AUDIT QUALITY AND ITS IMPACT ON THE DEGREE OF EARNINGS MANAGEMENT: EVIDENCE FROM SRI LANKA

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AUTHENTICITY STATEMENT

I certify that the attached material is my original work. No other person's work or ideas have been used without acknowledgement. Except where I have clearly stated that I have used some of this material elsewhere, I have not presented it for examination / assessment in any other course or unit at this or any other institution.

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CONFIRMATION STATEMENT

"I certify that the above statement made by the candidate is true and that this project is suitable for submission to the Department of Accounting, University of Sri Jayewardenepura for the purpose of evaluation"

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ABSTRACT

Purpose - This study aims to identify the impact of audit quality on earnings management in public listed entities in Sri Lanka. The study focuses on two objectives; examine whether the scope of audit quality has evolved over time and identify the relationship between the audit quality and the degree of earnings management.

Design/Methodology/approach – Objective One of the study was realised through an extensive literature analysis reviewing studies from 1981 to 2014 along with reports published by key institutions. In terms of the second objective, audit quality was measured in the study using two audit proxies (audit firm size and audit independence). The degree of earnings management was measured using three different perspectives; Discretionary accruals, Small positive earnings and Earnings smoothing.

The study selected 141 non-financial March ending companies using a non-random sampling technique. The main source of data was the audited annual reports of the sample companies, issued during 2013/14 to 2015/16. In analysing the collected data, techniques such as descriptive statistics, correlation analysis, multivariate and univariate analysis were used.

Findings – The results of the study revealed that the scope of audit quality has expanded over time from being unidimensional to a comprehensive multidimensional view and such expansion has been heavily influenced by the events of scandal, corporate collapses and changing regulatory and accounting environment. The study finds an insignificant association between audit quality and the degree of earnings management in Sri Lankan listed firms. Furthermore, the study reveals ineffectiveness in the oversight mechanism through the insignificant association reported between earnings management and the variables; audit committee independence, board size, board independence and CEO duality. Hence, the study concludes that audit quality exerts no significant impact on the degree of earnings management. This could be due to the prevalence of ineffective monitoring mechanism as it does not motivate auditors to improve audit.

Research limitations/implications – The study is subject to sample based limitations such as the scope of the study being limited to listed companies in Sri Lanka, use of non-random sampling technique and time period being restricted to 3 years (2013/14 to 2015/16). Further, the study is subject to variable based limitations due to the use of proxies as the concepts; audit quality and earnings management, are unobservable.

A different relationship between audit quality and earnings management may have been reported if the research had adopted a longer research period or used different set of proxies to gauge the concepts.

Practical implications – The findings of the study will be important for regulators and policy makers to better regulate the quality of audit services and take necessary measures to mitigate the practices of earnings management. Moreover, it will be particularly useful to investors when appointing/reappointing auditors and be mindful about financial reporting quality when making effective investment decisions.

Originality/value – This study contributes to extant literature by adding new knowledge by examining the expansion in the scope of audit quality over time and identifying the influence of audit quality on the degree of earnings management in public listed companies in a developing country - Sri Lanka.

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Earnings of a company is the residual income, which reflects the underlying financial performance of that entity and is the most significant variable in the financial statements (Levitt 1989). Even though accounting information such as earnings are considered important at present, Deegan (2014) points out that during the mid-1960s the usefulness of accounting information was highly questioned. Earnings calculated using historical cost based accounting was heavily opposed and radical changes to accounting were prescribed by several theorists and practitioners in order to make financial statement information more relevant for decision making.

In such period of time, the work of Ball and Brown (1968) and Beaver (1968) were influential as the studies revealed evidence on the usefulness and relevance of accounting information in investor decision making. Ball and Brown (1968) by examining the stock price fluctuations to unexpected earnings announcements, highlighted that investors use reported earnings to guide their forecasts and decisions as it provides informational value. Similarly, Beaver (1968) based on the price – volume reaction of 143 samples of annual earnings announcements, concluded that investors' emphasize and react heavily on the reported earnings.

Both of the above-stated papers emphasized that accounting information in the form of reported earnings, acts as the bedrock of investor decision making. Okolie (2014) also reiterates that earnings act as a mechanism to signal and direct resource allocation in capital markets as the theoretical value of equity is the present value of the entity's future earnings. Therefore reported earnings of a company not only communicate information regarding corporate performance, but is also the base on which investment and allocation decisions are made. In making such decisions, the underlying notion is that the earnings reported are reliable. In the commentary published by the U.S. Treasury Secretary, Paulson (2007) highlights that smooth functioning of capital markets depend on trust and that trust is founded on the presumption that financial information disclosed reflect the economic reality.

Such investor trust is put in jeopardy when earnings are managed to create a falsified picture than depicting the reality. Weil (2009) defines earnings management as the manipulation of reported income through accounting practices and decisions. Accounting is an evolving subject which adapts to changing business structures and innovative transactions (Levitt 1989). This feature of adaptability stems from the flexibility allowed by the accounting standards to exercise professional judgment. Accounting standards as a regulating mechanism exert somewhat limited control on accountant's judgment. However, Alves (2013, p. 144) stresses that this inherent pliancy is misused by managers to present falsified information. Managers exercise their professional judgment on opportunistic perspective rather than efficiency, to create a contrived picture of profitability.

Cohen, Dey and Lys (2008) highlighted, that the behaviour of earnings management was increasingly growing from 1987 till the enactment of Sarbanes-Oxley (SOX) Act in 2002. The severity of this agency problem heightened during the period between 1999 and 2002 when corporate scandals such as Enron, WorldCom, and Tyco occurred. Arens, Elder and Beasley (2010) describe the fall of Enron as one of the significant corporate collapses in American history. The fall was witnessed after the company recorded $618Mn quarterly loss, which after investigations was revealed due to the company claiming nearly $600Mn of falsified earnings from 1997. Thomas (2002) identifies the 360-degree employee review which forced company officials to record earnings to survive in the intense performance-driven culture of Enron, as the root cause for this fall. This along with the WorldCom scandal led to the pass of Sarbanes-Oxley (SOX) Act in 2002.

The implementation of SOX Act was an important milestone in the global corporate governance practices. However the study by Cohen, Dey and Lys (2008), which examined the impact of SOX Act on earnings management, revealed that though a significant decline was evident in accrual-based earnings management after the passage of SOX Act, real earnings management practices had begun to increase significantly. The demise of the 164 years old company, Lehman Brothers in the post-SOX Act period can be described as a 'seminal event' in the 2008 global financial crisis. Lehman Brothers, which in 2007 was awarded the Most Admired Securities Firm by the Fortune magazine, was filed for bankruptcy protection in 2008

due to alleged manipulation of sales and assets through the use of re-purchase agreements (Wiggins, Piontek & Metrick 2014).

A prominent scandal outside US is the Satyam scandal of 2009, recorded in India, where the management of the company produced more than 6000 fictitious invoices inflating revenue over $1Billion. The chairman claimed that nearly 50.4 Billion rupees out of 53.6 Billion rupees of assets listed on the balance sheet were non-existent (Arens, Elder & Beasley 2010). These scandals imply that earnings management has become a common occurrence across time in both developed and developing nations and has severely hurt investors' reliance on audited financial statements.

1.2 Research Issue of the Study

Auditing is a monitoring mechanism implemented to overcome the agency problem and ensure the pliancy offered through accounting standards is not used opportunistically. A strong auditing practice is necessary to support the well-functioning of the reporting system (Paulson 2007). But the collapse of companies as mentioned earlier, which recorded excellent earnings growth in their audited financial statements created doubts over the quality of audit performed.

The study conducted by Carcello and Palmrose (1994) reflected that 70% of the recorded bankruptcies were preceded by a clean audit opinion. Enron scandal which led to the fall of Arthur Anderson is a popular black mark which jeopardized public's trust on audit quality. The fall of Arthur Anderson on the grounds of obstruction of justice in the Enron Scandal, lawsuit against Ernst & Young over Lehman brothers audit by the company's investors (Wiggins, Piontek & Metrik 2014) and failure of the auditors of Satyam to verify existence of assets and occurrence of revenue (Arens, Elder & Beasley 2010) created concerns on the role, responsibility and quality of audit and its role in restraining earnings management.

Most recently, PCAOB (2016) announced the largest ever civil penalty charge of $8 million on Deloitte Brazil on the grounds of alterations of documents to conceal audit violations and the issue of audit reports which are materially false for its Brazilian airline client. Deloitte, one of the big – four firms, has admitted its violations and lack of cooperation to the investigations of PCAOB. Furthermore,

Financial reporting Council (FRC) instigated an investigation over KPMG, another big four firm, over its alleged collusion with its client, Rolls-Royce Limited (ICAEW 2017). Over a 10 year period, Rolls Royce had bribed officials in key markets to secure lucrative contracts and has managed to conceal it from its books of accounts. FRC commenced its enquiry to identify whether KPMG had recognised the illegal payments and has followed the necessary rules in conducting its audit.

External auditors and audit committees are criticised publicly as such scandals proved audited financial statements to be misrepresented. The quality of service offered by the external auditors and the proper functioning of the audit committee has been highly debated by many stakeholders due to such occurrences. Several studies were conducted in order to identify, whether there is an association between audit quality and earnings management. However, it failed to report consistent results (Inaam & Khamoussi 2016). Moreover, Alzoubi (2016) highlights that extant studies examining the relationship between audit quality and earnings management, have been mostly based on developed economies, while studies based on developing economies remain scarce.

As a developing nation, Sri Lanka has also witnessed several such scandals in the past. The fall of Pramuka Bank, Touchwood Investments and Golden Key PLC were, some prominent cases reported. Auditors of such companies were publicly accused, sued and imprisoned (with reference to the auditors of Golden Key) for failing to act ethically and with due care. In this context, this study attempts to address the fundamental issue of whether audit quality influences the practices of earnings management using evidence from Sri Lankan listed firms. Thus, the central research question of the study is to assess "*whether audit quality has an impact on the degree of earnings management in public listed entities in Sri Lanka?*'.

1.3 Objectives of the Study

The broad objective of this study is to examine the impact of audit quality on the degree of earnings management in quoted public companies in Sri Lanka. The study examines the concept of audit quality in depth and the influence of two main proxies of audit quality (i.e. audit firm size and audit independence) on the degree of earnings

management. Accordingly, the specific research objectives of the study are as follows:

1. To examine whether the scope of audit quality has evolved over time.

Audit quality is a multi-faceted concept. Extant literature relating to this only focuses on defining, measuring the concept using proxies or reviewing prior work relating to audit quality to better comprehend the concept. There is limited work conducted to study the evolution and examine whether there has been indeed an expansion in the scope of the concept over time. Accordingly, the first objective of the study will be to examine the concept in detail and assess whether the scope of audit quality has evolved over time.

2. To identify the relationship between audit quality (measured using audit firm size and audit independence) and the degree of earnings management practices in listed companies in Sri Lanka.

The concept of audit quality is required to be operationalized using proxies, in order to be measurable. Each of the proxies of audit quality reacts differently to induce or restrict earnings management. This impact that each proxy has on the degree of earnings management has been presented in the following chapter (Chapter Two), where the mixed results generated by different studies have been accentuated. Mixed results could be possibly due to the different economic contexts within which the research was conducted and such results cannot be generalized ignoring the contextual characteristics of Sri Lanka. Hence, the second objective of the study will be to empirically examine the relationship between each of the audit proxies and the degree of earnings management in Sri Lanka.

1.4 Scope of the Study

The scope of the study is centered on external audit and its impact on accrual-based earnings management. Even though there are several types of audit, the focus of this study was limited to external audit due to easier and reliable access to information.

Furthermore, the latest framework for audit quality put forward by International Auditing and Assurance Standards Board (IAASB) stipulates several broad drivers of

quality which in totality provides a clear view of the concept. However, this study focuses only on audit firm size and audit independence as proxies to measure audit quality as it was unable to incorporate additional audit quality proxies due to limited disclosure in annual reports.

1.5 Research Methodology

In examining the evolution of the scope of audit quality, the study undertakes an extensive literature analysis. The study reviews literature from 1981 to 2014 along with reports published by key institutions such as International Auditing and Assurance Standards Board (IAASB) and Public Company Accounting Oversight Board (PCAOB) relating to audit quality to achieve the said objective.

In studying the relationship between audit quality and the degree of earnings management, audit quality is measured using two audit proxies (audit firm size and audit independence), while the degree of earnings management is measured using Discretionary accruals through modified Jones model. Further, additional two variables are used to measure earnings management; small positive earnings and earnings smoothing to ensure the validity of results. The study limits its sample to 141 non-financial companies which operate with a financial year end of March, mainly to avoid differences in reporting and seasonal variations in earnings. Data needed for the research is collected through annual reports issued within the research period 2013/14 to 2015/16 and analysed using descriptive statistics, correlation analysis, multivariate and univariate analysis.

1.6 Significance of the Study

This study aims to identify the impact of audit quality on earnings management. Though studies have been conducted addressing this research issue in various contextual backgrounds, the extant literature have revealed mixed results in terms of the said association. Further, limited published studies have been conducted in the area of audit quality and earnings management in Sri Lanka. To the researcher's knowledge, there has been no published study done to examine evolution of the concept of audit quality or in identifying the relationship between audit quality and

earnings management in Sri Lanka. Therefore firstly, the theoretical contribution of the study is that it contributes to the extant knowledge by bridging the above-mentioned gap as it provides a wider perspective of the concept and analyses the relationship between audit quality and degree of earnings management in public listed companies in Sri Lanka.

The knowledge on audit quality and awareness of the factors influencing the level of audit quality both at a micro and macro level will be particularly useful to investors when appointing/reappointing auditors. This study will enable the investors to examine the existence of earnings management practices in Sri Lanka and to be mindful about financial reporting quality when investing in companies. Thereby to make more effective investment decisions.

Moreover, knowledge on broader factors influencing audit quality and the role of audit quality in constraining earnings management practices is necessary to both audit firms and audit committees of public listed companies. This study will enable them to understand the importance of their role in ensuring the smooth functioning of the capital market of the country and thereby, make them more accountable to their duties and service quality.

Additionally, knowledge broader influences to audit quality and the significance of audit quality in earnings management is important for regulators and policy makers such as Security Exchange Commission (SEC), Professional accounting bodies such as Institute of Chartered Accountants of Sri Lanka (ICASL), Sri Lanka Accounting and Auditing Standards Monitoring Board (SLAASMB) etc. to better regulate the quality of audit services and take necessary measures to mitigate the practices of earnings management.

1.7 Structure of Chapters

The main body of the research report comprises of five chapters. Chapter One focuses on the background study, research problem, research questions, purpose and the objective of the study and the significance. Chapter Two elaborates the extant literature on audit quality, expansion of its scope over time, the concept of earnings management and the development of hypotheses.

Chapter Three presents the conceptualisation and operationalization of the concepts along with the research design, sampling, and data analysis techniques of the study. Chapter Four includes findings and the discussion of the study, while the final chapter, Chapter Five presents the summary and conclusions, along with directions for future research.

1.8 Chapter Summary

This chapter provides the foundation to the study. The chapter highlights the background and research issue underlying the study. This study is important both on a theoretical and practical perspectives. The broad objective of this research is to examine the relationship between audit quality and the degree of earnings management in quoted public companies in Sri Lanka. In achieving this, the study intends to fulfil two specific objectives; to assess whether the scope of audit quality has evolved over time and to identify the relationship between audit quality and earnings management. The scope, methodology adopted and structure of the chapters are also elaborated in this chapter.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This chapter discusses and reviews the extant literature relevant to the current study and is broadly divided into three sections. The first section discusses about the concept of earnings management, reasons for managing earnings and measurement models. The second section analyses the concept of audit quality and its evolution in scope over time. Finally, literature relevant to the conceptual and empirical relationship between audit quality and earnings management is discussed.

2.2. Concept of Earnings Management

Managed earnings erode both the quality of earnings and financial reporting and reflect the desires of the management, instead of the true consequences of the management's decisions (Levitt 1989). Many of the prior studies (Alzoubi 2016; Dechow & Skinner 2000; Okolie 2014) use the definition put forward by Schipper (1986), which defines earnings management as a 'purposeful intervention in the external financial reporting process with the intent of obtaining some private gain'. Healy and Wahlen (1999) define earnings management as a concept which 'occurs when the managers use judgement in financial reporting and in structuring transactions, to alter financial reports'. This definition by Healy and Wahlen highlights the broader two categories of earnings management; real earnings management and accrual earnings management.

Real earnings management involves with manipulating the timing of operating, investing and financing activities, which impact cash flow directly (Inaam & Khamoussi 2016). Accruals earnings management, on the other hand, has no direct impact on cash flow (Healy & Wahlen 1999). It is where the managers use judgements and methods involved in financial reporting to manipulate financial reports with no direct impact on the cash flow. The degree of flexibility offered by the financial reporting framework allows managers to use their own judgement, which in turn creates an opportunity for earnings to be managed. Healy and Wahlen further highlight that this manipulation is commonly done through accounting judgements

such as useful lives, asset impairment, scrap values and obligation of pension benefits or through accounting methods such as depreciation policy or inventory valuation methods. Fernando and Kelum (2011, p. 66) stress that the listed companies in Sri Lanka commonly use depreciation charge and provision for income tax manage their earnings.

When examining the motives which induce managers to manage earnings, Levitt (1989) highlights that an environment conducive for earnings management is triggered by the whole financial community. This claim is supported by stressing that one of the motives which drive the management to manipulate earnings, is to reach the earning expectation put forward by capital market analysts' in order to improve market capitalization and value of the stock. Further, pressure to influence contractual outcomes that are impacted by the reported earnings such as compensation contracts and debt covenants is also a strong incentive to manage earnings.

Measurement of accrual earnings management requires total accruals to be classified as non-discretionary and discretionary accruals. Non- discretionary accruals are accruals arising due to normal business activities of the company whereas, discretionary accruals arise due to management's manipulative efforts. Higher the discretionary accruals signal companies' involvement in earnings management (Alzoubi 2016). There are five models used in measuring discretionary accruals; Healey model, DeAngelo model, Jones model, Modified Jones model and Industry model. Among them, modified Jones model is considered to be a powerful technique in measuring earnings management than other models (Dechow, Sloan & Sweeney 1995).

In limiting the practice of earnings management, researchers have attempted to analyse the impact the audit on earnings management. However, Dechow, Ge and Schrand (2010) highlights that there is lack of empirical evidence to support the impact as most audit related variables are unobservable and data to measure using proxies is limited.

2.3. The Concept of Audit Quality and Evolution in its scope

Auditing is generally related to agency theory and is highlighted as one of the main ways to reduce agency costs. Arrunada (2000) states that auditing is a tool to improve the informational value of the financial statements as it provides a reasonable assurance by expressing an opinion over true and fairness of the financial statements.

Assessing the quality of audit has been rather a difficult task as it is unobservable and multifaceted. Many researchers and institutions have attempted to define and measure audit quality. However, there is neither commonly accepted definition nor a range of indicators to describe or assess audit quality.

