

The Impact of International Financial Reporting Standards adoption on Accounting Quality: Evidence From Sri Lanka.

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March 2015

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Thesis submitted in partial fulfillment of the requirements for the Master of Science in



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Department of Mathematics
Faculty of Engineering
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Sri Lanka

March 2015

DECLARATION OF THE CANDIDATE

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University or other institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text

.....

Signature

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CERTIFICATION

I hereby recommend that the thesis titled “The Impact of International Financial Reporting Standards adoption on Accounting Quality: Evidence From Sri Lanka” prepared by Mr. P.R. Weerathunga under my supervision be accepted for the submission of the Degree of Master of Science in Financial Mathematics.

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DEDICATION

To my loving parents

Dear teachers

and all of my friends

without whom none of my success would be possible.



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ACKNOWLEDGMENT

It gives me great pleasure to thank the following individuals who have made this thesis a success.

I owe a great deal to Dr. KGA Udayakumara, Senior Lecturer and Head of the Department of Accountancy and Finance, Faculty of Management Studies, Rajarata University of Sri Lanka, who agreed to supervise me throughout the period of the research. He provided me with helpful comments on the scope and methodologies of this research and the design and content of this thesis. His constructive criticism and prompt feedback on the writing up of the chapters especially for the submission of the first draft of the thesis were an invaluable asset.

Then, I indebted to Mr. TMJA Cooray, Senior Lecturer and Coordinator for M.Sc. /P.G. Diploma in Financial Mathematics of Department of Mathematics, Faculty of Engineering, University of Moratuwa, who also supervised me especially for statistical analysis of the research. His continuous support, advice and encouragement were priceless. This thesis has benefited significantly due to his criticisms and suggestions. I would also grateful to Mr. AR. Dissanayake, Senior Lecturer of Department of Mathematics, Faculty of Engineering, University of Moratuwa, for providing necessary information from the beginning of course and encouraging us to complete the course early possible.

At various times, I have received helpful discussions and constructive comments from notable individuals. My thanks go to Dr. PMB Jayathilake (Head of the Department of Business Management, Faculty of Management studies, Rajarata University of Sri Lanka), Mr. Sampath Kappagoda (Senior Lecturer, Rajarata University of Sri Lanka), Mr. KV Aruna shantha (Lecturer, Rajarata University of Sri Lanka).

A special thank goes to Mr. AADP Bandara (Lecturer, Rajarata University of Sri Lanka) for accepting part of my duties when I struggle at the deadline of the submission of this thesis.

Finally I would like to thank all the staff members at the Department of Accountancy and Finance for their support in my academic endeavors.

ABSTRACT

This study examines whether the application of International Financial Reporting Standards (IFRS/SLFRS) is associated with higher accounting quality for Sri Lankan firms using a sample of 157 firms listed Colombo Stock Exchange (CSE). The companies listed on CSE were mandated to adopt IFRS/SLFRS in preparation of their financial statements with effect from 01st of January 2012. Prior to the adoption of IFRS/ SLFRS Sri Lankan firms reported under Sri Lankan Accounting Standards (SLAS). Thus, this study compares several measures of accounting quality for Sri Lankan firms under two reporting regime to identify the improvement of accounting quality in post IFRS/SLFRS adoption. Following prior studies, this study uses eight individual measures of accounting quality relating to earnings smoothing, managing towards earnings targets, timely loss recognition and value relevance. Firms are said to have improved accounting quality if they display lower levels of earnings smoothing, less management towards earnings targets, more timely loss recognition and higher levels of value relevance. The results of this indicate that in general, accounting quality of SL firms improved after mandatory IFRS/ SLFRS adoption in terms of displaying less management towards earnings targets and more timeliness of loss recognition. However, there is no evidence that accounting quality has been improved with regards to reducing earnings smoothing and improving value relevance. In addition, the results of this study revealed that earning smoothing has increased significantly following mandatory adoption of IFRS/ SLFRS. Further, the value relevance of accounting numbers is very low under IFRS/ SLFRS.



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LIST OF ABBREVIATIONS

Abbreviation	Description
BVPS	Book Value Per Share
CSE	Colombo Stock Exchange
DAS	Domestic Accounting Standards
EU	European Union
FASB	Financial Accounting Standards Board
FRRP	Financial Reporting Review Panel
FSA	Financial Service Authority
GAAP	General Accepted Accounting Principles
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IASCF	International Accounting Standards Committee Foundation
IFRS	International Financial Reporting Standards
LKAS	Sri Lankan Accounting Standards
MVPS	Market Value Per Share
NI	Net Income
NIPS	Net Income Per Share
OCF	Operating Cash Flows
ROA	Return on Assets
SEC	Security Exchange Commission
SL	Sri Lankan
SLFRS	Sri Lankan Financial Reporting Standards
UK	United Kingdom
US	United State



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CHAPTER 01

INTRODUCTION

1.1 Introduction

The main objective of this chapter is to provide a background of this study. The study primarily focuses on the mandatory adoption of International Financial Reporting Standards (IFRS) and Accounting Quality of the firms listed in Colombo Stock Exchange (CSE) in Sri Lanka. Whether or not the mandatory adoption of IFRS has led to higher accounting quality is an interesting question that has attracted many researchers to carry out studies particularly in developed countries as well as in developing countries.

IFRS are globally accepted high quality a single set of accounting standards developed by International Accounting Standards Board (IASB), which is formerly known as International Accounting Standards Committee (IASC). The primary objective of IFRS is to reduce information asymmetries between countries (Barth *et al.*, 2008) and different users of the financial statements, primarily investors (Haller *et al.*, 2009). Many studies investigating consequences of IFRS adoption have revealed that the primary objective of IFRS has been met. The findings of those studies indicate that the accounting quality under IFRS is higher than that of under Local Accounting Standards. (Ball *et al.*, 2003; Barth *et al.*, 2008; Capkun *et al.*, 2008). When the quality of financial statements is increased, it reduces the information asymmetries for different users (Street *et al.* 2000; Tarca, 2004; Ashbaugh *et al.*, 2001; Gordon *et al.*, 2010).

However, whether or not the mandatory IFRS adoption leads to a higher accounting quality is still controversial. Therefore, Studies which examine the consequences of IFRS adoption are very important, because it provides an opportunity to understand how the IFRS are being applied and whether the required disclosures are useful to investors for equity decision. When companies adopting IFRS for the first time, they must comply with IFRS 1 (First time adoption of IFRS) provisions. One of the most important provisions of IFRS 1 is the requirement to retrospectively application of IFRS standards. IFRS 1 disclosures also require reconciliations between the “old” Local standards and IFRS. This provision provides an opportunity for users to examine the same set of economic activities under two different accounting standards. For instance, users can investigate whether there is an improvement in financial reports in term of quality following IFRS implementation.



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Currently, though there are number of empirical studies in other countries which examine the effects of mandatory IFRS adoption, there are few empirical researches in Sri Lanka in this respect. These researches are also mostly focused on the value relevance of disclosure rather than accounting quality. The purpose of this study, therefore, is to investigate whether or not the accounting quality of Sri Lankan firm has been increase following the mandatory adoption of IFRS (in Sri Lanka SLFRS) in 2012.

In the next section, the background of the study is explained. The problem of the study, research questions and the objectives of the research are described in the sections 1.3, 1.4 and 1.5 respectively. Thereafter, the significance & scope of the study, methodological approach and statistical tests, which will be used in the study, is discussed. Finally, it provides an outline of the contents of remaining chapters of the study.

1.2 Background for the Study

1.2.1 Agency theory and information asymmetry

Among many business relationships existing in the modern business world, the Principal-agent relationship is one of the most important relationships that lay down the foundation for many businesses. This relationship is created whenever one individual called agent agrees to perform certain services on behalf of another individual, who is called principal. Principals are providing resources with organization and entrusted to the agents with ultimate objective of wealth maximization by managing such resources efficiently and effectively. As part of this arrangement, the principals' viz. investors receive the residual claim or the net income that remain after the payments of all other claimants. The principals (the investors) assess the accountability of the agents (the management) based on the information provided via financial reporting. Therefore, an expectation of the upper management of a business organization is to provide true and fair information about entity's financial performance and financial position to the investors. The financial reporting system is a mechanism by which the upper management provides necessary financial information to the market participants. The same is acting as a mean of reducing information asymmetry. The information asymmetry is raised due to the principal-agent conflict (Scott, 2012). Information asymmetry means the imbalance of the accounting information between management and investors of a business organization (Scott, 2012). This is because of the top management has right to access more information of business organization where as investors, creditors and other external users have to rely on the information provided by the top management. Thus, the investors are making wrong investment decision if they are provided with improper information. The effect of wrong investment decision leads to misallocation of scare

financial resources and a distrust of the financial reporting system. Markets in turn have their own mechanisms for penalizing and deterring harmful agency and information symmetry conflicts (Ball, 2009.), resulting in higher than necessary discount rates or, in the extreme, a collapse of the market itself.

Once the investors entrusted their scarce resources to the upper management, upper management has a contractual reporting obligation to investors. In order to assess the reliability of the financial reporting function the attestation function is introduced. The external auditor as an independent third party audits the financial reports prepared by the management and provided an opinion whether the financial reports are prepared in compliance with financial reporting or accounting standards. Accounting standards are necessary for the fulfillment of this monitoring role. Accounting standards are intended to mitigate information asymmetry and auditors test management prepared financial reports for compliance with the standards.



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1.2.2 Accounting Standards

Financial Reporting and Accounting Standards are a vital part of financial reporting system and help investors to make well- informed decision. The importance of this fact is underlined by (Levitt, 1998) who states that “educated investors need relevant, useful information to make their economic decisions” and that is according to Levitt what “high quality accounting standards provide”. They not only protect investors and creditors who are keen to know how the business they are investing in is doing but it also helps them to ensure that their investment or lending to a business is (still) substantiated.

Accounting Standards evolved through the time and there have been big changes over the years. The biggest and the most important change of the accounting standards in

history is introduction of International Financial Reporting Standards (IFRS). In 2005, the European Union (EU) decided to introduce IFRS. Thereby, all EU listed companies were obligated to prepare their consolidated financial reports in accordance with these rules, in order to obtain comparability between several financial statements. Despite the fact that, The International Accounting Standards Board (IASB) has been committed to working towards converging different accounting standards worldwide, In recent years, more than 100 countries including Brazil, Canada, China, Japan and India have agreed to require or allow adoption of IFRS, or have established timelines for the adoption of IFRS. But, still we can notice some differences between Domestic Accounting Standards (DAS) and IFRS. IFRSs are shareholder-oriented and promote the fair value approach presentation by incorporating more information into the financial reports (Dunne *et al.* 2008). According to many recent studies, it is very clear that the mandatory adoption IFRS includes many benefits, for instance, higher comparability of financial statements among companies operating in different countries, lower transaction costs, access to international capital through facilitated cross- border listings, and greater international investment (Dunne *et al.*, 2008; Aharony *et al.*, 2010). Moreover, Barth *et al.* (2006) provide evidence that IFRS convey new information to the market. This assists investors in making informed decisions, predictions of a firm's future financial performance and signal higher accounting quality through transparency. Therefore, IFRS would tend to reduce earnings manipulation and enhance stock market efficiency.

As a result of the global convergence of IFRS, the Institute of Chartered Accountants Sri Lanka (CA Sri Lanka) jointly with other regulatory bodies has introduced the IFRS in 2011 in the form SLFRS and LKAS (however is it termed as International

Financial Reporting Standards). Due to high technical nature of IFRS and other practical reasons the mandatory adoption of IFRS was post poned to 2012. From 01st of January 2012 onward, all listed companies in Sri Lanka were required to prepare their financial statement in accordance with the requirements of IFRS.

It is interesting to investigate the impact of this decision on the quality of the financial information included in the financial statements, because the financial information is very important to the stakeholders of a company. The stakeholders who rely on the financial statements are assumed to include different parties. For example, the Accounting Standards Board (ASB, 1999) in the UK states that only the decisions of investors are important to take into account at financial accounting. But, according to the International Accounting Standards Board (IASB, 1989), which has developed the IFRS, stakeholders of a company include much more participants such shareholders, potential inventors, employers, suppliers, economists, customers and the banks that finance the company. Stakeholders largely base their decisions on the financial statements of a company. Some examples of such decisions include an investor that wants to know how profitable the shares of a company are and banks want to know whether a company is able to repay its loans. Therefore, it is important that the financial statements provide a true and fair view of the companies' financial position and financial performance. The impact of a new accounting standard in relation to the quality of the financial information contained in the financial statements is interesting for these stakeholders.

1.3 Problem of the Study

The primary objective of developing IFRS by International Accounting Standards Board (IASB) is to introduce a single set of high quality, globally accepted

accounting and reporting standards that enhance the qualitative characteristics of general-purpose financial statements (IASCF, 2003). Succeeding the effort of IASB, more than 120 countries around the world have adopted or have set the time frame to adopt the IFRS by 2012 (IAS Plus, 2012). IFRS have been adopted almost two third of the countries throughout the world since these accounting standards may offer many benefits to the firms, for instance, IFRS enables higher comparability of financial statements of different firms operating in deferent countries. It may reduce the transaction cost and eliminating costs of preparing financial statements for different user groups (i.e. local and foreign) under different accounting standards (Kim, Li and Li, 2012). The users also can save time and cost of making decision when all financial statements are prepared using IFRS. Because, if the financial statements of different firms operating in different jurisdictions were prepared using different accounting standards, users had to understand multiple accounting standards consuming more time and money.



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Many studies have been conducted investigating the effect of mandatory IFRS adoption on accounting quality throughout the world. These studies have reported mixed results. Some studies confirmed that the primary objective of IFRS has been met where as some other studies have reported that there is no any improvement of accounting quality or accounting quality has been reduced after mandatory adoption of IFRS. Accounting quality could increase if removing alternatives and increasing the extent to which accounting measurements reflect economic position limit management's discretion to report accounting amounts that are less reflective of the firm's economic position and performance, e.g., by managing earnings. Further, application of IFRS could enhance the transparency and comparability of information, consequently the value relevance of information is increased. Accounting quality

could also be increased when adapting IFRS require the firms to recognize large losses in the period in which they occur rather than deferring them to future periods. A pivotal study on the voluntary adoption of IFRS is Barth *et al.* (2008). They examine whether the application of IFRS is associated with higher accounting quality than the application of non-US domestic accounting standards for a broad sample of firms in 21 countries. The authors measure accounting quality in terms of earnings smoothing, managing towards earnings targets, timely recognition of losses and value relevance. Barth *et al.* (2008) identified that the indications of better accounting quality are lower earnings smoothing and management towards earnings targets, more timely recognition of losses and higher levels of value relevance. The finding of the study reveals that generally firms applying IFRS exhibit less earnings smoothing, less managing of earnings towards targets, more timely loss recognition and higher value relevance compared to a matched sample of firms applying domestic standards. There have been several studies that have looked at accounting quality post IFRS adoption in terms of reductions in earnings management. For example, Jeanjean and Stolowy (2008) examine whether firms from the UK, France and Australia show changes in earnings management (operationalized as the ratio of small reported profits to small reported losses) post IFRS adoption. Based on data for 2002-2006, they did not find a reduction in earnings management. In fact, earnings management significantly increased 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 (operationalized 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 might be attributable to additional flexibility and subjectivity that IFRS



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introduces in the reporting of certain items compared to local standards.

However, the intention of the application of IFRS is to enhance the true and fair view of the financial position and financial performance of an enterprise and ensure high degree of transparency comparability of financial statements. Therefore, it is reasonable to predict that accounting amounts determined in accordance with IFRS are of higher quality than those determined in accordance with previous Sri Lankan Accounting standard (SLASs). But, the firm's regulatory, enforcement, political, economical and attestation environment also affects accounting quality (Ball, Robin, and Wu, 2003). Even if high quality reporting standards are adopted, there is still a risk of no improvement in accounting quality may occur when firms have incentives and opportunities to manipulate their financial statements (Leuz, 2003). For instance, when there is weak system of enforcement in a country, then the incentives of firm insiders to engage in earnings manipulation and produce low quality reports may not be constrained (Ball, 2001; Ball, 2006). The evidence of prior studies such as Ali and Hwnag (2000), Ball *et al.* (2000), Leuz *et al.* (2003), Burgstahler, Hail, and Leuz, (2006) suggest that countries where strong enforcement is established produce high quality financial information compared to weak enforcement countries. Therefore, there may be systematic differences in the consequences of IFRS adoption in strong enforcement countries and weak enforcement countries. Thus, it seems that the increase or decrease in accounting quality after IFRS adoption is depending upon different factors. Specifically, whether IFRS are of higher or low quality than local standards and the efficiency of enforcement mechanisms.

Another very important aspect that influenced to the national accounting systems, hence to accounting quality, are cultural differences. A study conducted by Hope

(2003) revealed that financial reporting and disclosures are affected by culture in which firms operate. According to Finch (2009) culture is “the collective programming of the mind which distinguishes the members from one human group from another”. Further, he stated that human group shares its own social norms, consisting of common characteristics such as value systems. There are huge differences between cultures and reducing such differences are very difficult and time-consuming process, even in the globalized and integrated economy. To demonstrate existing cultural differences, Hofstede (2008) in his cross-cultural study categorized countries according to the cultural differences he observed in his study. According to Hofstede (2008) the main cultural differences between countries are individualism versus collectivism, large versus small power distinct, strong versus weak uncertainty avoidance and masculinity versus femininity. These cultural differences affects, to high extent, financial reporting, and due to this produce differences between financial statements in different countries. Hence, there is no doubt, that due to those differences in cultures, the improvement or decline in accounting quality in post IFRS adoption period may not be solely depend upon whether IFRS are of higher or low quality than Local Accounting Standards.

According to above argument, it can be noted that whether or not mandatory IFRS adoption improve that accounting quality is still in doubt. Because changes in accounting quality may be affected by different factors, that are not attributable to financial reporting systems, such as political, economical, cultural and enforcement environment. Even though many prior studies found that there is improvement in accounting quality in the post IFRS adoption period, these results cannot be generalized to the developing countries, because most of these studies are based on developed countries such as UK, Germen, France, etc. Therefore, the problem

statement of this study has set as follows.

“Does mandatory IFRS adoption improve the accounting quality of the firms listed in Colombo Stock Exchange (CSE) in Sri Lanka”?

1.4 Research Questions

In resolving above problem following research questions were raised and expected to be answered.

1. Does mandatory IFRS adoption deter the earning management?
2. Does mandatory IFRS adoption urged in more timely loss recognition?
3. Does mandatory IFRS adoption increase the value relevance of accounting information?
4. Does mandatory adoption of IFRS lead to higher accounting quality as result of less earning management, high value relevance and more timely loss recognition?



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1.5 Research Objectives

The purpose of this study is to examine whether the accounting quality has been increased after mandatory IFRS Adoption. Accounting quality is a vague concept since it has not a single definition that gives a clear explanation of this concept. But accounting quality can be explained with referring to qualitative characteristics of financial statements. As mentioned in the section 1.3, the main objective of implementing IFRS is to improve the qualitative characteristics, i.e. understandability, relevance, reliability and comparability. Therefore, when a firm has adopted IFRS in preparation of financial statements, it can be argued that the qualitative characteristics have been improved so that the accounting quality is increased. Another broad and

complex issue is measuring the accounting quality because absence of consensus opinion about the measurements of accounting quality. However, previous studies have attempted to capture the accounting quality using different measurement. In this study, in line with Barth *et al.* (2008), the accounting quality has been captured using three different but related measures of the reporting quality, namely earning management, timely loss recognition and value relevance. Therefore the objectives of this thesis are set as follows.

- To investigate whether the mandatory adoption of IFRS associated with less earning management.
- To investigate whether the mandatory adoption of IFRS resulted in more timely loss recognition.



To investigate whether the mandatory adoption of IFRS has increased the value relevance of accounting numbers.

- To determine whether accounting quality has been increased after the mandatory adoption of IFRS.

1.6 Significance of the Study

This study tries to answer an important question concerning the quality of accounting after mandatory adoption of IFRS which have remained unanswered in Sri Lankan context until now. To the best of my knowledge, there are no any studies, which have, examine the accounting quality effect of IFRS adoption in Sri Lanka. Therefore, the major contribution of this study is filling existing research gap prevailing in Sri Lanka. Furthermore, Present study contributes to the literature on the consequences of mandatory IFRS adoption in numerous ways by investigating changes in accounting quality of the firms listed on CSE after mandatory IFRS adoption.

First, this study presents insights into the determinants of reporting quality of different component of financial statements such as comprehensive statement of income, statement of financial position and statement of changes in equity. Most of prior empirical studies have predominately focused on earning as a means for measuring accounting quality of income statements. For this reason, I have used earnings (i.e. changes in net income) in assessing accounting quality under IFRS. This study clearly shows whether or not the earning smoothing and earning management has reduced after IFRS adoption and accounting quality has been improved. This is a good implication to the various investors that they know the insiders have less ability to conceal low earning quality under IFRS. Moreover, this study provides important insights into the association between earning management and accounting quality by showing that earning management can have a constraining effect on accounting quality.



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In line with previous studies, the quality of the information contained in statement of financial position is determined via value relevance. This study investigates whether or not the value relevance of accounting information has been increased following to the IFRS adoption. The results from the value relevance analysis provide meaningful information to users of financial statements so that the users and various other investors can more accurately interpret the reported financial information.

Second, this study provides regulatory implication. It is among the first studies that provide a comprehensive set of empirical results to inform the Sri Lankan regulators about the consequences of the IFRS adoption in Sri Lanka. It also informs the regulators to established strong enforcement mechanism in the country to gain maximum benefit from IFRS adoption. In addition, global regulators may be interested in these findings as they decide whether to adopt IFRS fully or partially

with some exceptions. Moreover, the findings of this study are important to the IASB because the paper studies the effects of the most recent set of standards issued by the IASB. As the IASB attempt to make IFRS a more and more popular set of accounting standards around the world, it is important to understand the intended as well as the unintended consequences of IFRS.

In summary, this study has made a material impact on the understanding of accounting quality effect of IFRS adoption. Throughout the analysis, it is shown that results obtained using pre-IFRS adoption data are not significantly differ from the results obtained using post-IFRS adoption data. This finding is particularly important, because standard setters come to know that frequent amendments of accounting standards do not results in significant changes in reporting quality, but the extra burden on prepares. Moreover, this research has a considerable impact in academia because study presented a new variation of the most widely used proxy for the degree of earnings management and provide a rigorous discussion of the measurement approach and the informational approach to value relevance.

Furthermore, there are some practical implications related to the findings of this study. Most importantly, (potential) shareholders and other users should be aware of the fact that information contained in financial statements can to some extent be managed and, hence, this should be considered in their decision making processes. Moreover, they should take into account that the IFRS financial statements of companies from different countries cannot always be compared as the accounting quality of financial statements is affected by country-specific characteristics. This is also important for the standard setter IASB, whose aim is to achieve comparability of financial statements. Due to these country specific characteristics this aim is still far

from being reached.

1.7 Methodology

1.7.1 Introduction

The purpose of this study is to examine the accounting quality effect under IFRS adoption. In achieving above objective of the study, the study uses quantitative research approach. Moreover, the study uses a deductive research approach. The selection of these research methods is based on the nature of the research problem. In quantitative approach, the study mainly relies on statistics and data. Further, Adopting a deductive approach, this study is conducted in following manner: (1) identified the existing research gap and formulated research questions; (2) developed a theoretical framework that explained relationship between the variables identified for relevant construct; (3) developed the research hypotheses in line with the research objectives; (4) constructed statistical models to test research hypotheses; (5) Analyzed the results in term of theoretical framework and decide whether the hypotheses are accepted or rejected.

1.7.2 Population and Sample Selection

The population of this study is all public companies listed on the CSE in Sri Lanka. As on 01st April 2015, there are 292 companies listed on the CSE representing 20 business sectors. The final sample of this study consists of 157 companies representing 18 business sectors. The selection procedure of the final sample is discussed in detail in chapter 03. However, the final sample of 157 companies is the largest sample used for a study, which focus on IFRS adoption in the Sri Lankan context. The CSE was considered as the most appropriate setting for the testing of research problem because the CSE is the only capital market in Sri Lanka and where

all required data and information are freely available. In addition, unlike other companies, all companies listed on the CSE are required mandatory adoption of IFRS with effect from 01st January 2012. Therefore, by choosing CSE as a research setting this study was able to avoid any self-selection bias associated with not adoption of IFRS.

1.7.3 Data and Data Collection

To investigate whether or not the accounting quality has been increased after Mandatory IFRS adoption, data were collected from year 2009 to 2014. Therefore, the sample period for this study includes five financial years. In addition, the sample period includes three years under SLAS reporting and two years under IFRS (SLFRS) reporting. The sample period covers, in total, 785 firm-year observations and out of which 471 firm-year observations under SLAS reporting and 314 firm-year observations under IFRS reporting. Data for IFRS reporting had to be limited for two years. This is an inherent limitation of the study. All required data were collected manually from the annual reports of the firms and the annual reports were directly downloaded from the CSE official web site.

1.7.4 Theoretical Framework and Variable Identification

Accounting quality is an unclear concept and has no clear definition. According to Conceptual Framework for financial reporting, accounting quality is usefulness of accounting information to users of financial statements in making their economic decisions. Thus, accounting information is useful when the qualitative characteristics exist in the information. According to the framework accounting information must be comprised with four qualitative characteristics namely, understandability, reliability,

relevance, comparability. Adoption of IFRS was expected to enhance these qualitative characteristics. Therefore, as per the underline theory behind the IFRS, once the IFRS is adopted accounting quality should be increased. But whether the accounting quality is increased or not is questionable. Moreover, investigating whether or not accounting quality has been increased is ambiguity and more complex. But Following prior studies such as Lang *et al.* (2003), Lang *et al.* (2006), Barth *et al.* (2008) and Paananen and Lin (2009), this study operationalized accounting quality in terms of earnings management, timely loss recognition and value relevance. In this study, seven individual measures were used to analyze accounting quality categorized as three measures for earnings smoothing, one for management towards earnings targets, one for timely loss recognition and two measures for value relevance. Two of the earnings smoothing constructs measured the variance of year-to-year net income over both pre and post period of IFRS adoption. Third earning smoothing measure was used to identify the correlation between accruals and cash flows. The managing towards earnings targets measure is based on the frequency of small positive net incomes while timeliness of loss recognition measure focuses on the frequency of large negative net incomes. Finally, the two value relevance measures analyze the association between accounting information and share price and return. The use of multiple measures ensures that different aspects of accounting quality are taken into account and increases the validity of the results. Firms are said to have improved their accounting quality if they display lower levels of earnings smoothing, less management towards earnings targets, timelier loss recognition and higher levels of value relevance.



