



Heterogeneity in Earning Management of Listed Companies Following International Financial Reporting Standards Convergence: A Developing Country Experiences

P. R. Weerathunga^{1*}, Chen Xiaofang², T. K. G. Sameera³

¹School of Management, Wuhan University of Technology, Wuhan, P.R. China, ²School of Management, Wuhan University of Technology, Wuhan, P.R. China, ³Faculty of Management Studies, Rajarata University of Sri Lanka, Mihintale, Sri Lanka
*Email: weerathungaroshan@gmail.com

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ABSTRACT

This study examines the earning management behavior of Sri Lankan firms following International Financial Reporting Standards (IFRS) convergence. Moreover, we investigate whether the earning management following IFRS convergence is similar across different companies. We separately evaluate the companies based on size, auditor type, and performance to see whether these factors can moderate earning management behavior. We collected the data from a sample of 160 companies that are listed on the Colombo Stock Exchange for the period spanning from 2008 to 2015. The period from 2008 to 2011 was the pre-IFRS convergence and the period after 2012 was the post-IFRS period. Following prior studies, we used several measures to capture the earning management around IFRS convergence. Especially, our measures aim to identify earning smoothing and managing towards earning target and thereby determining whether the firms have engaged in earning management and its increase and decrease. The results show that the earning management, overall, has not decreased following IFRS convergence. However, our results indicate that post-IFRS earning management varies between companies. That is, large companies and companies with big four auditors experienced a decrease in earning management following IFRS convergence. Similarly, certain aspects of earning management of high performing companies are also found to have decreased in post-IFRS convergence. Finally, our findings provide important implications for regulators, investors and other corporate stakeholders.

Keywords: Earnings Management, International Financial Reporting Standards Convergence, Sri Lankan Firms

JEL Classifications: M410, M480, C2, C3

1. INTRODUCTION

Regardless of the debate over the adoption of International Financial Reporting Standards (IFRS), almost all the countries around the world have adopted or converged with or have set the timeline for the prospective adoption of IFRS. Following this widespread adoption of IFRS, it has gained increasing academic attention during the last decade and as a result, there are plenty of studies available in this regard. However, no consensus has been reached in respect of the economic consequences of IFRS Adoption. IFRS based financial statements provide more information compared to the financial statements based on local generally accepted

accounting principles (GAAP) because of the fair value approach of IFRS and its shareholder-orientation (Dunne et al., 2008). The proponent of IFRS argue that firms may be benefited from IFRS adoption, for instance, IFRS improve the comparability of financial statements across companies and countries. Moreover, when the quality of information is improved, it lowers the agency cost that may be arising from shareholder- management conflicts. Furthermore, IFRS facilitate cross-border listing and hence provide access to the foreign capital, and which leads to greater international investments (Aharony et al., 2010; Dunne et al., 2008). Barth et al. (2008) suggested that IFRS convey new information to the market. Such new information in the market

enables the investors to make informed decisions and prediction of a company's future performance, which in turn signal the higher accounting quality. Therefore, compliance with IFRS would reduce managers' earning manipulation and increase the efficiency of the stock market.

However, the opponents of IFRS adoption argue that the expected benefits may be achieved only under a strong institutional setting and enforcement mechanism. Accounting standards are only one of the factors that determine the accounting or financial reporting quality of a firm (Soderstrom and Kevin, 2016). Other determinants of the financial reporting quality may include financial market development, tax system, and firm-specific factors such as ownership, capital structure, size, nature of audit firm, firm performance, leverage, listing status, etc. (Soderstrom and Kevin, 2016; Uyar et al., 2016). Therefore, IFRS even as a single set of high-quality accounting standards may not be suitable for all countries and all companies given the institutional and firm-level differences. Soderstrom and Kevin (2016) pointed out that the accounting quality may not improve uniformly for each firm, given that the additional factor such as legal and political systems and incentives of financial reporting. Despite the plethora of studies available related to the IFRS adoption, there is a paucity of studies that examine firm-level determinants of accounting quality following IFRS adoption in the developing world. Almost all the developing countries have adopted IFRS in its current form with or without modifications. Nevertheless, limited attention has been given to the examination of economic consequences, especially the impact on firms' financial reporting quality of firms domiciled in developing countries. Given the limited studies in developing countries, this study examines the effects of IFRS convergence on earning management, which is one aspect of the accounting quality, of listed entities in a developing country.