This study analyses the evolution of audit quality under four phases. Such phases are based on the focus of the techniques used in explaining the concept over time; Definitions, proxies and frameworks. At the initial phase, the definitions and proxies used to define audit quality were highly auditor centric. The concept evolved to focus on the output of the audit process at the second phase. Subsequently at the third phase, the use of narrow and close-ended definitions subsided and the focus of proxies was improved to include more complex and earnings related surrogates. A notable development during this phase was the introduction of an audit quality framework by Financial Reporting Council (FRC). Consequently in the final phase, the use of a framework approach to explain the concept of audit quality gained popularity among academics and institutional bodies. In the following section, each phase is discussed in detail and supported through prior literature.

2.3.1. Auditor centric definitions and indicators

Most studies conducted on audit quality begin with the commonly cited definition of De Angelo (1981) on audit quality. The stated author defines quality of the audit service as the 'market assessed' total probability that an auditor can discover and report a breach. This definition highlights two essential components of audit quality; detecting and reporting.

The definition stipulates that if the probability of such a discovery as well as reporting it to the client is high, it ensures high level of audit quality. The probability of discovering a breach is highly dependent on the auditing process and procedures

adopted by the auditor. Similarly, probability of reporting such a breach is dependent on the auditor's independence from that particular client (DeAngelo 1981). Hence, users of the financial statements are likely to incur significant costs to assess the audit quality as they have little or even no information about the actual procedures used or about the incentives involved in the engagement contract that influences independence.

Further, this definition also stresses that audit quality depends on the eye of the beholder. Audit quality is 'market assessed' as different users perceive it in different viewpoints. Users of the audited financial statement would gauge audit quality to the extent to which it is free of material misstatements, whereas the auditor conducting the audit would measure it based on the audit methodology used (Knechel et al. 2013). This identified as one of the weaknesses of the definition.

Additionally Knechel et al. (2013) argue that such perceptions by the market can be erroneous and narrow in focus. Hence they are 'correct only to an extent'. Al-khaddash, Nawas and Ramadan (2013), also criticise this definition emphasizing on its lack of comprehensiveness, by only addressing external financial audits and failing to cover other types of audits and auditors.

Nevertheless, this definition was widely accepted possibly due to the prevalent audit environment at such time. Many put forward their definitions which were much in similar to DeAngelo. For example, Palmrose (1988) states a similar description where audit quality is associated with absence of material misstatements or omissions in the financial statements. Further, Davidson and Neu (1993) define audit quality as the auditors' ability to discover and bring to light material manipulations and misstatements in reported earnings along with Bradshaw, Richardson and Sloan (2001) defining audit quality as the willingness of the auditor to report any material manipulation or misstatement which threaten going concern of the client.

It is clear that all these definitions describe audit quality as twofold; whether the auditor can or cannot detect the misstatement. It focuses mainly on the competency, technicality and independence of the auditor. As Manita and Elommal (2010) highlight, audit quality was mainly described in terms of auditor quality, with auditor being the core.

Proxies or indicators of audit quality were also in line with the definitions where the focus was mainly auditor-centric. Most commonly used proxies were auditor size and auditor independence (Becker et al. 1998; De Angelo 1981; Palmrose 1988). Auditor size was captured through the type of auditor based on the quality differential between big audit firms and non-big audit firms. Audit fee was used as a proxy to gauge audit independence based on the argument of economic bond and as a measure of audit effort (Higher effort higher fee).

It is evident that the proxies are highly input based. DeFond and Zhang (2014) highlight that input based proxies represent the observable aspect of audit quality as seen by clients. Furthermore, quality is measured at a firm's level rather than being engagement specific especially with reference to the auditor type proxy. Auditor size when measured as a dichotomous variable of big or non-big firm, what is considered is the global level presence and reputation and this metric ignores the quality differential between offices of big audit firms in different countries. Also in terms of audit fees, it is difficult to gauge any quality improvements. However despite their drawbacks, they are yet used in studies mainly because information relating to them is freely available and easily accessible.

2.3.2. Shift to output-based indicators

As Li and Lin (2005) highlights the role of auditing and auditors were highly scrutinized due to notable earnings management scandals such as Enron and WorldCom. The auditor centric nature began to subside due to the loss of trust on auditors and both definitions and proxies reoriented towards compliance to regulations and standards, ethical practice and were highly outcome driven.

Government Accountability Office (2003) describes high audit quality as audit which is performed according to generally accepted auditing standards (GAAS) that provide a reasonable assurance stating the audited financial statements and its related disclosures are presented according to generally accepted accounting principles (GAAP) and are not subject to materially misstatements due to errors or frauds. This highlights the rules-based approach adopted by the US subsequent to the scandals and corporate failures.

Furthermore, in the study by Schauer (2002, p.78) audit quality was defined as one which decreases the probability of financial statements being falsified and more accurately reflects the economic reality of the audited entity. Similarly, Balsam, Krishnan, and Yang (2003) described the concept as the ability to restrain the extent of earnings management in managers.

In the same way as definitions, proxies too were reoriented output driven indicators (DeFond & Zhang 2014) and were based on the outcomes of the audit or market based rather than being auditor driven. Proxies were extended from being focused on audit size and fee, to encompass indicators such as audit opinion (Carey & Simnett 2006; Geiger & Raghunandan 2002), auditor industry specialization (Carcello & Nagy 2004), audit firm alumni working for clients (Menon & Williams 2004) presence of an audit committee and independence of the audit committee (Carcello & Neal 2000; Klein 2002).

Earnings quality indicators such as discretionary accruals (Balsam, Krishnan & Yang 2003; Carey & Simnett 2006), Earnings response coefficient (Balsam, Krishnan & Yang 2003) and meeting and beating earnings benchmarks (Carey & Simnett 2006) were also incorporated in studies as proxies for audit quality. However, they were not widely used in studies.

2.3.3. Wider use of proxies and introduction to a framework approach

Subsequently the use of definitions to describe audit quality subsided. (Knechel et al. 2013) in their review of reviewed literature, equalled the attempt made by academics and others to provide one definition of audit quality, to the act of blind men trying to identify an elephant. The descriptions are correct only to an extent as there are diverse viewpoints to be considered and most fail to see the big picture. Many researchers and institutions began to accept the difficulty in developing one definition to describe audit quality which is unobservable and multifaceted (Financial Reporting Council 2008; Francis 2004). Studies focused on developing proxies both output based such as audit opinion (Breesch & Branson 2009) and input based which can measure audit quality comprehensively and in an engagement specific manner.

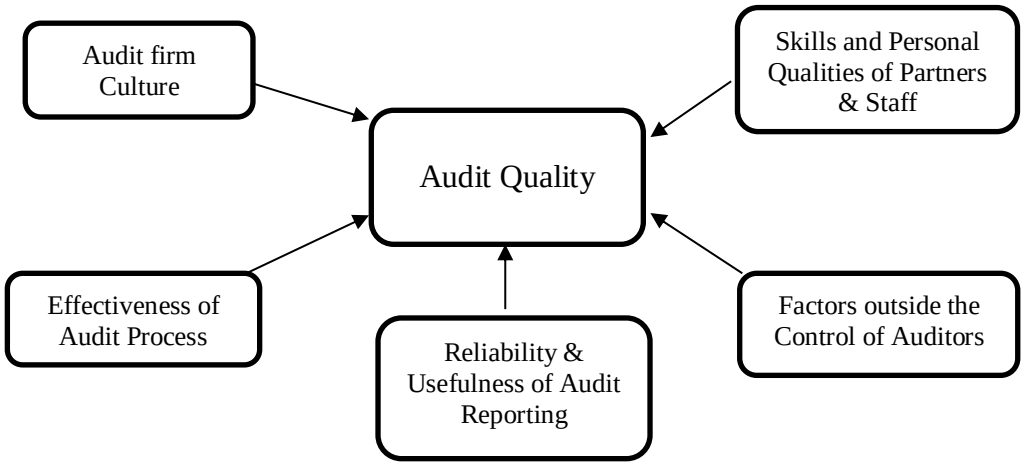
Input proxies such as auditor skills and expertise (Behn, Choi & Rang 2008; Breesch & Branson 2009; Li et al. 2009) and non-audit fees (Chung & Kallapur 2003; Li &

Lin 2005; Lin, Li & Yang 2006) which are more engagement specific were widely incorporated in studies as a proxy for audit quality. Additionally, earnings based proxies notably discretionary accruals (Chen, Lin & Lin 2008; Francis & Yu 2009; Hoitash, Markelevich & Barragato 2007) began to be widely used.

One of the notable improvements in studies relating to audit quality is the introduction of a framework approach to better explain the concept. In 2008, Financial Reporting Council (FRC) of United Kingdom made an unprecedented move to codify audit quality by issuing an "Audit quality framework". The use of a framework to explain the issues affecting audit quality was widely accepted as it provides a way to better describe and comprehend the diverse viewpoints of audit quality.

The objective of such a framework was to support communication between auditors, audit committees, investors, and other related stakeholders. The framework identifies following five drivers of audit quality as shown in Figure 2.1**.**

Figure 2.1 : Audit quality framework by FRC (2008)



Source: Knechel et al. (2013, p.389)

FRC issued a discussion paper titled "Promoting audit quality" in November of 2006. Extensive consultation was received on the latter from audit firms, professional bodies, investors and the general public and based on it, the final framework was codified and issued.

When analysing the broad drivers, it is clear that the framework is not comprehensive enough to address the concept of audit quality. Further, many of the stakeholders believed that the framework was inadequate and insufficient to address audit quality issues (FRC 2006).

The model was initially limited to four drivers, concentrating on forces that exert a direct influence on audit quality. However, as a result of the open consultation, a fifth driver of 'factors outside the control of auditor' was incorporated into the framework, addressing the broader influences to audit quality such as corporate governance, audit committee, shareholder and management support, and audit regulatory environment. However, the blanket approach by FRC to group all external interference under one specific term is considered inadequate and undermines the importance of such forces towards improving audit quality.

Furthermore, Holm and Zaman (2012) noted that stakeholder response to the discussion paper proved that the framework has neglected several important elements mainly with the intention of not posing any commercial threat to audit firms. Auditor expertise (highlighting the issue of most of the client facing work is done by staff who have less than three-year experience), Professionalism and threats to it, Commercialization and Transparency were elements that were noted as neglected by Holm and Zaman (2012) based on stakeholder response to the discussion paper.

They further stated that drivers identified in the framework are not based on a systematic study or analysis and view the framework by FRC as more an act of legitimization in order to win back trust on the audit which was eroded due to corporate scandals. However, this initial step was an important milestone in existing literature as it diverted attention to see the holistic picture relating to audit quality.

2.3.4. Wider use of frameworks

Subsequently, audit quality evolves to a phase where it is matched against the quality of information and earnings along with assurance and accountability to the public. This widening of scope is in line with the expectations of environment which requires an audit to move away from its traditional boundaries and be value relevant.

Definitions were not as specific and restrictive as prior literature. Most were focused on the results and deliverables of audit and outline the role of audit quality, elements the concept must address and the need for higher audit quality. For example, Liu, Wang and Wu (2011, p. 621) define the role of audit quality in much broader manner, where the purpose is to serve the public interest by increasing manager accountability and improve the confidence and trust in financial reporting.

Clinch, Stokes, and Zhu (2011) in their study describe audit quality as a component influencing the quality of accounting information disclosed, where higher the audit quality is needed to lower information asymmetry. Similarly, de las Heras, Canibano and Moreira (2012) identifies the need of higher audit quality to increase the probability of discovering audit failure, disciplining auditors and encourage auditors to constrain opportunistic behaviour from the management.

Earnings quality proxies and market-based indicators such as forecast accuracy and cost of capital (Lawrence, Minutti-Meza & Zhang 2011) became widely popular. Discretionary accruals has become a much widely used proxy to gauge audit quality (de las Heras, Canibano & Moreira 2012; Koh, Rajgopal & Srinivasan 2013; Lim, Ding & Charoenwong 2013; Minutti-Meza 2013) along with earnings response coefficient (Koh, Rajgopal & Srinivasan 2013; Lim, Ding & Charoenwong 2013) and meet or beat earnings benchmarks (Koh, Rajgopal & Srinivasan 2013; Minutti-Meza 2013) getting more attention.

In terms of audit related proxies, the input and output based surrogates used earlier continued to be adopted along with new indicators which focused on the audit process (Manita & Elommal 2010) and disciplinary sanctions (Sundgren & Svanstrom 2011)

The main highlight is the extensive use of frameworks to explain the concept which has resulted in an expansion in the scope of audit quality making it more comprehensive and holistic. Subsequent to the issue of FRC's framework, Francis (2011) made the initial step to develop a framework identifying the following levels of analysis involved in understanding audit quality.

The framework clearly recognises the input, process, and outcome along with the firm, industry and institutional level influences. The model mentions that in addition to the unaudited client financial statements, it identifies two inputs to the audit

process; audit testing procedures and engagement team personnel. At the audit process level, quality is affected by the choice and execution of audit tests and by the collection and examination of audit evidence. It recognises that audit firm plays a crucial part as it recruits and trains the engagement team who is directly involved in the audit process, develop firm-specific testing methodologies and also issue the audit report under the firm name.

Next, at the level of audit industry and market, Francis (2011) highlights that economic behaviour and markets are impacted by the structure of the industry which is the aggregation of individual audit firms. Then at the subsequent level, the framework includes the institutions which influence both auditors and audit firms through regulations and standards. Through the final level of analysis, the framework addresses the consequences of observable audit outcomes which is the audit report and the audited financial statements of the clients.

Figure 2.2: Framework by Francis (2011)

Units of Analysis in Audit Research

Audit Inputs
- Audit tests
- Engagement team personnel

Audit Processes
- Implementation of audit tests by engagement team personnel

Accounting Firms
- Engagement teams work in accounting firms
- Accounting firms hire, train, and compensate auditors, and develop audit guidance (testing procedures)
- Audit reports are issued in name of accounting firms

Audit Industry and Audit Markets
- Accounting firms constitute an industry
- Industry structure affects markets and economic behavior

Institutions
- Institutions affect auditing and incentives for quality, e.g., State Boards of Accountancy, the AICPA, FASB, SEC, and PCAOB, as well as the broader legal system

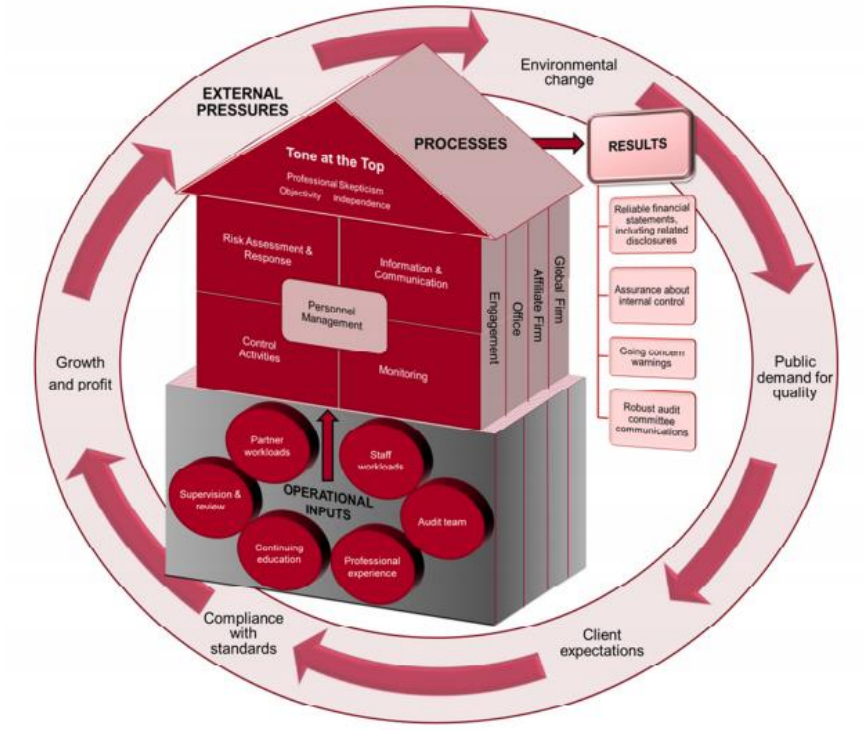
Economic Consequences of Audit Outcomes
- Audit outcomes affect clients and users of audited accounting information

Source: Francis (2011, p.126)

Contrary to the FRC (2008) framework, this framework recognizes the elements which impact the level of audit quality in a more structured and systematic manner. It starts from the elements which cause a direct influence and move on to elements which are much broader causing an indirect influence. The model clearly recognizes wider influences rather than the blanket approach used by FRC to group all as one driver.

PCAOB issued their tentative "Audit Quality Framework" in 2013, becoming the first to graphically depict all elements influencing audit quality unlike the approach by Francis (2011) and FRC (2008). It follows the same structure of input-process-output approach as Francis (2011) and the framework groups all external influences under one driver, similar to FRC (2008).

Figure 2.3: Audit Quality Framework by PCAOB



Source: PCAOB (2013, p.6)

This framework was accompanied with a clear definition of audit quality and a comprehensive set of quality indicators. PCAOB (2013) defines audit quality as meeting the needs of investors. It further goes on to recognize that the need of

investors as independent and reliable audits and strong communications with the audit committee on aspects such as financial statements and related disclosures, assurance on internal controls and warnings ongoing concern issues. The key shortcoming of this definition is that PCAOB focuses primarily on investor needs, ignoring an audit's duty of public interest. This could be due to the rules based and individualistic culture of the US.

The definition focused on results and deliverable of audit similar to the other definitions stated earlier. Additionally, by including audit committee into the definition the model explicitly acknowledges the importance of the committee in ensuring higher audit quality.

The framework clearly identifies several audit quality indicators for each recognized element; operational inputs, processes, results, tone at the top and external pressures. To match with the rules-based approach of the US, PCAOB has issued a clearly defined framework with adequate guidance on application, measurement audit quality indicators along with clear meaning for each element and indicator. This makes the model much easier to follow and adopt.

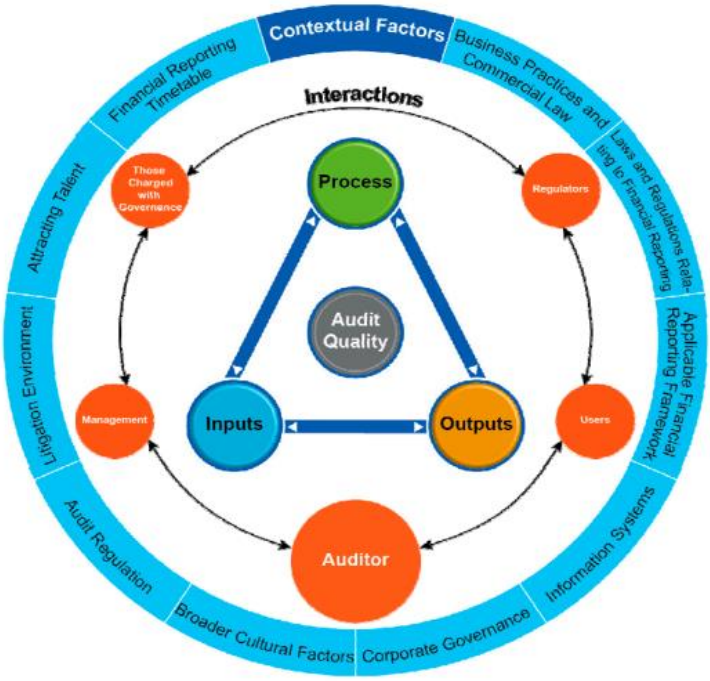
IAASB (2014) was the recently issued and a much broader in nature model, which captures several influences to audit quality. It clearly highlights the 'micro' environment of audit quality consisting of input, process and output factors which directly influence (financial) audit quality as engagement, firm and national level. It also addresses the broader environment consisting of interactions between stakeholders and contextual factors which exert an indirect influence on audit quality.