1.7. 5 Statistical Tests

In this study, several statistical tests were employed to test research hypotheses. First, Descriptive Statistics of all independent, dependent and control variable were obtained using the statistical software Eviews 8.1. In addition, the Correlation analysis, Multiple Regression and some residuals analysis were performed. Since all series of data are not normally distributed, several non-parametric tests such as Wilcoxon signed rank sum test, Kruskal-Wallis test and Mann-Whitney U test was used. All of these tests were run using the statistical software Eviews 8.1.

1.8 Chapter Outline

At the beginning of this chapter, it includes brief introduction to the study. Then, it discusses the background of the study, research problem, research questions and research objectives. Afterwards, it emphasizes significance of the research. Latter part of this chapter discusses the methodology and various statistical tests, which will be used in this research. The rest of this thesis is organized in the following manner.

Chapter two provides an outline for the theoretical background for the study. First, it discusses the institutional setting and regulatory mechanism that exist in the Sri Lanka. Chapter two also discusses changes that occurred in regulation and enforcement mechanism over the past few years. In particular, this chapter summaries the main finding and research approach of prior studies which have investigated the accounting quality changes subsequent to the changes in accounting standards. The analysis of previous studies is essential because it provides the background for selecting research variables, procedures for operationalization the variables and appropriate research techniques in analyzing data.

Chapter three comprises the population, sample, sample period, data and research methodology employed in the study. The measures of accounting quality, different accounting quality metrics, the dependent and independent variables together with their operationalization procedures are also included in this chapter. Chapter three also develops the testable hypotheses used to examine the research questions.

The results of the analysis carried out in this study are included in chapter four, mainly; the results of the descriptive analysis, bivariate analysis, multivariate analysis and other residual analysis together with their discussion are presented in the chapter four. In addition, the results of several tests used in testing research hypotheses are also discussed in this chapter. Finally, Chapter five presents the conclusions of the thesis and notes its limitations. It also presents the ideas on how this research can be extended.



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CHAPTER 02

LITERATURE REVIEW

2.1 Introduction

The primary objective of IFRS (SLFRS) is improve the transparency and comparability of the accounting information provided by the firms to their stakeholders. This research addresses a research question related to aforesaid primary objective of the IFRS. Specifically, this study investigates whether the accounting quality of Sri Lankan firms has been improved after mandatory IFRS adoption. However, the accounting quality of the firms is affected by various factors other than accounting standards, For instance, country's institutional setting including several rules, regulation and enforcement mechanism (Ball, 2006). Therefore, the section 2.2 of this chapter outlines the institutional setting, various regulations and enforcement mechanism that exist in Sri Lanka. Next, the section 2.3 provides an overview of the theoretical background for this research and to emphasize relevant empirical literature. In section 2.4, it is highlighted previous empirical studies that analyze consequences of both voluntary and mandatory IFRS adoption including changes in accounting quality and economic benefit for firms and capital market effect.

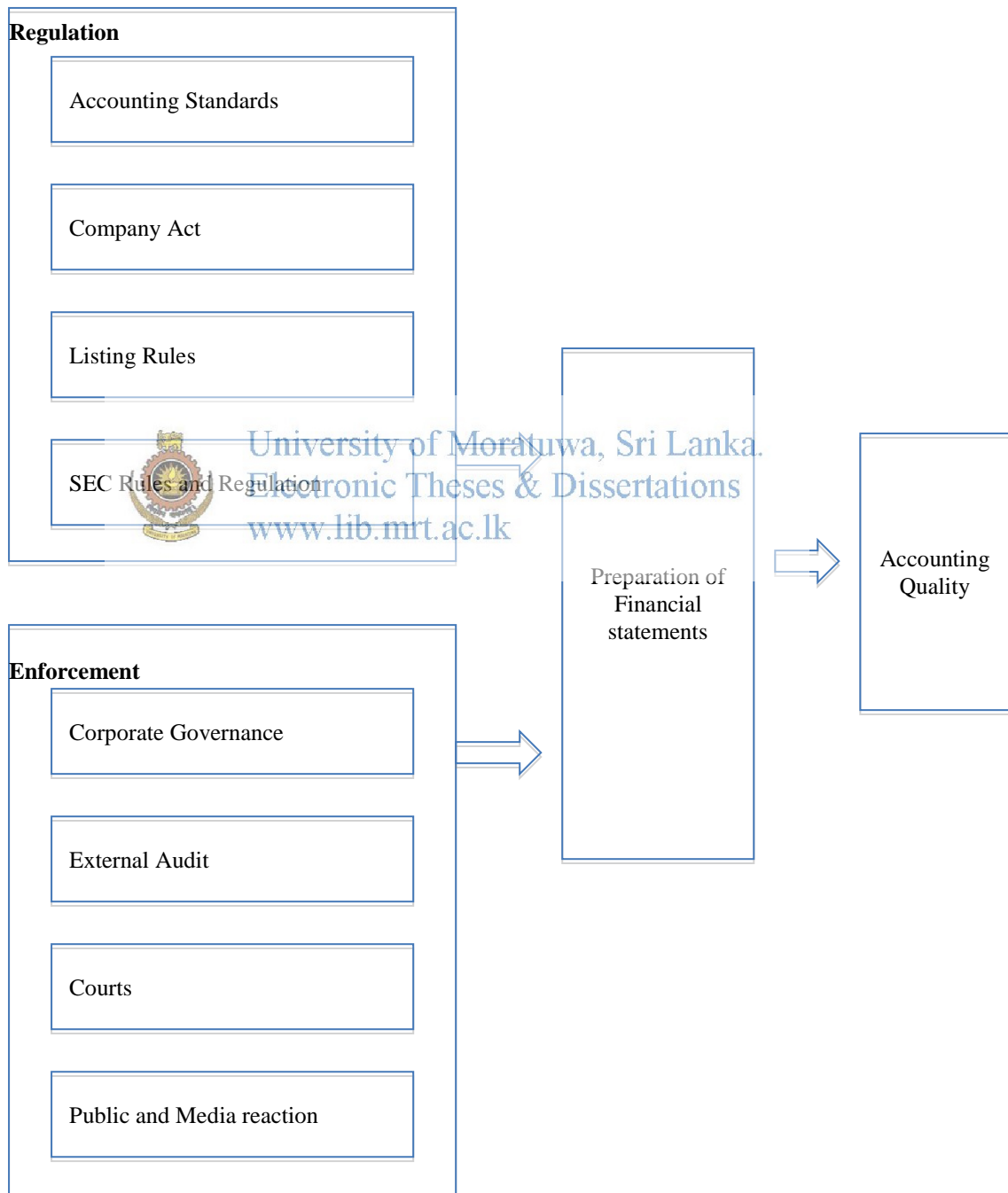
2.2 Sri Lankan Regulation and Enforcement mechanism

Discussion of country's regulation and enforcement mechanism is important in understanding that the accounting quality of the firms' does not solely depend on set of accounting standard. Even if, high quality accounting standards are adopted, the accounting quality may not be improved due to lack of strong regulations and enforcement mechanism. Therefore, this section is devoted to discuss regulation such as company act, listing rules, SEC rules etc. that needed to be followed in preparation

of financial statements. Further, enforcement mechanisms such as firms' corporate governance, external audit, courts and public and media reaction are also discussed.

The figure 2.1 presents interaction between these regulation and enforcement mechanism together with their effect on financial statements and accounting quality.

Figure 2.1 institutional setting for Financial Reporting in Sri Lanka



Source: Samarasekara (2013)

The board of directors of a firm is responsible for preparing a set of financial statements that comply with accounting standards. Moreover, to present the real economic situation of the firm, the financial statements should also be complied with the provision of Company Act, SEC directives/ regulation and listing rules. Besides, the prepares of the financial statement may be urged to prepare a high quality financial statements by the strength of the enforcement mechanisms including corporate governance, statutory audit by external auditors, courts and public and media reactions.

2.3 Theoretical Background

The main theoretical background for this study is based on information asymmetry.

Information asymmetry arises when certain interested parties of the firm have more information than others. For instance, insiders such as key management personnel of the firm may obtain more information of the firm's financial performance and position than outsiders such as investors.

Information asymmetry gives insiders the opportunity to conceal the poor performance or defer higher than expected performance. For example, managers may selectively release information such as delaying the release of poor earnings to increase the value of the stock options they hold or hide related party transactions. In response to the problem of information asymmetry, one line of argument proposes that market forces will resolve this issue. For example, in reaction to managers providing inadequate information on firm performance and position, investors will not supply resources such as debt and equity capital. However, the second line of argument claims that information is such a complex and important resource that market forces alone fail to sufficiently manage the problem. A study conducted by

Akerlof (1970) described this problem as ‘Lemons’ problem. This indicated that the breakdown in the functioning of capital market might occur since investors are unable to distinguish between the firm that have good reporting and bad reporting. Consequently, both good and bad firms may be valued at an average level. This in turn collapses whole capital market. Therefore, this requires a strong regulation and enforcement mechanism to protect investors and efficient functioning of capital market. As mention in previous section, regulation such as accounting standards, company law, listing rules and enforcement such as corporate governance, external audit, courts, public and media reaction urge the financial statement prepares to produce high quality financial statement (Lamfalussy, 2001; FEE, 2002; Cairns, 2004; Ball, 2006). This process finally improves the quality of the accounting.

Accounting and reporting standards are an important part of financial reporting system. High quality enforceable accounting standards require sufficient disclosures and comparability of financial statement through several means. Accounting standards provide firms with guidelines in preparation of financial statement and specify the information that should be disclosed to the outsiders. Moreover, accounting standards create an avenue where auditors can easily refuse demands by insiders to accept report that do not comply with accounting standards which possibly mislead the investors. Thereby, they limit opportunities for insiders of the firms to hide real economic situation and exploit investors (Benston, 1982). Thus, improvements in accounting standards can lead to reduced earnings management by the insiders of the firm and promote the disclosure of useful financial information, thereby improving accounting quality.

In 2011, the Accounting Standards Setting Committee of the Institute of Chartered

Accountants of Sri Lanka require all specific business enterprises to prepare and present their financial statement in compliance with SLFRS and LKAS. SLFRS refers to Sri Lanka Accounting Standards corresponding to IFRS and LKAS refers to Sri Lankan Accounting Standards corresponding to IAS. Even though, Sri Lanka Accounting Standards commonly referred as SLFRSs, there are no any differences between IFRS and SLFRS. However, during the year 2011, the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) adjourned the deadline for adoption of IFRS (SLFRS) to the year beginning on 1, January 2012.

This decision of the CA Sri Lanka was an important step towards achieving the IASB's objective of the adoption of a single set of high quality standards throughout the world. CA Sri Lanka believes that adoption IFRS will improve the uniformity of financial reporting and will also be comparable globally. In addition, the institute believes that adoption of IFRS will resulting in financial statement that are useful to users and provide a true and fair view of the financial performance and position of a firm. However, the objective of CA Sri Lanka will only be achieved if IFRS is such a higher quality accounting standards than previous SLAS and there are incentives for firms to comply with these standards.

2.3.1 Incentives for accounting standard setters to produce high quality accounting standards

Positive Accounting Theory outlined by Watts and Zimmerman (1978) tries to develop the understanding of pressures influencing the setting of accounting standards, effect of standards on users of financial statement and reasons for these users to attempt to influence the development of accounting standards. Positive accounting theory explains that prepares of financial statement such as managers, will

act to maximize their own utility. Factors such as tax effects, political cost, cost of information and managers compensation plans may influence prepares' attitudes towards some specific accounting standards. Watts and Zimmerman (1978) reveal that firms that are affected more by changes of accounting standards may put greater pressure on the standard setting body by lobbying against the changes, thereby decreasing the likelihood of their adoption.

Watts (1977) discusses the role of politicians and government bureaucrats in the development and regulation of accounting standards. The public pressure influences politicians and government bureaucrats and they will be criticized for any futures crises and this will in turn effect their careers. Therefore, they consider the effects of alternative regulations on the likelihood of criticism when they draft and interpret them. As politicians and bureaucrats are less likely to be slated for asset undervaluations compared to asset overvaluations, they may be biased towards introducing accounting standards that undervalue assets. An important example of conservative accounting which influenced accounting practice to the present day is the mandating of historical cost accounting by the SEC in 1934 following the Stock Market Crash of 1929, to prevent firms from carrying out excessive asset write-ups (Zeff, 2007).

Furthermore, Watts (1977) highlights that crises require introduction of new regulations aimed at improving inadequate disclosure. Politicians, bureaucrats and accounting standard setters may be encouraged to introduce standards that decrease the diversity in accounting methods available to firms in order to avoid blame for future crises. However, changes in accounting standards reducing diversity can increase costs on firms and their management (such as increased taxes, reduced

management compensation or decreased ability to smooth earnings). Therefore, in avoiding the increased costs of more stringent regulations, insiders may be act against proposed standards that reduce the diversity of accounting methods and restrict their choice of method.

Watts (1977) indicates that accounting standards setters have conflicting incentives towards the introduction of standards reducing accounting diversity. While they have an incentive to introduce these regulations to avoid blame for future crises they also do not wish to impose costs on firms and their management in order to avoid excessive lobbying. Watts (1977) states that the standard setters will choose the course of action that maximizes their own utility. Kenny and Larson (1993) find that when faced with lobbying, the IASC seeks acceptance from its constituency by adapting its position to that which is more palatable to the lobbyists.



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According to Public interest theory suggest that regulatory agency are created for genuine purposes and they intervene and create regulations to overcome inefficiencies in a 'free' market. However, this theory does not take into account that certain parties that have influence over the regulatory system seek to achieve their own agendas that are undesirable to the general public (Posner, 1974). The economic theory of regulation as introduced by Stigler (1971) takes into account the influence of lobbyists and unions. According to the economic theory of regulation, the strong powers of the state are a valuable product that various parties wish to solicit. The forces of demand and supply govern this product and the introduction of regulation is the outcome of these forces. Due to the resources that organizations have at their disposal, they may influence the regulators to such an extent that regulations maximizing their own wealth but not benefiting the general public may be introduced

(Ball, 2009).

One of the major problem that IASB faces in developing high quality enforceable accounting standards is the political pressure. These pressures are a real force that can be an obstacle to achieve convergence with high accounting quality Zeff (2010). Major accounting standard setters such as the FASB and the IASB have a due process allowing individuals and firms to comment on proposed accounting standards. However, with ‘political lobbying’, these parties attempt to influence standard setting outside the due process, through politicians. This can involve “overt or covert threats seeking intervention in order to overturn a proposed standard or to compromise the standard-setter’s reputation, independence, powers or even its existence” (Zeff, 2010,). For example, Zeff (2002) and Nobes and Parker (2010, p.265) provide a discussion on the pressures put on the IASB by firms about setting accounting treatments on specific issues such as goodwill, employee stock options and financial instruments. If IASB were to introduce more strict accounting standards than existing, the support from various lobbying group for the adoption of such strict accounting standards would be risked. The intense lobbying activity by EU banks on the development and introduction of IAS 39 *Financial Instruments: Recognition and Measurement*, leading to the involvement of high profile politicians such as former French president Jacques Chirac, highlights the intense pressures that the IASB can be subjected to (Whittington, 2005). Providing support to the existence of political lobbying, Ramanna (2008) finds firms that have incentives to lobby against the removal of pooling in the reporting of business combinations can be linked via political contributions to Congresspersons who became involved against the FASB’s position on this issue.

In summary, positive accounting theory emphasizes that firms will lobby the accounting standard setters to either adopt standards that give them greater choice or to reject standards that limit their existing discretion in the preparation of financial statements. The economic theory of regulation assumes that due to the resources firms have at their disposal, they may ‘capture’ the regulator (in this setting, the IASB) so accounting standards that do not benefit the general public may be introduced (Ball, 2009). However, public interest theory argues regulatory agencies are created for genuine purposes and they intervene and create regulations to overcome inefficiencies in a ‘free’ market. Considering these competing influences Zeff (2002) highlights the importance of the IASB not retreating from sensitive and controversial issues (such as the accounting of financial instruments) that are in need of high-quality standards.

2.3.2 Incentives of firms to produce high quality financial reports

Agency theory explains that the incentives of managers to hide poor performance of the firm or their activities could be resulted in lower quality reports. A manager’s incentives to disclose financial information can be explained by agency theory, in the context of asymmetric information between managers and owners (Jensen and Meckling, 1976). An agency relationship arises from a contract between a firm’s shareholders (the principals) and its managers (the agents). Under this contract, shareholders delegate decision-making power to the managers. Therefore, a separation between ownership and control occurs leading to a conflict of interest between the shareholders and managers because both parties are trying to maximize their utility (Ross, 1973). Thus the managers may engage in semi-optimal decision-making and not always act in the best interest of the shareholders. When a firm’s more shares are publically held, there is a greater separation between ownership (by investors) and control (by managers). In addition individual shareholders have less

power compared to firms with closely held shares. Hence, in the case of a firm with more publically held shares, the potential for conflict between the shareholders and managers is greater (Benston, 1982). Therefore, in order to hide their inefficient behavior, managers may not provide shareholders with financial information that provides an accurate view of a firm's financial position and performance.

Proper monitoring and bonding mechanisms, which will ensure that the managers' behavior is adequately aligned with the shareholders' interest, enable the shareholders to limit the incentives of managers' suboptimal behavior. For instance, compulsory requirement for the publication and independent auditing of financial statements, good internal control through corporate governance mechanisms, budget restrictions, operating rules and incentive compensation schemes are some of these monitoring and bonding mechanisms (Bernold, 1971).



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A study conducted by Jensen and Meckling (1976) reveals that the agency costs is the sum of: (i) monitoring expenditures by the principal, (ii) bonding expenditures by the agent, and (iii) the residual loss. Residual loss is the monetary cost to the principal due to their reduction in welfare as a result of the agent making decisions that do not maximize the firm's value. However, the managers will ultimately bear the monitoring cost, they incur bonding costs such as the cost of preparing financial statements to the shareholders to make assure that they will act in accordance of their agreement. Managers therefore have an incentive to reduce agency costs. One way of reducing these agency costs is through disclosing more information in the financial statements and having those statements audited so that the shareholders can better assess the decisions made by the managers (Watts, 1977).

Jensen and Meckling (1976) also revealed that another agency relationship between the firm's debt holders and managers who act on behalf of the shareholders. In this relationship, a conflict of interest between the debtholders and managers arises, especially if the managers own shares in the firm whereby managers have an incentive to maximize the wealth of the shareholders. Managers can use methods such as making excessive dividends payments to transfer wealth from the debt holders to equity holders. As a result, debtholders include restrictive agreements in the debt contract (on borrowing, dividends, production and investment decisions) to limit opportunities for managers to behave sub-optimally. Monitoring costs include the costs involved in writing these restrictive agreements and enforcing them. Debtholders will price-protect via interest rates or restrict their funding, and ultimately the managers will bear these monitoring costs as well (Jensen and



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Therefore, in reducing these costs, managers have to incur bonding costs such as providing more information in the financial statements to facilitate debtholders' assessment of the firm's ability to meet its debts and to assure debtholders that their interests are properly protected. Watts (1977) finds that, when the leverage of the firms are very high, there will be greater need for monitoring of the agency relationship between managers and debtholders and disclosure of information on the activities of the managers and the performance of the firm.

The basic behavioral assumption underlying agency theory is that people tend to act in their own self-interest. As managers own only a fraction of a firm's equity, they will only bear a small proportion of the cost the firm incurs in diverting resources to the managers while they get to enjoy all the benefits. Therefore, in an unconstrained

environment (that is, in the absence of monitoring or bonding mechanisms) managers' may have an incentive to divert all of the firm's wealth to themselves (Jensen and Meckling, 1976). However, several theories have been presented to explain why managers' incentives to manipulate firm wealth and not disclose the true state of affairs of the firm may be constrained. One explanation is the market for finance. From time to time, managers may need to raise more finance from the market for new investments. However, the market participants would be reluctant to provide finance to a firm where they are aware that the managers misappropriated funds on previous occasions. Therefore the market will either not provide funds or will require a higher yield to compensate for the likely misuse of the resources (Watts, 1977).

The market for corporate control also acts as a constraint. The threat of takeover and successful proxy fights by dissatisfied shareholders or other firms that consider the performance of the firm can be improved with better management, reduce the incentives of the managers to misuse resources (Manne, 1965). In addition, the market for managerial labour acts as a constraint. The future earnings potential of managers is a function of their current performance. While the manager may not immediately suffer any losses from the current underperformance of the firm, his future earnings will be negatively affected if the firm were to fail. In addition, managers who frequently misuse resources and underperform may not be able to attract talented managers to the firm. This is because potential recruits would be unwilling to join a firm that is unresponsive towards managerial performance and may not reward good performance (Fama, 1980).

However, critics of the efficiency of finance, takeover and managerial services markets argue that these mechanisms will only be effective in limiting the incentives

of managers to misuse resources if the outsiders of the organization obtain adequate information about the operations of the firm in order to make informed decisions about future investments and job opportunities. If this information is not available to outsiders, then the self-interested decision-making and sub optimal performance of the insiders will go unpunished. Thus, governments and regulatory institutions intervene and implement rules and regulations (such as accounting standards, company law and listing rules) and carry out enforcement (such as investigations and statutory audits) to increase the incentives of firms to disclose information to outsiders (Ball et al., 2003). Also, regulations such as accounting standards can assist public accountants by giving them a basis for refusing client demands to use accounting methods which can lead to misleading information being presented in financial reports (Benston, 1982).

IFRS (SLFRS) aims to make improvements in recognition, measurement and disclosure where traditionally there have been gaps in the disclosures made by firms in areas such as financial instruments (LKAS 39 and LKAS 32), intangible assets (LKAS 38, SLFRS 3) and segment reporting (LKAS 34). In addition, in the year of 2007, several years before the adoption of IFRS in Sri Lanka new such as Company Act has been implemented and regulatory bodies such as the SEC have made improvements in their enforcement activities. In combination these changes in the regulations and enforcement activities should create incentives for firms to reduce earnings management and enhance disclosure, thereby improving accounting quality.

Another theory related to the incentives of firms to produce high quality financial reports are what may be termed as the “capital need” theory as presented by Choi (1973). According to this theory, firms have an incentive to comply with mandatory reporting requirements and to increase voluntary disclosure to provide more financial

information to investors. Firms can reduce the level of uncertainty for investors about the future performance of the firm and thereby obtain capital at a lower cost.

Foster (1986) discusses how efficient capital markets can influence the information disclosed by firms in their financial reports. When firms attempt to raise capital at the lowest possible cost, they compete with each other in capital markets on the type of security offered and on the terms of the issue and future returns. However, investors may be uncertain about the quality of a firm and its securities. In such instances, they will demand information to assist them to better ascertain the timing and the risk of existing and future cash flows. This in turn enables them to value firms more accurately and to make other investment decisions such as choosing a portfolio of securities. Therefore, firms have an incentive to disclose information in their financial reports that will reduce un-diversifiable information risk and enable them to raise capital at a reduced cost. Consistent with the 'capital need' theory there have been several studies such as Diamond and Verrecchia (1991), Botosan (2007), Francis, Khurana and Pereira (2005), and Francis, Nanda and Olsson (2008) that find a negative association between quality of disclosure of financial information and cost of capital for firms.

In addition, listed firms have to meet the requirements of the stock exchange as well as regulators (such as the FSA and the FRRP) and are under greater public scrutiny compared to unlisted firms. Therefore, listed firms are more likely to have greater compliance with relevant regulations and higher levels of disclosure than unlisted firms. In support of this claim Singhvi and Desai (1971) find that the quality of annual report disclosure is higher for listed firms compared to unlisted firms. Stock exchanges tend to have varying listing requirements (Adhikari and Tondkar, 1992).

Firms listed on multiple stock exchanges may have higher levels of compliance and disclosure as they attempt to meet the requirements of different stock exchanges. This effect is greater in an international setting where the firms are cross listed on foreign stock exchanges because the demand for information by foreign investors is higher due to them being unacquainted with the relative merits of the firms. Cross-listed firms have to meet the listing requirements of multiple stock exchanges. Furthermore, cross-listed firms come under the additional scrutiny of the foreign regulators. For example, non-US firms cross-listed into the US come under the scrutiny of the SEC. The “bonding hypothesis” proposed by Coffee (2002) highlights that controlling shareholders can use a stock exchange listing in a high investor protection country (such as the US) to bond themselves to the regulatory requirements of that country to assure minority shareholders that they are less likely to be exploited. Therefore, cross-listed firms may have greater incentive to produce high quality financial statements by complying with the accounting standards and providing comprehensive disclosure.

Consistent with this reasoning Choi (1973) finds that sample firms significantly improved their disclosure on entry into an international capital market. In addition, Cooke (1993) reveals that cross-listed Japanese firms disclose more information than firms, which only have domestic listings. Street and Bryant (2000) find that the extent of compliance with IFRS and disclosure levels are higher for firms that have a US listing. Lang *et al.* (2003) show that non-US firms that have cross-listed in to the US have less earnings management compared to a matched sample of foreign firms that are not-cross listed. The cross listed firms also report accounting data that are more conservative, take account of bad news in a more timely manner, and are more strongly associated with share price compared to the non-cross listed firms. Also, Zéghalet *et al.* (2011) find that mandatory adoption of IFRS had a greater effect on



reducing the level of earnings management (based on discretionary accruals) for French firms that are listed on foreign markets compared to firms listed only on domestic stock exchanges.