We selected Sri Lanka as the research context as it provides an opportune empirical setting for our study. Before 2012, Sri Lankan firms used Sri Lanka Accounting Standards (SLASs) for the preparation of financial statements. However, Regulatory bodies¹ of Sri Lanka mandated the adoption of Sri Lankan Financial Reporting Standards (SLFRS/LKAS) that are substantially converge with IFRS for all listed companies starting from 2012. We collected the data for 4 years before IFRS convergence and 4 years after IFRS convergence. This way we can compare the earning management between pre-IFRS convergence and post-IFRS convergence. Moreover, we split the firms based on the size, auditor type and financial performance. Then we compare the earning management behavior of each group of firms between pre-post IFRS convergence. This study, thus, contributes to the literature in two ways. First, this study provides empirical evidence about the impact of IFRS convergence on earning management from a developing country for which limited studies are available. The most important contribution of this study is that it shows the earning management behavior differs among companies. We found that the large companies and companies having big four auditors exhibit less earning management in terms of earning smoothing and managing towards earning targets in the post-IFRS period. We also provide some practical implications on IFRS

convergence and its impact on earning management. Reduced earning management is a good indication of the accounting quality of a firm. Thus, understanding the effects of IFRS adoption on earnings management in Sri Lanka is of potential interest to regulators and accounting standards setting bodies. The findings of this study indicate the firm-level factors play an important role in the adoption of IFRS.

2. LITERATURE SURVEY

Plenty of studies have investigated the accounting quality in post IFRS adoption using an earning management approach. Studies such as Jeanjean and Stolowy (2008) investigate earning management of the UK, France and Australia following the mandatory adoption of IFRS. The proxies that they used were the ratio of small reported profit to small reported losses. In addition, their study was conducted based on data from 2002 to 2006. However, they find that earning management has not been reduced under IFRS. In fact, earning management significantly increase in France. Similarly, Callao and Jarne (2010) find, based on their study of firms from 11 EU countries using data from 2003-2006, that earnings management has increased post IFRS adoption. The countries where earnings management (operationalised in terms of discretionary accruals) has increased the most are France and the UK. Callao and Jarne (2010) argue that the increase in earnings management observed may be attributable to additional flexibility and subjectivity that IFRS introduces in the reporting of certain items compared to local GAAPs.

A study focusing purely on accounting quality of UK firms post IFRS adoption is Iatridis, (2010). His sample excludes financial institutions and consists of 241 firms listed on the LSE. The results reveal that firms report less smooth accounting numbers, more timely recognition of losses and a lower frequency of small profits post IFRS adoption, which is indicative of less earnings management. In addition, based on regressions of accounting numbers and market measures (such as share price and returns) the author finds that the IFRS amounts are more value relevant than UK GAAP amounts. The author states that his findings show that the implementation of IFRS has reduced the scope for earnings management, is related to more timely loss recognition and more value relevant accounting measures. However, the sample period of this study is limited to 2004 for the pre-adoption period and 2005 for the post-adoption period that undermines the reliability of the results. In addition, this study excludes firms from the financial industry that limits the generalizability of the results given that a high percentage of firms on the LSE are from the financial industry.

Aubert and Grudnitski, 2010 investigate the impact of IFRS adoption by identifying significant differences in return on assets (ROA) amounts for firms calculated under local accounting standards and restated IFRS figures for the 2004 financial year (as stated in the 2005 annual reports). The evidence shows significant differences between ROA under local accounting standards and IFRS figures for firms from Belgium, Finland, France, Germany, the Netherlands, Norway, Sweden, Switzerland and the UK. However, the authors do not find any evidence that IFRS earnings numbers are more value relevant or timely

¹ The Institute of Chartered Accountants and Standards Setting Committee.

compared to local standards, indicating that while mandatory IFRS adoption may have an impact on firm reporting numbers, these changes may not necessarily translate to more informative and high quality financial reports.

Verriest et al. (2013) also investigate the IFRS adoption process. Specifically, they examine the association between corporate governance strength (based on variables such as board independence, board functioning and audit committee effectiveness) and firms' compliance and disclosure choices made by first-time IFRS adopters. The results indicate considerable diversity in compliance and disclosure between firms. The evidence shows that firms with stronger governance mechanisms engage in more transparent IFRS restatements, comply with IFRS more rigorously and provide better disclosure quality than firms with weaker governance. Thus, the authors highlight the importance of stronger governance guidelines in promoting higher adoption quality.