This framework also addresses the same elements (such as input, process, output interactions and contextual factors) as Francis (2011) in examining the influences to audit quality. However, IAASB's framework evaluates these elements with much in depth analysis as opposed to Francis (2011) and PCAOB (2013).

Further, the framework by Francis (2011) mainly addresses observable aspects of the elements. But IAASB's framework addresses both observable and observable aspects of the elements and thus builds a holistic model to understand audit quality. For example in terms of inputs, Francis (2011) limits the focus to the engagement team and audit tests including clients unaudited financial statements. But IAASB further

includes values and ethics of the team as an input. In terms of audit outcomes, Francis (2011) addresses the audit report and audited financial statements whereas IAASB (2014) considers output from auditor, audit firm (such as Transparency reports), entity and regulators (audit inspection results) which are both formally prepared and presented as well as those which arise during the audit process but are not observable by outside stakeholders.

Figure 2.4: Framework on audit quality by IAASB



Source: *IAASB* (2014)

Through this framework, IAASB has expanded its focus on audit quality and undertakes initiatives to improve the quality of each element in the audit process. One such initiative to improve the quality of audit output is the new ISA 701. This requires the auditors of listed companies to disclose Key Audit Matters (KAM) in the audit report. Such disclosure provides more insight to the quality of audit rather than stakeholders trying to assess quality through a standardized audit report. IAASB (2014) also reiterates the need for KAM as the current reporting style does not provide insights into the audit process.

However, IAASB's framework for audit quality is highly qualitative in nature as opposed to PCAOB (2013) and limits the ability for an external stakeholder to independently assess audit quality as it requires an extensive amount of internal information.

The above review highlights how the concept of audit quality gradually developed. It reveals that three techniques were used to explain the concept of time; Definitions, proxies, and frameworks. A clear scope expansion is evident from the above use of techniques itself, where the emphasis has moved from a unidimensional view to a multidimensional framework construct inclusive of wider influences.

Additionally, each technique has improved due to environmental impact. Definitions initially were auditor competence and technicality driven. Subsequently, they were addressed the audit quality through the quality of its outcome. Proxies too evolved from being audit firm level to being engagement specific and more outcome driven (with the use of earnings quality proxies). Frameworks were a recent addition to the literature. But from the basic construct put forward by FRC (2008), the framework has been more comprehensive over time. This is evident through the recent framework by IAASB (2014).

Another interesting finding is the influence of the environment on such evolution, especially during the period of high profile corporate collapses. The institutional setting and audit environment have had a great impact on the progression of the concept. With the collapses and the subsequent stringent corporate governance regulations, the view of audit quality was changed to an outcome and ethics based view. This indicates that the concept has been indeed responsive to wider environmental changes.

2.4. Conceptual association between Audit Quality and Earnings management

After examining the concept of audit quality and its evolution over time, the following sections move on to focus on the conceptual and empirical association between both audit quality and earnings management.

In terms of the conceptual association, Agency theory provides the fundamental basis to examine the association between audit quality and earnings management. The agency theory explains that the principal delegates responsibility to the agent expecting the agent to achieve principal's interests. However, when incentive and opportunity to maximize agent's own benefit becomes existent, agency problem is created (Beaudoin et al. 2012).

Agency problem refers to the incongruence between owner and agent's interests. Earnings management is one such agency problem. Beatty and Harris (1998) highlight that opportunity for earnings management is created due to informational asymmetry. When managers have full access to the company's information than the shareholders, an opportunity is inherently created to manipulate. Further, Cohen, Dey and Lys(2008) stress that increasing earnings management behaviour was evident in companies which were performing poorly or which had top level managers holding significant stock options of the company emphasizing the incentives motivating to adopt earnings management practices.

In order to avoid the costs of agency problem, several measures such as maintenance of accounting records, issue timely and relevant information to shareholders and external monitoring of the stewardship function are adopted (Beatty & Harris 1998). This external monitoring gives rise to the function of the audit. Alzoubi (2016) too reiterates that agency problem stemming from ownership and control segregation, led to the request for a statutory audit. By adapting a quality monitoring mechanism through audit, sub-optimal behaviour can be restrained. Thus, on a theoretical basis, audit quality and earnings management inversely related.

2.5. Empirical association between Audit Quality and Earnings Management

Several empirical studies have been conducted globally to comprehend the role and influence of audit quality on earnings management. However, the existing literature has delivered contradictory findings. In this section, previous literature will be examined in terms of the association between each proxy of audit quality and earnings management using which the hypotheses for the study will be developed.

2.5.1. Audit firm size

The use of audit firm size as a proxy to gauge audit quality was a widely debated area. The standpoint of audit quality being dependent on audit firm size was criticized and considered unfair (Barnett & Danos 1979, cited in DeAngelo 1981). It was argued that audit firm size does not affect audit quality because all firms adopt uniform professional standards irrespective of the size. However, DeAngelo (1981) argues that with all other factors being constant, size alone affects auditor's incentives to act opportunistically. Hence, larger audit firms provide a higher level of audit quality as they have 'more to lose'. According to the results of the study conducted by (Al-khaddash, Nawas & Ramadan 2013), there is a significant positive correlation between audit quality and the reputation of the audit firm and the size of the audit firm. This justifies the ground of using auditor size as a proxy to represent audit quality.

a) Positive relationship between audit firm size and earnings management

Researchers have reported a positive relationship between audit firm size and earnings management, indicating that audit firms which are larger support the earnings management practices of its clients. In the study conducted by Alves (2013) which sampled 33 non- financial quoted companies in Portugal from 2003-2009, it was revealed that with a confidence of 95% there was a significantly positive relationship between firms audited by Big 4 and earnings management, indicating that companies audited by the Big 4 have a higher chance of reporting managed earnings. This indicates the ineffectiveness of the big audit firms in restraining earning management activities. Further, the findings corroborate with events of corporate scandals which were clients of big audit firms.

Furthermore, Li and Lin (2005) in their study, examining the relationship between audit quality and earnings management using US data found a similar relationship that companies with more earnings restatements were audited by Big5 audit firms. Similar empirical result was generated by Lin, Li and Yang (2006) implying more earnings management practices by the clients of Big5 audit firms. However, it must be highlighted that Li and Lin (2005) and Lin, Li and Yang (2006) used earnings restatements to measure earnings management as opposed to the other studies which used discretionary accruals.

Using abnormal working capital accruals as a proxy of earnings management, (Antle et al. 2006) found that based on UK data, clients of Big 6 audit firms report higher abnormal accruals than clients of Non-Big5 audit firms.

b) Negative relationship between audit firm size and earnings management

In contrast to the above, several studies empirically displayed a significant negative association between the two variables. The fundamental assumption is that larger an audit firm, greater are its incentives to discover financial irregularities. When audit firms are larger, the partners of the firms will be more scrutinized for their practices as pointed out by Watts and Zimmerman in 1981 (cited in Alves 2013). Hence, firms would take measures to manage their brand and reputation by avoiding legal liability (Behn, Choi & Rang 2008) and would lose firm identity and threaten survival in case of an audit failure (Bauwhede & Willenkens 2004), which can be similar to the consequences of the fall of Arthur Anderson. This, in turn, will make big audit arms to be more cautious in detecting and reporting any earnings management practices of its clients, to avoid audit failures.

The study conducted by Rusmin (2010), revealed a negative association between audit quality and earnings management, in Singaporean listed firms. The study concluded that the magnitude of earnings management is significantly lower in companies which are audited by the Industry specialist audit firm as well as in companies audited by the Big 4 audit firms. Similar findings were evident in a study conducted on 367 Taiwan IPO companies, the results showed that higher quality auditors (i.e. the big five operating in Taiwan) constrain earnings management (Chen, Lin & Zhou 2005).

Additionally, similar results were generated by Becker et al. (1998), Krishnan (2003) and Jordan, Clark, and Hames (2010) using US data, Gore, Pope and Singh (2001) using evidence from the UK, Gerald, Yanesari and Ma'atoofi (2011) by providing evidence from Iran, Okolie and Izedonmi (2013) using Nigerian listed companies, Tendeloo and Vanstraelen (2008) using data from Europe and in several others (Gul , Sui & Dhaliwal 2006; Lin & Hwang 2010).

c) No significant relationship between audit firm size and earnings management

On the other hand, several types of research report no significant relationship between big audit arms and earnings management. Piot and Janin (2007) concluded in their study which sampled 102 non-financial firms in France, that the presence of Big five auditors makes no difference or impact on earnings management activities in France. Further, Brahman and Ali (2006) found no statistically significant relationship between big audit arms and earnings management based on its sample of top 100 companies in Bursa Malaysia Main Board. Sun, Liu and Lan (2011) reported the same relationship between discretionary accrual and big four audit firms.

The study conducted by Major and Vanstraelen (2006) studied the impact of national audit environment, audit firm quality and nature of capital markets on earning management practices using the European nations; France, Germany and the UK between 1992 to 2000. The study concluded that a stricter audit environment and stringent environment of investor protection is essential to improve audit quality and big audit firm conservatism. The results of the study revealed that Big4 audit firm do not appear to constrain to earnings management in the sampled companies in France and Germany, as the institutional setting in terms of both audit environment and investor protection was weak in the stated nations.

Similar finding was reported in the study by Ching et al. (2015). The study revealed that audit firm size does not affect earnings management in Malaysian public listed companies. The study emphasized that the results of the study were different as opposed to the findings in prior literature because the audit environment of Malaysia is different from that of developed nations such as the US and the UK. Ching et al. (2015) noted that the presence of a weak institutional environment with no stringent rules or oversight over audit firms does not provide a stimulus for the firms to improve audit quality.

Further, in analysing the Big four auditors' audit quality and earnings management based on data gathered from the Turkish Stock market, Yasar (2013) concluded that there is no difference in the audit quality between big four and Non- big four audit firms in restricting earnings management and therefore, audit firm size as a surrogate

of audit quality has no impact on discretionary accruals. Once again the reason for no significant impact was attributed to the weak institutional environment in Turkey. Apart from the highlighted studies, several other types of research too reported similar findings in a weak environment where there is no effective oversight mechanism on audit (Bauwhede & Willenkens 2004; Jeong & Rho 2004; Alibi & Rajhi 2013).

2.5.2. Audit Independence

Auditors must be independent both in fact and in appearance. According to Lin and Tepalagul (2015), existing literature highlights four threats to audit independence; client importance, non-audit services, auditor tenure, and client's affiliation with audit firms.

The study by Ghosh, Kallapur and Moon (2009) covering a large sample over the periods of 2001-2006, highlighted that high level of client importance causes negative investor perception rather than a high non-audit fee ratio. Users of the audit report are more skeptical on auditor independence in situations where the audit firm is economically dependent on the client rather than the hindrance to independence through non- audit services (Irma wan, Judaic & Haifa 2013). Hence, client importance becomes an important variable affecting auditor independence, in-appearance.

Client importance measures the extent to which the auditor is financially dependent on the client. DeAngelo (1981) highlights that when the audit firm receives the fee it creates a financial bond between the auditor and client. When a major portion of an audit firm's total fee revenue, is received by one client, the audit firm becomes more of a 'stakeholder' being interested in the survival of the client's business and in retaining the client.

This study measures auditor independence through audit fees mainly due to the inadequate disclosure of non-audit fees. Lin and Hwang (2010, p.70) through the meta-analysis conducted, states that studies on the relationship between audit fees and earnings management have delivered mixed results. The following section highlights the mixed results between audit fees and earning management reported by revised literature.

a) Positive relationship between audit fees and earnings management

Gerayli, Yanesari and Ma'atoofi (2011) highlights an inverse relationship between audit independence and audit fee where large (small) values of audit fees imply poor (high) audit independence. Hence positive relationship between audit fees and earnings management implies a negative relationship between audit independence and earnings management.

Li and Lin (2005) through their study support the claim higher fees of audit or non-audit would create or improve the economic bond between the auditor and client and thus impair independence and reduce the quality of reported earnings (i.e. higher earnings management). The study examined the relationship between audit, non-audit and total fees and earnings restatement and reported a significantly positive relationship between audit fees and earnings restatement in a sample of 351 companies (matched each of the 117 restatement sample firms with two non-restatement firms based on firm size and the four-digit SIC Code). Lin, Li and Yang (2006) also reported a positive association between audit fees and earnings restatements using US data based on a sample of 106 restatement firms and 106 control firms.

Antle et al. (2006) studied impact of audit fees and earnings management based on data from the UK and verified results of the study for robustness using data from USA. This study reported a significant positive and robust influence of audit fees on earnings management in both the UK and US. Their findings also supported the standing that higher audit fees led to more bias by auditors to accept earnings management practices among its clients.

Alzoubi (2016) studied 86 listed companies in the Amman Stock Exchange (ASE) from 2007 to 2010 period, using natural logarithm of audit fees as the measure of audit independence. The study produced evidence that the level of earnings management is significantly lower in companies which are audited by independent auditors who were less dependent on the client (i.e. lower audit fees). This is also supported by the research conducted in Nigeria on 57 quoted companies covering the period 2006 to 2011, where audit independence is found to be restricting earning management practices (Okolie 2014).

Several other studies have also reported the similar association of higher the audit fee (lower the audit independence) leading to higher discretionary accruals (Gul, Chen & Tsui 2003; Abbott, Parker & Peters 2006; Alali 2011; Gerayli, Yanesari & Ma'atoofi 2011).

It is evident that the above studies follow the notion put forward by DeAngelo (1981) of "economic-bonding" due to high reliance over client. Holm and Zaman (2012) state that auditors tend to prioritize the interest of the clients as it affects their career progression and due to commercialization of auditing, where auditors are increasingly focusing on winning and retaining their clients.

b) Negative relationship between audit fees and earnings management

Studies have identified a negative relationship between audit fees and earnings management. The fundamental notion that is used to justify such relationship is that higher audit fees resemble the higher effort (i.e. higher audit quality) and hence lower degree of earnings management. As per researcher's knowledge, no study so far has reported a positive relationship between audit independence and earnings management.

Srinidhi and Gul (2007) through their study report a positive association between audit fee and accrual quality, implying a negative association to earnings management. Habbash (2010) also reported a significantly negative relationship between audit fees and earnings management using the UK data, where it was revealed that as audit fees by a client increases, the degree of earning management decreases.

Additionally, Lin and Hwang (2010) also revealed results that is consistent with the view that higher effort by the auditor result in higher working hours which in turn result in higher audit fee and thus lead to lesser occurrence of earnings management.

c) No significant relationship between audit fees and earnings management

When studying the relationship between client importance ratios (Total fees, audit fees and non-audit fees) and Discretionary accruals of 1,871 sample companies belonging to 54 diverse industries, Chung and Kallapur (2002) find no statistically

significant relationship between any of the client importance rations including audit fees and discretionary accruals**.**

Ching et al. (2015) also reported similar findings using data from Malaysian public listed companies from 2008 to 2013, where results revealed there was no statistically significant relationship between audit fees and earnings management. This association was also attributed to the weak audit environment of Malaysia than that of the US and UK.

2.6. Chapter Summary

Therefore it is clear that based on the extant literature, the results are inconclusive with regard to the relationship between proxies of audit quality and degree of earnings management. Each proxy acts in a different manner in influencing the degree of earnings management. Thus, whether the audit quality support or reduce the degree of earnings management, or insignificant in influence, is uncertain as a theoretical matter and warrants empirical investigation. Further there is less studies conducted pertaining to audit quality, earnings management and their association with reference to Sri Lanka. Hence, the study contributes to the literature by exploring this relationship.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter presents the conceptual model and the research design of the study. The chapter begins with the conceptual framework and moves on to the definitions and measurements of the variables. The regression models of the study are then presented. Subsequently, the chapter describes the sample and sample selection process along with the criterion used in generating the sample. Furthermore, the data and data collection will be explained. The chapter will then conclude with the methods of data analysis used for the study.

3.2 Conceptual Diagram

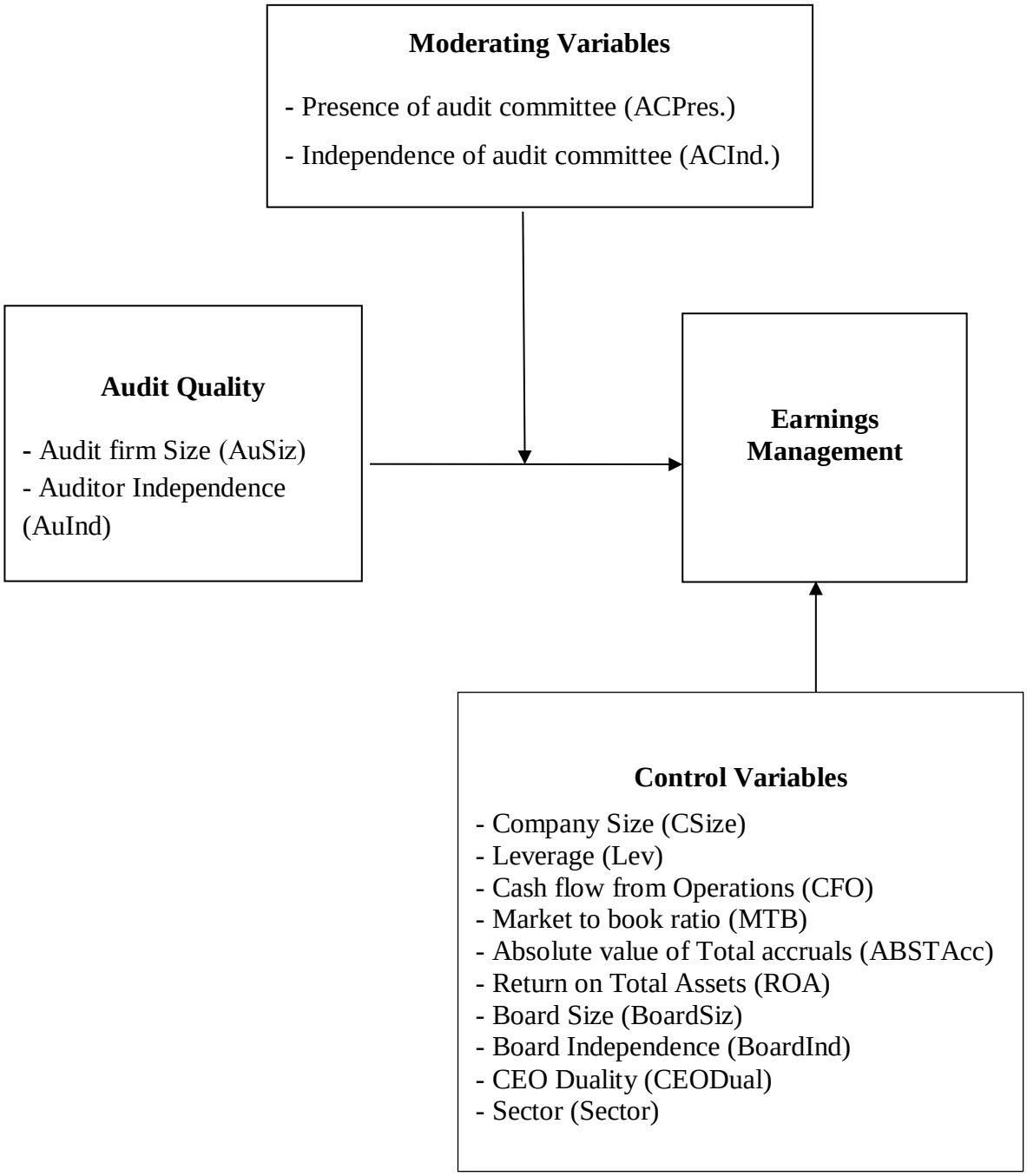
Two audit quality proxies have been considered in this study, in order to analyse the relationship between audit quality and degree of earnings management. These variables and the literature relevant to them have been extensively discussed in Chapter Two. The conceptual diagram (Figure 3.1) of this study is illustrated indicating the conceptualization of the research issue based on the revised literature.