In summary, agency theory indicates that managers may have incentives to produce low quality financial reports to hide poor performance of the firm or their suboptimal decision-making (to transfer firm wealth to themselves from shareholders). However, the markets for takeovers and managerial labor act as constraint to the suboptimal behavior of managers. In addition capital needs theory highlights that firms wanting to raise capital are motivated to produce high quality financial reports to reduce diversifiable information risk and enable them to raise capital at a lower cost. Furthermore, firm specific factors such as listing on foreign stock exchanges may provide firms with additional incentives to provide high quality financial reports.



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In this section I have discussed theories related to the incentives of firms to produce high quality financial reports by complying with accounting standards and providing comprehensive disclosure. If firms were complying with the requirements of IFRS and providing greater disclosure, it may improve the quality of their financial statements, in turn enhancing accounting quality and providing economic benefits such as lower cost of capital. Thus, in the next section I discuss previous literatures investigating various aspects of voluntary and mandatory IFRS adoption, such as effects on accounting quality and economic impacts.

2.4 Previous Literatures

In this section, the previous studies that have investigated the consequences of IFRS adoption will be discussed. Most of these studies aimed at finding whether the expected benefits of IFRS have been accrued. The previous studies relating to IFRS

adoption can be categorized as studies relating to voluntary IFRS adoption and studies relating to mandatory IFRS Adoption. Germany, Switzerland and some other countries allowed their firm to early adoption IFRS. Later, on 01 of January 2005, all EU members were required to adopt IFRS mandatorily. In Sri Lanka, the mandatory adoption of IFRS came into effect on 01 January 2012. However, separate analysis of voluntary and mandatory IFRS adoption is needed because the firms adopting IFRS voluntarily may have differing motivations to comply with IFRS and to provide more disclosures. Firms adopting IFRS voluntarily exhibit their commitment in increasing transparency and comparability of financial reports. Conversely, mandatory adopters may not exhibit such commitment because they are forced to adopt IFRS (Daske *et al.*, 2008). Therefore, the improvement in accounting quality and accruing of other benefits of IFRS adoption may vary between voluntary adopters and mandatory adopters of IFRS.



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2.4.1 Empirical Studies relating to Voluntary adoption of IFRS.

In 2005, all EU listed firms were required to apply IFRS in preparation of their financial statements. But voluntary application of IFRS is allowed for some countries like Germany and Switzerland even before 2003. Furthermore, voluntary IFRS adoption is allowed for non-listed firms as well. Guggiol (2010) indicates that there are two characteristics for voluntary IFRS adoption. First, adoption of IFRS depends upon the difference between local GAAP and IFRS and Second, the link between tax reporting and financial reporting of Local GAAP and IFRS. If the difference between Local GAAP and IFRS are not significant, the firms are free to choose between Local GAAP and IFRS. This is mostly the case in countries where investors are better protected and have more power (Barth, Landsman and Lang, 2008). The individual accounts of firms are used for tax purpose in some countries. From the tax authorities

point of view, there are several minuses of IFRS principles when IFRS statements are used for tax purpose. Therefore, countries with a stricter link between tax and the individual accounts have generally preferred to limit IFRS adoption to consolidated accounts only (Guggiola, 2010).

Most of the firms apply IFRS because in the end the benefit of IFRS adoption will surpass the costs of adopting IFRS. The study conducted by Dumontier and Raffournier (1998) using Swiss firms reveal that more internationally diversified firms, more capital-intensive firm and the firms with widely held ownership are tend to adopt IFRS voluntarily. Similar results can be seen in the study conducted by Chun and Taylor (2008) indicating there's an increase in globalization and cross-border transactions. The study of El-Gazzar, Finn and Jacob (1999) shows that there are four main motives for firms to adopt IFRS voluntarily. The first is to enhance the exposure to foreign markets, second to improve customer recognition, third to secure foreign capital, and at last to reduce political costs of doing business abroad. Studies among German firms that voluntary adopt IFRS between 1999 and 2001 showed that those firms had a higher accounting quality after adoption (Van Tendeloo and Vanstraelen, 2005).

German firms adopting IAS were required prepare reconciliations from German local GAAP to IAS for the year before adoption. This provides an ideal opportunity to compare German local GAAP and IAS financial statements for firms during the same time period. Hung and Subramanyam (2007) compare the accounting numbers of 80 German firms that adopted IFRS during 1998 to 2002 to examine the effects of the IFRS adoption on financial statement numbers. They find that total assets and book value of equity as well as the variability of book value and net income are

significantly higher under IAS compared to German GAAP. The authors conclude their results are indicative of the greater focus under German GAAP on income smoothing and balance sheet conservatism. However, the results also reveal that the book value of equity and net income are no more value relevant under IAS than under German GAAP. This result is inconsistent with Bartovet *al.* (2005) who find higher value relevance for IAS based earnings compared to German GAAP. The results of Hung and Subramanyam (2007) and Bartovet *al.* (2005) may differ due to different measures of value relevance used in each study. In the case of Hung and Subramanyam (2007), the difference in value relevance was measured in terms of difference in the R Square of returns/earning regressions while Bartovet *al.* (2005) use the slope coefficient of regression models. In a review of many IFRS studies Soderstrom and Sun (2007) conclude that it is more appropriate to use the difference in R Square to test the relative value relevance between two accounting standards, thus this study is also using same approach. When carrying out comparisons of value relevance between SLAS and IFRS (SLFRS).

Another voluntary adoption study focusing on Germany is Van Tendeloo and Vanstraelen (2005). They investigate whether German firms adopting IFRS engage in less earnings management than those reporting under German GAAP. They operationalize earnings management in terms of discretionary accruals. These findings reveal that IFRS adopters do not exhibit less earnings management than firms reporting under German GAAP, indicating that IFRS does not impose a significant constraint on earnings management, as measured by discretionary accruals.

Bart et al. (2008) conducted a study using a sample of 327 firms from 21 countries that adopting IFRS early to examine whether or not adoption of IFRS increase in

accounting quality by discouraging opportunistic earnings management. The sample period for the voluntary adopters of IFRS was year 1994 to year 2003, and control sample for their study comprises firms from the same countries. The firms in the control sample used local GAAP continuously while the firms in treatment sample adopted IFRS. They predict that earnings will be less managed by IFRS adopter compared to local GAAP adopters. This is because IFRS restrict, to some extent, the management's discretion to report earnings that are less reflective of the economic reality of the firm. They consider several measures including a measure to identify whether IFRS adoption constrains companies' accounting choices involving discretionary accruals. When a firm applies high quality enforceable accounting standards will result in higher variability in accounting earnings because it limits the managements' discretion (Ewert and Wagenhofer, 2005). Barth *et al.* (2008) predict that firms adopting IAS/IFRS will report more volatile earnings (less smoothing) than firms applying local standards. If adoption of IFRS standards reduces earnings management, they also predict the firms with voluntary IFRS Adoption will report a lower (higher) occurrence of small positive earnings (large negative earnings) in the post IFRS adoption period relative to the pre IFRS adoption period and relative to Control Firms that do not adopt IAS. Barth *et al.* (2008) reveals that voluntary adopter of IFRS report less earnings smoothing, higher occurrence of large losses and slightly lower (but insignificant) occurrence of small positive earnings in the post IFRS adoption period relative to a matched (by country and size) sample of firms that continue to apply domestic GAAP (Non-IAS Control Firms). They reveal similar results for pre-post tests for the voluntary adopter treatment firms, but no significant changes over time for the Control Firms that do not adopt IAS. Moreover, they reveal that following IAS/IFRS adoption there has been a reduction in discretionary earnings

management.

Studies conducted by Christensen *et al.* (2008) and Ahmed *et al.* (2010) argue that the Barth *et al.* (2008) findings can be explained by firms' incentives to voluntarily adopters of IFRS. Both the studies indicate that application of IFRS may involve with considerable judgment of managers. Moreover, many measurement and recognition criteria prescribed by IFRS are, up to some extent, based on private information of managers (e.g. fair value measurement). This allows managers to use their own discretion in applying IFRS. However, the use of managers' discretion to speculatively manage earnings or to provide managers' own predictive information about of the firms' future prospects depends on management's incentives (Burgstahler *et al.*, 2006; Daske, *et al.*, 2007). In other words, adoption of IFRS voluntarily is an internal choice and assessing the consequences of earnings management under IFRS adoption is likely to depend on firms' encouragements to better financial reporting transparency.

Christensen *et al.* (2008) assumes that firms with more external concentration in financing influence their incentives to adopt IAS/IFRS voluntarily and to be more transparent (less earnings management) in their financial reporting. In fact, the firms with more internal concentration have less commitment to adopt IFRS voluntarily and greater transparency because it resulted in losing of managers' information advantages over external parties of the firms. But voluntary adoption of IFRS enables the managers to attract external financing to make use of growth opportunities. Based on these arguments, Christensen *et al.* to assume that firms with more closely held ownership would be less likely to adopt IFRS voluntarily. Consistent with their assumption, they reveal the firms that delayed adoption of IFRS have bank ownership,

higher long-term leverage, infrequent equity issue, and have a less diffused ownership. They also find the firms that delayed IAS/IFRS adoption have lower analyst following, suggesting these firms face less demand for transparent information from the capital markets.

Christensen *et al.* (2008) conduct a study to compare earning management/smoothing behavior of early adopters versus late adopters. This study included 310 German firms that adopted IFRS/IAS voluntarily during the period from 1998 to 2005. Based on the results of this study, they concluded that there is a reduction in earning management for the early adopters whereas slightly increase in earning management/smoothing for those firms that adopt IFRS when it became mandatory in Germany. They also conclude that firms tend to adopt IAS/IFRS early because they have incentives to improve their earning quality.



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Similarly, Ahmed *et al.* (2010) compare earning management/smoothing practices of late and mandatory adopters. The sample of the study is drawn from 21 countries including 1,636 firms. They find that greater earning management among the IAS/IFRS adopters when compared to benchmark control firms after IFRS adoption. However, the result of their study shows that there is significant reduction in managing toward small positive earnings in the post IFRS adoption period compared to pre IFRS adoption period. These results were attributed to both IFRS adopter and benchmark control firms. But they argue that the difference between treatment and control samples incidence of small positive earnings in the post IFRS adoption period is more likely due to general economic trends than to newly adopt accounting standards is not significant suggesting that the decrease in earning management.

Like Christensen *et al.* (2008), Ahmed *et al.* (2010) argue that the difference in their

findings relative to the Barth *et al.* (2008) findings is due to the self-selection bias in the Barth *et al.* (2008) study, as only firms with more external orientation had incentives to adopt IAS/IFRS standards early and to commit to greater transparency (lower earnings management). But the incentives explanation would seem to carry little force when seeking to reconcile the findings of Barth *et al.* (2008) and Ahmed *et al.* (2010) because there is a considerable subset of firms in the Ahmed *et al.* sample that comes from countries where firms did not have a choice to adopt IAS/IFRS early as a credible way of signaling their commitment to greater transparency.

If the sole objective of the firms are to improve the accounting quality through greater compliance and adequate disclosure, the level of uncertainty for the investors may be reduced by the firms and as result receive economic benefit such as lower cost of capital (Choi, 1973). It is intended that the use of high quality international standards such as IFRS should increase the information provided to investors and consequently improve the efficient and effective functioning of capital markets (Regulation (EU) 1606/2002). There are several studies that have examined whether the adoption of IFRS has resulted in lower cost of capital for firms. For example, Leuz and Verrecchia(2000) analyze German firms, which have switched to IFRS or US GAAP from German GAAP. They examine whether the adoption of a set of ‘international’ accounting standards has reduced firm cost of capital due to reducing information asymmetries. They measure the information asymmetry component of cost of capital based on bid-ask spread, trading volume and share price volatility. The results reveal firms committing to IFRS or US GAAP have lower bid- ask spreads and higher trading volume indicating a reduction in costs associated with information asymmetry. However the results do not reveal a significant reduction in share price

volatility.

Firms adopting IFRS are providing more information, to investors, on firm performance and financial position is resulted in reducing analyst forecast errors. Ashbaugh and Pincus (2001) investigate whether or not the adoption of IAS/IFRS affect the analyst forecast accuracy. They reveal the adoption of IAS/IFRS is positively affected to the analyst forecast accuracy. In addition, they find that IAS/IFRS adoption resulted in reduction of analyst forecast error, which indicate the improvement in the informativeness of financial information under IAS/IFRS.

Cuijpers and Buijink (2005) conducted a study on the determinants and consequences of voluntary adoption of IAS or US GAAP for firms listed and established in the EU. They find that there is no reduction in cost of capital for the firms that adopt IAS or US GAAP. This results inconsistent with Leuz and Verrecchia (2000). In addition, they find the increase analyst forecast accuracy following the adoption of IAS or US GAAP. However, the results indicate that uncertainty among analysts and investors appears to be higher for firms using IAS or US GAAP compared to the firms reporting under local GAAPs. On further analysis they find that 'recent adopters' have higher forecast dispersion and lower analyst following than 'early adopters'. 'Early adopters' are defined as firms that adopted IAS or US GAAP prior to the 1998 financial year. This indicates that analysts take some time to understand the financial reports once the standards are changed and the benefits of adopting IAS or US GAAP take some time to accrue.

Similarly Daske (2006) investigates whether the adoption of IFRS or US GAAP results in measurable economic benefit to German firms in terms of reduced cost of equity capital. The sample period is 1993 to 2002 and cost of equity capital is

operationalized as an implied rate of return on a valuation model using financial analysts' consensus earnings forecasts and share prices. The statistical techniques used by Daske (2006) are more advanced than those used in prior studies such as Leuz and Verrecchia (2000). Contrary to expectation, Daske (2006) finds cost of equity capital increases during the transition period around the adoption of IFRS or US GAAP.

As mention in the previous section, in addition to high quality accounting standards, enforcement mechanisms and rules and regulations to protect investors are important to achieving improvements in accounting quality. Accordingly, Renders and Gaeremynck (2007) examine the determinants of early adoption of IFRS by firms in Europe to provide insights into the associated costs and benefits. Specifically, they examine the influences of country level corporate governance mechanisms and laws protecting investors on the early adoption of IFRS. The authors construct their own proxies to assess the country level corporate governance mechanisms (Corporate Governance Index) and laws protecting shareholders (modified shareholders' rights index developed by La Portaet *al.* (1998)). The results reveal that strong investor protection laws and corporate governance mechanisms are positively related to early IFRS adoption. These results indicate that losses of private benefits of control (such as the ability to divert assets from the firm) through IFRS adoption are smaller for the insiders of early IFRS adopters.

The table 2.1 presents a list of major studies that investigates the voluntary adoption of IAS. These studies have generally provided mixed results in terms of compliance with IAS, and the effectiveness of IAS in reducing earnings management and improving value relevance. For example Street *at al.* (1999) reveals significant levels

of non-compliance among sample firms. If firms are not complying with IAS or providing comprehensive disclosure, they will not be reducing information asymmetry risk for investors. Therefore, firms may not receive economic benefits such as reductions in cost of capital as a result of adopting IAS. Possibly due to inconsistencies in compliance with IAS and disclosure between firms, studies on the economic consequences and the capital market effects of IAS have also provided mixed results on aspects such as the relationship between IAS adoption and firm cost of capital.

For this study, the measures used by Barth *et al.* (2008) are the most relevant measures. Therefore, all the accounting quality metrics used in this study are consisting with Bart *et al.* (2008). It provided the most consistent findings in terms of the adoption of IAS resulting in better accounting quality compared to non-US domestic accounting standards. However, this study was not able to determine whether the improvements in accounting quality are a result of the adoption of higher quality accounting standards or changes in the incentives of firms or environmental changes such as the introduction of better enforcement mechanisms by national regulators.

Studies that examined the voluntary adoption of IAS tend to suffer from self-selection bias, as the incentives of firms that voluntarily adopted IAS may be different from firms that were forced to adopt IAS under mandatory rules. In addition, significant changes to IAS occurred over their sample periods that could affect the reliability of the results and their ability to provide evidence on the impact of IAS adoption (Soderstrom and Sun, 2007; Jeanjean and Stolowy, 2008). Studies on mandatory adoption of IFRS are more able to avoid these underlying issues. In the next section I

discuss studies that examine the mandatory adoption of IFRS.

Table 2.1 Studies on Voluntary adoption of IAS/IFRS/UK GAAP

Study	Sample details		Main findings	
	# Countries	Year (s)	Outcome variable	Summary
Street, Gray and Bryant (1999)	12 countries	1996	Compliance Level	Non-compliance level among IAS Firms are significant
Harris and Muller (1999)	US	1992-1996	Association between accounting amounts and share price and return	IAS amounts are highly associated with share price and US GAAP amounts are associated with return
Van Tendeloo and Vanstraelen (2005)	Germany	1999-2001	Less earning management	IAS adopters do not exhibit less earnings management than firms reporting under German GAAP
Bartov, Goldberg and Kim (2005)	Germany	1998-2000	Value relevance of earnings	Value relevance of US GAAP and IAS based earnings is higher than that of German GAAP.
Hung and Subramanyum (2007)	Germany	1998- 2002	Less earning management Value relevance of earnings	Less income smoothing and balance sheet conservatism under IAS. However, book value of equity and income are no more value relevant under IAS than under German GAAP.
Barth, Landsman and Lang (2008)	21 countries worldwide	1994-2003	Less earning management	AS firms exhibit less earnings smoothing, less managing of earnings towards targets, more timely loss recognition and higher value relevance compared to a matched sample of firms which applied domestic standards.

Source: (Smarasekara, 2013)

2.4.2 Empirical Studies relating to Mandatory adoption of IFRS

2.4.2.1 Studies on Earnings Management and Accounting quality

Several studies have been conducted to investigate the accounting in post IFRS adoption period using earning management approach. Studies such as Jeanjean and Stolowy (2008) investigate earning management of the UK, France and Australia

following 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 for 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.

Ahmed et al. (2012) examine changes in accounting quality using data from 2002-2007 from 20 countries that adopted IFRS and 15 countries that did not. Their results indicate that firms that adopt IFRS exhibit significant increases in income smoothing and aggressive reporting of accruals, and a significant decrease in timeliness of loss recognition compared to benchmark firms that do not adopt IFRS. However, the results do not indicate significant differences across IFRS and benchmark firms in meeting or beating earnings targets. In line with the explanations provided by Callao and Jarne (2010), Ahmed et al. (2012) attribute their findings to the greater flexibility and managerial discretion provided by IFRS compared to domestic GAAP. Ahmed et al. (2012) find that their results primarily hold for firms in strong enforcement countries. Therefore, the authors argue that the enforcement mechanisms in these countries were not able to counter the initial effects of greater flexibility in IFRS relative to domestic GAAP.

When the UK firms adopt IFRS mandatorily for first time in 2005, they had to restate their previous year's financial statements according to IFRS guidelines. This was a good opportunity for the researchers to compare IFRS statement to UK GAAP statements. Horton and Serafein (2009) examine whether the disclosure of these IFRS reconciliation adjustments to previously disclosed UK GAAP accounts have information content. The evidence indicated that differences in earnings per share between UK GAAP and IFRS figures for the prior year's accounts are positively and significantly associated with share price, indicating that investors find the reconciliations value relevant. Further analysis reveals that the values of the positive reconciliation adjustments are significantly associated with share prices even before the date the reconciliations are disclosed to investors through the first set of IFRS financial statements. In contrast, the negative reconciliation adjustments are associated with share prices only after the reconciliations are disclosed. The authors argue that this is consistent with the premise that managers communicate good news even prior to IFRS adoption, as opposed to bad news which was revealed only after the firm adopted IFRS. Thus, IFRS appears to provide a medium through which negative information is revealed more reliably to investors.



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A recent study that carries out a pre-post IFRS adoption comparison of accounting quality is Chen, Tang, Jiang and Lin (2010). Their sample includes publicly listed companies in 15 member states in the EU. Accounting quality is measured in terms of earnings smoothing, management towards earnings targets, and magnitude of absolute discretionary accruals, accruals quality and timely loss recognition. Data for the pre-adoption period is collected from 2000-2004 while the IFRS period includes 2005-2007. The results provide some evidence of improvements in accounting quality. That is, post IFRS adoption there is evidence of less managing earnings toward a target, a

lower magnitude of absolute discretionary accruals and higher accruals quality. However, the results also indicate higher levels of earnings smoothing and less timely recognition of losses in the IFRS adoption period.

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 financials industry that limits the generalizability of the results given that a high percentage of firms on the LSE are from the financials industry.

Aubert and Grudnitski (2011) 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 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, Gaeremynck and Thornton (2012) 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, Maydew and Thornock (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 show 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.

2.4.2. 2 Studies on Value Relevance and Accounting quality

The value relevance of accounting information is one of the most addressed issues in previous empirical studies related to financial accounting. It is motivated primarily by the need to provide empirical evidence as to whether users find accounting information relevance in equity valuation. Following IFRS adoption, it is assumed that value relevance of accounting amounts is increased because the relevance is one of the most important qualitative characteristics that is presumed to accrued by IFRS. Therefore, there have been number of studies, which have investigated whether the said objective of IFRS has been met. In particular, the most of studies focuses on the value relevance of accounting amounts after IFRS adoption.



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Before IFRS adoption, several value relevance studies were conducted to investigate the relationship share prices and accounting amounts across countries. Especially, studies such as Harris et al. (1994), Joos and Lang (1994), King and Langli (1998), Ali and Hwand (2000) and Arce and Mora (2002) were aiming at finding the explanatory power of earning and book value among countries. The studies conducted by Gornik-Tomaszewski and Jermakovicz (2001), Eccher and Healy (2003), Al-Sehali and Spear (2004), Chen and Wang (2004), Prather-Kinsey (2006), Davies-Friday *et al.* (2006) and Hellström (2006) document value relevance of accounting information in developing and transition economy.

Following to IFRS adoption, recent value relevance studies were aiming at finding the consequences of IFRS adoption which provide implication for parties such as

shareholders, regulators, policymakers on how IFRS adoption affect accounting information of firms domicile in non-European countries (Bao and Chow (1999), Sami and Zhou (2004), El Shami and Al Qenae (2005), El Shami and Kayed (2005)).

Bartovet *al.* (2005) compare the value relevance of 417 German firms from 1998 to 2000. All of these firms were listed on German Stock Exchange and adopting three different accounting standards namely German GAAP, US- GAAP and IFRS. However firms traded on the German Neuer Market were required to apply either Us-GAAP or IFRS. Their findings reveal that a higher value relevance for earning among the firms adopting either IFRS or US-GAAP relative to those firms adopting German GAAP. They attribute these results only for the firms having positives earnings. Moreover, they find that no significant difference of value relevance of earning amongst firms adopting US-GAAP and IFRS.

Consistent with Bartovet *al.* (2005), Goldberg and Kim (2005) reveal a higher value relevance of earning under IFRS compared to value relevance of earning under German GAAP. These results are also supported by Jermakowiczet *al* (2007). In this study, they used a price regression to determine the relationship between book value per share, earning per share and market value of shares using DAX-30 companies observed from 1995-2004. They found a significant association between the book value per share, earning per share and market value of shares.

Hung and Subramanyam (2007) conducted similar study using 80 German firms to compare the effect of IFRS adoption on the financial statement to those using German GAAP. They compare the restated financial statement with the financial statement prepared under IFRS in the adoption year. Results indicate that the book value calculated using restated financial statement and financial statement under IFRS are

value relevant, but not value relevance for earning. In addition, they find that total assets and book value are significantly higher under IFRS and there is a higher variability in book value and earnings under IFRS. Finally, they find that the adoption of IFRS require the firms to recognize larger loss frequently.

When the UK firms adopt IFRS mandatorily for first time in 2005, they had to restate their previous year's financial statements according to IFRS guidelines. This was a good opportunity for the researchers to compares IFRS statement to UK GAAP statements. Horton and Serafein (2009) examine whether the disclosure of these IFRS reconciliation adjustments to previously disclosed UK GAAP accounts have information content. The evidence indicated that differences in earnings per share between UK GAAP and IFRS figures for the prior year's accounts are positively and significantly associated with share price, indicating that investors find the reconciliations value relevant. Further analysis reveals that the values of the positive reconciliation adjustments are significantly associated with share prices even before the date the reconciliations are disclosed to investors through the first set of IFRS financial statements. In contrast, the negative reconciliation adjustments are associated with share prices only after the reconciliations are disclosed. The authors argue that this is consistent with the premise that managers communicate good news even prior to IFRS adoption, as opposed to bad news which was revealed only after the firm adopted IFRS. Thus, IFRS appears to provide a medium through which negative information is revealed more reliably to investors.

Davalle, Onali and Magarini (2010) also investigate whether value relevance (operationalised in terms of the relationship between accounting numbers and market data) increased after IFRS adoption. Their results for the overall sample (with firms

from Germany, Spain, France, Italy and the UK) indicate that the value relevance of earnings has increased post IFRS adoption while the value relevance of book value of equity has decreased. However, further analyses on individual country data provides mixed evidence whereby the influence of earnings on share price increased in Germany, France and the UK while the influence of book value of equity decreases in each of the countries excluding the UK. In addition, the authors analyze changes in the earning smoothing and timeliness of losses and the results do not provide any evidence that earnings smoothing has decreased and timeliness of losses increased for firms in any of the sample countries post IFRS adoption. The authors argue that these results provide evidence that the IASB's aim to improve cross-border comparability of financial statements by means of harmonization of accounting standards and improvements in accounting quality may not have been achieved.



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In summary, table 2.2 presents empirical studies which investigate the consequences of mandatory IFRS adoption around the world. These studies provide mixed results indicating that the adoption of IFRS resulted in reducing earning management and increasing the informativeness of financial reports. The results of studies such as Jeanjean and Stolowy (2008) and Callao and Jarne (2010) and Ahmed *et al.* (2012) indicate that the adoption of IFRS has not resulted in reductions in earnings management while Iatridis (2010) provides contrary evidence. In fact Jeanjean and Stolowy (2008), Callao and Jarne (2010) and Ahmed *et al.* (2012) find some evidence of increases in earnings management and they generally attribute their findings to the greater flexibility and managerial discretion provided by IFRS compared to domestic GAAP.

