difference from pre-adoption and post- adoption at the 10%, 5% and 1% confidence level, respectively (one-sided). ## indicates significantly different from zero at the 5% level (one-sided).

Table 3: Financial Reporting Quality Analysis of Hong Kong Firms

Panel A: Earning Management Metrics -				
	Predict	**Pre**	**Post**	**Diff**
Variability of ΔNI*	Post>Pre	0.0218	0.0236 ***	0.0018
Variability of ΔNI*/ΔCF*	Post>Pre	2.3561	2.3871	0.031
Correlation of ACC* and CFO*	Post>Pre	-0.0821	-0.0830***	-0.0009
Small positive net income (SPOS)		-0.03898##		
Panel B: Timely Loss Recognition Metrics				
Return*BAD coefficient	HK> A share	0.0292	0.7171***	0.6879
Panel C: Value Relevance Metrics (R^2)				
Price Model	HK> A share	0.2437	0.6208***	0.3771
Return Model				
Good news	HK> A share	0.0573	0.0023	-0.055
Bad news	HK> A share	0.0039	0.0002	0.0037

*, **, ***indicates significant difference from pre-adoption and post- adoption at the 10%, 5% and 1% confidence level, respectively (one-sided).

indicates significantly different from zero at the 5% level (one-sided).

Table 4: Result of the Real versus Accrual-based (discretionary) earnings management of China and Hong Kong firms

The accrual-based earnings are discretionary accruals while the real earnings activities include abnormal cash flows from operations, production cost and discretionary expenses of the firms.

Cross listed firms	China		Hong Kong	
	Pre	Post	Pre	Post
Discretionary (accrual-based) accruals	0.018*** (0.019)	0.322*** (0.153)	-1.241** (-0.012)	-0.010** (-0.003)
Abnormal cash flows from operations	-0.005* (-0.214)	-0.025* (-0.002)	0.102** (0.017)	0.579*** (0.196)
Abnormal production costs	-0.060 (-0.008)	-0.077 (-0.007)	-0.060 (-0.201)	-0.102 (-0.187)
Abnormal discretionary expenses	-0.032** (-0.014)	-0.040** (-0.172)	0.11** (0.015)	0.088** (0.098)

***significant at the 1% level,**significant at the 5% level, *significant at the 10% level.

Table 5: Robust Check – Non cross-listed firms

Non-Listed firms	China		Hong Kong	
	Pre	Post	Pre	Post
Discretionary(accrual-based) accruals	0.272*** (0.052)	0.283*** (0.035)	-1.287*** (-0.186)	-3.686*** (-0.363)
Abnormal cash flows from operations	-0.235** (-0.023)	-0.203* (-0.031)	0.405** (0.063)	0.579** (0.196)
Abnormal production costs	0.142** (0.047)	0.526** (0.057)	0.046* (0.020)	0.121* (0.037)
Abnormal discretionary expenses	-0.282** (-0.024)	-0.625*** (-0.093)	0.014** (0.078)	0.015** (0.028)

*, **, ***indicates significant difference from pre-adoption and post- adoption at the 10%, 5% and 1% confidence level, respectively (one-sided).

Table 6: Difference-in-difference analysis

	Pre- IFRS adoption	Post-IFRS adoption	Mean Difference
China	17.56	20.21	2.65
Hong Kong	13.74	15.03	1.29
	3.82	5.18	0.36*

*significant at the 10% level, and indicates the difference in regulatory environment of China and Hong Kong after the adoption period.