In this study, the proxies of audit quality are the independent variables while discretionary accrual, which is the proxy of earnings management, is the dependent variable of the study. Audit firm size and auditor independence are the two proxies of audit quality used in order to analyse its relationships with earnings management. Discretionary Accruals measured using the Modified Jones model will be used as the proxy representing the degree of earnings management. The model measures the discretionary accruals for a company as the difference between total accruals and non-discretionary accruals.

Further, this study includes two moderating variables; presence of an audit committee and independence of the audit committee, to better analyse the relationship between audit quality and earnings management. Earnings management is not only influenced by audit quality. There are several other factors, which induce or inhibit the management's involvement in managing earnings.

This study incorporates such factors as control variables; *Company Size, Leverage, Cash flow from Operations, Market to book ratio, Absolute value of Total accruals, Return on Assets, Board size, Board independence, CEO Duality and Sector.*

Figure 3.5: Conceptual Diagram of the Study.



3.3 Hypothesis Development

3.3.1 Audit firm size

Based on revised literature highlighted in Chapter Two, it is evident that most studies conducted in developed[i] nations such as USA (Becker et al. 1998; Krishnan 2003; Jordan, Clark & Hames 2010), UK (Gore, Pope & Singh 2001) and Singapore (Rusmin 2010) have mostly reported a negative relationship between audit firm size and degree of earnings management. Furthermore, Lin and Hwang (2010) also supports that audit firm size is a deterrent to earnings management through their meta-analysis which integrated findings from 48 prior studies that were mostly conducted in developed countries. However, some studies have identified positive association (Antle et al. 2006; Li & Lin 2005; Lin, Li & Yang 2006) and insignificant association (Maijoor & Vanstraelen 2006; Piot & Janin 2007) between audit firm size and earning management.

Additionally, studies conducted in developing countries have mostly reported a negative association between audit firm size and degree of earnings management while some indicated no significant relationship between them. Studies conducted in Taiwan (Chen, Lin & Zhou 2005), Iran (Gerayli, Yanesari & Ma'atoofi 2011) and Nigeria (Okolie & Izedonmi 2013) have indicated that audit firm size is a deterrent to earnings management practices, while research focusing on Malaysia (Rahman & Ali 2006; Ching et al. 2015) and Turkey (Yasar 2013) identified that audit firm size as a surrogate of audit quality has no impact on discretionary accruals.

Hence, as Sri Lanka is a developing nation, the study assumes based on revised literature that audit firm size will act to limit the degree of earnings management in Sri Lankan listed companies. Thus, hypothesis one (H_1) of this study was derived as:

H_1: *Audit firm size has significantly negative association with degree of earnings management.*

3.3.2 Audit independence

Chapter Two highlights that most research have reported a negative association between audit independence and degree of earning management specially in USA (Abbott, Parker & Peters 2006; Alali 2011; Li & Lin 2005; Lin, Li & Yang 2006), and in the UK (Antle et al. 2006) and Australia (Gul, Chen & Tsui 2003).

Studies conducted in developing countries such as Jordon (Alzoubi 2016), Nigeria (Okolie 2014), Iran (Gerayli, Yanesari & Ma'atoofi 2011), have also identified a negative relationship between audit independence and earnings management. However, Malaysia (Chung & Kallapur 2002; Ching et al. 2015) reported no statistically significant relationship between audit independence and discretionary accruals.

Therefore after consideration of above relationships, it is reasonable to assume that the audit independence and degree of earnings management are inversely related in Sri Lankan listed companies. With this hypothesis two (H_2) of the study was derived as:

H_2: *Auditor independence has a significantly negative association with degree of earnings management.*

3.4 Measurement of variables

3.4.1 Independent Variables

a) Audit firm size

This is measured in line with prior literature (Becker et al. 1998; Chen, Lin & Zhou 2005; Lin, Li & Yang 2006; Alves 2013) as a dichotomous variable, which would equal 1 if the company was audited by a member of the big three (i.e. KPMG, Ernst & Young and PricewaterhouseCoopers) within the three year period or 0 otherwise.

b) Auditor Independence

Extant literature generally measure this variable based on the non-audit fees paid by companies to auditors. However, disclosure of such information is minimal in the audited annual reports. Further, the service provider of such non-audit services cannot

be ascertained credibly. Hence, this study intends to measure auditor independence as the natural logarithm of audit fees as an alternate proxy consistent to extant literature (Gerayli, Yanesari & Ma'atoofi 2011; Okolie 2014; Ching et al. 2015; Alzoubi 2016).

3.4.2 Dependent variable

a) Discretionary Accruals

This study uses discretionary accruals as the measure for earnings management. Modified Jones Model is the commonly used technique to calculate discretionary accruals (Chen, Lin & Zhou 2005; Maijoor & Vanstraelen 2006; Rusmin 2010; Alves 2011; Yasar 2013; Mishra & Malhotra 2016).

The original Jones' Model regresses total accruals using the change in revenue and the gross property, plant, and equipment. It captures working capital accruals as a function of revenue growth and depreciation as a function of gross property, plant, and equipment. Dechow, Sloan, and Sweeney (1995, p.199) highlights that the original Jones model assumes revenues as non-discretionary. However, as credit sales could be used to manage earnings such assumption becomes invalid. Hence, Dechow, Sloan, and Sweeney (1995) adjusted the change in revenues for change in receivables to overcome the said limitation.

Total accruals can be computed through two approaches; balance sheet and cash flow approach. Hribar and Collins (2002) identified that the use of balance sheet approach disrupts the discretionary accruals calculations that could lead to Type I errors, where the study could conclude the existence of earnings management when in fact it is not. Hence, this study adopts the cash flow statement approach to calculate total accruals rather than the balance sheet approach. Total accruals are calculated under the cash flow approach using the following equation.

$$\mathbf{TACC}_{it} = \mathbf{NI}_{it} - \mathbf{CFO}_{it}$$

$\mathbf{TACC}_{it}$ = Total accruals for company *i* in year *t*.

$\mathbf{NI}_{it}$ = Net income of company *i* for year *t*.

$\mathbf{CFO}_{it}$ = Net cash flow from operations of company *i* for year *t*.

The above calculated $\mathbf{TACC_{it}}$ is used in the following equation.

$$\mathbf{TACC_{it}} = \boldsymbol{\alpha_1}\left(\frac{\mathbf{1}}{\mathbf{TA_{it-1}}}\right) + \boldsymbol{\alpha_2}(\Delta\mathbf{Rev_{it}} - \Delta\mathbf{Rec_{it}}) + \boldsymbol{\alpha_3}(\mathbf{PPE_{it}}) + \boldsymbol{\varepsilon_{it}}$$

Where,

$TACC_{it}$ = as defined previously.

ΔRev_{it} = Change in revenue for company *i* in year *t*.

ΔRec_{it} = Change in receivables for company *i* in year *t*.

PPE_{it} = Net property, plant and equipment for company *i* in year *t*.

$\mathbf{TA_{it-1}}$ = Total assets for firm *i* in year *t-1*.

The variables are deflated by lagged Total assets ($\mathbf{TA_{it-1}}$) as shown in the following equation and then regressed on a cross sectional sector specific basis to estimate the coefficient parameters for each sector.

$$\frac{\mathbf{TACC_{it}}}{\mathbf{TA_{it-1}}} = \boldsymbol{\alpha_1}\left(\frac{\mathbf{1}}{\mathbf{TA_{it-1}}}\right) + \boldsymbol{\alpha_2}\left(\frac{\Delta\mathbf{Rev_{it}} - \Delta\mathbf{Rec_{it}}}{\mathbf{TA_{it-1}}}\right) + \boldsymbol{\alpha_3}\left(\frac{\mathbf{PPE_{it}}}{\mathbf{TA_{it-1}}}\right) + \boldsymbol{\varepsilon_{it}}$$

Non-discretionary accruals ($\mathbf{NDAC_{it}}$) will be estimated by applying the calculated coefficients (for a sector) on a company specific basis (for companies within such sector).

The expected discretionary accruals ($\mathbf{DACC_{it}}$) is then calculated using the following equation.

$$\mathbf{DACC_{it}} = \mathbf{TACC_{it}} - \mathbf{NDAC_{it}}$$

b) Additional proxies

Along with discretionary accruals, the study also uses two additional proxies to measure earnings management; small positive earnings and earnings smoothing.

Small positive earnings attempt to identify the presence of earning management practices to avoid reporting earnings decreases or losses (Burgstahler & Dichev

1997). The underlying concept as highlighted by Barth, Landsman, and Lang (2007) is that the management of the company prefers to report positive earnings than negative earnings. This proxy is measured using the variable SPOS, a dummy variable that will be "1" if net income scaled by total assets is between 0 and 0.01 and "0" otherwise.

The next proxy used in the study is earnings smoothing. Earnings smoothing is an act of earnings management where variability in net income is minimized in order to reflect a steady performance. While earnings smoothing can be measured through the variability of ΔNI alone, this study measures earnings smoothing as a ratio between variability of ΔNI to the variability of ΔCFO. This enables to control for volatile cash flows.

Companies with high volatility in cash flow experience a high volatility in net income as well. If discretionary accruals are used to manage such volatile earnings, the variability in net income becomes much lesser than the variability in cash flows (Barth, Landsman & Lang 2007). Hence, a lower ratio in the variability of ΔNI to the variability of ΔCFO provides evidence of smoothing company earnings (Barth, Landsman & Lang 2007; Dechow, Ge & Schrand 2010).

3.4.3 Moderating variables

a) Presence of an audit committee

The presence of the audit committee improves the influence of audit quality on the degree of earnings management. The primary role of the audit committee is to monitor the activities of the board and ensure decisions are made in the interest of the stakeholders. Piot and Janin (2007) state that an audit committee contributes to the audit quality at two levels; through supervising crucial accounting decisions and liaise with external auditors while protecting their independence from internal management pressure. This highlights that the audit committee moderates the relationship between external auditors and the company. Audit committee ensures that audit work is carried out smoothly and liaises with auditors as independent representatives of the company. They simply regulate the quality of the audit work similar to the regulating bodies and auditing standards. Lin and Hwang (2010) stresses that the presence of audit committee is perceived as an indication of higher quality of monitoring and improved

supervision over financial reporting of companies. Hence, a negative association between audit committee presence and earnings management is expected.

However, empirical studies have reported mixed results as to the relationship between audit committee presence and earnings management. Lin and Hwang (2010) highlight that only a very few studies have reported a negative and statistically significant relationship between these two variables. Furthermore, Lin and Hwang (2010) as well as Inaam and Khamoussi (2016) conclude that based on the meta-analysis conducted there is no statically significant relationship between the existence of an audit committee and earnings management.

In contrary, Alves (2013) presents results of a positive relationship, exhibiting that companies with an audit committee in Portugal have greater propensity to manage earnings. Alves explains the positive association through three possible explanations; information asymmetry between the executive and non-executive directors, lack of time due to increased non-executive directorships and lack of audit committee independence. Hence, the presence of the audit committee alone cannot explain the impact completely (Inaam & Khamoussi 2016).

This study measures the existence of an audit committee through a dummy variable. The dummy variable would take up the value of "1" if the company has an audit committee or "0" otherwise.

b) Independence of the audit committee

As mentioned in the preceding section, the mere presence of an audit committee will not be an effective moderating variable. Hence, audit committee independence was incorporated into the study as an additional variable. This variable is measured by the ratio of independent non-executive directors in the audit committee to the total members of the committee in the sample companies.

A strong and independent audit committee is vital to monitor the activities of the board and to ensure faithful representation of information to the stakeholders (Levitt 1989). The commonly held expectation is higher the independence of the audit committee, better and effective will be the monitoring and oversight function. This in turn will improve the quality of earnings reported.

Abbott, Park, and Parker (2000) in their study of analysing the effect of audit committee activity and its independence on restraining fraud reported that companies with independent directors in their audit committee are rarely to be sanctioned for fraudulent practices. Lin and Hwang (2010) through the meta-analysis revealed a statistically significant negative relationship at 99% confidence level between the variables. This was also supported by the study conducted in Malaysia by Saleh, Iskandar, and Rahmat (2007), which showed evidence that the presence of an independent audit committee impedes earning management practices.

Klein (2002) studied the impact of characteristics of audit committee on earnings management based on 692 firm years in USA. The results revealed that there is a statistically significant negative association between committee independence and discretionary accruals. However, the findings reported that there is no association between fully independent audit committees and discretionary accruals/earnings management. Hence, Klein (2002) highlighted that it is not mandatory for an entity to operate with a 100% independent audit committee.

Lin, Li and Yang (2006) studied the impact of audit independence and earnings management using 106 listed firms from USA, where earnings restatements was used as the proxy instead of discretionary accruals. The study concluded that there is no evidence of a relationship between the variables. Rahman and Ali (2006) analysed the effectiveness of audit committees in restricting earnings management practices from 2002 to 2003 using a sample of 97 Malaysian listed companies. The study reported no significant association between the committee independence and discretionary accruals measured through Modified Jones model.

3.4.4 Control variables

a) Company size

Company size is widely used control variable in prior literature (Chen, Lin & Zhou 2005; Piot & Janin 2007; Cahan et al. 2008; Yasar 2013; Alzoubi 2016). These studies argue that firm size could act as a motivating or restricting factor in engaging in earnings management. Company size is an influential factor as risk of litigation and scrutiny from investors are proven to be higher for larger companies than smaller size companies (Rusmin 2010). Chen, Lin and Zhou (2005) highlighted that larger

companies are less likely to manage earnings due to stringent inspection by investors and capital market analysts. Further, this view is supported by the political cost hypothesis, where larger firms are expected to engage in income-decreasing accruals management to avoid political costs.

However, as an inducing factor, larger companies engage in earnings management to meet investor and capital market expectations (Alves 2013). Jensen (1993) highlights that as a company becomes larger, greater will managerial discretion, which in turn will provide more opportunity to managing earnings. Further, there has been empirical evidence supporting this argument by Chen, Lin and Zhou (2005) and Yang (2008). This study measures company size using the natural logarithm of total assets.

b) Leverage

The leverage is measured as total debt to total assets ratio. Leverage is used as a proxy for the intention of managing earnings to avoid technical default of debt covenants. This has been advocated through the debt hypothesis. DeFond and Jiambalvo (1993) provide evidence through their study that firms with high debt use income-increasing accruals management to inflate earnings when there is an increased probability of defaulting debt covenants. Several other studies have also reported a positive relationship between leverage and earnings management (Gerayli, Yanesari & Ma'atoofi 2011; Alves 2013; Alzoubi 2016)

However, Chen, Lin, and Zhou (2005) reported a significant negative association between leverage and earnings management, based on the sample of 367 firm-year observations in Taiwan. The study concluded that companies do not use discretionary accruals to meet debt covenants. Park and Shin (2004) also report a negative association in their study. The study highlights that when a company reports a higher leverage, lenders tend to scrutinize the company much closely leaving less opportunity for earnings management. In order to control for the influence over earnings management, leverage is incorporated into the study as a control variable.

c) Cash flow from Operations

Cash flow from operations is measured as a percentage of total assets at the beginning of each year considered (CFO/TA). Companies with a steady operational cash flow do

not engage in earnings management practices as the companies are performing well (Becker et al. 1998; Habbash 2010). This implies that cash flow problems act as an incentive to manage earnings. Furthermore, (Becker et al. 1998) highlights that there is a significant difference in operating cash flows, between companies audited by big five compares to the companies audited by non-big five firms.

Dechow, Sloan, and Sweeney (1995) identified that cash flow from operations impacts the magnitude of discretionary accruals with a significant negative relationship. Gerayli, Yanesari, and Ma'atoofi (2011) on the other hand identified that there is no statistically significant relationship between cash flow from operations and earnings management. However, consistent with the prior literature (Yasar 2013; Alzoubi 2016; Piot & Janin 2007; Cahan et al. 2008), this variable is incorporated to control such association.

d) Market to book ratio

This variable examines the growth prospects of the company. The growth of the company can be an important motivating factor, which influences a company to manage earnings. Companies could use earnings management as a tool to signal growth potential of the company to its investors (Chen, Lin & Zhou 2005). On the other hand, Carcello and Nagy (2004) highlight that as a company grows, it would be exposed to market pressure to report consistent growth in earnings, surpass expected targets and manage earnings to avoid reporting earning decreases or losses. The growth of the company is measured by through the market to book ratio (dividing the market value by the book value of equity), as it compares the market value to existing value of the entity. A higher market to book ratio indicates greater prospects of growth for the company.

e) Absolute value of Total accruals

The absolute value of total accruals is incorporated to control the accrual generating the capacity of a company (Becker et. al. 1998). The study by Becker et al. (1998) provided evidence of a negative association between an absolute value of total accruals and discretionary accruals. Yasar (2013) also reported similar findings of a negative relationship between the variables. These studies concluded that companies with high total accruals tend to reduce earnings. Non-discretionary accruals tend to be

negative due to depreciation. Hence, if there were negative discretionary accruals it would increase the absolute value of total accruals of the company.