Table 2.2 Studies on Mandatory adoption of IAS/IFRS/UK GAAP

Study	Sample details		Main findings	
	# Countries	Year (s)	Outcome variable	Summary
Jeanjean and Stolowy (2008)	UK, France 2002- and Australia	2002- 2006	Earning Management	Earnings management did not decrease post IFRS adoption.
Horton and Serafeim (2009)	UK	2004	Value Relevance	Investors find IFRS reconciliation adjustments value relevant.
Callao and Jarne (2010)	11 countries in the EU	2003- 2006	Earning Management	Earnings management based on discretionary accruals has increased post IFRS adoption.
Davalle, Onali and Magarini (2010)	Germany, 2002- Spain, France, 2007 Italy and UK	2002- 2007	Value Relevance	Value relevance of earnings has increased post IFRS adoption while the value relevance of book value of equity has decreased, for the overall sample. Individual country data provide mixed evidence on value relevance. No evidence that an earnings smoothing has decreased and timeliness of losses increased for sample firms.
Chen, Tang, Jiang and Lin (2010)	15 countries in 2000- the EU	2000- 2007	Earning Management	Less managing earnings toward a target, a lower magnitude of absolute discretionary accruals and higher accruals quality, post IFRS adoption. However, higher levels of earning smoothing and less timely recognition of losses.
Iatridis (2010)	UK	2004- 2005	Earning Management	UK firms report less smooth accounting numbers, more timely recognition of losses and a lower frequency of small Profits and higher value relevance post IFRS adoption.
Aubert and Grudnitski (2011)	13 countries in the EU	2004	Value Relevance	Significant differences between ROA under local the EU accounting standards and reconciled IFRS figures. No evidence that IFRS earnings numbers are more value relevant or timely compared to local standards.
Verriest, Gaeremynck, Thornton (2012)	15 countries in Europe	2004	Corporate Govenance	Firms with stronger governance mechanisms engage in more transparent IFRS restatements, provide better disclosure quality and comply with IFRS more rigorously than weaker governance firms.
Ahmed, Neel and Wang (2012)	20 countries worldwide	2002- 2007	Earning Management	IFRS firms show an increase in income smoothing and aggressive reporting of accruals and reduction in the timeliness of loss recognition relative to benchmark firm. Their results mainly hold even for firms from strong Enforcement countries.
Christensen, Lee and Walker (2007)	UK	1996- 2004	Value Relevance	Share price reaction is positive and increases in cost of equity capital lower, to announcements that increased the likelihood of IFRS adoption, for firms that were more likely to adopt

				IFRS voluntarily.
Daske , Hail, Leuz and Verdi (2008)	26 countries worldwide	2001-2005	Earning Management	Market liquidity and firm valuations increased for firms from countries with relatively strict enforcement regimes and an institutional environment that provides incentives for more transparent earnings. These effects are weaker when domestic standards are closer to IFRS.
Li (2010)	18 countries in the EU	1995-2006	Cost of Equity	Mandatory adopters from countries with strong enforcement mechanisms benefit from a significant decrease in their cost of equity capital.
Armstrong, Barth, Jagolinzer, and Riedl (2010)	18 countries in the EU	2002-2005	Value Relevance	Incrementally positive stock market reactions to events associated with the likelihood of the IFRS adoption for firms with lower pre-adoption information quality.
Byard, Li and Yu (2005)	20 countries in Europe	2003-2006	Analysts' absolute forecast error	Analysts' absolute forecast dispersion decreased for mandatory adopters who are domiciled in countries with both strong enforcement regimes and domestic standards that differ significantly from IFRS.
Horton, Serafeim and Serafeim (2012)	Horton, Serafeim and Serafeim (2012)	2001-2007	Analysts' absolute forecast error	Analysts' consensus forecast errors decrease for firms that mandatorily adopt IFRS relative to forecast errors of other firms. The magnitude of the forecast errors decrease is associated with the firm-specific differences between local GAAP and IFRS.
Landsman, Maydew and Thornock (2012)	27 countries worldwide	2002-2007	Value Relevance	Information content (based on abnormal return volatility and abnormal trading volume) of earnings announcements increased in countries that mandated adoption of IFRS relative to those that did not. Firms from countries with relatively strong legal enforcement experienced a greater change in information content.

Source: (Samarasekara 2013)

The main objective of the present study is to investigate whether the mandatory adoption of IFRS (SLFRS) leads to higher accounting quality of Sri Lankan firms. Most of studies related IFRS adoption and accounting quality based on developing countries such as UK, Germany and Switzerland. Results drawn from these studies concerns about the generalizability of the finding to the developing countries such as Sri Lanka. This is because differing regulatory and enforcement mechanism is also

affect to the accounting quality. Furthermore, to accrue the expected benefit of IFRS may take considerable period of time because firms and investors take some time to understand the application of IFRS. In addition, though IFRS prescribe stricter guideline for certain areas, it allows more flexibility and subjectivity in other areas (Cairns, 2004). Therefore, accounting quality effect of IFRS adoption may vary across firms and countries. Thus, it is important to investigate whether the accounting quality has been improved following IFRS adoption in developing countries Like Sri Lanka. Sri Lanka is a country where IFRS/SLFRS does not allowed to apply before 2011. Therefore, unlike previous studies this study does not suffer from self-selection bias.

2.5 Chapter summary

The main aim of this is to discuss the conceptual background of this study. This chapter is also provides a lengthy discussion of previous empirical studies relating to present study. In addition, this chapter discusses the regulatory and enforcement mechanisms related firms' accounting quality. Discussion of regulatory and enforcement mechanisms is needed because it important in understanding that accounting quality does not solely depend on high quality accounting standards but on strength of enforcement mechanisms.

Under theoretical background, it presents theories related to the incentives of accounting standards setter such an IASB and FASB to introduce high quality accounting standards and firms to apply these accounting standards in preparing their financial statements. In the next section of this chapter, it discusses previous empirical studies related to voluntary and mandatory adoption of IFRS. These studies provide a clear insight on how IFRS adoption effect on the accounting quality of firms'

financial reports. Based on this understanding, hypotheses that explore the research questions are presented in Chapter three.



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CHAPTER THREE

METHODOLOGY

3.1 Introduction

The aim of this study is to examine whether or not the accounting quality of the firms listed on CES has been increased after mandatory adoption IFRS (SLFRS). The accounting quality of a firm may be affected by factors that are unrelated to accounting standards such as country's institutional setting. Therefore, previous chapter describes the country's institutional setting i.e. regulation and enforcement mechanisms that affect on the quality of accounting. Further, previous chapter highlights the theoretical background on which this study is developed. In addition, it discusses empirical studies related to IFRS adoption. In reviewing previous literature, it was identified suitable methodological approach to achieve the research objectives. These methods are discussed in detail in following sections.



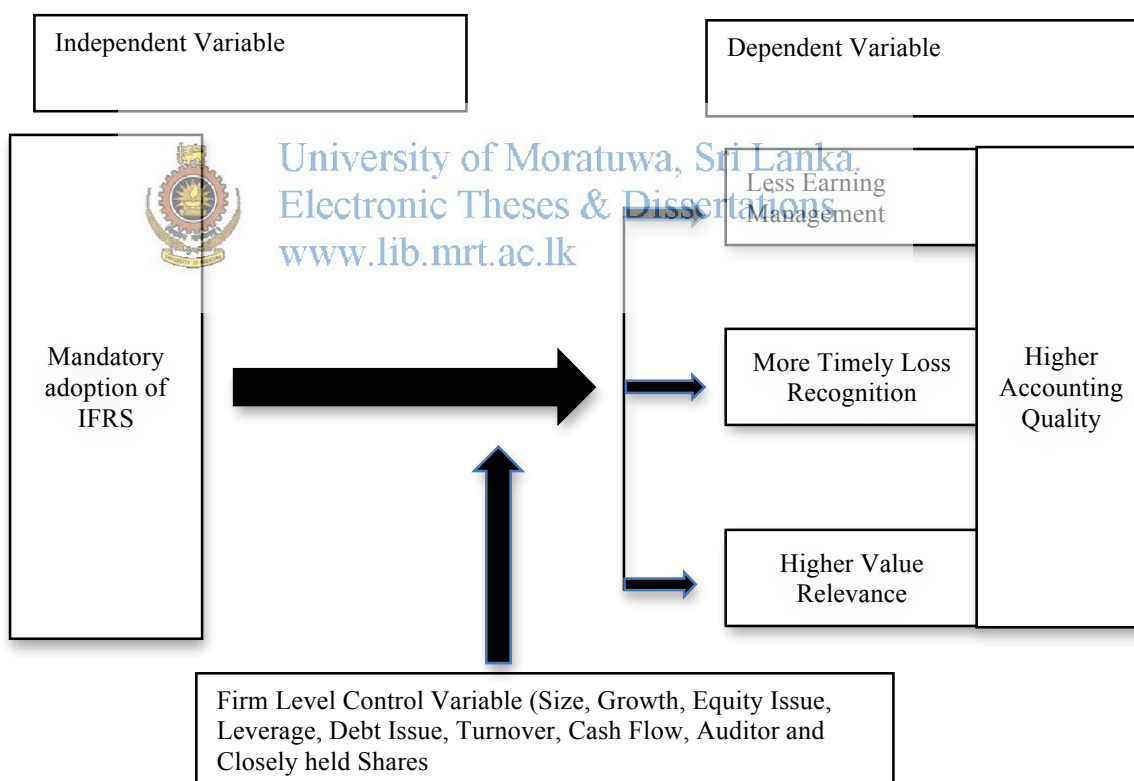
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The aim of this chapter is to develop testable hypotheses about the association between IFRS adoption and accounting quality of the firms listed on CSE in Sri Lanka based on literature review in the chapter two. Therefore section 3.2 devoted for hypotheses development. The research setting, sample profile and data collection are discussed in section 3.3. Section 3.4 discusses the research model and related independent, dependent and control variable. This study uses eight(08) different measures of accounting quality to test the research hypotheses and these measures are discussed in section 3.5. Finally, section 3.6 provides a brief summary about overall methodology.

3.2 Hypotheses Development

To develop testable research hypotheses, this section first defines accounting quality and its related measures namely earning management, timely loss recognition and value relevance. Thereafter, this section highlights several argument made by previous studies regarding the accounting quality effects of IFRS adoption worldwide. Based on these arguments, the conceptual framework of the study is developed. Figure 3.1 presents the conceptual framework of the study. Accordingly, the research hypotheses, which address the research questions, are developed in t alternative form.

Figure 3.1: Conceptual Framework



3.2.1 Accounting Quality

Accounting quality is a vague concept and has no clear definition. But previous researches have established several mechanisms for measuring accounting quality such as earning management, timely loss recognition and value relevance. According

to IASB's Conceptual Framework accounting quality is usefulness of accounting information to all relevant parties in the economy to facilitate investment and credit decisions. The Conceptual Framework states that the objective of general purpose of financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity. The Conceptual Framework also highlights that for information to be useful, it must be relevant (that is, provide an indication of future cash flows) and faithfully represent what it purports to represent (that is, information must be complete and unbiased). It also states that the usefulness of financial information to various users is enhanced by the qualitative characteristics such as comparability, verifiability, timeliness, and understandability.

In line with previous empirical studies such Lang *et al.* (2003), Lang *et al.* (2006), Barth *et al.* (2008), and Paananen and Lin (2009), this study will operationalize accounting quality in term of earning management, timely loss recognition and value relevance.

3.2.1.1 Earning Management

Earning management or earnings smoothing can be defined as under-reporting or over-reporting of earnings using discretionary accruals to reduce earnings volatility over the time (Dye 1988; Goel and Thakor 2003; Arya, Glover and Sunder 2003).

Healy and Wahlen (1999) define earning management as follows:

“Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers”

Consistent with Healy and Wahlen (1999), Leuz, Nanda and Wysocki (2003) define earnings management as the alteration of firms' reported economic performance by managers to either mislead some stakeholders or to influence contractual outcomes. Further and Scott (2009) defines earnings management as the choice by the insiders of accounting policies, or actions affecting earnings, so as to achieve some specific reported earnings objective. This definition is considered to be more strict definition. However, earning management has generally been viewed as an outcome of managers' opportunistic behavior to maximize their current and future compensation. For example, managers tend to under-report earnings when realized earnings are sufficiently high, such that their bonus reaches the bonus cap or when they have ratcheted budgets; they over-report earnings when realized earnings fall between a lower and upper bound of bonus (Healy 1985; Holthausen, Larcker, and Sloan 1995; Guidry, Leone and Rock 1999; Murphy 2001). Some studies argue that earning management has been reduced in the post IFRS adoption period so that earning quality is improved. Studies suggesting that the adoption of IFRS gains significant improvement in earning quality often depend on the idea that IFRS are, perhaps, more principle based than local accounting standards. Therefore, the financial statements prepared applying IFRS are providing more transparent and realistic information that reflect the firm's underline economic position than those under local accounting standards. For example, most of the assets and liabilities are measured at fair value under IFRS, which may better reflect real economic value of the assets and liabilities. However, the prediction about firm's assets depends on whether the assets are marketable or have an active market (Linsmeier 2013). In addition, the IASB has taken steps, in developing IFRS, to reduced alternative accounting treatments and to require accounting measurement that better reflect 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, based on these argument following hypothesis is developed.

H₁: Earning management of Sri Lankan firms has been decreased significantly after the mandatory adoption of IFRS (SLFRS)

3.2.1.2 Timely Loss Recognition

Timely loss recognition refers to the incremental timeliness of recognizing losses than profits into accounting earnings, which results from higher verifiability threshold of gain recognition than of loss recognition (Basu 1997; Watts 2003). Recognition of losses is considered timely if they are included in the financial statements as they occur instead of being spread over multiple future periods. Ball and Shivakumar (2005) discuss two main mechanisms by which timely recognition of losses improves the usefulness of financial information for investors and creditors. The first is corporate governance. When a firm has strong corporate governance, insiders have to recognize losses as they occur. Therefore, they are less likely to invest in loss making “pet” projects or “trophy” acquisitions. They are also more likely to stem losses faster as they cannot defer the recognition of losses to future periods (and future generations of managers). The second mechanism is through improved efficiency in debt agreements. If losses are recognized in a timely manner, financial statements provide more accurate information to lenders on the pricing of debt. In addition, accuracy in financial statements may trigger the breach of debt covenants earlier. Therefore, timely recognition of losses improves the usefulness of financial information to investors and lenders, thereby increasing accounting quality.

Chen, Tang, Jiang and Ling (2010) conducted a study comparing accounting quality in pre and post IFRS adoption period. They have operationalized the accounting quality in term of absolute discretionary accruals, accruals quality and timely loss recognition. Data for the pre- adoption period is collected from 2000-2004 while the IFRS period includes 2005- 2007. The result of this study is indicative of improvement in accounting quality. They find that firms exhibit less earning management and more timely loss recognition in post IFRS adoption period. This is also result consistent with Barth et al. (2008). Firms' may tend to recognize large negative earning frequently under IFRS because IFRS are principle-based accounting standards that require insiders to recognize losses of any magnitude exactly in the period in which they occurred. Therefore, it is reasonable to predict that firms tend to recognize more losses under IFRS. Accordingly, following hypothesis is developed.

 *H₂: Sri Lankan firms have reported large negative earnings frequently under IFRS (SLFRS)*

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3.2.1.3 Value Relevance

Conceptual Framework for preparation and presentation of financial statements introduced by IASB prescribes four qualitative characteristics that should be embedded in financial information. Among them, one of the most important quality characteristics is relevant. Relevant financial information enables the users to make decision differently. Financial information is relevant, if and only if, it contains predictive value or confirmatory value. If users can use financial information in predicting future outcomes, information is said to have predictive value. As well as, financial information has confirmatory value if it provides feedback about previous evaluations. Therefore, if financial information is relevant, investors will use this information when making investment decisions. This will result in a closer

association between accounting numbers such as earnings and market measures such as share prices and returns (Amir, Harris Venuti, 1993; Francis and Schipper, 1999; Ali and Hwang, 2000; Hung, 2000). There have been several studies, which focus on value relevance of accounting amounts after mandatory adoption of IFRS. These includes Goodwin, Ahmed and Heaney (2008) and Ahmed and Goodwin (2006) from Australia; Gjerde, Knivsfla and Sættem (2008) from Norway; Horton and Serafeim (2009) and Christensen, Lee, and Walker (2007) from UK. There have also been studies focuses on multiple countries IFRS adoption and value relevance. For example, Capkun, Cazavan-Jeny, Jeanjean and Weiss (2007) for 7EU countries; and Wang (2008) for 14 EU countries find that no incremental value relevance under IFRS adoption. Study conducted by Christensen, Lee, and Walker (2007) and Horton and Serafeim (2009) find that UK firms exhibit incremental price relevance under IFRS. Another study, conducted by Capkun *et al.* (2007) reveal IFRS financial statement convey more value relevant information relative to local UK GAAP. Wang (2008) observe the return and net income reconciliation under IFRS and find that is once again consistent with incremental value relevance for IFRS. All of the studies focus on mandatory IFRS adoption use incremental value relevance approach. The reason is that incremental value relevance approach test whether IFRS information has incremental explanatory power for share price. However, most of the previous empirical studies suggest that IFRS amounts are highly value relevant. Thus, following hypothesis is formulated.

H₃: Financial information of Sri Lankan firms is highly value relevant under IFRS (SLFRS)

Based on the above discussion, it can be concluded that mandatory adoption of IFRS

resulted in less earning management, more timely loss recognition and higher value relevance. Except few studies, all other studies are consistent with these findings. Therefore, in line with previous studies the last hypothesis is derived as follows.

H₄: Post IFRS (SLFRS) accounting quality of Sri Lankan firms is higher due to less earning management, more timely loss recognition and higher value relevance.

3.3 Research Setting

This study selected Colombo Stock Exchange (CSE) as its research setting because CSE is the Sri Lankan only stock exchange. In addition, financial information and other required data are available only for the companies listed on CSE. Further, all the companies listed on CSE are required to comply with IFRS (SLFRS) in preparation of their financial statements for the periods starting after 01st of January 2012. Moreover, none of these companies applied IFRS (SLFRS) before 2012 even if the early adoption of IFRS (SLFRS) was permitted during 2011. As mention in the previous chapter, most of studies that focused on the mandatory adoption of IFRS suffer from self- selection bias since the countries, on which the studies based on, allowed early adoption of IFRS before it became mandatory (where prior to 2005 voluntary adoption was allowed). The incentives for voluntary adopters may be different from those of mandatory adopters giving differing effect of IFRS adoption. However, this study does not suffer from self-selection bias since none of the companies listed on CSE adopted IFRS (SLFRS) before 2012. Furthermore, prior to 2012 all of the CSE companies used SLAS. This provides clean sample of companies for our comparison of pre-post IFRS adoption.

3.4 Populations and Sample

The population of this study is all the companies listed on CSE. As on the 01st of July 2014, there are 292 companies listed on CSE representing 20 business sectors. However, the final sample of the study consists of 157 companies. Following is the sampling procedures of the study. First, all the companies listed under Banking, Finance and Insurance industry sector were excluded, since the regulatory and enforcement mechanisms for these companies are far different from that of for other companies¹. Thus, accounting quality of these companies may be higher than other companies even prior to mandatory adoption of IFRS (SLFRS). Second, the companies with non-March financial year ending were excluded from the sample. The reason for this is the companies with December financial year ending (non-March) have not prepared their financial statements for the year of 2014 at the time of this study is conducted. Some analysis performed in this study required at least two year of data for pre and post IFRS (SLFRS) comparison. Since IFRS (SLFRS) was mandated in 2012, it is unable to obtain two years of post IFRS (SLFRS) adoption data for companies with December financial year ending. Third, companies quoted on or after 31st March 2010 were excluded due to the sample period of the study spans from financial year 2009/2010 to 2013/2014. Finally, several companies were excluded from the final sample due to insufficient of data available over the sample period.

Table 3.1 provides further information of sampling procedure of this study. According to table 3.1, the final sample represents 54% of total companies listed on CSE. To further understand the sample composition, table 3.2 provides industry breakdown

¹Banking, Finance and Insurance companies are govern 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.

according to the CSE business sector categorization. According to the table 3.2 sample represents a range of industries including, beverage, food & tobacco, chemical & pharmaceuticals, diversified holdings, footwear & textiles, health care, hotel and travel, information technology, investment trust, land and property, manufacturing, motors, oil palms, plantation, power & energy, services, store suppliers, telecommunication and trading.

Table 3.1 Sample of the companies available for analysis

Particulars	No. of Companies	Percentage
Total number of companies listed on CSE as on 01 st July 2014	292	100%
<u>Exclusion:</u>		
Banking, Finance and Insurance companies	62	21%
Non-March financial year ending	36	12%
Late listing	17	6%
Companies with insufficient data	20	7%
Final Sample	157	54%

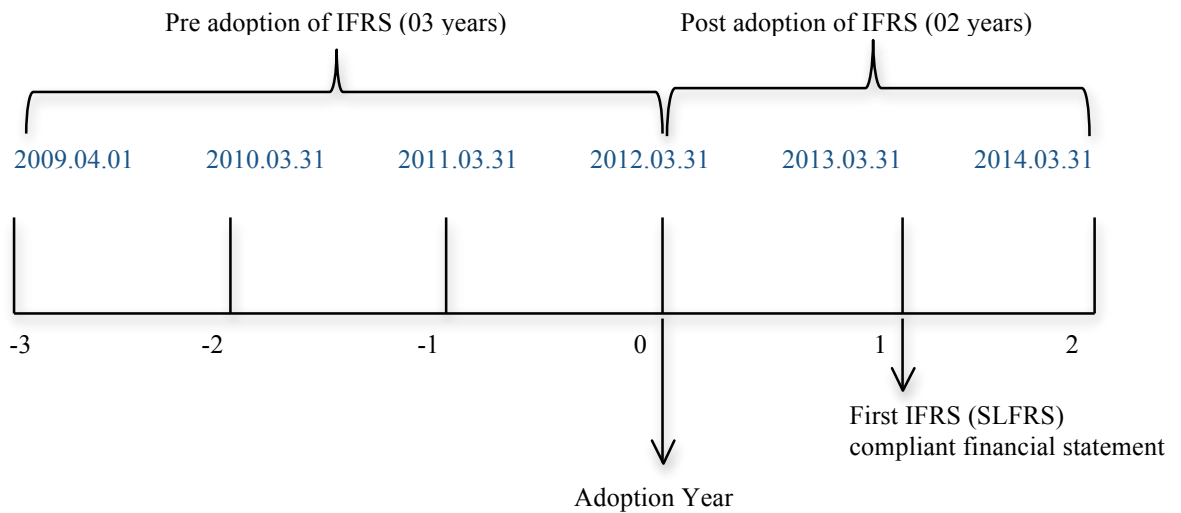
3.4.1 Data

This study focuses on Sri Lankan firms listed on CSE, because these firms are required to report their financial statements according to IFRS (SLFRS) for financial periods starting from 1 January 2012, Figure 3.2 provides an overview of the transition to IFRS (SLFRS) for firms with financial year ends on 31st March each year. The first set of IFRS (SLFRS) compliant annual reports were provided in 2013 by these firms.

Table 3.2 Industry breakdowns of Companies

Industry Sector	No. of Firms In the Industry	No. of Firms in the Sample	%
Banking, Finance and Insurance	64	0	0
Beverage Food & Tobacco	21	15	71
Chemical & Pharmaceuticals	10	8	80
Diversified Holdings	19	11	58
Health Care	5	4	80
Hotel And Travel	38	27	71
Information Technology	2	1	50
Investment Trust	9	9	100
Land And Property	19	11	58
Manufacturing	38	25	66
Motors	6	6	100
Oil Palms	5	5	100
Plantation	19	9	47
Power & Energy	8	5	63
Services	8	7	88
Store Suppliers	4	4	100
Telecommunication	2	0	0
Trading	8	7	88
Construction & Engineering	4	2	50
Footwear And Textile	3	1	33
Total	292	157	54

Figure 3.2 Transition to IFRS (SLFRS) for companies with 31st March Financial year-ends



The data collected for this study covers the time period from 2009 to 2014. Therefore, as can be seen in the figure 3.2, the sample period for this study includes three years under SLAS reporting (adoption years -3 to 0) and two years under IFRS (SLFRS) reporting (adoption years 1 to 2). The names of all the companies listed on the CSE, along with their quoted date, industry sector, market capitalization and were obtained from the CSE website. Annual reports and stock market data for these firms were also obtained from the CSE. All accounting data such as Turnover, Net profit, Total assets, Total Liabilities, Cash flow from operating activities, no. of Ordinary shares and Book value of equity were collected manually referring annual reports of each companies for the five years. This is ended up with 785 firms-year observations (157 firms into five years) of which 471 firms-year observations under SLAS reporting and 314 firms- year observations under IFRS (SLFRS) reporting. The pre-post IFRS comparison was carried out pooling these observations under SLAS and IFRS (SLFRS) separately.



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3.5 Research Model

As mentioned in the first chapter, the main objective of this study is to investigate whether or not mandatory IFRS adoption improve the accounting quality of Sri Lankan Firms. In line with previous studies, the accounting quality is measured in term of earning management, timely loss recognition and value relevance. Therefore, this study uses multivariate analysis based on following model.

Accounting Quality = f (IFRS Adoption, firm level control variable)

(Less earning Management,
 More timely loss recognition,
 Higher Value relevance)

3.5.1 Dependent Variable

The relationship between independent and dependent variables is shown in figure 3.1- Conceptual Framework. According to the research model and the figure 3.1, the dependent variable is accounting quality. Less earning management, more timely loss recognition and higher value relevance reflects higher Accounting quality following mandatory adoption of IFRS

3.5.2 Independent Variables

The independent variable of this model is mandatory adoption of IFRS (SLFRS). IFRS is a single set of high quality, understandable, enforceable, and globally accepted financial reporting standards based upon clearly articulated principles (Mackenzie *et al* 2013). Therefore, it is expected that the accounting quality of SL firms be improved following mandatory adoption of IFRS (SLFRS).



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3.5.3 Control Variable

Accounting quality of a firm may be depending upon factors other than accounting standards. In particular, country level and firm level factors are associated with the disclosure level of financial information and the degree of compliance with accounting standards. Therefore, consistent with previous studies such as Barth *et al.* (2006), Lang *et al.* (2006), Bart *et al.* (2008), and Khan and Watts (2009) this study includes several firm level control variables in the models. In order to maintain consistency and allow comparison of the results with prior studies, this study operationalized each of the control variables as they were used in the above-mentioned studies. The control variables along with their definition are shown in table 3.3.