Landsman et al. (2012) investigate whether the information content of earnings announcements, measured in terms of abnormal return volatility and abnormal trading volume, increases in countries following mandatory IFRS adoption. The evidence shows that the information content increased in 16 countries that mandated the adoption of IFRS relative to the 11 that reported under local accounting standards. Using path analysis, Landsman et al. (2012) discern three mechanisms through which IFRS adoption increases information content: reducing reporting lag (length of time between period end and earnings announcement), increasing analyst following, and increasing foreign investment. The authors also find that firms in strong legal enforcement countries experienced a greater increase in information content following mandatory IFRS adoption than firms from countries with weak enforcement.

To sum up, the findings of the previous studies related to the effect of IFRS adoption or convergence on accounting quality, particularly on earning management, are inconclusive. The idea that established in the accounting literature is that the accounting quality is affected by several factors that are not directly related to financial reporting. Examining the impact of these factors on the adoption of IFRS and accounting quality would make a significant contribution to the literature. This study examines the effects of IFRS convergence on earning management empirically; in particular, we investigate whether firm-level factors such as firm size, auditor, and performance could explain the earning management behavior.

3. HYPOTHESIS DEVELOPMENT

3.1. Firm Size and Earning Management

The size of a firm is a critical determinant of the extent of the application of accounting standards. Generally, large firms with more resources and expertise tend to comply with regulations. Therefore, it is reasonable to assume that they will comply with the requirements of IFRS to a greater extent relative to the smaller firms. Another reason why large companies have to comply with IFRS is political cost (Watts and Zimmerman, 1990). To reduce

the expected political cost, large companies may have to increase the credibility of financial statements with the actual application of IFRS (Guerreiro et al., 2008). Moreover, compliance with IFRS may be less costly for large companies compared to smaller ones due to resource availability, and they may already have a superior information system that facilitates the adoption of IFRS. Furthermore, large companies are usually older firms, may have a more established reporting system, and therefore, the adoption of IFRS was less costly and could be expected greater compliance. Such a genuine adoption or higher compliance with IFRS expects to have greater accounting quality. IFRS reduces the alternative accounting treatments and requires accounting measurement that better reflects the firm's real economic position and performance and that limit managements' opportunistic decision in determining accounting amounts (Barth et al., 2008) and this, in turn, improve the earning quality. Therefore, the following hypothesis is proposed in relation to firm size and earnings management behavior.

H1: Large firms are likely to experience less earning management following IFRS convergence compared to smaller firms.

3.2. Auditor Type and Earning Management

The audit is an essential part of the financial reporting process. Similarly, the nature of the auditor (i.e., type of the accounting firm, auditors' expertise) is also crucial for the quality of the information provided via financial reporting. Generally, an auditor is considered as the guardians of the shareholders' interest, who control the financial reporting quality to reduce the conflict between managers and the shareholders (Johnson and Lys, 1990; Williams, 1988). Financial reporting quality depends on the incentives of managers and shareholders and their interaction. Managers may try to reduce or increase the performance (i.e., earnings) to manipulate the actual performance so that it will meet the expectation of shareholders. Accounting standards are designed to limit such managers' opportunistic behavior (Atkinson et al., 2002). However, the proper application of accounting standards is uncertain, and therefore, external assurance is needed. Prior studies established the idea that the large audit firms with industry expertise provide a high-quality audit (Carson, 2009; Reichelt and Wang, 2010). Moreover, the large audit firms (i.e., big four auditors) are usually experts in the application of IFRS since they are actively participating in the development and amendment of accounting standards (Wieczynska, 2008). Therefore, the firms with big four auditors most likely to experience better accounting quality following IFRS convergence. Since the extent of earning management of one aspect of accounting quality, the firms with big four auditors may experience less earning management relative to smaller firms. Thus, the following hypothesis is proposed:

H2: Firms whose auditor is one of the big four auditors are likely to experience less earning management following IFRS convergence.