While above studies justified a negative relationship between discretionary accruals and the absolute value of total accruals, several others reported a positive association between the absolute value of both discretionary and total accruals. Chen, Lin, and Zhou (2005) provide evidence of a significant positive association between the absolute value of total accruals and the absolute value of discretionary accruals. Moreover, Jeong and Rho (2004) highlight that companies tend to reflect a significant positive association between discretionary and total accruals, when there is no proper mechanism to distinguish discretionary and non-discretionary accruals. Hence, this variable is included in the test models of the study, in order to control for such influence (Becker et al. 1998; Rusmin 2010; Yasar 2013).

f) Return on Assets

Return on assets reflects the management's ability to utilise company assets efficiently in generating a return. The performance of companies must be controlled as they influence earnings management. Companies tend to manage earnings to avoid reporting losses or reporting earning decreases. In order to control for such incentive, return on assets is incorporated as a control variable. Dechow, Sloan, and Sweeney (1995) highlights that financial performance of a company influences the discretionary accruals. Furthermore, Gul, Chen, and Tsui (2003) stress that financial performance also impacts audit risk. However, Rusmin (2010) report findings of an insignificant relationship between financial performance and earnings management, using data from Singapore-listed firms.

g) Board Size

Jensen (1993) emphasizes that as per agency theory, the presence of a large board increases the conflicts of interest between shareholder and management as it obstructs unanimous decision making. Furthermore, Rahman and Ali (2006) reported a significant positive association between board size and earnings management based on the sample of 97 Malaysian listed entities.

Opposing such view, studies have argued that larger the board, diverse it would be in expertise and thus enable to restrict earnings management (Klein 2002; Alves 2013). Lipton and Lorsch (1992) also share the same view that larger board size is both effective and efficient as more time and effort can be committed to monitor activities of the management. Therefore, sub optimal behaviour can be limited. However, the study advocates an optimal size of 7-8 directors in the board in order for it to function efficiently.

Additionally, Habbash (2010) highlights that the relationship board size and independence with earnings management could be insignificant or even positive in Asian nations, as boards may contain less effective independent directors who are appointed through social contacts. This study measures board size as the total number of board members and includes the variable to control for influences on the dependent variable.

h) Board Independence

Independence of the board is an essential variable influencing the occurrence of earnings management within companies. Most studies report a negative significant relationship between board independence and earnings management. Xie, Davidson, and DaDalt (2003) examined the effect of board and audit committee characteristics on earnings management. The study hypothesized that higher board independence will result in companies to engage less in earnings management and the results supported the hypothesis. However, the study only considered two control variables; firm size and a dummy variable for the years considered. This restricts the validity of the study's findings. However, Klein (2002) also reported a negative relationship between board independence and earnings management (measured through Modified Jones Model), even after rectifying the above stated limitation.

On the other hand, several other studies reported contradictory findings to the above. Park and Shin (2004) investigated the influence on earnings management due to board composition using data from Canada. The study concluded that there is no statistically significant association between discretionary accruals and board independence. However, Rahman and Ali (2006) reported a positive but insignificant association between discretionary accruals and board independence. This led the study to

conclude that board independence is an ineffective oversight mechanism to restrict earnings management.

Hence, in consistent with prior literature, board independence is included as a control variable in order to control for its effects over earnings management. This will be measured as a ratio of independent non-executive directors to the total members of the board (Alzoubi 2016; Piot & Janin 2007).

i) CEO Duality

When Chairman and CEO positions are combined, it gives undue power and influence to override controls, which creates an opportunity to manage earnings. Jensen (1993) highlights that Chairperson of the board has the duty to engaged in board meetings and also monitor activities of the CEO. Therefore, when both roles are combined, it creates a situation of conflict of interest to the CEO. The fundamental expectation is that separation of the two roles should lead to reduced degree of earnings management. Klein (2002) supports this view through empirical evidence, which reported that separation of Chairman and CEO roles causes a decrease in the degree of earnings management.

However, Lin and Hwang (2010) based on the meta-analysis comments that no prior literature has reported a significant association between the variables. This is further supported by the study of Xie, Davidson, and DaDalt (2003) which also reports no statistically significant association. This study measures CEO duality as a dichotomous variable, which takes the value of "1" if both Chairman and CEO positions are combined and "0" otherwise.

j) Sector

Sector variable represents the 11 dummy variables, incorporated as a control variable to avoid the results being dominated by a specific industry sector. This controls for clustering effects and avoids sector effects on earnings management (Maijoor & Vanstraelen 2006).

Table 3.1 : Variable Description

Variable	Acronym	Variable description
Absolute value of discretionary accruals	$\mathrm{AbsDACC}_{it}$	Absolute value of discretionary accruals of company *i* for year *t* using modified Jones model (Deflated by lagged total assets).
Small positive earnings	SPOS_{it}	"1" if net income scaled by total assets is between 0 and 0.01 and "0" otherwise.
Earnings smoothing	$\mathrm{SMTH}_{\boldsymbol{it}}$	Absolute change in net income divided by the change in cash flow from operations.
Audit firm size	AuSiz_{it}	"1" if auditor is a member of Big three, "0" otherwise.
Audit Independence	AuInd_{it}	Natural logarithm of audit fees of company *i* for year *t*.
Presence of an Audit committee	ACPres_{it}	"1" if company has an audit committee, "0" otherwise.
Audit committee Independence	ACInd_{it}	Ratio of Independent Non-executive committee members to total audit committee members.
Company size	CSiz_{it}	Natural logarithm of Total assets of company *i* for year *t*.
Leverage	$\mathrm{Lev}_{\boldsymbol{it-1}}$	Total Liability of company *i* for year *t* divided by Total assets of company *i* for year *t*-1.
Cash flow from operations	$\mathrm{CFO}_{\boldsymbol{it-1}}$	Net cash flow from operations of company *i* for year *t* divided by Total assets of company *i* for year *t*-1.
Market to book value	MTB_{it}	Market capitalization of company *i* at the end of year *t* divided by Total equity of company *i* for year *t*.
Absolute value of Total Accruals	$\mathrm{AbsTAcc}_{it}$	Absolute value of Total Accruals of company *i* for year *t*.
Return on Assets	ROA_{it}	Earnings before Interest and Tax of company *i* for year *t* divided by Total assets of company *i* for year *t*.
Board size	$\mathrm{BoardSiz}_{it}$	Total number of board members of company *i* for year *t*.
Board Independence	$\mathrm{BoardInd}_{it}$	Ratio of independent non-executive directors in the board to total board members of company *i* for year *t*.
CEO Duality	$\mathrm{CEODual}_{it}$	"1" if the roles of the CEO and chairman are combined and "0" otherwise.
Sector	Sector	11 Dummy variables (the study examines 11 industries) which take a value between "1" if a company belongs to a sector and "0" otherwise.

3.5 Population and the sample

This study examines the impact of audit quality on the degree of earnings management of the listed companies in Sri Lanka. The population of the study is the listed companies in the Colombo Stock Exchange (CSE). As at 30th September 2016, 291 entities have been listed in the CSE. Out of such a population, this study focuses on the non-financial companies, in which final year is ending on 31st March. The study covers the recent three year period from the year ending 31st March 2013 to 2016, as its sample period.

3.5.1 Sample selection criteria

The sample consists of 141 non-financial companies listed in the CSE over a period of three years, with a total of 423 observations (see Appendix 1). The sample was selected based on the following criteria.

a) Non-financial companies listed in the CSE.

The sample includes companies across all the sectors of the CSE excluding the Banks, Finance, and Insurance Sector. In addition, the investment trusts and closed-ended funds were also excluded from the sample. These sectors were excluded on the grounds of non-comparability of information. The Banking, Finance, and Insurance sector companies are exposed to several stringent rules and regulations that monitor their activities. Moreover, companies in the excluded sectors have different reporting, profitability and liquidity measures compared to the other sectors included in the sample.

b) Firms that adopt a financial year end of March.

The study takes into account listed, which operate with a financial year of March. The rationale for excluding companies with a financial year-end of December is, to avoid distortions to the data arising from seasonal variations.

c) Use of Non- consolidated financial statements

This study uses non – consolidated financial statements when gathering data. Use of consolidated financial statements merely provides an average value without depicting

the true state of the company itself and in a situation of both parent and subsidiary are listed in the CSE, which if included in the sample could lead to distortions in the data.

d) Companies with no change made to the auditors throughout the sample period.

Companies included in the sample of this study have made no significant change of the auditors of the company. This is to ensure no distortions influence the degree of earnings management which is studied through this study. Companies, which for a period of 3 recent years have continued to be with the same auditor or shift of auditors between either big three or non-big three, are included in the study. Companies, which has shifted from non-big three audit firms to big three audit firms or vice versa are excluded.

e) Companies that have been continuously listed at the CSE and whose financial data are accessible throughout the three year research period.

The sample includes companies that have been continued to be listed throughout the sample period (from 2013/14 to 2015/16). Further, this sample comprises of companies from both Main and Diri Savi boards. However, any newly listed company or delisted companies or companies transferred to default board are not taken into account.

f) Sectors with less than 5 companies

Modified Jones model uses ordinary least squares (OLS) regression in order to generate sector specific coefficients which are then used to generate firm-specific non-discretionary accruals ($NDAC_{it}$). In generating such sector specific coefficients, the considered sectors must include at least five companies in order to generate meaningful results through OLS regression. Hence, sectors, which have less than 5 companies after adjusting for all above criteria were excluded (such as Healthcare, Store supplies, Trading, Construction and Engineering, Footwear and textiles and Information technology).

3.5.2 Sample profile

As at 30th September 2016, there are 291 listed companies under 20 sectors in the CSE as per CSE website. The initial sample of the study then excluded companies newly listed during the research period and companies listed under the Banks,

Finance and Insurance, Investment Trusts and Mutual Funds. Furthermore, the sample excluded companies with the financial year ending in December and companies falling under the categories of default board, dealing suspended, trading suspended and trading halt, which had not presented the annual reports required for the study as at 30th September 2016 to the CSE.

However, upon data collection 22 companies were excluded from the sample, as there were insufficient data to construct the relevant proxies, change of auditors from Non-big three audit firms to big three audit firms during the research period and sectors with less than five companies. Table 3.2, given below highlights the sample profile of the study.

Table 3.2: Profile of the Sample

Sample formation	
Description	Number
Firms listed in CSE as at 30th Sept. 2016*	291
(Less)	
Financial companies and mutual funds listed in the CSE	67
Listed firms operating with December FY end.	36
Change of auditors (from Non-Big3 to Big3)	1
Newly listed entities	4
Companies under following categories**	21
Companies with insufficient information to construct proxies	3
Companies in unqualified sectors	18
Final sample used for statistical analysis	**141**
Sector-wise breakdown	
Sector_1 - Beverage, Food and Tobacco	17
Sector_2 - Chemicals and pharmaceuticals	7
Sector_3 - Diversified Holdings	16
Sector_4 - Hotels and Travel	31
Sector_5 - Land and Property	12
Sector_6 – Manufacturing	27
Sector_7 – Motors	6
Sector_8 - Oil Palms	5
Sector_9 – Plantations	8
Sector_10 - Power & Energy	7
Sector_11 – Services	5
Total	**141**

* This excludes delisted companies during the research period.

** Default Board, Dealing suspended, Trading suspended and Trading halt categories

3.6 Data and Data collection

The data used in the study is secondary data. It was obtained from the published annual reports of the sample companies from the website of CSE. The main items of interest to this study are the Statement of Financial Position, Statement of Profit and Loss and Other Comprehensive Income, Notes to the financial statements, Audit committee disclosures, and Audit report. All of the stated data were obtained from the annual reports. Data gathered was then analysed for interpretation with the support of previous literature.

3.7 Data Analysis Methods

In analysing the data, this study used methods such as descriptive statistics, correlation analysis, multivariate regression analysis and univariate analysis to measure the impact of audit quality on the degree of earnings management. Stata statistical software was used for this study. The study uses the following analysis techniques to examine the data collected. The techniques were selected based on revised literature (Alves 2013; Alzoubi 2016; Chen, Lin & Zhou 2005; Gerayli, Yanesari & Ma'atoofi 2011; Rusmin 2010). A brief description of the methods used is given below.

a) Descriptive statistics

All variables will be analysed using descriptive statistics to provide a general overview of the characteristics of the sample. Descriptive statistics includes the mean, median, standard deviation, maximum, minimum, skewness and Kurtosis values for each individual variable.

b) Correlation analysis

Correlation analysis will be used to analyse the relationship between all variables on pair-wise to identify the degree, direction and the significance of the association. Both Pearson and Spearman correlation will be conducted. This test is performed to identify for any significant and strong association between the variables and to test for multicollinearity.

c) Multivariate analysis

After considering the influence and strength of association between two variables at a time, the study proceeds to engage in multivariate analysis. The advantage of performing a multivariate analysis is that it considers the influence of several variables on the dependent variable together, rather than merely considering the influence of one variable alone. The study uses both Pooled (OLS) and Panel regression to test the hypotheses developed in the study. Panel regression analysis was used as this study requires data to be analysed by time and company. It tests the direction of the relationship based on the coefficient value while testing the significance using the p values.

Following are the three regression models used in the study, to test the hypotheses stated in Chapter Two. Each model has a different proxy representing earnings management as its dependent variable while other variables remain the same. The main reason to segregate the study into three different models is to improve the robustness of the findings generated and ensure the validity of the results.

Model A: Discretionary Accruals

$$\begin{aligned}\mathbf{DACC}_{it} = {} & \boldsymbol{\beta_0} + \boldsymbol{\beta_1}(\mathbf{AuSiz}_{it}) + \boldsymbol{\beta_2}(\mathbf{AuInd}_{it}) + \boldsymbol{\beta_3}(\mathbf{ACPres}_{it}) + \boldsymbol{\beta_4}(\mathbf{ACInd}_{it}) \\ & + \boldsymbol{\beta_5}(\mathbf{CSiz}_{it}) + \boldsymbol{\beta_6}(\mathbf{Lev}_{it-1}) + \boldsymbol{\beta_7}(\mathbf{CFO}_{it-1}) + \boldsymbol{\beta_8}(\mathbf{MTB}_{it}) \\ & + \boldsymbol{\beta_9}(\mathbf{ABSTAcc}_{it}) + \boldsymbol{\beta_{10}}(\mathbf{ROA}_{it}) + \boldsymbol{\beta_{11}}(\mathbf{BoardSiz}_{it}) \\ & + \boldsymbol{\beta_{12}}(\mathbf{BoardInd}_{it}) + \boldsymbol{\beta_{13}}(\mathbf{CEODual}_{it}) + \boldsymbol{\beta_{14}}(\mathbf{Sector}) + \boldsymbol{\varepsilon_{it}}\end{aligned}$$

Model B: Small Positive Earnings

$$\begin{aligned}\mathbf{SPOS}_{it} = {} & \boldsymbol{\beta_0} + \boldsymbol{\beta_1}(\mathbf{AuSiz}_{it}) + \boldsymbol{\beta_2}(\mathbf{AuInd}_{it}) + \boldsymbol{\beta_3}(\mathbf{ACPres}_{it}) + \boldsymbol{\beta_4}(\mathbf{ACInd}_{it}) \\ & + \boldsymbol{\beta_5}(\mathbf{CSiz}_{it}) + \boldsymbol{\beta_6}(\mathbf{Lev}_{it-1}) + \boldsymbol{\beta_7}(\mathbf{CFO}_{it-1}) + \boldsymbol{\beta_8}(\mathbf{MTB}_{it}) \\ & + \boldsymbol{\beta_9}(\mathbf{ABSTAcc}_{it}) + \boldsymbol{\beta_{10}}(\mathbf{ROA}_{it}) + \boldsymbol{\beta_{11}}(\mathbf{BoardSiz}_{it}) \\ & + \boldsymbol{\beta_{12}}(\mathbf{BoardInd}_{it}) + \boldsymbol{\beta_{13}}(\mathbf{CEODual}_{it}) + \boldsymbol{\beta_{14}}(\mathbf{Sector}) + \boldsymbol{\varepsilon_{it}}\end{aligned}$$

Model C: Earnings Smoothing

$$\mathbf{SMTH}_{it} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}(\mathbf{AuSiz}_{it}) + \boldsymbol{\beta_2}(\mathbf{AuInd}_{it}) + \boldsymbol{\beta_3}(\mathbf{ACPres}_{it}) + \boldsymbol{\beta_4}(\mathbf{ACInd}_{it}) + \boldsymbol{\beta_5}(\mathbf{CSiz}_{it}) + \boldsymbol{\beta_6}(\mathbf{Lev}_{it-1}) + \boldsymbol{\beta_7}(\mathbf{CFO}_{it-1}) + \boldsymbol{\beta_8}(\mathbf{MTB}_{it}) + \boldsymbol{\beta_9}(\mathbf{ABSTAcc}_{it}) + \boldsymbol{\beta_{10}}(\mathbf{ROA}_{it}) + \boldsymbol{\beta_{11}}(\mathbf{BoardSiz}_{it}) + \boldsymbol{\beta_{12}}(\mathbf{BoardInd}_{it}) + \boldsymbol{\beta_{13}}(\mathbf{CEODual}_{it}) + \boldsymbol{\beta_{14}}(\mathbf{Sector}) + \boldsymbol{\varepsilon_{it}}$$

d) Additional tests – Univariate analysis

The study conducts additional tests of univariate analysis, in order to support the finding from the above tests. A similar approach was followed in the study by Chen, Lin and Zhou (2005). The t-test examines whether the means of two groups are statistically different from each other. Both parametric (Independent sample t-test) and Non- parametric (Mann-Whitney U test) is used to analyse whether the influence of Big3 and Non-Big3 audit firms on earnings management is statically different. This will imply whether quality of audit differs among Big3 and Non-Big3 audit firms and help identify the key differences between the two groups of companies that obtain the services of Big3 or Non-Big3 audit firms.

3.8 Chapter Summary

This chapter describes the research design and methodology of the study. It presents the conceptual diagram and the hypotheses of the study. The chapter then presents the definition and measurement of the variables, the sample and the methods of data collection. The collected data is analysed using descriptive statistics, correlation, multivariate and univariate analysis. Chapter Four will present the analysis of the study carried out using the methods described in this chapter.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

In achieving the purpose of the study, the research design presented in Chapter Three was instigated and the collected data were analysed using statistical data analysis methods. This chapter focuses on the presentation and analysis of the research findings of the study. The chapter initially presents descriptive analysis of the sample. Subsequently, the empirical findings are presented and analysed with reference to the results of reviewed literature. Finally the chapter concludes with a summary.

4.2 Descriptive statistics

The audit quality and earnings management variables along with the moderating and control variables are analysed using descriptive statistics to provide a general overview of the sample. Mean, minimum, maximum, median, standard deviation, skewness, and kurtosis, are calculated on this regard. The results of the analysis are shown in Table 4.1.

4.2.1 Degree of Earnings management

As per the results, the absolute value of discretionary accruals (AbsDACC) of the sample has a mean value of 0.110 with a maximum of 0.648 and a minimum of 0.002. One sample t-test was performed in order to test whether the absolute value of discretionary accruals is significantly different from 0, at a 99% confidence level. The results indicated a t-statistic of 15.19 with a p-value of 0.000, which rejects the null hypothesis that absolute value of discretionary accruals equal to 0. This provides evidence that listed companies in Sri Lanka do manage their earnings. The evidence is supported by the results of Fernando and Kelum (2011, p. 66). Fernando and Kelum studied whether quoted public companies in Sri Lanka engage in earnings management practices and concluded that the listed companies in Sri Lanka did show indications of earnings management.