Table 3.3 Definitions of Control Variables

Variables	Definition
Size (SIZE)	Natural logarithm of book value of total assets at the end of the financial year
Growth (GROWTH)	Annual percentage change in sales at the end of the financial year
Equity Issue (EISSUE)	Annual percentage change in book value of equity at the end of the financial year
Leverage (LEV)	Total liabilities scaled by end of year book value of equity at the end of the financial year
Debt Issue (DISSUE)	Annual percentage change total liabilities at the end of the financial year
Turnover (TURN)	Annual sales scaled by total assets at the end of the financial year
Cash flows (OCF)	Annual net cash flow from operating activities scaled by total assets at the end of the financial year
Auditor (AUD)	Indicator variable is set to one if the firm's auditor is PricewaterhouseCoopers, KPMG and Ernst & Young and zero otherwise
Closely Held shares (CLOSE)	Percentage of closely held shares of the firm at the of the financial tear

3.5.3.1  Size (SIZE)

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Large-scale firms are more subjective to wealth transfer as a result of government intervention, which could costly to the firms (Watta and Zimmerman 1986). That is, larger firms are more politically visible and generally exposed to attack in the form of greater regulation, such as price controls and the threat of nationalization. Therefore, larger firms have a greater incentive to disclose more financial information in their annual reports than smaller firms to enhance their reputation and public image and to lessen public criticism or the threat of government intervention (Watts and Zimmerman, 1978; Holthausen and Leftwich, 1983). Due to the effect that differences in firm size can have on managerial incentives to report high quality financial information, therefore, this study includes size as a control variable. Consistent with prior studies, firm size is proxied by the total assets as at the end of the financial reporting period. The total assets were not normally distributed and in order to create

a normal distribution necessary for statistical analysis, I take the natural log to transform this data.

3.4.3.2 Growth (GROWTH)

The firms with higher annual growth in term of sales tend to manage their earnings because these firms are subject to high risks (Aussenegg, Inwinkl and Schineider 2008). As these firms faced higher risk, they have a greater incentives to ‘window dress’ their accounting. Thus, the firms with higher level of annual growth may engage in more earning management and this in turn reduces accounting quality of such firms. Therefore, this study includes growth as a control variable measured as annual percentage change in sales.

3.5.3.3 Equity issue (EISSUE)

The firms may disclose more information in order to attract potential investors (Cooper and Grindler (1996), Welker (1995), and Botosan 1997). Investors preferred to have more information in making their investment decisions. Therefore, the firms with share issues during a particular year may have greater level of disclosure, thereby, higher accounting quality. Thus, to eliminate the effect of higher level of equity issuance on accounting quality, equity issue as measured percentage change in book value of equity at the end of the financial year was included as control variable.

3.5.3.4 Debt issue (DISSUE)

The firms that are expecting to issue debt should have disclosure more information in order to encourage investors and thereby reduce cost of debt financing (Sengupta 1998). Therefore, the firms with higher debt issuance may have higher accounting quality than others. Thus, it is necessary to control for debt issuance. Accordingly, the debt issue as measured the percentage change in total liabilities at the end of financial

year included as a control variable.

3.5.3.5 Turnover (TURN)

Firms that have low levels of revenue relative to total assets may have to raise capital in the future in order to continue operations, which in turn could affect their disclosure patterns and accounting quality (Lang et al., 2006). Therefore, this study included a control for the level of firm turnover that is defined as the annual sales divided by total assets end of financial year

3.5.3.6 Cash flow (OCF)

Aussengget *al.* (2008) showed that when firms have higher level of cash flow need not to engage in earning management since they are more likely to reach earning target and less likely default in loans. Thus, firms with higher cash flows may have better accounting quality. Therefore, this study included annual net cash flow from operating activities scaled by total assets at financial year-end as a control variable.

3.5.3.7 Auditor (AUD)

DeAngelo argues (1981) that larger audit firms have incentives to supply a higher level of audit quality, as they risk losing some of their reputation if they are associated with clients whose reporting practices are considered as offering 'bad quality. Thus, Craswell and Taylor (1992) suggested a firm's choice of auditor may be associated with the decision to disclose more or less information. Accordingly, Inchausti (1997) found a positive association between the use of a Big 6 auditor and disclosure of financial information by firms. In addition, Becker, Defond, Jiambalvo, and Subramanyam (1998) found that firms with a Big 6 auditor are less likely to engage in earnings management. This indicates that the use of a Big 6 auditor is related to better disclosure and less earnings management, in turn higher accounting quality.

Therefore, this study control for possible variations in auditor quality by including an indicator variable that is set to one if the firm's auditor is PricewaterhouseCoopers, KPMG or Ernst & Young and zero otherwise.

3.4.3.8 Closely held shares (CLOSE)

According to Investopedia (2003) closely held shares means “the shares in a publicly traded company held by a small number of shareholders who are either directly affiliated with the company or management, or are majority stakeholders. Closely held shares may not publicly trade in the same manner as other shares. These companies may trade under light volume, since the majority of the shares can be held by a small group of shareholders. Companies that are closely held tend to be resistant to hostile takeovers, since the majority of shares are held within a small, interested group of shareholders”. Level of disclosure of companies with more closely held may be relatively low, as they have less incentives for disclosed more information. Therefore, to control for the effect of ownership concentration the closely held shares as measured one minus publicly held shares are included as a control variable in this study.

3.6 Accounting Quality Metrics

This section discusses eight accounting quality metrics used in this study to measure research hypotheses. Four earning management metrics were used to capture different aspect of earning smoothing by firm and firms' tendency to manage earning towards targets; timeliness of loss recognition is measured using another accounting quality metrics; finally, two quality metrics were employed in assessing value relevance of accounting information.

3.6.1 Earning smoothing measures

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 (ΔNI) 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 ΔNI 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:

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

In this equation, ΔNI 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 is an indicator variable is set to one if the firm's auditor is PricewaterhouseCoopers, KPMG or Ernst & Young and zero otherwise; CLOSE is the closely held shares by

firms at the end of financial year calculated as one minus percentage of publicly held shares.

The residual derived from the above equation (1) are named as ΔNI^* . Then, the cross sectional variance of ΔNI^* for each companies over pre-post IFRS (SLFRS) time period is calculated. To test for the normality of variance of ΔNI^* , a Lilliefors test was carried out using Eviews 8.1 (appendix A). Since the variance of ΔNI^* is not normally distributed, the Wilcoxon signed rank test for the differences in median is used to examine whether the variance of ΔNI^* is significantly differ under IFRS (SLFRS) and SLAS. A significant variability of ΔNI^* 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 ΔNI divide by change in operating cash flows (ΔOCF). The change in net income (ΔNI) is divided by change operating cash flow (ΔOCF) 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 cash flows. Since the change in operating cash flows can be affected by other factors not related to earnings smoothing, ΔOCF is first regress with control variables.

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

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 ΔOCF^* . Then, ΔNI^* calculated as per equation 1 for each company divided by corresponding ΔOCF^* and resulting variable is the ratio of change in net income over change in cash flows ($\Delta NI^*/\Delta OCF^*$) and then calculated the cross-sectional variance of $\Delta NI^*/\Delta OCF^*$ for each company over pre-post IFRS time periods. Then after, the variance of $\Delta NI^*/\Delta OCF^*$ 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 $\Delta NI^*/\Delta OCF^*$ is significantly different under SLAS and IFRS. A higher variability of $\Delta NI^*/\Delta OCF^*$ is indicated less earning smoothing and therefore better accounting quality.

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 (Land and Lang, 2002; Drake et al., 2009). Same as with equation (1) and (2), the residuals for equation (03) and (04) are derived. These residuals were named as OCF^* and ACC^* respectively.

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

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

Where ACC is annual net income before extraordinary items less 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 violations of normality using the Lilliefors test (Appendix A). The null hypotheses 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 investigated for the significance in the differences between the various groups under comparison². A lower negative correlation between the residuals of Equation (3) and (4) is indicative of lower earnings smoothing, thereby better accounting quality.



All of the above metrics are related to earning management. The results of these metrics are used to test H₁. If the desirable results, as discussed above, are obtained, then H₁ is accepted indicating less earning management thereby higher accounting quality in the post IFRS (SLFRS) adoption time period.

3.6.2 Managing towards earning targets

Managers tend to avoid showing small losses in their financial statement using accounting choices (Burgstahler and Dichev 1997, and 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

² The significance of difference between correlation coefficients is calculated using this web site- <http://www.quantitativeskills.com/sisa/statistics/correl.htm>

hide large losses (Leuzet *al.* 2003). Therefore, in this metric of earning management, it assess the firms' tendency to manage earning towards target that is towards small positive net income. 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 small positive net incomes between IFRS (SLFRS) and SLAS, this study uses the following pooled regression:

$$IFRS(0,1)_{it} = \alpha_0 + \alpha_1 SPOS_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 EISSUE_{it} + \alpha_5 LEV_{it} + \alpha_6 DISSUE_{it} + \alpha_7 TURN_{it} + \alpha_8 OCF_{it} + \alpha_9 AUD_{it} + \alpha_{10} CLOSE_{it} + \varepsilon_{it} \dots\dots\dots(05)$$

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. SPOS 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 SPOS indicates that there is a lower frequency of small positive net incomes under IFRS compared to SLAS, therefore demonstrating better accounting quality.

3.6.3 Timely Loss Recognition measures

When a firm earn large negative losses, it is important recognize such losses as they occur rather than deferring into multiple periods because it provide investors with more value relevant information and managers are forced to stem the losses faster (Ball and Shivakumar 2005). Therefore, this study investigates whether the firms recognize large losses as they incur. This study operationalized large losses (LNEG)

as observation when annual net income scaled by total assets is less than -0.2 value of one is assigned and zero otherwise. A higher frequency of LNEG is indicative of better accounting quality as it shows that managers are recognizing large losses in the period in which it occur. The firms likelihood of recognizing large losses as they occur may be depend upon several factors not attributable to earning management. Therefore, instead of comparing frequency of large losses (LENG) between pre and post IFRS period, timely loss recognition is measured as the coefficient of LENG variable from following equation (6), which is also included control variable.

$$IFRS (0,1)_{it} = \alpha_0 + \alpha_1LENG_{it} + \alpha_2SIZE_{it} + \alpha_3GROWTH_{it} + \alpha_4EISSUE_{it} + \alpha_5LEV_{it} + \alpha_6DISSUE_{it} + \alpha_7TURN_{it} + \alpha_8OCF_{it} + \alpha_9AUD_{it} + \alpha_{10}CLOSE_{it} + \varepsilon_{it} \dots\dots\dots (06)$$



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In above equation, IFRS (0;1) is an indicator variable, which is given a value of one for observation under IFRS (SLFRS) and zero for observations under SLAS. LNEG is an indicator variable set to one for observations where annual net income scaled by total assets is less than -0.2 and zero otherwise. Accordingly, a positive coefficient for LNEG suggests that firms recognize large losses more frequently under IFRS compared to SLAS, and they therefore have better accounting quality.

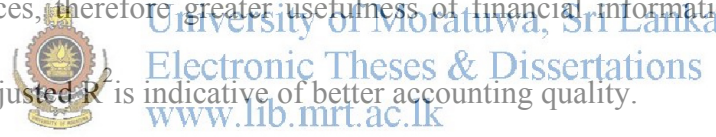
3.6.4 Value Relevance measures

This study includes three measures of value relevance. First, value relevance measure is based the association (adjusted R²) from a regression of share prices on earnings and book value of equity derived from Ohlson (1995). Firms with superior accounting quality are expected to exhibit higher association between share prices and earnings because higher quality earnings should better reflects a firm's underlying

economics (Ali and Hwang, 2000). Share price (P), is first regressed on industry indicator variable in order to control for mean differences in share price across industries. The residuals from this regression (MVPS*) are then regressed on book value of equity per share (BVPS) and net income per share (NIPS). Share price (MVPS) used in this study is the price of shares three months after financial year-end. The reason for this is that financial statements (annual reports) of firms are made available for the public mostly after three months time. Thus, the first value relevance measure is based in the adjusted R^2 from equation (7).

$$MVPS^*_{it} = \alpha_0 + \alpha_1 BVPS_{it} + \alpha_2 NIPS_{it} + \varepsilon_{it} \dots\dots\dots (7)$$

A higher adjusted R^2 indicates that there is a closer association between earnings and share prices, therefore greater usefulness of financial information to users. Thus, a higher adjusted R^2 is indicative of better accounting quality.



Second and third value relevance metric of this study is based on the explanatory power (adjusted R^2) from regressions of net income on annual stock return. Following Barth *et al.* (2007) earning and return relationship is calculated separately for the firms with positive and negative returns. This is because the firm are divided into two categories as good new firms and bad new firms. Then, taking earning as dependent variable two reverse regressions were estimated for good news and bad news firms separately. Same as the equation (07), earning, measured as net income per share divided by share price at beginning of the year (NIPS/P), is first regressed on industry indicator variable to control for mean difference across industries. The residual from this regression is named as $[NIPS/P]^*$ and which is then regressed on annual stock return (*RETURN*). Following Lang, Raedy, and Wilson (2006) and

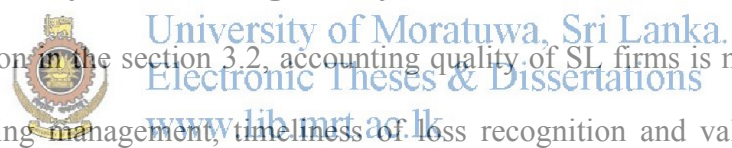
Barth, Landsman, and Lang (2008), annual stock return (*RETURN*) is measured as the natural logarithm of the ratio of stock price three months after fiscal year end to stock price nine months before fiscal year end, adjusted for dividends.

$$[NIPS/P]^* = \alpha_0 + \alpha_1 RETURN_{it} + \varepsilon_{it} \dots \dots \dots (8)$$

As with previous equation (07), this regression was estimated separately for pre adoption and post adoption periods. A higher adjusted R^2 indicates that there is a closer association between earnings and return, therefore greater usefulness of financial information to users. Thus, a higher adjusted R^2 is indicative of better accounting quality.

3.5.5 Summary of Accounting Quality Metrics.

As mentioned in section 3.2, accounting quality of SL firms is measured in terms of less earnings management, timeliness of loss recognition and value relevance. Five quality metrics for earnings management, one quality metric for timely loss recognition and two quality metrics for value relevance were used in this study. All the accounting quality and their expected indication for better accounting quality are presented in table 3.4.





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3.7 Chapter Summary

This chapter discussed the rationale for the selection of population and sample, the time period under which analysis is performed, and the sources of data and the sample composition. In addition, the dependent, independent and control variables are discussed in details and the overall regression model, which is used to test each of the hypotheses is shown. Then, a detailed discussion of the eight accounting quality measures that assess the quality of financial reporting in the areas of earnings smoothing, managing towards earnings targets, timeliness of loss recognition and value relevance are provided. Finally, summary of all accounting quality metrics are presented. In the next chapter, the descriptive, bivariate comparison and the multivariate results for the testing of the hypotheses along with the analysis of the results are presented.



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CHAPTER 4

DATA ANALYSIS AND RESULTS

4.1 Introduction

This study addresses a recently developed issue relating to IFRS adoption. As previously mentioned, whether mandatory adoption of IFRS improves the accounting quality is still questionable. Therefore, this study investigates accounting quality effect of mandatory IFRS adoption in Sri Lankan context. In answering for this problem, this study raised four research questions. For each these questions separate hypotheses were developed. These hypotheses were tested using eight (08) accounting quality metrics. The accounting quality metrics along with their dependent, independent and control variables are discussed in chapter three. This chapter provides rigorous discussion of data analysis and results. Section 4.2 discusses descriptive statistics of dependent and control variables. Section 4.3 provides univariate comparison of test and control variable between pre and post IFRS (SLFRS) time periods. The multivariate results for hypotheses testing are presented in section 4.4. Finally, summary of chapter is presented in section 4.5.

4.2 Descriptive Analysis

This section presents descriptive statistics for the sample firms to provide insight into firm characteristics. Descriptive statistics for test and control variables are presented in Table 4.1, Table 4.2 and Table 4.3. Specifically, Table 4.1 presents the descriptive statistics for each of these variables pooled over the sample period while Table 4.2 presents the descriptive statistics of test variables and Table 4.3 presents the descriptive statistics of control variables for each year in the sample period. In order

to reduce the effects of extreme observations variables have been winsorised at the 2.5 and 97.5 percentiles. The test and control variables are presented in the order they appear in the accounting quality measures.

Table 4.1: Descriptive statistics for test and control variables

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
Test Variables						
ΔNI	0.014	0.011	0.131	-0.095	0.054	785
ΔOCF	0.011	0.013	0.201	-0.191	0.092	785
ACC	0.006	0.000	0.195	-0.140	0.080	785
OCF	0.056	0.053	0.244	-0.114	0.086	785
SPOS	0.084	0.000	1.000	0.000	0.278	785
LNEG	0.029	0.000	1.000	0.000	0.169	785
RETURN	0.050	0.085	1.859	-2.029	0.905	785
NIPS/P	0.117	0.061	0.706	-0.085	0.182	783
MVPS	199.628	70.500	1,300.000	4.900	332.981	785
BVPS	143.082	53.578	777.975	2.242	210.785	785
NIPS	12.975	4.112	79.375	-3.375	20.821	785
Control Variables						
LEV	0.805	0.577	2.919	-0.018	0.779	785
GROWTH	0.178	0.133	1.085	-0.360	0.328	785
EISSUE	0.186	0.106	0.962	-0.193	0.275	785
DISSUE	0.219	0.090	1.845	-0.447	0.530	785
TURN	0.787	0.635	2.392	0.046	0.655	785
SIZE	9.401	9.430	10.530	8.024	0.662	785
OCF	0.056	0.053	0.244	-0.114	0.086	785
ADU	0.777	1.000	1.000	0.000	0.416	785
CLOSE	75.886	75.820	99.799	48.668	15.658	785

4.2.1 Relationship between earnings and cash flows

Table 4.1 presents the descriptive statistics for all variables that pooled over sample period from 2010 to 2014. Sample firms on average have net income per share (NIPS) of Rs.12.975. Tables 4.2 shows that the annual means of NIPS steadily increase from 2010 to 2012 (Rs.12.654 to 14.928). Then, NIPS has been declined slightly to Rs.11.888 in 2013 and again in 2014 NIPS has increase to Rs.12.671. The median value of NIPS for the pooled sample period is Rs.4.112 that is considerably lower than mean value.

Table 4.2: Descriptive statistics for dependent variables by year

Test Variables	Financial Year	Adoption year	Mean	Median	Max.	Min.	Std. Dev.
ΔNI	2009/10	-2	0.015	0.010	0.167	-0.102	0.059
	2010/11	-1	0.013	0.010	0.133	-0.111	0.058
	2011/12	0	0.017	0.011	0.121	-0.078	0.049
	2012/13	1	0.018	0.016	0.153	-0.105	0.063
	2013/14	2	0.011	0.012	0.092	-0.086	0.044
ΔOCF	2009/10	-2	0.041	0.029	0.355	-0.193	0.122
	2010/11	-1	-0.024	0.010	0.147	-0.386	0.129
	2011/12	0	0.022	0.015	0.261	-0.146	0.094
	2012/13	1	0.010	0.004	0.187	-0.143	0.080
	2013/14	2	0.007	0.006	0.173	-0.147	0.079
ACC	2009/10	-2	-0.026	-0.016	0.165	-0.237	0.098
	2010/11	-1	0.039	0.009	0.298	-0.101	0.100
	2011/12	0	0.020	0.009	0.286	-0.114	0.090
	2012/13	1	0.000	0.003	0.167	-0.170	0.076
	2013/14	2	0.000	-0.009	0.141	-0.111	0.063
OCF	2009/10	-2	0.073	0.061	0.302	-0.130	0.103
	2010/11	-1	0.048	0.044	0.239	-0.172	0.101
	2011/12	0	0.056	0.061	0.194	-0.085	0.075
	2012/13	1	0.053	0.049	0.268	-0.098	0.086
	2013/14	2	0.051	0.039	0.194	-0.065	0.067
SPOS	2009/10	-2	0.102	0.000	1.000	0.000	0.303
	2010/11	-1	0.076	0.000	1.000	0.000	0.267
	2011/12	0	0.089	0.000	1.000	0.000	0.286
	2012/13	1	0.057	0.000	1.000	0.000	0.233
	2013/14	2	0.096	0.000	1.000	0.000	0.295
LNEG	2009/10	-2	0.000	0.000	1.000	0.000	0.113
	2010/11	-1	0.006	0.000	1.000	0.000	0.080
	2011/12	0	0.015	0.000	1.000	0.000	0.113
	2012/13	1	0.115	0.000	1.000	0.000	0.320
	2013/14	2	0.000	0.000	0.000	0.000	0.000
RETURN	2009/10	-2	0.607	0.604	1.481	-0.266	0.456
	2010/11	-1	0.115	0.166	1.483	-1.778	0.812
	2011/12	0	-0.562	-0.497	0.063	-1.545	0.422
	2012/13	1	0.079	0.104	0.512	-0.456	0.244
	2013/14	2	-0.020	-0.038	3.286	-3.697	1.930
NIPS/P	2009/10	-2	0.082	0.061	0.422	-0.075	0.115
	2010/11	-1	0.129	0.056	0.678	-0.039	0.179
	2011/12	0	0.060	0.053	0.216	-0.043	0.065
	2012/13	1	0.103	0.086	0.380	-0.098	0.119
	2013/14	2	0.318	0.056	2.672	-0.304	0.700
MVPS	2009/10	-2	170.910	87.500	832.500	7.338	217.610
	2010/11	-1	277.019	94.100	1678.680	6.680	450.949
	2011/12	0	184.396	58.000	1316.815	4.900	342.070
	2012/13	1	191.039	65.000	1276.420	4.170	333.260
	2013/14	2	185.284	62.100	1300.650	4.835	332.036
BVPS	2009/10	-2	143.602	54.158	835.758	2.416	213.773
	2010/11	-1	120.229	49.611	601.283	2.210	166.702
	2011/12	0	113.918	45.042	613.556	2.362	163.641
	2012/13	1	162.155	53.746	865.127	2.611	244.820
	2013/14	2	183.635	60.766	981.142	2.793	274.356
NIPS	2009/10	-2	12.564	3.710	84.230	-3.468	21.792
	2010/11	-1	13.420	4.278	76.232	-1.787	20.589
	2011/12	0	14.928	4.112	102.161	-2.984	25.961
	2012/13	1	11.888	4.671	69.722	-3.118	18.109
	2013/14	2	12.671	3.715	73.079	-6.196	19.924

The median NIPS also follows the general pattern of the mean where it increases to Rs.4.671 by year of 2013 then declines to Rs.3.715 by year of 2014. The mean net income per share scaled by beginning of year price (NIPS/P) for the whole sample period is 0.117 (Table 4.1). Table 4.2 reveals that the yearly pattern for this variable is inconsistent with NIPS as it steadily increases over the sample period from 0.082 to 0.318. In addition, the ΔNI variable (defined as change in net income scaled by total assets at financial year end) has a mean of 0.015 during year 2009/2010 then decreases to 0.013 in 2010/2011 and increases up to 0.018 during the years 2012/2013 and again decrease to 0.011 in the year of 2013/2014. Therefore, it can be concluded that profitability of the firms has been increased over the period of 2010 to 2013 and decreased hugely in 2014. The mean for operating cash flows scaled by end of year total assets (OCF) for the whole sample period is 0.056 while the median is 0.053 (Table 4.1). Table 4.2 reveals that the annual mean OCF has remained positive and slightly decreases over the sample period with the lowest mean displayed in adoption year -1 at 0.048. The mean OCF figures are stable around 0.048 to 0.073 over the sample period. The changes in operating cash flow variable (ΔOCF) 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 0.011 and 0.013 respectively (Table 4.1). However, The annual figures for ΔOCF are not remaining positive over sample period where it takes -0.024 in the year of 2010/11 (Table 4.2) being the lowest figure for ΔOCF . Overall, the earnings measures of NIPS and ΔNI consistently reveal that sample firms experience a decline in profitability in year of 2013/2014, indicative of the general decline in the country's economy. However, the cash flow measures of OCF and ΔOCF do not show correspondingly large reductions in operating cash flow levels.