3.3. Firm Performance and Earning Management

Profitable companies may try to increase the reliability of financial statements by complying with accounting standards and other regulations so as to reduce expected political costs (Guerreiro et al., 2008). High performing companies are generally inclined to higher political costs. These firms can increase the

reliability of reported profit by complying with IFRS. Several studies have found a positive relationship between compliance with IFRS and profitability (Iatridis and Rouvolis, 2010; Kim et al., 2011). Therefore, highly profitable firms may be assumed to have a better accounting quality when compared with loss, making firms, or less profitable firms. Thus, the following hypothesis is formulated:

H3: High-performing companies are likely to experience less earning management following IFRS convergence relative to the low-performing companies.

4. METHODOLOGY

4.1. Sample and Data

The sample of companies was obtained from the Colombo Stock Exchange (CSE) in Sri Lanka. As on the 01st January 2019, there are 290 companies listed on CSE representing 20 business sectors. However, our final sample consists of only 160 firms. When reaching the final sample, all the companies listed under the Banking, Finance, and Insurance industry sector were excluded, since the regulatory and enforcement mechanisms for these companies are far different from that of other companies². Thus, the accounting quality of these companies may be higher than other companies, even before the convergence of IFRS. Moreover, companies quoted on or after March 31, 2008 were excluded due to the sample period of the study spans from financial year 2007/2008 to 2014/2015. Finally, several companies were excluded from the final sample due to insufficient data available over the sample period. All required data was hand collected from the published annual reports of the companies. Annual reports were accessed from the official web site of CSE.

4.2. Measures of Earning Management

4.2.1. Earning smoothing

The first earnings smoothing metric used in this study determines the extent to which managers have reduced the variability of reported earnings. The first earnings smoothing metric is the variability of the change in net income (Δ_NI) used in previous studies such as Lang et al. (2005), Barth et al. (2006), Barth et al. (2008), Paananen and Lin (2009), Chen et al. (2010). Earnings smoothing is indicated by a smaller variance in the Δ_NI variable. However, the variance of changes in net income is affected by several firm level factors that are not attributable to earnings smoothing. Therefore, this metric of earnings smoothing is based on the residual from the following equation of ΔNI on control variables:

$$\Delta_NI_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \epsilon_{it} \quad (1)$$

In this equation, Δ_NI is the change in net income before extraordinary items scaled by total assets at the end of the financial

year; $SIZE$ is the natural logarithm of book value of total assets at the end of the financial year; $GROWTH$ is annual percentage change in sales at the end of the financial year; $EISSUE$ is annual percentage change in book value of equity at the end of the financial year; LEV is end of year total liabilities scaled by end of year book value of equity; $DISSUE$ is annual percentage change in total liabilities at the end of the financial year; $TURN$ is annual sales scaled by total assets at the end of the financial year; OCF is annual net cash flow from operating activities scaled by total assets at the end of the financial year; AUD takes one for the firms having one of the big four auditors (i.e., PricewaterhouseCoopers, KPMG or Ernst and Young, Deloitte) or zero otherwise; $CLOSE$ denote the closely held shares, which is calculated one minus percentage of publicly held shares.

The residual derived from the above equation (1) is named as Δ_NI^* . Then, the cross-sectional variance of Δ_NI^* for each company over pre-post IFRS (SLFRS) time period is calculated. To test for the normality of variance of Δ_NI^* , a Lilliefors test was carried out using Eviews 8.1. Since the variance of Δ_NI^* is not normally distributed, the Wilcoxon signed rank test for the differences in the median is used to examine whether the variance of Δ_NI^* is significantly differed under IFRS and SLAS. A significant variability of Δ_NI^* is indicated that less earning smoothing by managers and therefore better accounting quality.

Based on the previous studies such as Barth et al. (2006), Barth et al. (2008), Paananen and Lin (2009), Chen et al. (2010). The second metric of earnings smoothing is constructed as the ratio of the variability of Δ_NI divide by change in operating cash flows (Δ_OCF). The change in net income (Δ_NI) is divided by change operating cash flow (Δ_OCF) since firms with more volatile cash flows tend to have more volatile earnings. If managers use discretionary accruals to smooth earnings, then the variability of earnings should be lower than the variability of cash flows. Since the change in operating cash flows can be affected by other factors not related to earnings smoothing, Δ_OCF is first regress with control variables.

$$\Delta_OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \epsilon_{it} \quad (2)$$