Balsam, Krishnan, and Yang (2003) in their study highlight that a mean value of absolute discretionary accruals exceeding 10% is economically significant. As the

mean value reported in this study (as shown in Table 4.1) exceeds this threshold, it is clear that the degree of earnings management in the sampled companies is economically significant. Further, the mean value is higher in comparison to the results recorded in Jordon (Alzoubi 2016), in Malaysia (Rahman & Ali 2006), but is lower than 0.22 recorded by Chung and Kallapur (2003) and 0.62 recorded by Rusmin (2010) for the US and Singapore, respectively.

Mean value of Small positive earnings (SPOS) indicates that 6% of the sample companies (i.e. 8 companies) reported net income scaled by total assets between 0 and 0.01, while the others report otherwise. Earnings smoothing (SMTH) highlight that on average net incomes vary 1.44 times higher than operating cash flow. However, the median indicates that 50% of the sample companies record a lesser variability of net income to cash flow of 0.57. This implies that at least 50% of the sample companies engage in earnings smoothing practices.

4.2.2 Audit quality

In terms of the audit quality proxies, it is clear that 89% of the sample companies (Mean 0.887) are audited by the big three audit firms in Sri Lanka; KPMG, Ernst & Young and PricewaterhouseCoopers, implying a big three domination in the segment of listed companies. This is a much higher proportion compared to results of 81% in Malaysia (Rahman & Ali 2006), 86% in Singapore (Rusmin 2010), 83% in France (Piot & Janin 2007), 70% in Nigeria (Okolie 2013) and 47% Iran (Gerayli, Yanesari & Ma'atoofi 2011).

The higher proportion could be due to the perceived higher audit quality of big audit firms. Listed entities could prefer to be audited by big three firms as it would enable the companies to remain credible in the eyes of both local and foreign investors. The non-big three audit firms audit the remaining 11% of the sample.

Further, audit independence (AuInd) reports a mean of 6.5 with a standard deviation of 0.75. It indicates that there is no significant variation in terms of audit fees within the sample as it is clustered closely around the mean audit fee. This could be due to the sample being biased to the big three audit firms.

Table 4.3: Descriptive statistics of the variables (N = 432)

Variable	Mean	Min.	Max.	Median	S.D.	Skewness	Kurtosis
Dependent variables							
AbsDACC	0.110	0.002	0.648	0.060	0.149	2.602	9.461
SPOS	0.057	0.000	1.000	0.000	0.232	3.832	15.685
SMTH	1.440	0.033	8.397	0.571	2.195	2.206	6.865
Independent variables							
AuSiz	0.887	0.000	1.000	1.000	0.318	-2.437	6.941
AuInd	6.463	5.247	7.925	6.416	0.750	0.328	2.243
Moderating variables							
ACPres	1.000	1.000	1.000	1.000	0.000	.	.
ACInd	0.852	0.667	1.000	1.000	0.159	-0.174	1.096
Control variables							
Csiz	14.843	12.493	16.822	14.846	1.160	-0.221	2.415
Lev	0.336	0.015	0.792	0.304	0.243	0.350	1.962
CFO	0.052	-0.132	0.228	0.051	0.090	-0.013	2.731
MTB	1.656	0.432	5.089	1.279	1.231	1.482	4.567
AbsTAcc	0.067	0.002	0.228	0.047	0.063	1.191	3.480
ROA	0.073	-0.023	0.206	0.069	0.063	0.434	2.437
BoardSiz	8.196	3.000	15.000	8.000	2.110	0.485	3.235
BoardInd	0.386	0.222	0.571	0.375	0.103	0.236	2.069
CEODual	0.054	0.000	1.000	0.000	0.227	3.930	16.449

4.2.3 Moderating variables

Moreover, the mean value for ACPres (presence of an audit committee) suggests that all companies within the sample have had an audit committee throughout the research period. Due to no variation in the variable over the period considered, the variable was omitted from subsequent tests. In either case, the results do not reflect any changes.

With regard to the independence of the audit committee (ACInd), at least 67% of the committee comprises of independent members. On average 85% of the members of the audit committees of the sample, are independent with a standard deviation of 0.6.

This is a much higher proportion compared to 68% in Malaysia (Rahman & Ali 2006) and 34% in Jordan (Alzoubi 2016). Furthermore, 50% of the sampled companies operate with completely independent audit committees.

4.2.4 Control variables

Company size, which was measured using the natural logarithm of total assets, indicates a mean value of 14.8 within the range of 12.5 to 17. This highlights that average size of the companies in terms of its total assets is approximately Rs.2Bn with a minimum of Rs.0.3Bn and a maximum of Rs.20Bn.

Additionally, the results indicate that the companies in the sample have on average financed 34% of their beginning total assets through debt, with a lower standard deviation of 0.24. The median value highlights that 50% of the sample operate with a gearing less than 30% of its total assets. These imply that most companies operate at a lower gearing even though the maximum leverage extends up to 79%. Revised literature highlights that mean leverage in France (Piot & Janin 2007), Portugal (Alves 2013) and Singapore (Chia, Lapsley & Lee 2007) are much higher compared to Sri Lanka. This indicates that most public listed companies in Sri Lanka align their capital structure with a higher weighting to equity than predominance to debt sources. This is consistent with the claim made by Samarakoon (1999) that the use of debt financing is much lower in Sri Lanka, due to the majority of family-owned business being listed in CSE.

The companies record marginally positive cash flow from its operations, which on average amounts to 5.2% of its beginning total assets. While this does indicate poor financial performance in terms of lower cash flow generation, it is consistent with the results of Taiwan (Chen, Lin and Zhou 2005), Iran (Gerayli, Yanesari and Ma'atoofi 2011) and Turkey (Yasar 2013). However, this is much lesser compared to findings reported in Singapore (Rusmin 2010) and France (Piot & Janin 2007).

Firm growth, which is measured through the ratio of market to book value of equity, is dispersed with a standard deviation of 1.23 around the mean value of 1.66. The analysis reports a maximum market value of 5 times the book value of equity. Further, there is no company within the sample with a negative market to book value unlike

reported in Habbash (2010) and Lin, Li and Yang (2006). This indicates that no company operates with negative equity balance sheet where total liabilities exceed total assets. This is also corroborated with the lower level of leverage reported earlier.

The absolute value of total accruals is on average 7% of the opening assets with a maximum of 23%. The mean is consistent with the findings of Yasar (2013) but is much lower compared to 26% reported in Singapore (Rusmin 2010), 11% in the US (Balsam, Krishnan & Yang 2003; Lin, Li & Yang 2006). Additionally, based on the mean value of both absolute value of discretionary and total accruals it is evident that Sri Lanka has a higher magnitude of earnings management in comparison to other developing countries but a lower magnitude as opposed to developed countries such as Singapore and the US.

The average performance of the companies is reported at a return on total assets of 7.3%, while some manage to generate a return of 21%. This is consistent with the findings of Manawaduge, De Zoysa and Rudkin (2009) which also records an average ROA of 6.68% with a standard deviation of 0.067 for listed companies in Sri Lanka based on the study conducted during the financial year 2007/2008.

Furthermore, the companies within the sample operate with an average of 8 directors in the Board and this could vary within the range of three to fifteen directors. The optimal board size of 7-8 directors advocated by Lipton and Lorsch (1992), is adopted by 50% of the sampled companies. However in terms of Board independence, on average only 39% of the Board comprises of independent non-executive directors with the maximum being of 57% of the Board. This indicates that an average board size of 8 would comprise of 5 executive directors and 3 non-executive independent directors.

CEO Duality is recorded at an average of 0.054, indicating that while 94.6% of the companies have separated the role and duties of the Chairman and CEO. The balance of 5.4% has violated the corporate governance requirement of segregation of Chairman and CEO role. However, an improvement is evident in comparison to the findings of Palipana et al. (2015) where, upon examining data from Sri Lankan listed entities for the period from 2011 to 2013, the study identified that 22% of the

companies operate with the same person holding both positions of chairman and CEO.

Skewness and kurtosis can be used in testing for normality. As highlighted by Rahman and Ali (2006), if the reported skewness is within the range of ± 1.96 and kurtosis be within ± 2, the data set can be considered as normal distributed. As per Table 4.1, it is evident that no variable satisfies this condition except for Audit committee independences (ACInd) and Leverage (Lev).

However, Shapiro-Wilk W test for normality was performed in order to identify whether the variables conform to the normality assumption. The null hypothesis of the test is that the variables are normally distributed. However, based on the results of the Shapiro-Wilk W test (shown in Table 4.2) it is clear that the null hypothesis of normal distribution, can be rejected for all variables of the study. Alzoubi (2016) also highlights that in studies where earnings management is the dependent variable, non-normality in variables can be expected.

Table 4.4: Shapiro-Wilk W test for normality

Variable	Obs	W	V	z	Prob>z
AbsDACC	423	0.640	104.326	11.087	0.000
SPOS	423	0.926	21.460	7.315	0.000
SMTH	423	0.638	104.879	11.100	0.000
AuSiz	423	0.970	8.640	5.144	0.000
AuInd	423	0.980	5.680	4.144	0.000
ACInd	423	0.982	5.212	3.938	0.000
Csiz	423	0.988	3.516	3.000	0.001
Lev	423	0.953	13.491	6.207	0.000
CFO	423	0.993	2.138	1.813	0.035
MTB	423	0.830	49.087	9.289	0.000
ABSTAcc	423	0.863	39.757	8.786	0.000
ROA	423	0.977	6.559	4.487	0.000
BoardSiz	423	0.988	3.598	3.055	0.001
BoardInd	423	0.984	4.597	3.639	0.000
CEODual	423	0.923	22.401	7.417	0.000

4.3 Pairwise Correlation

Table 4.3 present the pair-wise correlation matrix for the variables of this study. Despite the data being not normally distributed, both Pearson (lower bound) and Spearman correlation (upper bound) coefficients have been performed in order to identify important relationships in terms of the direction and strength between the variables under consideration.

It is evident that though there are correlations between the variables that are statistically significant, none exceeds 0.80. Hence, there are no highly correlated variables in the study. This indicates that there is no threat of multicollinearity. The highest correlation was recorded between company size (Csiz) and auditor independence (AuInd) at 0.583 under Pearson correlation while under Spearman the highest correlation recorded was between absolute discretionary accruals (AbsDACC) and the absolute value of total accruals (AbsTACC) at 0.649.

4.3.1 Relationship between audit quality and degree of earnings management

As highlighted earlier, the study focuses on two hypotheses.

H_1 - Audit firm size has a significant negative association with the degree of earnings management.

H_2 - Audit independence has a significant negative association with the degree of earnings management.

In testing the above hypotheses, it was clear that the hypotheses are not supported by under both Pearson and Spearman correlation analysis. The absolute value of discretionary accruals (AbsDACC) is negatively correlated to audit size and audit independence. However, the correlation is weak and is statistically insignificant. The same relationship is evident in terms of small positive earnings (SPOS) and the audit quality proxies (audit size and audit independence). Correlation between earnings smoothing (SMTH) and audit quality proxies also provides the same evidence under Spearman correlation analysis, which improves the reliability of the evidence generated. However, under Pearson correlation, auditor independence reported a weak negative statistically significant (at 90% confidence level) correlation with earnings

smoothing and a positive but statistically insignificant correlation between audit firm size and earnings smoothing.

4.3.2 Effect of moderating variables

Furthermore, the results indicate that audit size is positively correlated to audit independence with statistically significant at 99% confidence level. This implies that big three audit firms tend to be highly independent as opposed to non-big three firms. Additionally, audit firm size and audit committee independence is positively correlated, which implies companies with higher independent audit committee opt for big-three firms than non-big firms (Alzoubi 2016). On an interesting note, it is also evident that the independence of the audit committee positively correlates to the absolute value of discretionary accruals (at 1% level of significance).

4.3.3 Effect of control variables

In terms of the control variables of the study, several statistically significant correlations are evident. A statistically significant (at 0.01 level) positive correlation between audit firm size and company size and a much stronger correlation between audit independence and company size is evident under both Pearson and Spearman analysis. This providence evidence that larger the companies become, they opt to contract highly independent big three audit firms to audit their financial statements.

Furthermore, company size is negatively correlated to the absolute value of discretionary accruals and the absolute value of total accruals at a significance of 1%. This indicates that company size is an influential restraining factor as larger companies engage in a lesser degree of earnings management. This could be due to the high scrutiny of larger companies by the market (Chen, Lin & Zhou 2005; Rusmin 2010). Further, the negative correlation could be due to contracting highly independent auditors. However, as both firm size and independence have no significant correlation with the absolute value of discretionary accruals, such a claim cannot be supported.

Furthermore, a positive significant correlation between company size and board size is evident through the correlation analysis. As Jensen (1993) highlighted, when a

company becomes larger there will lesser control over the management and higher managerial discretion. Hence, a larger board would be required to monitor the activities of the management.

The findings further reveal a positive correlation between leverage and the absolute value of discretionary accruals and the absolute value of total accruals at 1% significance level. This implies that higher debt driven companies manage earnings more using discretionary accruals, which could be to avoid the consequences of a technical default (by breaching debt covenants). Further, it indicates that leverage has a negative insignificant correlation with small positive earnings and a negative but significant at 1% correlation with earnings smoothing. Correlation between leverage and audit size indicates that companies with higher leverage opt to engage audit firm which is smaller in size (i.e. non-big three firms). This could be to minimize the involvement of quality auditors in order to manage earnings.

Cash flow from operations highlights a statistically significant negative correlation between the absolute value of discretionary accruals and small positive earnings at 1% level of significance (under Spearman correlation). This indicates that the companies with higher cash flow from operations record a lesser magnitude of earnings management. This is in line with the view of Becker et al. (1998) and Habbash (2010). However, there could be real earnings management practices instead of accruals management due to a higher level of scrutiny and regulations to monitor for accruals earnings management (Cohen, Dey & Lys 2008). Further, a positive correlation is evident between cash flow from operations and auditor independence under Spearman correlation. This highlights the ability of cash positive companies to engage highly independent auditors.

Furthermore, cash flow from operation increases when firm growth improves (at 1% level of significance). Company growth captured through the market to book ratio has a positive correlation to audit firm size (at 5% level of significance) and audit independence (at 10% level of significance). Additionally, it has a weak positive correlation to discretionary accruals at 5% significance level and to total accruals at 0.10 significance level. This implies that as a firm grows earnings management practices could be adopted.

There is a very strong positive correlation between the absolute value of total accruals and discretionary accruals (significant at 1%), indicating that firms with larger values of total accruals have a higher propensity to engage in earnings management practices through larger values of discretionary accruals. This supports the claim of Jeong and Rho (2004) and Chen, Lin, and Zhou (2005). However, there is negative significant (at 1% significance level) relationship between total accruals and earnings smoothing.

Furthermore, the absolute value of total accruals is negatively related to audit independence at 99% level of confidence, while there was a negative but insignificant correlation between the absolute value of discretionary accruals and audit independence. However, the absolute value of total accruals does not have a statistically significant correlation with any of the corporate governance variables.

Improvement in return on total assets, which indicate the performance of the company, has a weak positive correlation to both discretionary accruals and total accruals (at a 1% and 5% level of significance). Further, there is a positive correlation between ROA and earnings smoothing at 10% significance level. These highlight that as performance improves in a company, the company will opt for accruals earnings management or earnings smoothing in order to manage earnings.

Further, the negative correlation between return on assets (financial performance) and small positive earnings depicts that the need to adopt small positive earnings as a mode to manage earnings will reduce when the company performance improves. This is because companies adopt small positive earnings to avoid reporting earnings decreases or losses. Hence, when the performance of the company improves, there would be no necessity to use small positive earnings.

The correlation results further indicate a significant (at 1% level of significance) positive relationship that as a company performs well, both cash flow from operations and market value will improve. Further companies with better financial performance contract independent big audit firms and vice versa when performance drops. This is clear through the significant positive correlation evident between ROA and the audit quality variables under Spearman correlation results.

The corporate governance variables indicate no statistically significant correlation with the earnings management proxies, except for board independence. There is a

statistically significant positive correlation between the board independence (at 10% level of significance) and discretionary accruals and this is similar to the earlier reported relationship between audit committee independence and discretionary accruals. According to agency theory, the existence of independent directors within the board improves the monitoring function. Revised literature also highlight that presence of independent directors reduces earnings management within entities (Klein 2002; Alzoubi 2016). Through descriptive analysis, it was evident that nearly all companies operate with a highly independent board and audit committees. However, significant positive relationship reported through correlation analysis poses a question on whether the members are in fact independent to control suboptimal behaviour.

All three corporate governance variables correlate to audit independence significantly. The significant positive relationship between board size and audit independence at 1% significance level indicate that companies with a higher board size opt for independent auditors. However, there is a significant but weak negative correlation between audit independence and board independence at 90% confidence level. This implies that if the board comprises of highly independent members, the need to contract independent auditors will be reduced slightly.

Further, the negative significant correlation between CEO duality and audit independence highlight that companies with no segregation in the role of Chairman and CEO opt for auditors with lesser independence. This could be to enable such companies to engage in earnings management practices by influencing the auditors.

Further, it is evident that a significant positive association exists between audit committee independence and board independence under both Pearson and Spearman correlation analysis. This could imply that companies with higher board independence operate with highly independent audit committees as well. The relatively strong correlation between the variables could be justified through the claim of Klein (2002). The audit committee is a subcommittee of the Board. Hence, independent non-executive directors of the audit committee are also the independent members of the Board itself. Hence, a higher correlation can be expected between the variables (Klein 2002).