Table 4.3: Descriptive statistics for control variables by year

Control Variables	Financial Year	Adoption year	Mean	Median	Maximum	Minimum	Std. Dev.
LEV	2009/10	-2	1.022	0.578	5.519	0.023	1.309
	2010/11	-1	0.755	0.590	2.664	0.021	0.699
	2011/12	0	0.771	0.636	2.530	0.020	0.684
	2012/13	1	0.782	0.552	2.827	0.013	0.777
	2013/14	2	0.804	0.540	2.719	0.019	0.759
GROWTH	2009/10	-2	0.139	0.123	0.771	-0.283	0.242
	2010/11	-1	0.352	0.244	1.838	-0.432	0.486
	2011/12	0	0.136	0.133	1.104	-0.500	0.363
	2012/13	1	0.150	0.138	0.862	-0.351	0.272
	2013/14	2	0.120	0.078	1.019	-0.337	0.293
EISSUE	2009/10	-2	0.265	0.114	1.570	-0.138	0.415
	2010/11	-1	0.259	0.144	1.152	-0.231	0.343
	2011/12	0	0.146	0.103	0.695	-0.174	0.203
	2012/13	1	0.247	0.155	1.431	-0.204	0.356
	2013/14	2	0.061	0.056	0.322	-0.195	0.125
DISSUE	2009/10	-2	0.088	0.023	1.200	-0.415	0.372
	2010/11	-1	0.371	0.124	3.160	-0.493	0.889
	2011/12	0	0.191	0.136	1.154	-0.497	0.400
	2012/13	1	0.213	0.114	1.430	-0.483	0.463
	2013/14	2	0.289	0.090	2.332	-0.465	0.668
TURN	2009/10	-2	0.798	0.607	2.375	0.048	0.670
	2010/11	-1	0.867	0.638	2.710	0.047	0.777
	2011/12	0	0.800	0.643	2.556	0.054	0.687
	2012/13	1	0.750	0.617	2.037	0.045	0.591
	2013/14	2	0.728	0.636	2.017	0.047	0.553
SIZE	2009/10	-2	9.317	9.363	10.410	7.943	0.657
	2010/11	-1	9.317	9.363	10.410	7.960	0.657
	2011/12	0	9.409	9.401	10.488	8.146	0.637
	2012/13	1	9.512	9.528	10.547	8.302	0.623
	2013/14	2	9.546	9.555	10.595	8.322	0.636
ADU	2009/10	-2	0.803	1.000	1.000	0.000	0.399
	2010/11	-1	0.777	1.000	1.000	0.000	0.418
	2011/12	0	0.669	1.000	1.000	0.000	0.472
	2012/13	1	0.809	1.000	1.000	0.000	0.394
	2013/14	2	0.828	1.000	1.000	0.000	0.379
CLOSE	2009/10	-2	72.992	74.090	92.812	47.188	13.500
	2010/11	-1	70.954	72.170	90.458	44.540	13.698
	2011/12	0	71.882	73.630	92.641	43.568	14.042
	2012/13	1	91.085	99.629	99.908	56.748	14.021
	2013/14	2	71.562	73.070	92.862	47.266	13.390

4.2.2 Other accounting measures

The mean value of accruals (ACC) over the sample period is 0.006 (Table 4.1). This variable is defined as annual net income less annual cash flow from operating activities, scaled by end of year total assets. Positive accruals indicate that firms have more accounting earnings than cash flows. Table 4.2 reveals that the annual mean level of accruals became more negative in the year of 2009/2010 that is -0.026. Then,

the ACC increases to 0.039 in 2010/2011 and decreases gradually to 0.000 over sample period, indicating that firms experienced a decline in their earnings levels compared to their net cash flow during this period. Therefore, the descriptive statistics for the accruals measure are consistent with the patterns of the earnings and cash flow measures discussed above.

The mean (median) book value of equity per share (BVPS) is Rs.143.08 (Rs.53.57) over the sample period (Table 4.1). The annual mean BVPS has been gradually decreasing from Rs.143.60 in adoption year -2 to Rs.113.91 in adoption year 0 (Table 4.2). Subsequently, the mean value of BVPS has been increased drastically from 113.91 to 183.63 in adoption year 2.

4.2.3 The market measures

The average share price (MVPS) for firms over the sample period is Rs.199.62. The median share price is quite lower at Rs.70.50 reflecting skewness in price (Table 4.1).

Table 4.2 reveals that over the sample period the highest mean and median share prices were observed in adoption year -1 of Rs.277.01 and Rs.94.10 respectively. Then the share prices declines to a mean of Rs.185.28 and a median of Rs.62.10 by adoption year 2. Fundamentally, based on theories of market efficiency, the annual means for MVPS should follow the pattern for NIPS. However, reported mean values for MVPS and NIPS do not show such close pattern indicating that the market is not that much efficient.

The descriptive statistics for the annual share returns (RETURN) show overall mean (median) value of 0.050 (0.085) (Table 4.). This variable is measured as natural logarithm of the ratio of stock price three months after fiscal year end to stock price nine months before fiscal year end, adjusted for dividends.

The annual mean RETURN declined from a high of 0.607 in adoption year -2 to -0.562 and -0.020 in adoption years 0 and 2 respectively (Table 4.2).

4.2.4 Control variables

Firm size (SIZE) is measured as the Natural logarithm of book value of total assets at the end of the financial year. Table 4.1 shows that the mean value of firm size over the whole sample period is 9.401 and the median is much closer at 9.430 which is reflective of the low standard deviation of 0.662. An annual sale scaled by end of year total assets (TURN) shows overall mean and median levels of 0.787 and 0.635 respectively for the whole sample period (Table 4.1). Table 4.3 reveals that the annual mean turnover vary between 0.7-0.8 over the sample period while the median remain around 0.60 but declines to 0.607 in adoption year -2. Firm level growth (GROWTH) is measured in terms of percentage change in sales. The overall mean and median growth rates are 17.8% and 13.8% over the sample period (Table 4.2).




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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 0.805 and the median is 0.577 reflecting the relatively high standard deviation of 0.779 (Table 4.1). The annual mean leverage level increased to its highest levels over the five-year of sample period in adoption year -2 to 1.022 (Table 4.3). Equity issue (EISSUE) is defined as the percentage change in book value of equity. The overall mean (median) level of equity issuance is 0.186 (0.106) (Table 4.1). The EISSUE is declined to the lowest point by adoption year 2 (Table 4.3). The means for EISSUE in adoption year -2, 0.265 and 2 is 0.061 respectively. Debt issue is computed as the percentage change in end of year total liabilities (DISSUE) and the overall mean (median) for the period is 0.219 (0.090) (Table 5-18). However, DISSUE does not show a consistent trend overtime.

4.2.4 Test of Normality

Table 4. 4 presents the results for the Lilliefors test and Anderson-Darling test where the continuous variables were investigated for violations of the normality assumption. These test were carried out using Eviews 8.1 statistical software (appendix 4). Lilliefors test and Anderson-Darling test are more powerful than one-sample Kolmogorov-Smirnov test (Webcache.googleusercontent.com, 2015). If the distribution of continuous variables are violated the normality assumption, then it is inappropriate to use parametric tests that assume normality to analyze the data. As can be seen from Table 4.4, all of the continuous variables are significant at the $p < 0.01$ levels. Therefore, the null hypothesis of a normal distribution is rejected and non-parametric tests must be used in the univariate analysis.

Table 4.4: Lilliefors and Anderson-Darling test for normality



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Test Variables	Lilliefors Test		Anderson-Darling test	
	Value	Significance of test	Value	Significance of test
ΔNI	0.214	Significant	94.189	Significant
ΔOCF	0.165	Significant	45.080	Significant
ACC	0.186	Significant	66.533	Significant
OCF	0.107	Significant	20.648	Significant
RETURN	0.115	Significant	21.941	Significant
NIPS/P	0.409	Significant	234.001	Significant
MVPS	0.345	Significant	160.911	Significant
BVPS	0.394	Significant	189.596	Significant
NIPS	0.377	Significant	212.465	Significant
Control Variables				
LEV	0.342	Significant	139.185	Significant
GROWTH	0.350	Significant	185.116	Significant
EISSUE	0.292	Significant	134.891	Significant
DISSUE	0.285	Significant	125.947	Significant
TURN	0.143	Significant	26.943	Significant
SIZE	0.064	Significant	2.634	Significant
OCF	0.107	Significant	20.648	Significant
CLOSE	0.075	Significant	4.701	Significant

4.2.5. Bivariate relationship among variables

Table 4.5 presents information about the correlations between the continuous variables. Spearman rank correlation was chosen to test the direction and strength of the relationships between these variables due to the non-parametric distribution of the data.

This table shows that the highest correlation of 0.731 was between net income per share (NIPS) and net income per share scaled by price (NIPS/P). However, this is not problematic given these two dependent variables are not included in the same regression. Other variables were also correlated, but no correlation was high enough to impair the regression results. The correlation coefficients should not be considered harmful until they exceed 0.80 (Farrar and Glauber 1967).

4.3 Univariate comparison of test and control variables under IFRS (SLFRS)

and SLAS



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Table 4.6 provides a comparison of the variables under SLAS and IFRS (SLFRS) for the 157 sample firms. While Table 4.2 and 4.3 (in Section 4.2) provided annual descriptive statistics for each of the test and control variable, for comparison purposes Table 4.6 presents statistics where observations have been pooled over three years (adoption years -2 to 0) under SLAS and the observations under IFRS (SLFRS) have been pooled over two years (adoption years 1 to 2). In addition, Table 4.6 includes t-statistics for differences in means and z-scores for the Wilcoxon rank sum test for differences in medians.

Table 4.6 reveals that the mean (median) values for the change in net income (ΔNI) variable under SLAS is 0.025 (0.010) while it is 0.009 (0.014) under IFRS (SLFRS) and the differences in the means and medians are not significant ($p < 0.01$). This Indicates That earning volatility of sample firms is same under IFRS (SLFRS) and



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SLAS that is the changes in net income is not significantly differing among pre and post IFRS (SLFRS) adoption period. The means and median for the change in cash flow (Δ OCF) variable are also not significantly different between the two time periods. However, the median value for Δ OCF is considerably lower under IFRS (SLFRS) at 0.004 compared to 0.017 under SLAS.

Table 4.6: Univariate comparison of test and control variables under IFRS (SLFRS) and SLAS

	Mean				Median			
	SLAS N=471	IFRS (SLFRS) N=314	t-statistic		SLAS N=471	IFRS (SLFRS) N=314	Wilcoxon z- statistic	
			Value	Prob.			Value	Prob.
Test Variables								
Δ NI	0.025	0.009	0.159	0.111	0.010	0.014	0.330	0.741
Δ OCF	0.011	0.006	0.397	0.691	0.017	0.004	1.711	0.087
ACC	0.017	-0.001	1.506	0.132	0.001	-0.003	1.085	0.277
OCF	0.057	0.054	0.399	0.689	0.056	0.044	1.465	0.142
RETURN	0.059	0.016	0.477	0.632	0.076	0.093	0.112	0.911
NIPS/P	0.163	0.241	-0.454	0.649	0.055	0.073	2.261	0.023
MVPS	265.939	230.596	0.768	0.442	78.000	64.250	2.254	0.024
BVPS	254.038	202.865	0.488	0.625	50.496	56.869	1.586	0.112
NIPS	30.816	15.135	1.534	0.125	3.969	4.357	0.078	0.937
Control Variables								
LEV	0.994	0.924	0.391	0.696	0.596	0.551	0.343	0.731
GROWTH	0.419	0.221	1.426	0.154	0.161	0.098	3.455	0.000
EISSUE	0.257	0.158	1.511	0.131	0.116	0.095	2.592	0.009
DISSUE	0.341	0.358	-0.178	0.858	0.079	0.098	1.407	0.159
TURN	0.852	0.758	1.689	0.091	0.638	0.622	0.661	0.508
SIZE	9.314	9.519	-3.854	0.000	9.333	9.547	4.012	0.000
OCF	0.057	0.054	0.399	0.689	0.056	0.044	1.465	0.142
CLOSE	80.756	71.519	7.597	0.000	82.765	73.260	7.756	0.000

Table 4.6 shows that the mean net income per share (NIPS) lower under IFRS (SLFRS) at Rs.15.135 compared to Rs.30.816 under SLAS. Contrary to that, the median value of NIPS is higher under IFRS (SLFRS) at Rs.4.357 relative to Rs.3.969 under SLAS. The annual data presented earlier in Table 4.2 implies that most of the increase in NIPS, observed in the pre IFRS period, mainly occurred in adoption years -1 and 0. However, none of these differences are statistically significant (Table 4.6). Table 4.6 also shows that neither the mean nor the median values for the operating

cash flow variable (OCF) are significantly different between the two time periods. The mean (median) OCF under SLAS is 0.057 (0.056) while it is 0.054 (0.044) under IFRS (SLFRS). Firm accruals (ACC) is calculated as annual net income less annual cash flow from operating activities, scaled by end of year total assets. The mean and median values of ACC are negative at -0.001 and -0.003 under IFRS (SLFRS) compared positive values of 0.017 and 0.001 in pre IFRS adoption period. However, the differences in mean and median between two periods are not statistically significant.

The mean (median) share prices three months after financial year end (MVPS) is also lower under IFRS (SLFRS) at Rs.230.596 (78.000) compared to 265.939 (64.250) under SLAS. The decrease in median share price is significant at 0.05 level ($p < 0.05$).

The book value of equity per share (BVPS) has also decreased from Rs.254.038 under the SLAS period to Rs.202.865 under IFRS (SLFRS) ($p > 0.01$). Similarly, the mean value for annual returns (RETURN) has decreased considerably whereby it is 0.059 under SLAS and 0.016 under IFRS (SLFRS). However, this is also not statistically significant.

Firm leverage (LEV) is lower in the IFRS (SLFRS) period with a median of 0.551 compared to 0.596 under SLAS ($p > 0.01$). This is inconsistent with the increase in the median values for debt issue (DISSUE). Under IFRS (SLFRS), the median is 0.098 compared to 0.079 under SLAS, indicating firms are issuing more debt during the IFRS (SLFRS) period. The medians for the equity issue variable (EISSUE) have also decreased from 0.116 under SLAS to 0.095 under IFRS (SLFRS). Similarly, the median for the GROWTH variable has decreased from 0.161 under SLAS to 0.098 under IFRS. These differences in median are statistically significant at 99% confidence level ($p < 0.01$).

In summary, the descriptive statistics in Table 4.6 reveal that there is no significant changes have occurred in most of the test and control variables. While earnings measures such as NIPS show a decrease post IFRS adoption, cash flows (OCF) have also decrease, resulting in a decrease in accruals (ACC). In addition, the volatility of earnings (ΔNI) has decreased but so has the volatility of cash flows (ΔOCF). Market based measures such as share price (MVPS), has decreased. Similarly, Annual share return (RETURN) has declined in the IFRS (SLFRS) period compared to the SLAS period. The decreases in the median values of the equity issue (EISSUE), growth (GROWTH) variables provide an indication that sample firms are requiring more funds under SLAS compared to under IFRS (SLFRS).

Table 4.7 provides frequency statistics for the dichotomous variables under SLAS and IFRS (SLFRS). Pearson's Chi-square tests were carried out to test whether the proportions of the dichotomous variables were significantly different between the two time periods. The results reveal that the frequencies of all three dichotomous variables are significantly different between the periods ($p < 0.05$).

Table 4.7: Frequency statistics for dichotomous variables under SLAS and IFRS (SLFRS)

	SLAS		IFRS (SLFRS)		Pearson's χ^2 test	
	N=471 n	%	N=314 n	%	Value	Prob.
Big 4 Auditor(AUD)						
Use Big 4 auditor (1)	353	74.95	257	81.85	206.785	0.001
Does not use Big 4 auditor (0)	118	25.05	57	18.15		
Frequency of small positive net income (SPOS)						
Net income scaled by total assets is between 0 and 0.01 (1)	42	8.92	24	7.64	4.543	0.031
Net income scaled by total assets less than 0 and greater than 0.01 (0)	429	91.08	290	92.36		
Frequency of large negative net income (LNEG)						
Net income scaled by total assets is less than -0.20 (1)	5	1.06	18	5.73	4.270	0.038
Net income scaled by total assets is greater than -0.20 (0)	466	98.94	296	94.27		

4.4 Multivariate results and hypotheses testing

Following prior research such Lang *et al.* (2003), Lang *et al.* (2006), Barth *et al.* (2008), and Paananen and Lin (2009), this study used eight accounting quality metrics in order to capture various aspects of accounting quality of financial reporting in the areas of earnings smoothing, managing towards earnings targets, timeliness of loss recognition and value relevance. In Chapter 3, I discussed the research method adopted in this study and described the calculation of each of the eight measures of accounting quality. The descriptive statistics and univariate comparisons of the data are provided in previous section. The results of the multivariate analysis are presented in this section.

4.4.1 Overall improvement in accounting quality



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This section presents the results for H₁, H₂, H₃ and H₄ respectively where it is predicted that the firms listed on CSE have higher accounting quality under IFRS (SLFRS) compared to SLAS. All 157 firms in the final sample are included in the testing of H₁, H₂, H₃ and H₄. As stated in Chapter 3, there are three years of observations under SLAS (adoption years -2 to 0) and two years under IFRS (SLFRS) (adoption years 1 to 2). The following discussion looks at each aspect of accounting quality included in this study. That is, earnings smoothing, managing towards earnings targets, timeliness of loss recognition and value relevance are each examined in turn. Then a summary of the results is provided. H₁ is accepted if the firms listed on CSE show less earnings smoothing and management towards earnings targets, H₂ is accepted if the firms listed on CSE exhibit more timely recognition of losses, H₃ is accepted if the firms provide more value relevant information in the IFRS (SLFRS)

period compared to when firms reported under SLAS. Finally, H₄ is accepted if firms listed on CSE show improvement in accounting quality as result of less earning management, more timely loss recognition and higher value relevance.

4.4.1.1 Earning Management

Earning smoothing

Agency theory suggests that managers have an incentive to conceal a firm's current poor performance if their remuneration and other rewards are tied to firm performance (Jensen and Meckling, 1976). Managers may also under-report strong performance in order to give themselves a buffer in future periods of poor performance (Beidleman, 1973; Moses, 1987; Beattie *et al.*, 1994). This is referred to as earnings smoothing. The first set of accounting quality metrics used in this study considered whether earnings smoothing reduced after the adoption of IFRS (SLFRS). These results are presented in Table 4.8.

Table 4.8: Variability of changes in net income (ANI*) (Prediction SLAS < IFRS (SLFRS))

Test for Equality of Medians Between ANI* of SLAS and IFRS (SLFRS)					
Sample: 1 157					
Included observations: 157					
Method	df	Value	Probability		
Wilcoxon/Mann-Whitney		4.597	0.000		
Kruskal-Wallis	1	21.140	0.000		
Category Statistics					
Variable	Count	Median	Overall Mean Rank	Mean Score	Median
SLAS	157	0.0019	92	181.057	0.267
IFRS (SLFRS)	157	0.0006	65	133.942	-0.267
All	314	0.0012	157	157.500	2.260
<p>ANI* is the residuals from Equation 1: $\Delta NI_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$, where ΔNI is the change in net income scaled by total assets at financial year-end. SIZE is the natural logarithm of the total assets at financial year-end. GROWTH is annual percentage change in sales. EISSUE is annual percentage change in book value of equity. LEV is total liabilities scale by book value of equity at financial year-end. DISSUE is annual percentage change in total liabilities. TURN is annual sales divided by end of year</p>					

total assets. OCF is annual net cash flow from operating activities scaled by end of year total assets. AUD is an indicator variable set to one if the firm's auditor is PricewaterhouseCoopers, KPMG or Ernst & Young and zero otherwise. CLOSE is the percentage of closely held shares at the end of the year.

The first earnings smoothing metric is the variability of change in net income (ΔNI^*) (Table 4.8). A higher variance for ΔNI^* indicates that the firms are less likely to smooth their earnings (Barth et al., 2008). Accordingly, this study predicted that firms will display higher variability of ΔNI^* under IFRS (SLFRS) compared to SLAS. The change in net income (ΔNI) can be influenced by firm specific factors that are unrelated to changes in accounting standards. Therefore, ΔNI were first regressed for each sample year on the corresponding firm level control variables (presented in Equation 1). That is, this regression was estimated nine times (for each year in the final sample) by using observations for the 157 firms in the final sample. The residuals from the first level regressions were named ΔNI^* . Then ΔNI^* were pooled for each firm for the three years under SLAS and the two years under IFRS (SLFRS). This allowed me to calculate the variance of ΔNI^* for each firm under SLAS and IFRS (SLFRS). Hence this process ended up with 157 observations for the variance of ΔNI^* for each time period. As the results of the Lilliefors test, the normality assumption for the variance of ΔNI^* for SLAS and IFRS (SLFRS) is rejected (see annexure 01). Therefore, the Wilcoxon rank sum test for differences in medians (paired sample) was used to assess whether the variance of ΔNI^* was significantly different for firms, under SLAS and IFRS (IFRS). Table 4.8 shows results for the Wilcoxon rank sum test and for some other test provided by Eviews 8.1 statistical software including the median values for the variance of ΔNI^* of each time period. Contrary to the prediction, the median variance of ΔNI^* is higher under SLAS compared to IFRS (SLFRS) (0.0019 versus 0.0006). In addition, the difference in medians is statistically significant indicating that the higher earning smoothing in post

IFRS (SLFRS) time period. Therefore, H₁ is not supported by these results.

Firms with more volatile earnings may also have more volatile cash flows (Barth et al., 2008). Therefore, the second earnings management metric controls for this by scaling changes in net income by changes in operating cash flows (Table 4.9).

Table 4.9: Variability of ratio of changes in net income over change in cash flows ($\Delta NI^*/\Delta OCF^*$) (Prediction SLAS < IFRS (SLFRS))

Test for Equality of Medians Between $\Delta NI^*/\Delta OCF^*$ of SLAS and IFRS (SLFRS)					
Sample: 1 157					
Included observations: 157					
Method	df	Value	Probability		
Wilcoxon/Mann-Whitney		4.131	0.000		
Kruskal-Wallis	1	17.071	0.000		
Category Statistics					
Variable	Count	Median	Overall Median	Mean Rank	Mean Score
SLAS	157	2.9691	95	178.668	0.233
IFRS (SLFRS)	157	0.7125	62	136.331	-0.233
All	314	1.7243	157	157.500	0.000
<p>ΔNI^* is the residuals from Equation 1: $\Delta NI_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$, where ΔNI is the change in net income scaled by total assets at financial year-end. SIZE is the natural logarithm of the total assets at financial year-end. GROWTH is annual percentage change in sales. EISSUE is annual percentage change in book value of equity. LEV is total liabilities scale by book value of equity at financial year-end. DISSUE is annual percentage change in total liabilities. TURN is annual sales divided by end of year total assets. OCF is annual net cash flow from operating activities scaled by end of year total assets. AUD is an indicator variable set to one if the firm's auditor is PricewaterhouseCoopers, KPMG or Ernst & Young and zero otherwise. CLOSE is the percentage of closely held shares at the end of the year.</p> <p>ΔOCF^* is the residuals from Equation 2: $\Delta OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$, where ΔOCF is the change in operating cash flows available to ordinary shareholders at financial year end scaled by total assets at financial year end.</p>					

As with the first earnings management metric, changes in operating cash flows (ΔOCF) for each year were regressed on the corresponding control variables shown in Equation 2. The residuals from these regressions are named ΔOCF^* and are then used to scale ΔNI^* . The resulting variable is the ratio of change in net income over change in cash flows ($\Delta NI^*/\Delta OCF^*$). As with the previous measure, the cross sectional

variance of $\Delta NI^*/\Delta OCF^*$ for each firm under SLAS and IFRS (SLFRS) was calculated. The Lilliefors test rejected the assumption of normality for the variance of $\Delta NI^*/\Delta OCF^*$ under SLAS and IFRS (SLFRS) (see annexure 02). Thus, the Wilcoxon rank sum test was used for differences in medians to determine whether the variance of $\Delta NI^*/\Delta OCF^*$ were significantly different under SLAS and IFRS (SLFRS). Similar to the first earnings management metric, a higher variance for $\Delta NI^*/OCF^*$ indicates that firms are less likely to manage earnings. Therefore, this study predicted that firms will display greater variability under IFRS (SLFRS) compared to SLAS. Table 4.9 shows that the median variance of $\Delta NI^*/OCF^*$ is 2.9691 under SLAS and 0.7125 under IFRS (SLFRS). This lower variance under IFRS is not consistent with the prediction. Thus, again is not supported by these results. However, this is also opposing to the prediction. That is the firms listed on CSE exhibit higher earning smoothing following IFRS (SLFRS) adoption.



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The next measure of earnings smoothing investigates the correlation between accruals and cash flows (Table 4.10). 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 firms will display a less negative relationship between accruals and cash flows under IFRS (SLFRS) compared to SLAS. Similar to the previous two metrics of earnings management, both ACC and OCF were first regressed on the corresponding control variables (shown in Equations 3 and 4), where observations are pooled for the 157 sample firms separately for the three years under SLAS (471 observations) and the two years under IFRS (314 observations). Then residuals from these two regressions (ACC^* and OCF^*) were tested for violations of normality. The

null hypothesis of a normal distribution was rejected for both variables (see annexure 03). Therefore, the Spearman Rank-order correlation was employed to investigate the extent of the correlation between ACC* and OCF*. Finally, differences between the correlation coefficients under SLAS and IFRS (SLFRS) were tested for significance. The correlation coefficient between ACC* and OCF* is -0.6995 under SLAS while -0.6749 under IFRS (SLFRS), which is consistent with the prediction. However, the differences between correlation coefficient were not statistically significant ($z = 0.6399$, $p = 0.5228$)¹. Therefore, except last measure (the correlation between accruals and cash flows) all other measures of earnings smoothing do not support H₁ as they do not provide any evidence that firms listed on CSE reduced their level of earnings smoothing post IFRS (SLFRS) adoption.

Table 4.10: Correlation between OCF* and ACC*

	IFRS_ACC*	IFRS_OCF*	SLAS_ACC	SLAS_OCF*
IFRS_ACC*	1.0000			
IFRS_OCF*	-0.6749	1.0000		
SLAS_ACC	0.0969	-0.0851	1.0000	
SLAS_OCF*	-0.0328	0.1537	-0.6995	1.0000

OCF* is the residual from **Equation 3**: $OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 AUD_{it} + \alpha_8 CLOSE_{it} + \varepsilon_{it}$

ACC* is the residual from **Equation 4**: $ACC_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 AUD_{it} + \alpha_8 CLOSE_{it} + \varepsilon_{it}$ where ACC is annual net income less annual net cash flow from operating activities.