In here, ΔOCF is the change in annual net cash flow from operating activities scaled by total assets at the end of the financial year and other variables are same as above. The residuals derived from this regression were denoted by Δ_OCF^* . Then, Δ_NI^* calculated as per equation 1 for each company divided by the corresponding Δ_OCF^* and resulting variable is the ratio of change in net income over the change in cash flows (Δ_NI^*/Δ_OCF^*) and then calculated the cross-sectional variance of Δ_NI^*/Δ_OCF^* for each company over pre-post IFRS time periods. Then, the variance of Δ_NI^*/Δ_OCF^* is tested for normality and is not normally distributed (Appendix A). Therefore, the Wilcoxon signed rank test for differences in medians is used to determine whether the variability of Δ_NI^*/Δ_OCF^* is significantly different under SLAS and IFRS. the higher variability of Δ_NI^*/Δ_OCF^* is indicated less earning smoothing and, therefore, better accounting quality.

2 Banking, Finance, and Insurance companies are governed by specific regulations (i.e., Banking Act no. 30 of 1988, Finance Business Act no 42 of 2011, Finance Leasing Act no. 56 of 2000 and Insurance Industry Act no. 42 of 2000) in addition to Company Act no. 07th of 2007, SLFRSs and Listing rules, etc. These additional regulations require these companies to disclose more information and to be more transparent.

The third earnings smoothing metric of this study is based on the Spearman correlation between accruals (ACC) and cash flows (OCF). Insiders may use their accounting discretion to conceal significant changes in a firm's operating cash flows by the early reporting of future revenues or delaying the reporting of current expenses to conceal poor current performance. They may also wish to hide stronger than expected current performance to create a buffer for the future (Leuz et al., 2003). Accruals and cash flows generally have a negative correlation; however, a larger negative correlation indicates earnings smoothing as managers react to poor cash flows by increasing accruals or concealing better than expected performance by decreasing accruals (Barth et al., 2006). Same as with equation (1) and (2), the residuals for equation (3) and (4) are derived. These residuals were named as OCF* and ACC*, respectively.

$$OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it} \quad (3)$$

$$ACC_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it} \quad (4)$$

Where ACC is annual net income before extraordinary items minus annual cash flow from operating activities, scaled by total assets at the end of the financial year and the other variables are defined as in Equation (1). ACC* and OCF* are tested for the violations of normality using the Lilliefors test. The null hypothesis of a normal distribution was rejected for ACC* and OCF*. Therefore, the Spearman rank-order correlation test is used to examine the extent of the correlation between ACC* and OCF*. Finally, the correlation coefficients from the Spearman rank-order correlation tests were used to determine the significance of the differences between the various groups under comparison. A lower negative correlation between the residuals of Equation (3) and (4) is indicative of lower earnings smoothing, thereby better accounting quality.

4.2.2. Managing towards earning targets

Managers tend to avoid showing small losses in their financial statements using accounting choices (Burgstahler and Dichev, 1997; Degeorge et al., 1999). Normally managers are encouraged not to reporting losses of any magnitude. However, even if they hide small losses using accounting discretion, they are unable to hide large losses (Leuz et al., 2003). Therefore, in this metric of earning management, it assesses the firms' tendency to manage earning towards target that is towards small positive net income (SPNI). Following Burgstahler and Dichev (1997), "small positive net incomes" is defined to be where net income scaled by total assets is between 0 and 0.01. A firm's tendency to report small positive earnings could be affected by a variety of factors unrelated to earnings management. Accordingly, instead of directly comparing the frequency of SPNIs between IFRS and SLAS, this study uses the following pooled regression:

$$IFRS(0,1)_{it} = \alpha_0 + \alpha_1 SPNI_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 EISSUE_{it} + \alpha_5 LEV_{it} + \alpha_6 DISSUE_{it} + \alpha_7 TURN_{it} + \alpha_8 OCF_{it} + \alpha_9 AUD_{it} + \alpha_{10} CLOSE_{it} + \varepsilon_{it} \quad (5)$$

In here, IFRS (0,1) is an indicator variable, which is given a value of one for observations under IFRS and zero for observations under SLAS. SPNI is an indicator variable set to one for observations where annual net income scaled by total assets is between 0 and 0.01 and zero otherwise (Lang et al., 2003). A negative coefficient for SPNI indicates that there is a lower frequency of SPNIs under IFRS compared to SLAS, therefore demonstrating less managing towards earning targets.