Table 4.5 : Pearson (lower bound) and Spearman correlation (upper bound) correlation matrix for variables (N = 432)

	AbsDACC	SPOS	SMTH	AuSiz	AuInd	ACInd	Csiz	Lev	CFO	MTB	AbsTAcc	ROA	BoardSiz	BoardInd	CEODual
AbsDACC		-0.112**	-0.067	-0.020	-0.038	0.139***	-0.199***	0.268***	-0.152***	0.105**	0.649***	0.199***	-0.006	0.091*	-0.037
		0.022	0.168	0.686	0.436	0.004	0.000	0.000	0.002	0.031	0.000	0.000	0.908	0.061	0.444
SPOS	-0.065		-0.073	-0.009	-0.040	-0.021	0.028	-0.094*	-0.143***	-0.062	-0.079	-0.247***	-0.018	-0.016	-0.059
	0.181		0.133	0.855	0.416	0.673	0.561	0.054	0.003	0.205	0.106	0.000	0.707	0.748	0.227
SMTH	0.002	-0.053		-0.022	-0.014	-0.044	-0.027	-0.104**	-0.004	-0.013	-0.177***	0.082*	-0.010	-0.023	0.040
	0.967	0.277		0.648	0.767	0.369	0.574	0.032	0.935	0.795	0.000	0.092	0.833	0.637	0.410
AuSiz	-0.029	-0.009	0.022		0.159***	0.122**	0.242***	-0.106**	-0.026	0.104**	-0.076	0.124**	0.002	0.094*	-0.013
	0.554	0.855	0.651		0.001	0.012	0.000	0.029	0.591	0.033*	0.120	0.011	0.970	0.053	0.793
AuInd	-0.013	-0.050	-0.088*	0.146***		0.076	0.595***	0.298***	0.116**	0.088*	-0.105**	0.100**	0.153***	-0.087*	-0.098**
	0.795	0.303	0.072	0.003		0.118	0.000	0.000	0.017	0.072	0.031	0.040	0.002	0.073	0.043
ACInd	0.133***	-0.018	-0.001	0.124**	0.070		0.019	0.039	-0.048	-0.033	0.018	0.007	0.021	0.319***	0.046
	0.006	0.715	0.981	0.011	0.150		0.698	0.430	0.329	0.502	0.712	0.894	0.664	0.000	0.345
Csiz	-0.149***	0.017	-0.128***	0.245***	0.5828***	0.013		0.053	0.003	0.008	-0.226***	0.026	0.158***	0.003	-0.054
	0.002	0.726	0.008	0.000	0.000	0.792		0.278	0.946	0.866	0.000	0.590	0.001	0.959	0.268
Lev	0.207***	-0.078	-0.144***	-0.105**	0.296***	0.021	0.090*		-0.060	-0.017	0.266***	0.057	0.033	0.053	0.047
	0.000	0.110	0.003	0.031	0.000	0.660	0.065		0.216	0.726	0.000	0.239	0.505	0.281	0.330
CFO	-0.224***	-0.112**	0.012	-0.016	0.090*	-0.055	-0.006	-0.107**		0.140***	-0.114**	0.464***	0.045	-0.068	-0.023
	0.000	0.022	0.799	0.736	0.064	0.261	0.904	0.027		0.004	0.020	0.000	0.361	0.164	0.634
MTB	0.089*	-0.060	-0.002	0.137***	0.019	-0.040	-0.023	0.001	0.078		0.095*	0.252***	0.115**	-0.074	0.049
	0.068	0.216	0.970	0.005	0.697	0.412	0.640	0.992	0.108		0.050	0.000	0.018	0.126	0.310
AbsTAcc	0.496***	-0.025	-0.019	-0.062	-0.142***	0.021	-0.221***	0.207***	-0.183***	0.164***		0.117**	0.038	0.053	-0.028
	0.000	0.609	0.692	0.200	0.003	0.670	0.000	0.000	0.000	0.001		0.016	0.439	0.276	0.563
ROA	0.028	-0.229***	0.122**	0.108**	0.067	0.011	0.015	0.002	0.444***	0.218***	0.136***		0.055	-0.090*	0.014
	0.564	0.000	0.012	0.026	0.169	0.830	0.759	0.974	0.000	0.000	0.005		0.264	0.064	0.772
BoardSiz	0.018	-0.008	0.005	0.005	0.160***	-0.002	0.183***	0.038	0.028	0.094*	-0.001	0.038		-0.130***	-0.172***
	0.715	0.865	0.927	0.918	0.001	0.962	0.000	0.435	0.565	0.054	0.990	0.438		0.007	0.000
BoardInd	0.080*	-0.007	0.038	0.097**	-0.086*	0.302***	-0.006	0.043	-0.071	-0.094*	0.069	-0.100**	-0.142***		0.006
	0.099	0.883	0.438	0.046	0.077	0.000	0.895	0.383	0.148	0.053	0.156	0.039	0.003		0.897
CEODual	-0.057	-0.059	-0.017	-0.013	-0.079	0.043	-0.077	0.052	-0.028	0.007	-0.001	0.006	-0.151***	0.004	
	0.239	0.227	0.721	0.793	0.104	0.374	0.114	0.284	0.573	0.880	0.992	0.910	0.002	0.937	

Notes: *Significant at 0.10 level , **Significant at 0.05 level, ***Significant at 0.01 level

4.4 Multivariate Analysis

In performing multivariate analysis, even though the study does not qualify the normality assumption both Pooled (OLS) regression and Panel regression is performed to improve the robustness of the results. Additional dummy variables for the years in the study was incorporated into the regression models when performing regression based on pooled OLS, to control for time effects. In performing panel regression, it is essential to decide whether to continue with fixed effects or random effects model.

Judge et al. in 1985 (cited in Habbash 2010) states that in a study where the time series units are lesser while the cross-sectional units are higher, the random-effects model is much suited. As this study focuses on a time series of three years with cross-sectional units of 141 companies, the random-effects model is much suited. However, to ensure reliability, Hausman Test was performed. Hausman test is conducted prior to the regression analysis to determine whether the fixed or random effect model is more suited. The selection depends on the probability of the Chi-Sq. statistic generated in the Hausman test.

The null hypothesis of the test is that random effect model is preferred, whereas the alternative hypothesis is that the fixed effects model is preferred. If the probability of the Chi-Square the statistic is lesser than 5 per cent, the null hypothesis is rejected, as the fixed effect model is the appropriate model to test for regression. However, if the probability exceeds 5 percent, the null hypothesis cannot be rejected. Hence, the random effect model is appropriate for analysis.

Table 4.4 represent the results of the Hausman test, which was carried out to determine the selection of the fixed or random effect model for this study. The p-value for all three models exceeds 5 per cent. Hence the null hypothesis cannot be rejected, which suggest that random effects are more suitable for the regression analysis as highlighted by Judge et al. in 1985 (cited in Habbash 2010.

Table 4.6 : Hausman test and effect model results under Panel regression

	Model A	Model B	Model C
	AbsDACC	SPOS	SMTH
Chi-sq. statistic (Prob>chi2)	0.1335	0.5331	0.3444
Appropriate Effect Model	Random	Random	Random

4.4.1 Results and Discussion of Model A (Discretionary Accruals)

Table 4.5 represent the results of the regression for Discretionary accruals (Model A). Under Model A, absolute discretionary accruals (AbsDACC) is the dependent variable. The Model is regressed using both pooled OLS and panel (random effects) models. Both approaches indicate a very high level of R2. Under the Panel (random effects) model, the variables considered explaining 75% of the variation in the dependent variable AbsDACC, while under pooled OLS the variables explain 73% of the variation in the dependent variable. Overall, under both approaches, the model is valid at 99% significance level.

a) Impact of audit quality on discretionary accruals

Under both Panel and Pooled OLS approaches, the results indicate a statistically insignificant relationship between audit firm size and the absolute value of discretionary accruals. This does not support the hypothesis of the study, that the audit firm size is significantly negatively associated with the degree of earnings management. Although the results contradicts with the findings of several studies (Lin & Hwang 2010; Rusmin 2010; Alves 2013), it supports the findings of Maijoor and Vanstraelen (2006), Rahman and Ali (2006), Piot and Janin (2007), Yasar (2013) and Ching et al. (2015). The studies state that the big audit firm conservatism/quality differential is not uniform across companies as national audit environment and investor protection mechanisms are drastically different among countries.

Further, the results also report a statistically insignificant relationship between audit independence and discretionary accruals. Hence, the second hypothesis of the study is also not supported by the results. The results support the findings of Chung and Kallapur (2003) and Ching et al. (2015) which attributes the statistically insignificant relationship between audit independence and degree of earnings management, to the

weak audit environment and institutional setting of the Malaysia compare to the stringent environment in US and UK.

b) Effect of moderating variables on discretionary accruals

Further, the results indicate that audit committee independence has a statistically insignificant but positive association with discretionary accruals. These findings are in line with the results of Rahman and Ali (2006) and Lin, Li and Yang (2006). It implies that audit committee has an insignificant role in constraining earnings management. Section 4.3.3 indicated that on average 85% of the audit committee comprises of independent members. However, such association reveals that establishment independent audit committees have had no significant impact on the degree of earnings management in companies. This further indicates that the oversight function of the committee could be weak and ineffective oversight function.

c) Effect of control variables on discretionary accruals

It is evident that only a few of the control variables report a significant association to the discretionary accruals. This could be due to the higher correlation reported earlier between discretionary accruals and the absolute value of total accruals. Even though the stronger correlation of 0.649 does not pose a threat of multicollinearity, it could be overshadowing the significance of the other control variables. This could be the possible reason as to why variables that reported significant correlation indicate an insignificance association to discretionary accruals under multivariate analysis. Therefore, an additional regression was performed after removing the absolute value of total accruals (ABSTAcc) from the initial equation of model A and the results are shown in Table 4.6. It is clear that the R^2 of the adjusted model has dropped drastically under both Panels and Pooled tests. This implies that as a single variable, the absolute value of total accruals strongly explains variation in the degree of earnings management.

Company size reports a negative but insignificant association with the absolute value of discretionary accruals as per the initial model. However, upon eliminating the absolute value of total accruals (ABSTAcc) variable, the significance of company size improves. The significant negative association reveals as a company becomes larger, the degree of earnings management reduces. This could be due to stringent scrutiny

by investors (Chen, Lin and Zhou 2005) or due to a higher risk of litigation (Rusmin 2010).

Leverage also reports an insignificant but positive relationship to discretionary accruals in the initial model (Table 4.5). However, a significant positive association between leverage and discretionary accruals is reported after adjusting the model as seen in Table 4.6. The adjusted results are consistent with the debt hypothesis. The debt hypothesis advocates that as leverage increases, the closer the entity becomes to breach debt covenants. To avoid violation of debt covenants and its dire consequences, companies engage in actions to manage earnings. Furthermore, the findings are consistent with prior studies (Gerayli, Yanesari & Ma'atoofi 2011; Alves 2013; Alzoubi 2016).

Cash flow from operations reports a statistically significant (at 1% level of significance) negative relationship with discretionary accruals under both panel and pooled OLS approaches. This is again in line with the results of correlation and implies that companies with the healthy and steady flow of cash from operations report lesser discretionary accruals, indicating a lower practice of earnings management (DeFond & Jiambalvo 1993; Habbash 2010). This suggests cash flow difficulties are a significant factor inducing earnings management practices. Further, under both pre and post adjustments, the variable remains significant but reports a much higher beta-value (coefficient) after eliminating the absolute value of total accruals (ABSTAcc) from the regression equation.

Furthermore, company growth (measured through the market to book value ratio) has an insignificant positive relationship with discretionary accruals. However, the association becomes significant after the adjustment (Table 4.6). The result is supported by the correlation test results and through the findings of prior studies. Chen, Lin, and Zhou (2005) justify the positive association as companies use earnings management to mask as fast growing entities with a positive outlook. DeFond and Jiambalvo (1993) on the other hand, validates the positive relationship stating that fast-growing firms could over invest in current assets (for example increase credit sales to improve turnover, which results in high receivables) with a view of accelerating growth, resulting in earnings management.

The absolute value of total accruals is a strong influential variable. It is positively significant at 1% significance level under both approaches and the magnitude of the relationship is high as evident through the high beta value. The results are in line with similar studies (Becker et al. 1998; Rusmin 2010; Yasar 2013). Total accruals comprise of both non-discretionary and discretionary accruals. Hence, an increase in either one of the component results in an increase in total accruals. Thus, a positive association is expected.

In terms of company performance, although a higher positive coefficient is reported under random effects model, it is insignificant. Under pooled OLS approach, ROA indicates a significant positive coefficient at 95% confidence level. However, after adjusting for the absolute value of total accruals, the variable becomes significant at a 1%. It implies that as the degree of earnings management increases the performance of the company improves, which would be the ultimate aim of earnings management (to report a falsified better bottom-line).

Board size indicates an insignificant negative association with discretionary accruals, which indicates that increasing the number of members of the board does not necessarily reduce the magnitude of earnings management of the companies. Though this direction of the association is consistent with the results of Klein (2002), Alves (2013) and Alzoubi (2016), the significance reported is not supported through revised literature.

Board independence also reports an insignificant positive association with discretionary accruals. Habbash (2010) highlights that the relationship between board independence with earnings management could be positive in Asian nations, as boards may contain less effective independent directors who are appointed through social contacts. The findings of the study are contrasted to the findings of Xie, Davidson, and DaDalt (2003) and Klein (2002) which reported a negative association between the variables. But it is consistent with Park and Shin (2004) and Rahman and Ali (2006). This indicates that board independence is an ineffective oversight mechanism to restrict earnings management in Sri Lankan listed firms.

Further, CEO duality also reports a negative but insignificant association to discretionary accruals. Segregation of the roles of chairman and CEO indicates no

impact on the degree of earnings management, contrary to the findings of Jensen (1993) and Klein (2002). However, the results are consistent with the findings of Xie, Davidson, and DaDalt (2003) and Lin and Hwang (2010). Despite the insignificance, the direction of the association is in line with the fundamental view of agency theory, that combining the roles of Chairman and CEO improves the conflict of interest, which will result in increased earnings management.

It is clear that the corporate governance variables; board size, board independence and CEO duality are not significantly related to discretionary accruals. A plausible reason for such an association can be the managerial hegemony theory. Managerial hegemony theory stresses that the board becomes ineffective in performing its oversight function due to management dominance over the board. The theory contradicts the agency theory. It advocates that as independent directors are outside members they lack adequate knowledge of the activities of the company. This, in turn, results in the board to be dependent on the information generated by the management, creating management dominance over the board (Rahman and Ali 2006).

In terms of the sectors considered, sector_2, which represents the Chemicals and pharmaceuticals sector, indicates a significant positive relationship with discretionary accruals. This implies that companies in the Chemicals and pharmaceuticals sector report higher discretionary accruals than the other sectors.

Furthermore, sectors such as Sector_3 (Diversified Holdings), Sector_4 (Hotels and Travel), Sector_5 (Land and Property), Sector_6 (Manufacturing), Sector_10 (Power & Energy) and Sector_11 (Services) record a higher level of discretionary accruals despite an insignificant relationship. Sectors such as Sector_7 (Motors), Sector_8 (Oil Palms) and Sector_9 (Plantations) report an insignificant negative relationship implying a lower level of discretionary accruals.

Table 4.7 : Regression Analysis for Discretionary Accruals (Model A - Unadjusted)

Variable	Model A: DACC					
	Panel (Random-effects)			Pooled OLS		
	Coefficient	*z*-value	p-value	Coefficient	*t*-value	p-value
Constant	-0.053	-0.61	0.55	-0.019	-0.29	0.772
AuSiz	0.000	0.00	1.00	0.001	0.08	0.938
AuInd	0.009	0.89	0.37	0.007	0.95	0.344
ACInd	0.055	1.58	0.11	0.023	0.82	0.414
Csiz	-0.003	-0.40	0.69	-0.003	-0.63	0.529
Lev	0.026	1.11	0.27	0.027	1.38	0.168
CFO	-0.132	-2.89***	0.00	-0.167	-3.33***	0.001
MTB	0.003	0.63	0.53	0.001	0.32	0.750
ABSTAcc	1.010	15.85***	0.00	0.957	14.15***	0.000
ROA	0.101	1.30	0.19	0.189	2.50**	0.013
BoardSiz	-0.002	-0.86	0.39	-0.001	-0.53	0.599
BoardInd	0.010	0.20	0.84	0.024	0.57	0.571
CEODual	-0.027	-1.14	0.25	-0.023	-1.26	0.209
Sector_2	0.469	16.55***	0.00	0.471	22.78***	0.000
Sector_3	0.008	0.34	0.73	0.006	0.38	0.704
Sector_4	0.002	0.08	0.93	-0.001	-0.06	0.952
Sector_5	0.006	0.24	0.81	0.002	0.10	0.924
Sector_6	0.018	0.93	0.35	0.017	1.20	0.230
Sector_7	-0.017	-0.57	0.57	-0.024	-1.09	0.275
Sector_8	-0.001	-0.02	0.99	-0.003	-0.14	0.891
Sector_9	-0.029	-0.99	0.32	-0.029	-1.33	0.185
Sector_10	0.014	0.48	0.63	0.006	0.27	0.788
Sector_11	0.017	0.51	0.61	0.014	0.60	0.548
Year_2015				0.004	0.49	0.626
Year_2016				-0.007	-0.79	0.430
	R^2	0.7484		R^2	0.752	
	Wald chi2	801.71		Adj R^2	0.737	
	Prob.>chi2	0.0000		Prob > F	0.000	
				Root MSE	0.076	
				F(24,398)	50.150	

Notes: *Significant at 0.10 level , **Significant at 0.05 level, ***Significant at 0.01 level

Table 4.8 : Regression Analysis for Discretionary Accruals (Model A - Adjusted)

Variable	Model A(adj): DACC					
	Panel (Random-effects)			Pooled OLS		
	Coefficient	z-value	p-value	Coefficient	*t*-value	p-value
Constant	0.149	1.49	0.14	0.153	1.94*	0.05
AuSiz	-0.002	-0.12	0.90	-0.004	-0.25	0.80
AuInd	0.006	0.49	0.63	0.006	0.59	0.55
ACInd	0.057	1.39	0.17	0.032	0.95	0.34
Csiz	-0.014	-1.92*	0.06	-0.013	-2.35**	0.02
Lev	0.091	3.37***	0.00	0.082	3.54***	0.00
CFO	-0.273	-4.71***	0.00	-0.333	-5.59***	0.00
MTB	0.009	1.74*	0.08	0.008	1.92*	0.06
ROA	0.379	4.00***	0.00	0.403	4.45***	0.00
BoardSiz	-0.003	-0.91	0.36	-0.001	-0.62	0.53
BoardInd	0.010	0.16	0.87	0.042	0.82	0.41
CEODual	-0.045	-1.65	0.10	-0.042	-1.93*	0.05
Sector_2	0.491	15.23***	0.00	0.487	19.30***	0.00
Sector_3	0.046	1.76*	0.08	0.038	1.85*	0.07
Sector_4	0.021	0.90	0.37	0.015	0.81	0.42
Sector_5	0.043	1.44	0.15	0.036	1.54	0.12
Sector_6	0.027	1.18	0.24	0.027	1.51	0.13
Sector_7	0.009	0.26	0.79	0.003	0.12	0.90
Sector_8	-0.013	-0.32	0.75	-0.019	-0.60	0.55
Sector_9	-0.033	-0.99	0.32	-0.034	-1.28	0.20
Sector_10	0.033	0.99	0.32	0.030	1.14	0.25
Sector_11	0.034	0.91	0.36	0.034	1.17	0.24
Year_2015				0.007	0.60	0.55
Year_2016				-0.012	-1.09	0.28
	R^2	0.6219		R^2	0.627	
	Wald chi2	415.89		Adj R^2	0.605	
	Prob.>chi2	0.0000		Prob > F	0.000	
				Root MSE	0.094	
				F(23, 399)	29.100	

Notes: *Significant at 0.10 level , **Significant at 0.05 level, ***Significant at 0.01 level

4.4.2 Results and Discussion of Model B (Small Positive Earnings)

Table 4.7 represent the results of the regression for Model B, where small positive earning (SPOS) is the dependent variable and is regressed using logistic regression as SPOS is a dichotomous outcome variable. Under the Panel (random effects) test, the

variables considered only explain 15% of the variation in the dependent variable SPOS, while under pooled OLS the variables explain 30% of the variation in the dependent variable. Though the explanatory power of the tests is low, the model is valid at a 99% level of significance in both tests.

a) Impact of audit quality on small positive earnings

Similar to the results in Model A, audit firm size reports a positive but insignificant association to Small positive earnings (SPOS) under Panel (random effects) test, while an insignificant negative association is reported under Pooled OLS test. Therefore Hypothesis One (H1) of the study which assumes that audit firm size is significantly negatively associated with the degree of earnings management is unsupported through the findings of Model B as well.