¹The significance of difference between correlation coefficients is calculated using this web site-
<http://www.quantitativeskills.com/sisa/statistics/correl.htm>

Managing towards small positive net income

Table 4.11: frequency of SPOS

$IFRS(0,1)_{it} = \alpha_0 + \alpha_1 SPOS_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 EISSUE_{it} + \alpha_5 LEV_{it} + \alpha_6 DISSUE_{it} + \alpha_7 TURN_{it} + \alpha_8 OCF_{it} + \alpha_9 ADU_{it} + \alpha_{10} CLOSE_{it} + \varepsilon_{it}$				
Dependent Variable: IFRS				
Method: Least Squares				
Included observations: 785				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPOS	-0.3534	0.0915	-3.8599	0.0001
SIZE	0.3155	0.0679	4.6417	0.0000
GROWTH	0.0013	0.0895	0.0147	0.9882
EISSUE	-0.1464	0.0838	-1.7472	0.0810
LEV	-0.0776	0.0373	-2.0778	0.0381
DISSUE	0.1448	0.0523	2.7660	0.0058
TURN	-0.0998	0.1248	-0.8001	0.4238
OCF	0.1319	0.4286	0.3077	0.7583
ADU	-0.1735	0.0945	-1.8365	0.0667
CLOSE	0.0126	0.0023	5.2945	0.0000
C	-3.2942	0.6082	-5.4157	0.0000
R-squared	0.3712	Mean dependent var	0.2454	
Adjusted R-squared	0.3631	S.D. dependent var	0.6240	
S.E. of regression	0.3972	Akaike info criterion	1.0052	
Sum squared resid	122.1225	Schwarz criterion	1.0706	
Log likelihood	-383.5581	Hannan-Quinn criter.	1.0303	
F-statistic	45.6981	Dubin-Watson stat	2.413	
Prob(F-statistic)	0.0000	Weighted mean dep.	0.4492	
Wald F-statistic	23.5707	Prob(Wald F-statistic)	0.0000	

The next accounting quality measure is the frequency of small positive net income (SPOS). The underlying principle of this measure is that firms prefer to manage their earnings and report small positive income figures rather than negative income. Therefore, this study predicted that firms will report a lower frequency of small positive net income under IFRS (SLFRS) compared to SLAS. SPOS 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 SPOS under SLAS and IFRS (SLFRS) were not directly compared because a firm's reported level of SPOS may be affected by firm level specific factors that are unrelated to IFRS (SLFRS) adoption. Instead, as shown in Equation 5, SPOS was regressed along with other control variables on a dichotomous variable (IFRS), which is set to one for observations under IFRS (SLFRS) and zero for observations under UK GAAP. Therefore, all 785 observations

in the final sample are included in this regression with the dependent variable (IFRS) differentiating between observations under IFRS (SLFRS) and SLAS. A negative coefficient for SPOS indicates that less frequency of SPOS under IFRS (SLFRS) compared to SLAS, providing evidence of higher accounting quality. The coefficient for SPOS is reported in Table 4.11 while the Wald statistics are presented in Table 4.12 below. In analysis of small positive net income (SPOS) 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).

Table 4.12: Significance of coefficient of SPOS

Wald Test			
Test Statistic	Value	df	Probability
t-statistic	-3.8599	774	0.0001
F-statistic	14.899	(1, 774)	0.0001
Chi-square	14.899	1	0.0001
Null Hypothesis: C(1)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C(1)	-0.3535	0.0915	

The results are consistent with the prediction because the coefficient for SPOS is negative (-0.3534) and significant at the $p < 0.01$ levels. Therefore, is supported because the result shows that managing earnings towards targets less under IFRS (SLFRS) compared to SLAS.

4.4.1.2 Timely Loss Recognition

The next determinant of accounting quality is the timeliness of loss recognition that is measured in terms of the frequency of large negative net income (LNEG). A higher frequency for LNEG indicates that firms recognize losses in the period in which it occurs rather spreading them over multiple future periods. Therefore, this study

predicted that firms would display a higher frequency of large negative net income under IFRS compared to SLAS. LNEG was set to one when annual earnings scaled by total assets are less than -0.20. Then, LNEG is regressed along with other control variables on a dichotomous variable (IFRS) that was set to one for observations under IFRS and zero for observations under SLAS (as per Equation 6). A positive coefficient for LNEG indicates that firms recognize large losses more frequently under IFRS. The coefficient for LNEG and the Wald statistic is presented in Table 4.13 and Table 4.14. The results are consistent with the prediction where the coefficient for LNEG is Positive and significant at $p < 0.01$ levels. Therefore, the results for LNEG support H2. That is firms listed on CSE in Sri Lanka have recognized large negative earnings more frequently under IFRS (SLFRS) compared previous SLAS. This is an indication of improvement in accounting quality of SL firms following mandatory adoption of IFRS (SLFRS).



Table 4.13: frequency of LNEG

$IFRS (0,1)_{it} = a_0 + a_1LNEG_{it} + a_2SIZE_{it} + a_3GROWTH_{it} + a_4EISSUE_{it} + a_5LEV_{it} + a_6DISSUE_{it} + a_7TURN_{it} + a_8OCF_{it} + a_9AUD_{it} + a_{10}CLOSE_{it} + \varepsilon_{it}$				
Dependent Variable: IFRS				
Method: Least Squares				
Included observations: 785				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNEG	0.2981	0.1011	2.9486	0.0033
SIZE	0.1177	0.0271	4.3396	0.0000
GROWTH	-0.1290	0.0524	-2.4581	0.0142
EISSUE	-0.1722	0.0630	-2.7326	0.0064
LEV	-0.0277	0.0229	-1.2063	0.2280
DISSUE	0.0447	0.0330	1.3532	0.1764
TURN	0.0082	0.0275	0.2998	0.7644
OCF	-0.2866	0.2006	-1.4283	0.1536
ADU	0.0263	0.0420	0.6280	0.5301
CLOSE	0.0081	0.0010	7.6249	0.0000
C	-1.2762	0.2541	-5.0210	0.0000
R-squared	0.1332	Mean dependent var	0.4000	
Adjusted R-squared	0.1221	S.D. dependent var	0.4902	
S.E. of regression	0.4599	Akaike info criterion	1.2957	
Sum squared resid.	163.2864	Schwarz criterion	1.3611	
Log likelihood	-497.5719	Hannan-Quinn criter.	1.3208	
F-statistic	11.9041	Durbin-Watson stat	0.2477	
Prob.(F-statistic)	0.0000			

Table 4.14: Significance of coefficient of LNEG

Wald Test			
Test Statistic	Value	df	Probability
t-statistic	2.9486	774	0.0033
F-statistic	8.6947	(1, 774)	0.0033
Chi-square	8.6947	1	0.0032
Null Hypothesis: C(1)=0			
Normalized Restriction (= 0) C(1)	Value	Std. Err.	
	0.2981	0.1011	

4.4.1.3 Value Relevance

The final accounting quality measure of this study is based on value relevance of accounting information. This study utilized three value relevance metrics. First, value relevance measure is based the association (adjusted R^2) from a regression of share prices on earnings and book value of equity derived from Ohlson (1995). Firms with superior accounting quality are expected to exhibit higher association between share prices and accounting information (i.e. earnings per share and book value per share). Accordingly, this study predicted that the value relevance of accounting information under IFRS (SLFRS) is higher than that of under SLAS. Thus, for this measure the adjusted R^2 of corresponding regression² (show in equation 07) between two reporting regime was compared. A higher adjusted R^2 is indicative of a better association between accounting information and share price, thereby greater value relevance and accounting quality. Table 4.15 and Table 4.16 present the results of first value relevance model separately for two time periods

The finding in Table 4.15 and 4.16 reveal that the adjusted R^2 for firms under SLAS significantly larger than the adjusted R^2 for firms under IFRS (SLFRS), 41.84% versus 4.78%.

² As this model rejects the assumption of homoscedasticity, weighted Least square regression was estimated to remove the heterosecedasticity. The results of white heteroscedasticity are presented in appendix c.

Table 4.15: The association between share price and accounting information under SLAS

$MVPS_{it}^* = \alpha_0 + \alpha_1 BVEPS_{it} + \alpha_2 NIPS_{it} + \varepsilon_{it}$				
Dependent Variable: MVPS*				
Method: Least Squares				
Sample: 1 471				
Included observations: 410				
Weighting series: NIPS				
Weight type: Variance				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIPS	6.432	1.107	5.810	0.000
BVPS	0.837	0.133	6.251	0.000
C	-201.704	5.258	-38.354	0.000
Weighted Statistics				
R-squared	0.4332	Mean dependent var	-78.723	
Adjusted R-squared	0.418	S.D. dependent var	181.475	
S.E. of regression	58.232	Akaike info criterion	10.974	
Sum squared resid	1380140.	Schwarz criterion	11.003	
Log likelihood	-2246.680	Hannan-Quinn criter.	10.985	
F-statistic	148.169	Durbin-Watson stat	2.021	
Prob(F-statistic)	0.000	Weighted mean dep.	-182.299	
Wald F-statistic	143.409	Prob(Wald F-statistic)	0.000	

Table 4.16: The association between share price and accounting information under IFRS

$MVPS_{it}^* = \alpha_0 + \alpha_1 BVEPS_{it} + \alpha_2 NIPS_{it} + \varepsilon_{it}$				
Dependent Variable: MVPS*				
Method: Least Squares				
Sample: 1 314				
Included observations: 314				
Weighting series: BVPS				
Weight type: Variance				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIPS	1.398	0.801	1.745	0.081
BVPS	0.682	0.111	6.104	0.000
C	-134.873	15.191	-8.878	0.000
Weighted Statistics				
R-squared	0.053	Mean dependent var	-60.734	
Adjusted R-squared	0.047	S.D. dependent var	206.527	
S.E. of regression	174.329	Akaike info criterion	13.169	
Sum squared resid	9451515.	Schwarz criterion	13.205	
Log likelihood	-2064.577	Hannan-Quinn criter.	13.183	
F-statistic	8.869	Durbin-Watson stat	2.081	
Prob(F-statistic)	0.000	Weighted mean dep.	-119.954	
Wald F-statistic	22.556	Prob(Wald F-statistic)	0.000	

Tabulated regression summary statistics indicate that the coefficients on net income

per share and book value per share are significantly positive under both SLAS and IFRS (SLFRS) time period and that both coefficients are smaller under IFRS (SLFRS). This is inconsistent with prediction. Therefore, first price regression results do not support H₃. That is the value relevance of accounting information has been decreased following mandatory IFRS (SLFRS) adoption and thereby indicating poor accounting quality.

Second and third value relevance metric of this study is based on the explanatory power (adjusted R²) from regressions of net income on annual stock return. Following Barth *et al.* (2007) earning and return relationship is calculated separately for the firms with positive and negative returns. Similar to first value relevance measure, a greater value relevance of earning is expected under IFRS (SLFRS) relative to SLAS. In addition, the value relevance of good news (positive return) and bad news (negative return) firms is separately estimated under IFRS (SLFRS) and SLAS. Table 4.17 provides results of the second and third value relevance measures of earning under SLAS and IFRS (SLFRS)

Table 4.17: The association between earnings and returns for both good news and bad news firms under SLAS and IFRS (SLFRS)

$[NIPS/P]^* = \alpha_0 + \alpha_1 RETURN_{it} + \epsilon_{it}$								
	SLAS				IFRS (SLFRS)			
	Bad News		Good News		Bad News		Good News	
	Coef.	Prob.	Coef.	Prob.	Coef.	Prob.	Coef.	Prob.
<i>R</i> TURN	0.0249	0.0112	0.0241	0.0263	-0.0133	0.5955	0.0700	0.0354
R-squared	0.0292		0.0557		0.0022		0.0241	
Adjusted R ²	0.0248		0.0516		-0.0056		0.0187	
F-statistic	6.5383		5.4094		0.2833		4.4948	
Prob(F-statistic)	0.0112		0.0263		0.5955		0.0354	

As previously stated, the adjusted R^2 for good news firms is greater than that for bad news firms (5.57% versus 2.92% under SALS and 1.87% versus -0.56%). However, Contrary to predictions the adjusted R^2 for firms under IFRS (SLFRS) is lower than that for firms under SLAS (1.87 % versus 5.16% for good news firms and -0.56% versus 2.48% for bad news firms). Therefore, all value relevance measures indicate that the value relevance of accounting numbers under IFRS (SLFRS) is lower than that of under SLAS, thereby H_3 is rejected.

Final hypothesis (H_4) of this study is that the accounting quality of SL firms has increased after mandatory adoption of IFRS (SLFRS) as a result of less earning management, timely loss recognition and higher value relevance. The acceptance or rejection of H_4 is based on the results of all accounting quality metrics discussed above. Therefore, summary of the results of all accounting quality measures is tabulated as follows.



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Table 4.18: Summary of the results of accounting quality metrics.

Earning Smoothing	Prediction	SLAS	IFRS	Z-scores	H₄
Variance of ΔNI^*		0.0019	0.0006	4.597 ^(a)	Not supported
Variance of $\Delta NI^*/\Delta OCF^*$		2.9691	0.7125	4.131 ^(a)	Not supported
Correlation OCF^* and ACC^*	SLAS < IFRS	-0.6995	-0.6749	0.639 ^(b)	Not supported
Managing toward earnings targets	Prediction	Coefficient		Wald stat	H₄
Frequency of SPOS	Negative	-0.3534		-3.8599*	Supported
Timely loss recognition	Prediction	SLAS	IFRS	Wald stat	H₄
Frequency of LNEG	Positive		0.2981	2.9486*	Supported
Value relevance	Prediction	SLAS	IFRS	Z-scores	H₄
MVPS* and accounting numbers		41.84%	4.78%	-	Not supported
NIPS/P* and RETURN					
Good News	SLAS < IFRS	5.16%	1.87%	-	Not supported
Bad News		2.48%	- 0.56%		

* Significant at the $p < 0.001$ levels. (a) Significant but contrary to the prediction. (b) Consistent with the prediction but not statistically significant.

Table 4.18 reveals that none of the earnings smoothing metrics supported for H₄. Inconsistent with the prediction, earning management of SL firms has not decline after mandatory adoption of IFRS (SLFRS). Instead, earning smoothing has been increased significantly following IFRS (SLFRS) adoption. However, earning smoothing measured in term of correlation between accrual and cash flow has been decreased, but it is not statistically significant. There has been a decrease in managing towards earning targets measured in term of frequency of SPOS following IFRS (SLFRS) adoption. In addition, SL firms exhibit more timely loss recognition under IFRS (SLFRS) compared to SLAS. Therefore, H₄ is supported by both of these accounting quality measures. Same as earning smoothing measures, none of the value relevance measures supported for H₄, indicating lower value relevance of accounting information under IFRS (SLFRS) compared to SLAS.



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The results of this study are consistent with the results of prior studies on mandatory IFRS adoption such as Jeanjean and Stolowy (2008) who find that the pervasiveness of earnings management (operationalized in terms of small loss avoidance) did not decline after the introduction of IFRS in Australia, France and the UK. Similarly, Callao and Jarne (2010) find that earnings management in terms of the level of discretionary accruals has increased in the UK post IFRS adoption. The results of this is also Consistent with Chen et al. (2010) who looked at listed firms in 15 EU member states and find that earnings smoothing in terms of the variance of ΔNI^* increased after the adoption of IFRS. However, inconsistent with the results of this study the authors find that timeliness of loss recognition operationalized in terms of the frequency of LNEG decreased post IFRS adoption. Present study finds that significant increase in timeliness of loss recognition in SL firms post IFRS (SLFRS) adoption.

The part of finding of this study are similar to that of Devalle et al. (2010) who did not find a reduction in earnings smoothing (Variance of ΔNI^*), while other part of findings are not similar because Devalle et al. (2010) find that a decrease in the timeliness of loss recognition (LNEG) for firms from the UK, Germany, Italy, France and Spain post IFRS adoption. Likewise Ahmed et al. (2012) examined the accounting quality of firms from 20 countries including the UK. The authors found that income smoothing (operationalised in terms of variance of ΔNI^* , variance of $\Delta NI^*/\Delta OCF^*$, correlation between OCF^* and ACC^*) increased post IFRS adoption. The results of Ahmed et al. (2012) also reveal that the timeliness of loss recognition decreased post IFRS adoption.

The results of the present study for the management towards earnings targets supports & H₄ and is consistent with Chen et al. (2010) because they find a reduction in the frequency of small positive net incomes (SPOS) post IFRS adoption. In addition, the results for all three measures of value relevance in this study revealed that there is no closer association between accounting numbers and market measures under IFRS (SLFRS). Therefore, The findings related to value relevance measures of this study are inconsistent with most of prior studies such as Devalle et al. (2010), Iatridis (2010), Samarasekara (2013), report that the influence of earnings and book value of equity on market measures such as share price and returns increased in the UK post IFRS adoption.

In summary, for the full sample of 157 firms listed on CSE used in this study, there is evidence that accounting quality improved after mandatory IFRS (SLFRS) adoption with respect to managing towards earnings targets and timely loss recognition. However, there is no evidence that accounting quality improved with regards to

earnings smoothing and value relevance. A reason that all eight of the accounting quality measures did not show uniform increases in accounting quality may be attributable to several factors. First, this study considered two years under IFRS (SLFRS) and during this immediate years following IFRS (SLFRS) adoption accounting quality of the firms may not improved from all the aspect as firms need some time to understand and implement the IFRS (SLFRS). Second, the regulation and enforcement mechanism may not stronger enough, compared countries like UK, Germany and France, to force the firms to adopt IFRS (SLFRS) genuinely to achieve expected benefit. Furthermore, each of the measures that are used in this thesis captures different aspects of accounting quality and it is reasonable to assume that the effect of IFRS on each of these measures will not be uniform (Dechow, Ge and Schrand, 2010).



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CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Introduction

The primary aim of this chapter is to (i) provide a summary of the background of the study; (ii) summarize the findings of the study; (iii) present limitations and direction for the future studies. Thus, section 5.2 provides a brief review of the study and methodology employed. Section 5.3 provides major conclusion and implication of the findings of the study. Limitations and problems encountered in conducting the research project are presented in 5.4. Finally, section 5.5 describes further areas that could be explored in future research.

5.2 The background of the study

The main objective of this study was to investigate whether or not mandatory adoption of IFRS (SLFRS) improves the accounting quality of SL firms. Thus, in achieving the objective of this study, the accounting quality of the SL firms before and after IFRS (SLFRS) adoption was compared. Accounting quality is measured in terms of earnings smoothing, management towards earnings targets, timeliness of loss recognition and value relevance as established prior studies.

The research setting of this study is CSE. CSE is only Stock Exchange operating in Sri Lanka as well as all the firms listed on CSE are mandated to use IFRS (SLFRS) from 01st of January, 2012. To capture different aspects of firm financial reporting this study used eight individual measures of accounting quality that included three measures for earnings smoothing, one for managing towards earnings targets, one for timely loss recognition and two measures for value relevance. These measures were

adopted in line with prior studies such as Lang, Raedy and Yetman (2003), Lang, Raedy and Wilson (2006), Barth, Landsman and Lang (2008) and Paananen and Lin (2009). This study predicted that the firms listed on CSE would display lower earnings smoothing, less managing towards earnings targets, more timely recognition of losses and greater value relevance under IFRS (SLFRS) compared to SLAS.

All the tests were performed based on the full sample of 157 sample firms to address the research questions. The results indicate that the accounting quality of SL firms improved after mandatory IFRS (SLFRS) adoption in terms of displaying less management towards earnings targets and more timely loss recognition. However, there was no evidence of accounting quality improvements after mandatory IFRS (SLFRS) adoption with regards to displaying lower levels of earnings smoothing and greater value relevance. These results are consistent with prior studies such as Jeanjean and Stolowy (2008) and Callao and Jaime (2010) and Ahmed, Neel and Wang (2012) who do not find reductions in earnings management post IFRS adoption.

5.3 Conclusion

The results for the full sample of 157 firms provided evidence of less managing towards earnings targets and more timely loss recognition for SL firms after mandatory IFRS (SLFRS) adoption. However, the results did not show reductions in earnings smoothing or improved value relevance following mandatory IFRS (SLFRS) adoption. This implies that while there are benefits to the adoption of IFRS (SLFRS) to SL firms, these benefits are not consistent across all aspects of accounting quality. The results for five out of eight measures of accounting quality used in this study did not show improvement in accounting quality following mandatory IFRS (SLFRS)

adoption because of several reasons, First, this study considered two years under IFRS (SLFRS) and during this immediate years following IFRS (SLFRS) adoption accounting quality of the firms may not improved from all the aspect as firms need some time to understand and implement the IFRS (SLFRS). Second, the regulation and enforcement mechanism may not stronger enough, compared countries like UK, Germany and France, to force the firms to adopt IFRS (SLFRS) genuinely to achieve expected benefit. Furthermore, each of the measures that are used in this thesis captures different aspects of accounting quality and it is reasonable to assume that the effect of IFRS (SLFRS) on each of these measures will not be uniform (Dechow, Ge and Schrand, 2010).

The results for the full sample revealed that despite SLAS being perceived to be of high quality with few differences with international standards, SL firms benefited from the adoption of IFRS (SLFRS) through improvements in certain aspects of accounting quality, such as reductions in managing towards earnings targets and improvements in timeliness of loss recognition.

5.4 Limitations and Problems

This study has its own limitation and this has to be considered in interpreting the results.

- Data for this study was confined to the first two years (2012/2013 and 2013/2014) after the mandatory adoption of IFRS (SLFRS). As firms need some time to understand and implement IFRS (SLFRS), the number of years under analysis in the post IFRS adoption time period is important (Ernstberger *et al.*, 2008). Therefore, the first inherent limitation of this study is lack of enough time series of data to conclude the effect of IFRS (SLFRS) adoption.
- The changes in accounting quality may be affected by different factors that are

not attributable to accounting standards. For instance, the strength of other laws and regulation, courts, SEC rules and regulation, corporate governance, media and public reaction are effectively influenced on reporting quality of the firms. Thus, next limitation of this study is not considering any of these factors in assessing accounting quality of SL firms.

- In the IASB's ongoing efforts to improve financial reporting practices, the Board has introduced several new standards and modified existing standards. For example, the IASB has issued IFRS 7 and IFRS 9 relating to financial instruments, IFRS 10, IFRS 11 and IFRS 12 relating to Consolidated Financial Statements and IFRS 13 Fair Value Management. The effects of these new standards on accounting quality did not include in this study as the sample period ends in 2014.
- The next limitation of this study is that the measures used for timely loss recognition may not capture the real economic situation of firms. This is because timely loss recognition measured in term of frequency of large negative earnings could also indicate insiders taking 'big bath'¹ to increase their ability to report profits in future periods (Kirschenheiter and Melumad, 2002). This is in turn could indicate lower accounting quality.
- 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.

¹The strategy of manipulating a company's income statement to make poor results look even worse. The big bath is often implemented in a bad year to enhance artificially next year's earnings. The big rise in earnings might result in a larger bonus for executives. New CEOs sometimes use the big bath so they can blame the company's poor performance on the previous CEO and take credit for the next year's improvements (investopedia, 2015).

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.

5.5 Recommendation for the future research

Considering the previous discussion of the major findings, conclusions and limitation of this study, there are possible avenues that can be explored in future research regarding the effect of mandatory adoption of IFRS (SLFRS) in Sri Lankan context.

- As firms need some time to understand and implement IFRS (SLFRS), the number of years under analysis in the post IFRS adoption time period is important. Therefore, future studies can be conducted including number of years under IFRS (SLFRS).
- Rather than choosing a sample of companies representing different industries, it would also be possible to choose those companies belonging to only one particular industry so as to capture the affect of mandatory adoption of IFRS (SLFRS) to that industry. This is because the real improvement of accounting quality cannot be captured when different companies are pooled out. Thus, Industry wise analysis would also one to recognize which set of companies has seriously adopted IFRS (SLFRS).
- The earnings smoothing measures used in this study has its own limitation of not differentiate 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. Therefore, the Future research in accounting quality would benefit by developing a more precise measure of earnings smoothing that is

able to identify when managers are smoothing earnings to hide firm performance.

- The results of this study indicated that an improvement in timeliness of loss recognition after mandatory adoption of IFRS (SLFRS). However, these results may not indicate real improvement in accounting quality as the measurement limitation of the timely loss recognition. Therefore, future research in accounting quality could benefit from using a measure that is able to differentiate between firms taking a ‘big bath’ and reporting the actual underlying losses of the firm in a timely manner.
- As this study could not measure the effect of newly introduced IFRS on accounting quality, Future research could empirically investigate whether accounting quality of IFRS adopters improved after the introduction of these new standards and firms have had enough time to understand their application.