5. DATA ANALYSIS AND RESULTS

5.1. Descriptive Analysis

Table 1 presents the descriptive statistics for each of test and control variables pooled over the sample period. In order to reduce the effects of extreme observations, variables have been winsorised at the 1 and 99 percentiles. The test and control variables are presented in the order they appear in the earning management metrics.

The Δ_NI variable (defined as the change in net income scaled by total assets at financial year end) has a mean of 0.016 during sample period while median value is 0.013 and maximum and minimum values are 0.147, -0.084 respectively. The mean for operating cash flows scaled by end of year total assets (OCF) for the full sample period is 0.043 while the median is 0.041. The changes in operating cash flow variable (Δ_OCF) is calculated as the change in annual net cash flow from operating activities scaled by total assets at financial year end. The pooled sample mean and median figures for the ΔOCF are 0.012 and 0.014 respectively. The mean value of accruals (ACC) over the sample period is 0.009 (Table 1). This variable is defined as annual net income less annual cash flow from operating activities, scaled by the end of year total assets. Positive accruals indicate that firms have more accounting earnings than cash flows.

Firm size (SIZE) is measured as the Natural logarithm of the book value of total assets at the end of the financial year. Table 1 shows that the mean value of firm size over the entire sample period is 9.761 and the median is 9.236 which is reflective of the low standard deviation of 0.652. An annual sale scaled by the end of year total assets (TURN) shows overall mean and median levels of 0.677 and 0.673 respectively for the whole sample period (Table 1). Firm level leverage (LEV) is computed as total liabilities divided by end of year book value of equity. The overall mean level of leverage is 0.815 and the median is 0.567 reflecting the relatively high standard deviation of 0.699 (Table 1). The overall mean (median) level of equity issuance is 0.176 (0.116) (Table 1). The Debt issue is computed as the percentage change in end of year total liabilities (DISSUE) and the overall mean (median) for the period is 0.229 (0.086) (Table 1).

5.2. Multivariate Results and Hypotheses Testing

To test H1, we divided the firms into two categories as large and smaller firms based on the firm size (i.e., the natural logarithm of total year-end assets). We took the eight years average of the size, and the firms with above-median average size were indicated as large companies, and firms with below-median average size were taken as small firms. Similarly, to test H2, firms were divided based

on their external auditor during the post-IFRS convergence period as firms with big four auditors and non-big four auditors. There were 104 firms with big four auditors and 56 firms with non-big four auditors. Firms were divided as high performing and low performing based on the 8 years average of ROA. The firms with above-median average ROA were considered as high performing, and the rest was taken as low performing companies. Following the division of the firms, each earning management metrics were separately estimated for each group of firms. The results are presented in Tables 2-4.

The first earnings smoothing metric is the variability of change in net income (Δ_NI^*). A higher variance for Δ_NI^* indicates that the firms are less likely to smooth their earnings (Barth et al.,

2008). Accordingly, this study predicted that firms would display a higher variability of Δ_NI^* under IFRS compared to SLAS. In line with prediction, the median variance of Δ_NI^* is higher under IFRS compared to SLAS for the large, big four auditors and high performing companies (Tables 2-4). Also, the difference in medians is statistically significant, indicating that the less earning smoothing in the post-IFRS (SLFRS) period. Therefore, H1, H2, and H3 are partially supported by these results. However, the median variance of Δ_NI^* for smaller firms is higher under SLAS compared to IFRS and which provides further support for our predictions.

Firms with more volatile earnings may also have more volatile cash flows (Barth et al., 2008). The second earnings management metric

Table 1: Descriptive statistics for test and control variables

	Mean	Median	Maximum	Minimum	Std. Dev.	Obser.
Test variables						
ΔNI	0.016	0.013	0.147	-0.084	0.052	1280
ΔOCF	0.012	0.014	0.197	-0.176	0.098	1280
ACC	0.009	0.001	0.183	-0.145	0.056	1280
OCF	0.043	0.041	0.232	-0.132	0.076	1280
SPOS	0.092	0.000	1.000	0.000	0.253	1280
Control variables						
LEV	0.815	0.567	3.112	0.015	0.669	1280
GROWTH	0.138	0.143	1.054	-0.366	0.382	1280
EISSUE	0.176	0.116	0.784	-0.198	0.256	1280
DISSUE	0.229	0.086	1.234	-0.456	0.452	1280
TURN	0.677	0.673	2.867	0.034	0.702	1280
SIZE	9.761	9.236	10.272	7.983	0.652	1280
OCF	0.062	0.054	0.263	-0.132	0.078	1280
ADU	0.723	1.000	1.000	0.000	0.439	1280
CLOSE	74.786	75.987	99.632	47.783	14.231	1280