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APPENDIX A – Test of Normality

Table 1: Test of Normality for Variance of Residuals of Δ NI (Pre IFRS)

Empirical Distribution Test for Variance of Residuals of Δ NI (Pre IFRS)			
Hypothesis: Normal			
Sample: 1 157			
Included observations: 157			
Method	Value	Adj. Value	Probability
Lilliefors (D)	0.434	NA	0.000
Anderson-Darling (A2)	54.667	54.933	0.000

Figure 1: Test of Normality for Variance of Residuals of Δ NI (Pre IFRS)

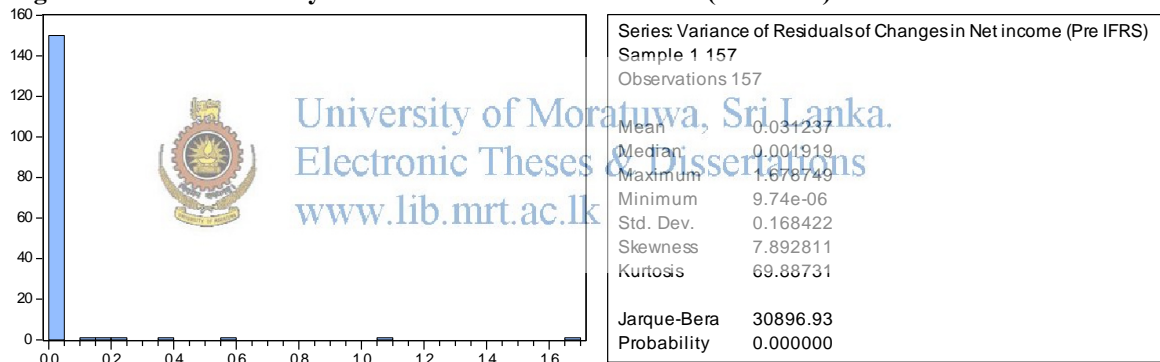


Table 2: Test of Normality for Variance of Residuals of Δ NI (Post IFRS)

Empirical Distribution Test for Variance of Residuals of Δ NI (Post IFRS)			
Hypothesis: Normal			
Sample: 1 157			
Included observations: 157			
Method	Value	Adj. Value	Probability
Lilliefors (D)	0.393	NA	0.000
Anderson-Darling (A2)	41.528	41.730	0.000

Figure 2: Test of Normality for Variance of Residuals of ΔNI (Pre IFRS)

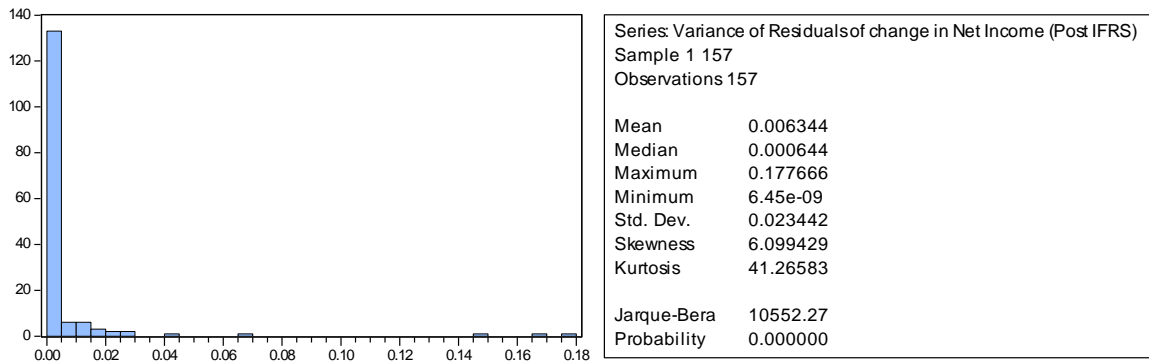


Table 3: Test of Normality for Variance of $\Delta NI^*/\Delta OCF^*$ (Pre IFRS)

Empirical Distribution Test for Variance of $\Delta NI^*/\Delta OCF^*$ (Pre IFRS)			
Hypothesis: Normal			
Sample: 1 157			
Included observations: 157			
Method	Value	Adj. Value	Probability
Lilliefors (D)	0.493	NA	0.000
Anderson-Darling (A2)	62.955	63.262	0.000



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Figure 3: Test of Normality for Variance of $\Delta NI^*/\Delta OCF^*$ (Pre IFRS)

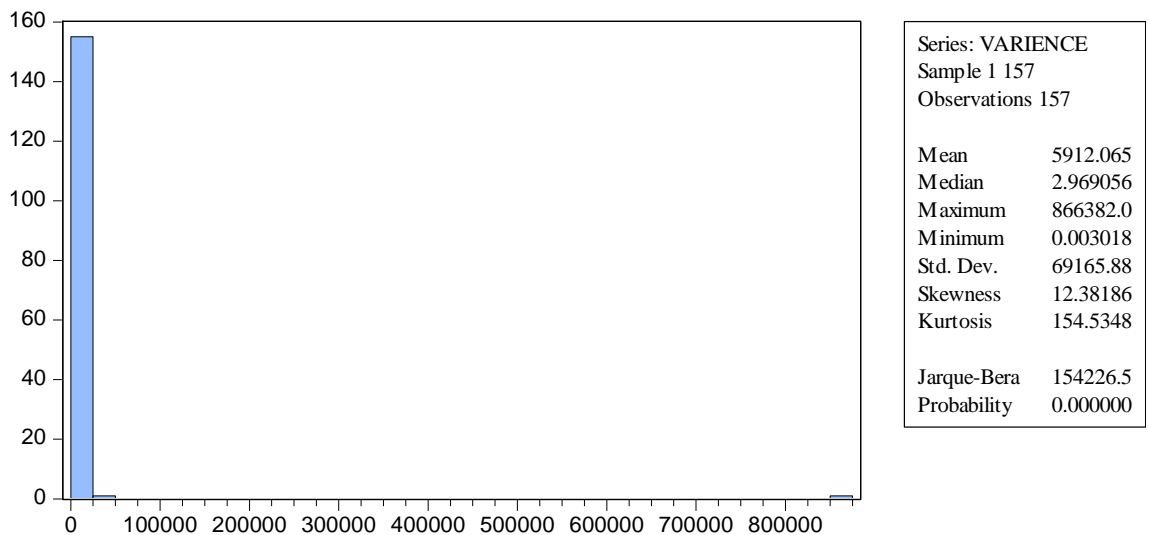


Table 3: Test of Normality for Variance of $\Delta NI^*/\Delta OCF^*$ (Post IFRS)

Empirical Distribution Test for VARIENCE01			
Hypothesis: Normal			
Sample: 1 157			
Included observations: 157			
Method	Value	Adj. Value	Probability
Lilliefors (D)	0.469	NA	0.000
Anderson-Darling (A2)	59.411	59.700	0.000

Figure 3: Test of Normality for Variance of $\Delta NI^*/\Delta OCF^*$ (Post IFRS)

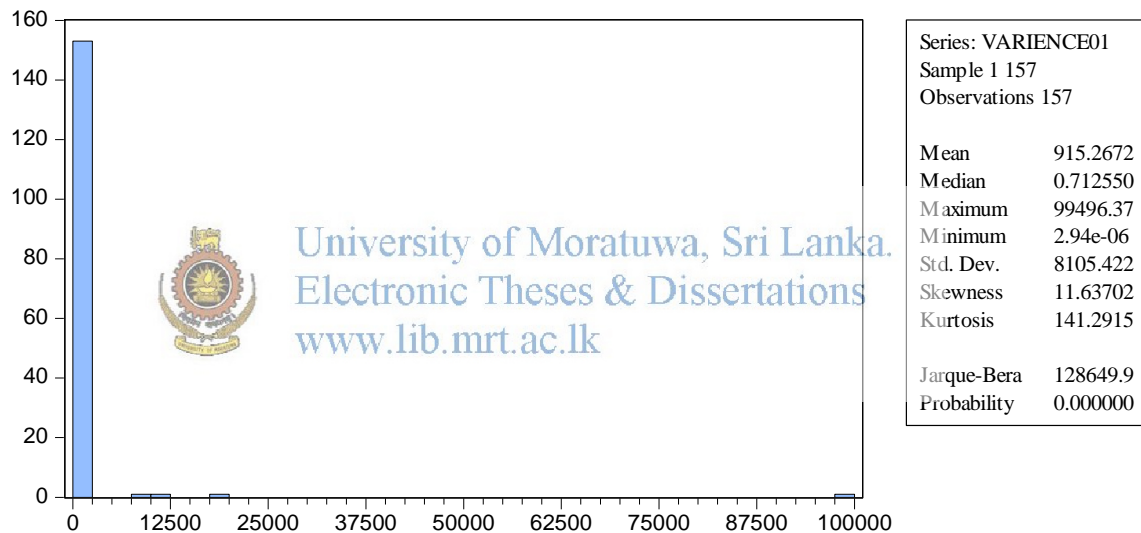


Table 4: Test of Normality for ACC* (Pre IFRS Accruals)

Empirical Distribution Test for ACC* (Pre IFRS Accruals)			
Hypothesis: Normal			
Sample: 1 471			
Included observations: 471			
Method	Value	Adj. Value	Probability
Lilliefors (D)	0.220	NA	0.000
Anderson-Darling (A2)	50.174	50.254	0.000

Figure 4: Test of Normality for ACC* (Pre IFRS Accruals)

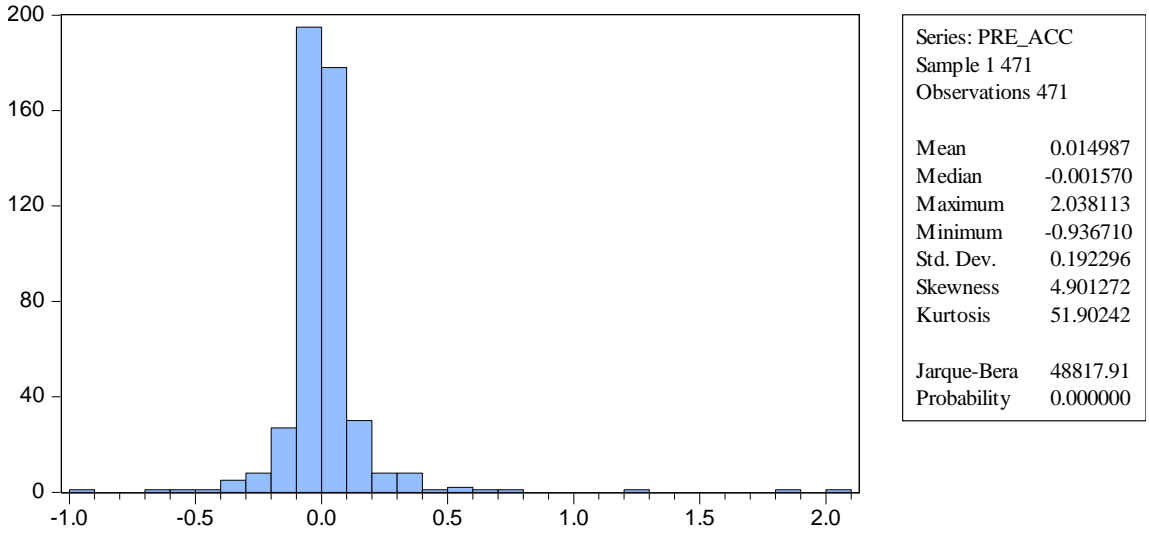


Table 5: Test of Normality for ACC* (Post IFRS Accruals)

Empirical Distribution Test for ACC* (Post IFRS Accruals)
Hypothesis: Normal
Sample : 1 314
Included observations: 314

Method	Value	Adj. Value	Probability
Lilliefors (D)	0.141366	NA	0.0000
Anderson-Darling (A2)	13.12327	13.15491	0.0000

Figure 5: Test of Normality for ACC* (Post IFRS Accruals)

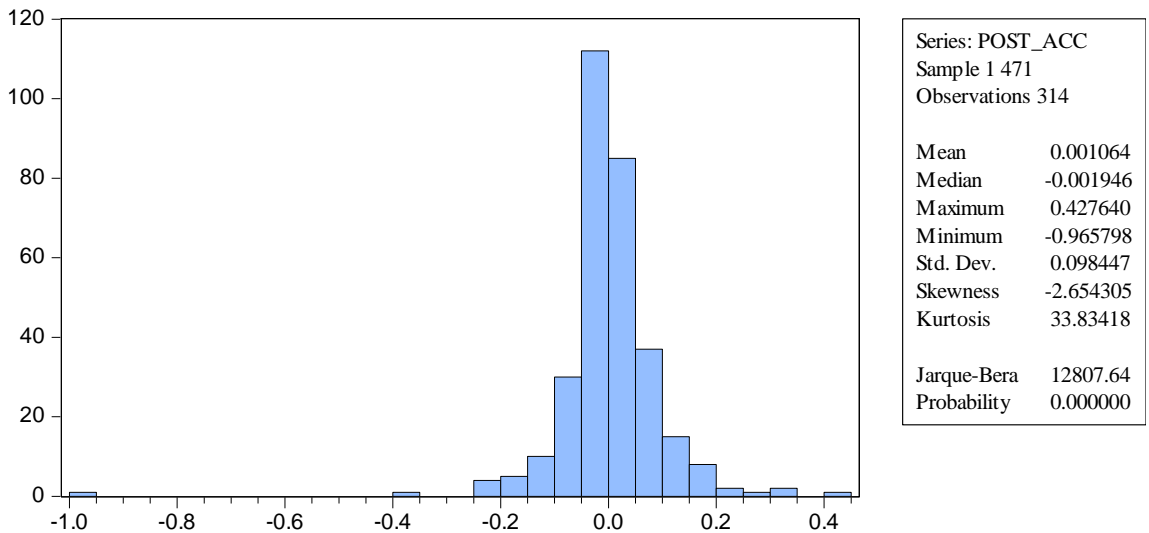


Table 6: Test of Normality for OCF* (Pre IFRS Operating Cash Flows)

Empirical Distribution Test for PRE_OCF			
Hypothesis: Normal			
Sample: 1 471			
Included observations: 471			
Method	Value	Adj. Value	Probability
Lilliefors (D)	0.129	NA	0.000
Anderson-Darling (A2)	16.825	16.852	0.000

Figure 6: Test of Normality for OCF* (Pre IFRS Operating Cash Flows)

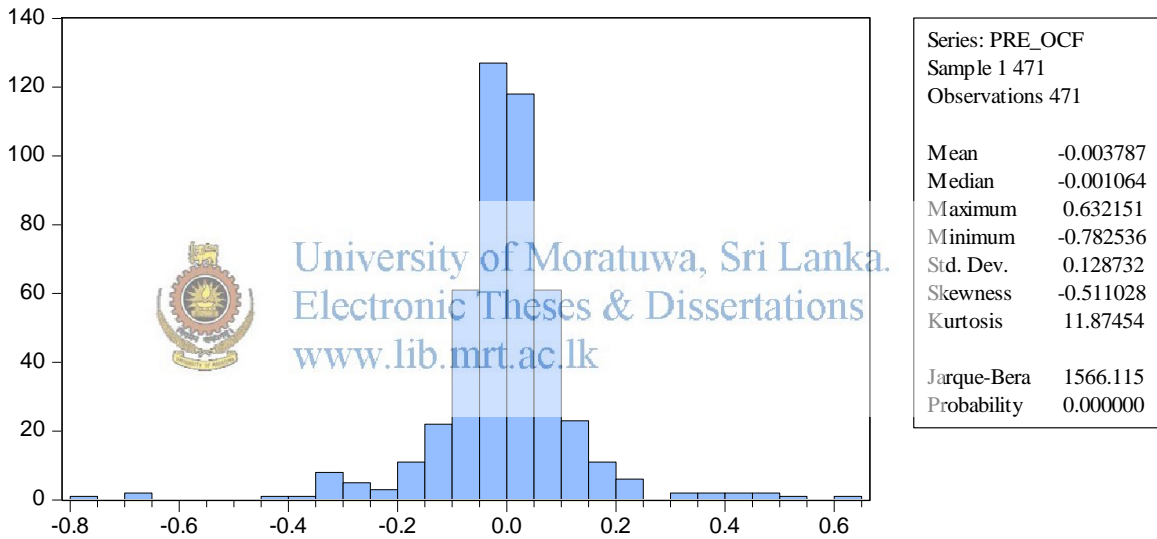
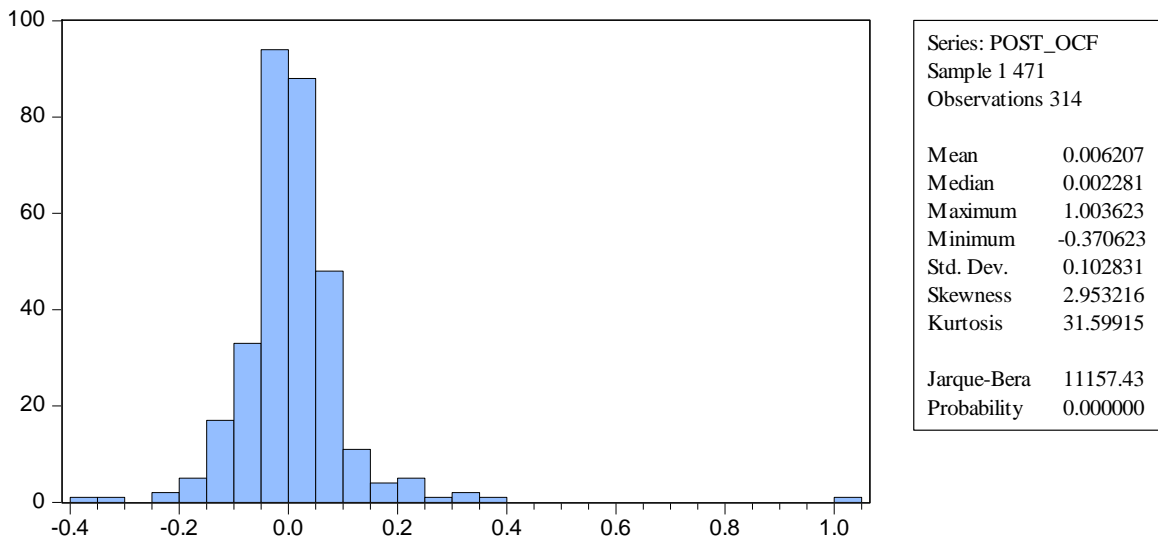


Table 6: Test of Normality for OCF* (Pre IFRS Operating Cash Flows)

Empirical Distribution Test for POST_OCF			
Hypothesis: Normal			
Sample (adjusted): 1 314			
Included observations: 314 after adjustments			
Method	Value	Adj. Value	Probability
Lilliefors (D)	0.116	NA	0.000
Anderson-Darling (A2)	11.372	11.399	0.000

Figure 6: Test of Normality for OCF* (Post IFRS Operating Cash Flows)



ΔNI^* is the residuals from **Equation 1**: $\Delta NI_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$ where ΔNI is the change in net income scaled by total assets at financial year-end. $SIZE$ is the natural logarithm of the total assets at financial year-end. $GROWTH$ is annual percentage change in sales. $EISSUE$ is annual percentage change in book value of equity. LEV is total liabilities scale by book value of equity at financial year-end. $DISSUE$ is annual percentage change in total liabilities. $TURN$ is annual sales divided by end of year total assets. OCF is annual net cash flow from operating activities scaled by end of year total assets. AUD is an indicator variable set to one if the firm's auditor is PricewaterhouseCoopers, KPMG or Ernst & Young and zero otherwise. $CLOSE$ is the percentage of closely held shares at the end of the year.

ΔOCF^* is the residuals from **Equation 2**: $\Delta OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$ where ΔOCF is the change in operating cash flows available to ordinary shareholders at financial year end scaled by total assets at financial year end.

OCF^* is the residual from **Equation 3**: $OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 AUD_{it} + \alpha_8 CLOSE_{it} + \varepsilon_{it}$

ACC^* is the residual from **Equation 4**: $ACC_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 AUD_{it} + \alpha_8 CLOSE_{it} + \varepsilon_{it}$ where ACC is annual net income less annual net cash flow from operating activities.

APPENDIX B – White Heteroskedasticity Test

Table 1: Heteroskedasticity Test for Residuals of Price Regression (Pre IFRS)

$MVPS^*_{it} = \beta_0 + \beta_1 BVEPS_{it} + \beta_2 NIPS_{it} + \varepsilon_{it}$				
Heteroskedasticity Test: White				
F-statistic	1.116	Prob. F(3,406)	0.342	
Obs*R-squared	3.355	Prob. Chi-Square(3)	0.340	
Scaled explained SS	45.603	Prob. Chi-Square(3)	0.000	
Test Equation:				
Dependent Variable: WGT_RESID^2				
Method: Least Squares				
Date: 03/20/15 Time: 00:12				
Sample: 1 471				
Included observations: 410				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
$NIPS_WINSORIZED^2 * WGT^2$	3466.061	1273.349	2.722	0.006
$BVPS_WINSORIZED^2 * WGT^2$	-46.987	34.713	-1.353	0.176
WGT^2	0.069	0.028	2.467	0.014
	230.399	121.921	1.889	0.059
R-squared	0.008	Mean dependent var	3366.195	
Adjusted R-squared	0.000	S.D. dependent var	17700.008	
S.E. of regression	17692.50	Akaike info criterion	22.409	
Sum squared resid	1.271	Schwarz criterion	22.448	
Log likelihood	-4589.922	Hannan-Quinn criter.	22.424	
F-statistic	1.116	Durbin-Watson stat	2.265	
Prob(F-statistic)	0.342			

$MVPS^*_{it} = \beta_0 + \beta_1 BVEPS_{it} + \beta_2 NIPS_{it} + \varepsilon_{it}$, where $MVPS^*$ is the residual of a regression where share price (PRICE) in rupees three months after financial year end is first regressed on industry indicator variables; BVEPS is book value of equity per share at financial year end. NIPS is net income per share at financial year end;

Table 2: Heteroskedasticity Test for Residuals of Price Regression (Post IFRS)

$MVPS^*_{it} = \beta_0 + \beta_1 BVEPS_{it} + \beta_2 NIPS_{it} + \varepsilon_{it}$				
Heteroskedasticity Test: White				
F-statistic	2.487	Prob. F(3,310)	0.060	
Obs*R-squared	7.380	Prob. Chi-Square(3)	0.060	
Scaled explained SS	69.184	Prob. Chi-Square(3)	0.000	
Test Equation:				
Dependent Variable: WGT_RESID^2				
Method: Least Squares				
Date: 03/20/15 Time: 20:50				
Sample: 1 314				
Included observations: 314				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1484.135	671.008	2.211	0.0277
NIPS_WINSORIZED^2*WGT^2	-17.229	8.817	-1.954	0.0516
BVPS_WINSORIZED^2*WGT^2	-1.639	1.071	-1.530	0.1269
WGT^2	9538.284	8704.746	1.095	0.2740
R-squared	0.023	Mean dependent var	1692.193	
Adjusted R-squared	0.014	S.D. dependent var	7409.373	
S.E. of regression	7357.118	Akaike info criterion	20.657	
Sum squared resid	1.680	Schwarz criterion	20.705	
Log likelihood	-8239.209	Hannan-Quinn criter.	20.676	
F-statistic	2.487	Durbin-Watson stat	2.118	
Prob(F-statistic)	0.060			

$MVPS^*_{it} = \beta_0 + \beta_1 BVEPS_{it} + \beta_2 NIPS_{it} + \varepsilon_{it}$, where $MVPS^*$ is the residual of a regression where share price (PRICE) in rupees three months after financial year end is first regressed on industry indicator variables; $BVEPS$ is book value of equity per share at financial year end. $NIPS$ is net income per share at financial year end;

Table 3.4: Summary of Accounting Quality Metrics

Accounting Quality Measures	Metrics	Indication of better accounting quality
1 Earning Smoothing		
1.1 Variance of residuals from the ΔNI model	$\Delta NI_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$	Higher Variance
1.2 Variance of residuals from the ΔNI model scaled by the variance of residuals from the ΔOCF model	$\Delta OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$	Higher Variance
1.3 Correlation between the residuals of the OCF and ACC models	$OCF_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$ $ACC_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 CLOSE_{it} + \varepsilon_{it}$	Less Negative Correlation
2 Managing towards earning targets		
2.1 Frequency of small positive net income (SPOS)	$IFRS (0,1)_{it} = \alpha_0 + \alpha_1 SPOS_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 EISSUE_{it} + \alpha_5 LEV_{it} + \alpha_6 DISSUE_{it} + \alpha_7 TURN_{it} + \alpha_8 OCF_{it} + \alpha_9 AUD_{it} + \alpha_{10} CLOSE_{it} + \varepsilon_{it}$	Lower frequency of SPOS
3 Timeliness of loss recognition		
3.1 Frequency of large negative net income (LNEG)	$IFRS (0,1)_{it} = \alpha_0 + \alpha_1 LENG_{it} + \alpha_2 SIZE_{it} + \alpha_3 GROWTH_{it} + \alpha_4 EISSUE_{it} + \alpha_5 LEV_{it} + \alpha_6 DISSUE_{it} + \alpha_7 TURN_{it} + \alpha_8 OCF_{it} + \alpha_9 AUD_{it} + \alpha_{10} CLOSE_{it} + \varepsilon_{it}$	Higher Frequency of LENG
4 Value relevance		
4.1 Share prices on book value of equity and earnings	$P^*_{it} = \alpha_0 + \alpha_1 BVEPS_{it} + \alpha_2 NIPS_{it} + \varepsilon_{it}$	Higher Adjusted R2
4.2 Share prices on book value of equity and earnings	$[NI/P]^* = \alpha_0 + \alpha_1 RETURN_{it} + \varepsilon_{it}$	Higher Adjusted R2

Table 4.5: Correlation coefficients for the continuous variables (Spearman rank-order correlation)

	Δ NI	Δ OCF	ACC	OCF	RETURN	NIPS/P	MVPS	BVPS	NIPS	LEV	GROWTH	EISSUE	DISSUE	TURN	SIZE	CL
Δ NI	1.000															
Δ OCF	0.042	1.000														
ACC	-0.023	-0.534	1.000													
OCF	0.057	0.552	-0.673	1.000												
RETURN	0.022	0.081	-0.061	0.054	1.000											
NIPS/P	0.025	0.012	0.107	0.222	0.139	1.000										
MVPS	-0.009	0.049	0.114	0.037	0.096	0.029	1.000									
BVPS	0.027	-0.032	0.137	-0.044	0.014	0.308	0.701	1.000								
NIPS	0.007	0.023	0.156	0.192	0.014	0.731	-0.533	-0.699	1.000							
LEV	0.004	0.004	-0.142	-0.006	0.020	0.128	-0.170	-0.099	-0.014	1.000						
GROWTH	0.013	0.112	0.058	0.019	0.077	0.042	-0.041	-0.065	-0.008	-0.006	1.000					
EISSUE	-0.068	-0.033	0.182	-0.139	0.038	0.326	0.106	0.141	0.311	0.022	0.230	1.000				
DISSUE	-0.061	-0.137	0.167	-0.200	-0.073	0.033	0.019	0.090	0.075	0.145	0.166	0.080	1.000			
TURN	-0.009	0.049	-0.103	0.208	0.037	0.253	0.092	0.079	0.240	0.495	0.011	0.121	-0.078	1.000		
SIZE	-0.006	0.014	-0.029	0.140	-0.079	0.254	0.058	0.150	0.245	0.260	0.057	0.169	0.179	0.061	1.000	
CLOSE	0.031	-0.026	-0.021	-0.012	0.032	-0.029	0.060	0.032	0.028	-0.116	0.002	0.002	0.003	-0.121	0.021	1

This table presents Spearman's rank correlations between the continuous variables for the 157 sample firms over the sample period. The total number of firm year observations is 785. Δ NI is the change in net income scaled by total assets at financial year-end. Δ OCF is change in annual net cash flow from operating activities scaled by total assets at financial year-end. ACC is annual net income less annual cash flow from operating activities, scaled by end of year total assets. OCF is annual net cash flow from operating activities scaled by end of year total assets. RETURN natural logarithm of the ratio of stock price three months after fiscal year end to stock price nine months before fiscal year end, adjusted for dividends. NIPS/P is net income per ordinary share at financial year-end, scaled by beginning of year share price. MVPS is share price in rupees three months after financial year-end. BVPS is book value of equity in rupees per ordinary share at financial year-end. NIPS is net income available to ordinary shareholders at financial year end per ordinary share. LEV is total liabilities divided by book value of equity at financial year-end. GROWTH is annual percentage change in sales. EISSUE is annual percentage change in book value of equity. DISSUE is annual percentage change in total liabilities. TURN is annual sales divided by end of year total assets. SIZE is Natural logarithm of book value of total assets at the end of the financial year. CLOSE is percentage of closely held voting shares at the year-end.