Table 2: Comparison of Earning management between large and small companies

Earning smoothing	Prediction	Large companies			Small companies			H1
		SLAS	IFRS	Z-score	SLAS	IFRS	Z-score	
Variance of Δ_NI^*	SLAS < IFRS	0.0005	0.0018	3.786 ^a	0.0008	0.0005	-0.978 ^b	Supported
Variance of Δ_NI^*/Δ_OCF^*		0.8756	1.5732	4.231 ^a	1.1622	1.4723	1.267 ^a	Supported
Correlation OCF* and ACC*		-0.6334	-0.6231	0.608 ^b	-0.5327	-0.5231	0.475 ^b	Not-Supported
Managing towards earning targets	Prediction	Large companies		Small companies		H1		
		Coefficient	Wald Stat.	Coefficient	Wald Stat.			
Frequency of SPNI	Negative	-0.3624	-4.7845 ^a	0.2643	2.5624 ^c	Supported		

^aStatistically significant and consistent with the prediction, ^bConsistent with the prediction but statistically insignificant, ^cStatistically significant but contrary to the prediction.

SLAS: Sri Lanka Accounting Standard, IFRS: International Financial Reporting Standards

Table 3: Comparison of earning management between companies with big four auditor and non-big four auditor

Earning smoothing	Prediction	Big four auditor			Non-big four auditor			H2
		SLAS	IFRS	Z-score	SLAS	IFRS	Z-score	
Variance of Δ_NI^*	SLAS < IFRS	0.0008	0.0015	3.546 ^a	0.0009	0.0011	1.978 ^b	Supported
Variance of Δ_NI^*/Δ_OCF^*		0.9326	1.3734	4.941 ^a	0.7322	0.7623	0.267 ^b	Supported
Correlation OCF* and ACC*		-0.5411	-0.5754	1.781 ^a	-0.5357	-0.5461	0.475 ^b	Not-Supported
Managing towards earning targets	Prediction	Big four Auditor		Non-Big four Auditor		H2		
		Coefficient	Wald Stat.	Coefficient	Wald Stat.			
Frequency of SPNI	Negative	-0.3425	-2.7845 ^a	-0.2356	-2.5624 ^c	Supported		

^aStatistically significant and consistent with the prediction, ^bConsistent with the prediction but statistically insignificant, ^cStatistically significant but contrary to the prediction.

SLAS: Sri Lanka accounting standard, IFRS: International financial reporting standards

Table 4: Comparison of Earning management between high-performing and low-performing companies

Earning smoothing	Prediction	High performing companies			Low performing companies			H3
		SLAS	IFRS	Z-Score	SLAS	IFRS	Z-Score	
Variance of D_NI*	SLAS <IFRS	0.0011	0.0016	1.675 ^a	0.0007	0.0005	-0.967	Supported
Variance of D_NI*/D_OCF*		1.7341	1.7456	0.454 ^b	0.8453	0.8267	-0.756	Not-Supported
Correlation OCF* and ACC*		-0.6534	-0.6424	0.677 ^b	-0.4327	-0.4478	0.669	Not-Supported

Managing towards earning targets	Prediction	Big four auditor		Non-big four auditor		H3
		Coefficient	Wald Stat.	Coefficient	Wald Stat.	
Frequency of SPNI	Negative	-0.0234	-1.3426 ^a	0.3367	2.6567 ^c	Supported

^aStatistically significant and consistent with the prediction, ^bConsistent with the prediction but statistically insignificant, ^cStatistically significant but contrary to the prediction.
 SLAS: Sri Lanka accounting standard, IFRS: International financial reporting standards

controls for this by scaling changes in net income by changes in operating cash flows. As with the first earnings smoothing metric, changes in operating cash flows (Δ OCF) for each year were regressed on the corresponding control variables shown in Equation 2. The residuals from these regressions are named Δ OCF* and are then used to scale Δ NI*. The resulting variable is the ratio of change in net income over the change in cash flows (Δ NI*/ Δ OCF*). As with the previous measure, the cross-sectional variance of Δ NI*/ Δ OCF* for each firm under SLAS and IFRS (SLFRS) was calculated. Similar to the first earnings management metric, a higher variance for Δ NI*/OCF* indicates that firms are less likely to manage earnings. Therefore, this study predicted that the companies would display greater variability under IFRS compared to SLAS. Tables 2 and 3 show that the median variances of Δ NI*/OCF* are higher under IFRS compared to SLAS. This higher variance under IFRS is consistent with our prediction. Thus, again, H1 and H2 are supported by these results.

The next measure of earnings smoothing investigates the correlation between accruals and cash flows. Generally, correlations between accruals and cash flows display negative values. A larger negative correlation can indicate earning smoothing because managers may be responding to poor cash flow performance by increasing accruals (Land and Lang, 2002; Drake, Myers and Myers, 2009). Therefore, this study predicted that the large firms, firms with big four auditors, and high performing firms would display a less negative relationship between accruals and cash flows under IFRS compared to SLAS. However, the results reported in Tables 2-4 support none of our hypotheses.

Our final measure of earning management is the frequency of SPNI. The underlying principle of this measure is that firms prefer to manage their earnings and report small positive income figures rather than negative income (Barth et al., 2008). Therefore, this study predicted that firms will report a lower frequency of SPNI under IFRS compared to SLAS. SPNI is an indicator set to one when annual earnings scaled by total assets is between 0.00 and 0.01 and zero otherwise. The firms' percentages of SPNI under SLAS and IFRS were not directly compared because a firm's reported level of SPNI may be affected by firm level specific factors that are unrelated to IFRS convergence. Instead, as shown in Equation 5, SPNI was regressed along with other control variables on a dichotomous variable (IFRS), which is set to one for observations under IFRS and zero for observations under UK

GAAP. Therefore, all 1280 observations in the final sample are included in this regression with the dependent variable (IFRS) differentiating between observations under IFRS and SLAS. A negative coefficient for SPNI indicates that less frequency of SPNI under IFRS compared to SLAS, providing evidence of higher accounting quality. The coefficient for SPNI is reported at the bottom of each Table along with Wald statistics. In the analysis of SPNI this study employed OLS estimation instead of logit estimation because the model rejected the assumption of homoscedasticity. Logit models are extremely sensitive to the effects of heteroscedasticity (Green 1993 cited in Barth 2006). The results are consistent with the prediction because the coefficient for SPNI is negative for all large companies, companies with big four auditors and high performing companies and significant at the $P < 0.01$ levels. Therefore, all hypotheses are partially supported because the result shows that managing earnings towards targets less under IFRS compared to SLAS.

6. CONCLUSION

The aim of this study was to examine the earning management of the Sri Lankan firms before and after IFRS Convergence. Instead of comparing all companies together, we divided the companies based on their size, auditor type and performance and compare the earning management during pre and post IFRS convergence. This procedure allows us to determine whether the earning management is consistent across different types of companies. The results of the study indicate that earning management is not even across the companies during pre and post IFRS convergence. Especially, large companies and companies with big four auditors have engaged in less earning smoothing and managing towards earning targets following IFRS convergence. A certain aspect of earning management of high performing companies was also found to have reduced following IFRS convergence.

This study provides important insights for the regulatory bodies, investors, managers and other corporate stakeholders. The extent of compliance with IFRS is differ among the different companies and therefore the accounting quality of financial statements is heterogeneous amongst companies. The increased regulatory pressure would ensure the gravity of compliance with IFRS. Investors should read IFRS financial statements carefully. Because the accounting quality of IFRS financial statements of various companies may not even due to heterogeneous applications and the

mere comparison does not lead to the better investment decision. Finally, the major limitation of this study is the appropriateness of earning management metrics used. The proponent of the earnings management argued that managers may be engaging in smoothing earnings to provide a true indication of a firm's future cash flows (Scott, 2009). Therefore, managed earnings may be useful information to investors and in turn reflect better accounting quality. However, the measures used in this study do not distinguish between smoothness in earnings due to managers hiding the true performance of the firm or attempting to provide a better indication of future cash flows. Thus, it is a limitation of this study.

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