On the other hand, Audit independence reports an insignificant negative association to Small positive earnings under both Panel and Pooled OLS tests. Therefore, Hypothesis Two of the study also remains unsupported by the results of Model B. It must be noted that the insignificant association between the variables are consistent under both Model A and Model B.

b) Effect of moderating variables on small positive earnings

Independence of the Audit committee (ACInd) indicates a positive but insignificant association to Small positive earnings. This is consistent with the results of Rahman and Ali (2006) and Lin, Li, and Yang (2006). The results further validate that despite the presence of independent audit committees, there has been no significant influence over the degree of earnings management.

c) Effect of control variables on small positive earnings

Out of the control variables, company performance is the only variable that indicates a significant association (at 1% significance level) to the Small positive earnings under both Panel and Pooled OLS regression. The rest of the control variables report an insignificant association to Small positive earnings.

Company performance reports a significant negative association (at 1% significance level) to the Small positive earnings. Dechow, Sloan, and Sweeney (1995) states companies tend to manage earnings to avoid reporting losses or reporting earning decreases. Small positive earnings, is an earnings management mechanism which is adopted to avoid reporting earnings decreases or losses (Burgstahler & Dichev 1997). When an entity performs poorly (lower ROA), to avoid reporting such performance to the capital markets the companies would manage earnings to disclose a better bottom-line. Therefore, a significant negative association between company performance and Small positive earnings can be justified.

Company size is not a significant variable under Model B much similar to the initial results of Model A (Table 4.5). It reports an insignificant negative relationship with SPOS. This implies that company size is not an influential constraint on Small positive earnings. Nevertheless, the negative association is in line with the fundamental notion that larger entities engage in fewer earnings management (Chen, Lin & Zhou 2005; Rusmin 2010).

Leverage also reports an insignificant positive association with Small positive earnings. The results indicate that leverage is not a significant inducing factor to manage earnings. However, the direction of the association is consistent with the findings of prior studies (Alves 2013; Alzoubi 2016; DeFond & Jiambalvo 1993; Gerayli, Yanesari & Ma'atoofi 2011) and supports the debt hypothesis.

On the other hand, Cash flow from operations reports an insignificant negative association to Small positive earnings. The results are however inconsistent with the result of Model A in terms of the significance. This could be because the main motive/intention of adopting Small positive earnings to manage to earn, is to avoid reporting a loss or a decrease in profit. Hence, the cash position of the company would have no significant influence over the decision to adopt Small positive earnings. Nevertheless, the negative association is in line with the results of correlation and revised literature which reports that companies with healthy and steady flow of cash from operations report a lower degree of earnings management (DeFond & Jiambalvo 1993; Habbash 2010)

Furthermore, company growth also indicates an insignificant negative relationship with Small positive earnings. The result is consistent with the initial findings of Model A (Table 4.5). The findings indicate that though there is a negative relationship between company growth and small positive earnings, such relationship is not significant. Hence, Company growth may not be a significant constraining factor to manage earnings. This may be due to the increased market pressure an entity is exposed when it grows. Carcello and Nagy (2004) highlights that as a company grows, the company would be exposed to market pressure, which will coerce the entity to report consistent growth in earnings, surpass expected targets and manage earnings to avoid reporting earning decreases or losses.

The absolute value of total accruals reports an insignificant association to Small positive earnings even though it reports a positive association. This implies that absolute value of total accruals is not an influential factor in Small positive earnings, unlike in the Discretionary accrual model (Model A).

Additionally, all three corporate governance variables indicate no statistically significant relationship with Small positive earnings. Both board size and board independence have a positive insignificant association with Small positive earnings. This further reaffirms that though Sri Lankan listed entities operate with boards which are optimally sized (Lipton & Lorsch 1992) and on average 39% independent, it has no significant impact in improving the monitoring function and thus have no influence on earnings management.

In terms of sector dummies, Sector_2 (Chemicals and pharmaceuticals sector) and Sector_6 (Manufacturing) indicates a significant negative relationship with Small positive earnings at 5% and 10% significance levels respectively. This implies that companies in such sectors engage less in small positive earnings as an approach to manage earnings.

Furthermore, sectors such as Sector_3 (Diversified Holdings), Sector_4 (Hotels and Travel), Sector_5 (Land and Property), Sector_7 (Motors), Sector_9 (Plantations), Sector_10 (Power & Energy) and Sector_11 (Services) also record a negative but insignificant association with small positive earnings. However, Sector_8 (Oil Palms)

reports a positive significant association with small positive earnings, implying that companies in such sector engage on small positive earnings to manage earnings.

Table 4.9 : Regression Analysis for Small Positive Earnings (Model B)

Variable	Model B: SPOS					
	Panel (Random-effects)			Pooled OLS		
	Coefficient	z-value	p-value	Coefficient	z-value	p-value
Constant	0.221	1.08	0.28	0.620	0.10	0.92
AuSiz	0.001	0.02	0.98	-0.120	-0.13	0.90
AuInd	-0.009	-0.36	0.72	-0.419	-0.73	0.47
ACInd	0.067	0.78	0.43	3.361	1.38	0.17
Csiz	-0.007	-0.50	0.62	-0.180	-0.54	0.59
Lev	0.028	0.47	0.64	0.989	0.73	0.47
CFO	-0.009	-0.06	0.95	-0.506	-0.16	0.88
MTB	-0.017	-1.63	0.11	-0.378	-1.38	0.17
ABSTAcc	0.246	1.25	0.21	3.736	0.77	0.44
ROA	-0.661	-2.96***	0.00	-26.159	-3.19***	0.00
BoardSiz	0.005	0.86	0.39	0.184	1.31	0.19
BoardInd	0.009	0.07	0.95	-1.453	-0.44	0.66
CEODual	-0.040	-0.71	0.48	0.000		
Sector_2	-0.145	-2.24**	0.03	0.000		
Sector_3	-0.062	-1.17	0.24	-0.839	-0.76	0.45
Sector_4	-0.033	-0.71	0.48	-0.565	-0.65	0.52
Sector_5	-0.098	-1.63	0.11	-1.961	-1.28	0.20
Sector_6	-0.084	-1.88*	0.06	-2.348	-1.79*	0.07
Sector_7	-0.086	-1.24	0.22	0.000		
Sector_8	0.323	4.06***	0.00	3.147	2.46**	0.01
Sector_9	-0.088	-1.31	0.19	-1.331	-0.91	0.36
Sector_10	-0.054	-0.81	0.42	0.000		
Sector_11	-0.104	-1.39	0.17	0.000		
Year_2015				-0.058	-0.10	0.92
Year_2016				-0.495	-0.78	0.44
	R^2	0.1515		Pseudo R^2	0.2978	
	Wald chi2	61.67		LR chi2(19)	51.4000	
	Prob.>chi2	0.0000		Prob > chi2	0.0001	

Notes: *Significant at 0.10 level , **Significant at 0.05 level, ***Significant at 0.01 level

4.4.3 Results and Discussion of Model C (Earnings Smoothing)

Table 4.8 represent the results of the regression for Model C, which uses Earnings smoothing (SMTH) as the dependent variable to proxy for earnings management. Earnings smoothing is measured through a ratio between variability of ΔNI to the variability of ΔCFO as stated in Chapter Three. A lower ratio between variability of ΔNI to the variability of ΔCFO provides evidence of smoothing company earnings (Barth, Landsman & Lang 2007; Dechow, Ge & Schrand 2010).

Under both Panel (random effects) and Pooled OLS tests, the overall model is valid at 99% significance level. The variables considered under the Panel (random effects) regression, explain 14% of the variation in the dependent variable Earnings smoothing (SMTH), while the variables explain 15% of the variation in the dependent variable under Pooled OLS regression.

a) Impact of audit quality on earnings smoothing

Hypothesis One (H_1) of the study which assumes that audit firm size is significantly negatively associated with the degree of earnings management is unsupported through the findings of Model C as well. Audit firm size reports an insignificant association to Earnings smoothing (SMTH) under Panel (random effects) and Pooled OLS tests.

On the other hand, Audit independence also reports an insignificant association to Earnings smoothing (SMTH) under both Panel and Pooled OLS tests. Therefore, Hypothesis Two (H_2) of the study which assumes a significant negative association between audit fees and earnings management, also remains unsupported by the results of Model C.

b) Effect of moderating variables on earnings smoothing

Independence of the Audit committee (ACInd) indicates a positive but insignificant association to Earnings smoothing (SMTH). The results are consistent with the findings of Model A and B and corroborate with revised literature (Rahman & Ali 2006; Lin, Li & Yang 2006). The results also support the effective oversight mechanism of the audit committee, as there in no significant influence over the degree of earnings management, despite the presence of independent audit committees.

c) Effect of control variables on earnings smoothing

Company size reports a negative significant association with the metric of Earnings smoothing, which suggests that larger companies report a lesser ratio of net income to cash flow variability (variability of ΔNI to the variability of ΔCFO). This indicates that larger companies smooth their earnings to avoid variation in the bottom-line. As Carcello and Nagy (2004) highlighted such an association could be due to the intense market pressure to report steady earnings.

In terms of leverage, Table 4.8 indicates a negative association with Earnings smoothing. An insignificant association is reported under Panel regression while a significant association at a 10% significance level is reported under Pooled OLS regression. The results suggest that high leverage entities report lower variation in net income (i.e. engage in Earnings smoothing) and is consistent with the findings of both Model A and Model B and are in line with prior literature (Gerayli, Yanesari & Ma'atoofi 2011; Alves 2013; Alzoubi 2016).

Cash flow from operations indicates a negative significant association (at 10% level of significance) with Earnings smoothing under Panel regression. The results support the findings of correlation analysis and support the claim that companies with the healthy and steady flow of cash from operations indicate a lower degree of earnings management (DeFond & Jiambalvo 1993; Habbash 2010). However, an insignificant but negative association is reported under Pooled OLS test.

In terms of Company growth, a negative and insignificant association is revealed with Earnings smoothing. The result is in line with the initial findings of Model A (Table 4.5) and Model B. This may be due to the increased market pressure an entity is exposed when it grows as highlighted by Carcello and Nagy (2004). As a company grows, it would be exposed to market pressure, which will coerce the entity to report steady growth in earnings.

The absolute value of total accruals indicates a negative significant association under Pooled OLS regression. This indicates that as total accruals increases, the ratio of net income to cash flow variability (variability of ΔNI to the variability of ΔCFO) decreases (indicating that the company is engaging in earnings smoothing). This result is validated through the findings of Barth, Landsman, and Lang (2007). The study

highlights that if discretionary accruals are used to manage earnings, the variability in net income becomes much lesser than the variability in cash flows. This, in turn, causes a lesser ratio of net income to cash flow variability (variability of ΔNI to the variability of ΔCFO). However, under Panel regression, a negative but insignificant association is reported to earnings smoothing.

Company performance measured through return on total assets has a statistically significant positive association with the metric of earnings smoothing at 1% significance level. The findings as per Table 4.8, suggests that an increase in return on assets (Company performance) results in a higher variation in net income (i.e. low earnings smoothing).

Similar to the earlier models, all three corporate governance variables indicate an insignificant relationship to earnings smoothing. This is consistent with the results of Model A and Model B. The insignificant relationship validates the claim of Habbash (2010) that the relationship between board size and independence with earnings management could be insignificant in Asian countries. Further, it corroborates with the findings of Lin and Hwang (2010) of no significant association between the CEO duality and earnings management.

Sector_3 (Diversified Holdings) indicates a positive significant association with earnings smoothing under both tests while Sector_9 (Plantations) reports a positive significant association with earnings smoothing under pooled OLS regression. Sector_5 (Land and Property) also indicates a similar relationship. However, it is significant at 99% confidence level with a higher positive coefficient. This indicates that the companies within these sectors engage in fewer earnings smoothing to manage earnings. Sector_2 (Chemicals and pharmaceuticals sector) and Sector_7 (Motors) indicates an insignificant negative relationship with earnings smoothing. Furthermore, sectors such as Sector_4 (Hotels and Travel), Sector_6 (Manufacturing), Sector_8 (Oil Palms), Sector_10 (Power & Energy) and Sector_11 (Services) also record a positive but insignificant association with earnings smoothing.

Table 4.10 : Regression Analysis for Earnings Smoothing (Model C)

Variable	Model C: SMTH					
	Panel (Random-effects)			Pooled OLS		
	Coefficient	*z*-value	p-value	Coefficient	*t*-value	p-value
Constant	3.211	1.57	0.12	3.218	1.80*	0.07
AuSiz	0.388	0.95	0.34	0.409	1.15	0.25
AuInd	0.144	0.59	0.55	0.133	0.62	0.54
ACInd	0.318	0.37	0.71	0.274	0.36	0.72
Csiz	-0.268	-1.83*	0.07	-0.284	-2.22**	0.03
Lev	-0.941	-1.62	0.11	-0.876	-1.67*	0.10
CFO	-2.379	-1.74*	0.08	-1.957	-1.43	0.15
MTB	-0.064	-0.61	0.54	-0.055	-0.58	0.56
ABSTAcc	-2.912	-1.56	0.12	-3.077	-1.67*	0.10
ROA	7.541	3.50***	0.00	7.526	3.65***	0.00
BoardSiz	0.024	0.40	0.69	0.033	0.63	0.53
BoardInd	0.631	0.49	0.62	0.641	0.56	0.58
CEODual	-0.592	-1.06	0.29	-0.601	-1.23	0.22
Sector_2	-0.041	-0.06	0.95	-0.019	-0.03	0.97
Sector_3	0.935	1.77*	0.08	0.963	2.09**	0.04
Sector_4	0.178	0.38	0.70	0.187	0.46	0.65
Sector_5	2.234	3.71***	0.00	2.242	4.28***	0.00
Sector_6	0.069	0.15	0.88	0.069	0.18	0.86
Sector_7	-0.443	-0.64	0.52	-0.427	-0.71	0.48
Sector_8	0.519	0.65	0.52	0.557	0.80	0.42
Sector_9	1.035	1.53	0.13	1.061	1.80*	0.07
Sector_10	0.161	0.24	0.81	0.149	0.26	0.80
Sector_11	0.718	0.96	0.34	0.681	1.05	0.30
Year_2015				0.335	1.34	0.18
Year_2016				0.225	0.90	0.37
	R^2	0.1435		R^2	0.1479	
	Wald chi2	52.39		Adj R^2	0.0966	
	Prob.>chi2	0.0003		Prob > F	0.0000	
				Root MSE	2.0867	
				F(24, 398)	2.8800	

Notes: *Significant at 0.10 level , **Significant at 0.05 level, ***Significant at 0.01 level

4.5 Univariate analysis

In order to support the above findings, the study conducts a univariate analysis, testing for differences between the clients of big three and non-big three audit firms.

It is evident that the difference between the absolute value of discretionary accruals for both big three and non-big three is not statistically significant based on both independent sample t-test and Mann-Whitney U test. Further, the same result is reported for the two alternative earnings management proxies of small positive earnings and earnings smoothing. This further supports the finding generated through the correlation and multivariate analysis, which suggests that there is no statistically significant relationship between audit firm size and earnings management, and also conform to the results of Jeong and Rho (2004). However, despite the statistical insignificance in all three proxies of earnings management, following observations can be made with regard to the mean-value for each group.

The mean absolute value of discretionary accruals is lesser in companies audited by the big three audit firms than the non-big three. Similarly, companies audited by big three also report a lesser magnitude of small positive earnings and earnings smoothing, indicating a quality differential quality differential between big three and non-big three in curbing earnings management practices. The mean value of absolute value of total accruals is also lesser in the clients of the big three even though the difference is not statistically significant.

Further, it is evident that audit independence is different and statistically significant between big three and non-big three firms at a significance level of 1% under both tests. This validates the findings of correlation analysis where the significant positive correlation was reported. Furthermore, as audit independence was measured through audit fees, the finding also report a statistically significant difference between the fees charged. This differential is influenced by audit size as shown through the correlation analysis, which implies the brand name of the audit firms (whether or not it belongs to big three) influences the fee charged. The results further indicate that in companies audited by the big three, a higher independence in the audit committee can be evident and this difference is statistically significant.

Table 4.11 : Univariate analysis according to the audit firm size

	AuSiz		Independent Sample t-test			Mann-Whitney U test
	(Big3 = 1)	*N*	Mean	S.D.	*t*-statistic	*z*-statistic
AbsDACC	1	375	0.108	0.172	0.593	0.401
	0	48	0.122	0.146		
SPOS	1	375	0.056	0.230	0.183	0.183
	0	48	0.063	0.245		
SMTH	1	375	1.458	2.233	-0.453	0.457
	0	48	1.305	1.894		
AuInd	1	375	6.502	0.731	-3.02***	-3.273***
	0	48	6.158	0.833		
ACInd	1	375	0.859	0.158	-2.563***	-2.5**
	0	48	0.797	0.155		
Csiz	1	375	14.945	1.125	-5.18***	-4.969***
	0	48	14.051	1.135		
Lev	1	375	0.326	0.243	2.163**	2.176**
	0	48	0.407	0.236		
CFO	1	375	0.051	0.089	0.337	0.539
	0	48	0.056	0.095		
MTB	1	375	1.716	1.278	-2.828***	-2.134**
	0	48	1.186	0.598		
ABSTAcc	1	375	0.066	0.063	1.283	1.557
	0	48	0.079	0.066		
ROA	1	375	0.075	0.061	-2.233**	-2.555**
	0	48	0.054	0.072		
BoardSiz	1	375	8.200	2.062	-0.103	-0.038
	0	48	8.167	2.478		
BoardInd	1	375	0.389	0.104	-1.998**	1.938*
	0	48	0.358	0.089		
CEODual	1	375	0.053	0.225	0.263	0.263
	0	48	0.063	0.245		

Note: *Significant at 0.10 level , **Significant at 0.05 level, ***Significant at 0.01 level

Company size is also statistically different between the two groups, indicating the larger companies contract the big three audit firms for auditing services. This further corroborates with the statistically significant positive correlation between the two variables. Furthermore, market to book value and return on assets are also statistically different and higher in big three clients as opposed to the non-big three. This further reaffirms the results of correlation analysis (Section 4.3.3) where companies with a higher asset base, market capitalization and growth indicated a statistically significant positive correlation to audit firm size. The possible reason for such companies to opt for big-three firms could be due to the increased credibility received by contracting a globally known audit firm or for legitimacy purposes.

Even though the difference between the two groups in terms of cash flow from operations is not statistically significant, it is evident that clients of the big three have much steady cash flow from operation with a lesser standard deviation in comparison to the non-big three. Further, as the same group reports a lower mean in all earnings management proxies than the balance 48 observations, it reaffirms the claim of both Becker et al. (1998) and Habbash (2010) which states that companies with steady cash flow have less motivation to manage earnings.

In terms of Leverage, the two groups are statistically different with a confidence of 95% in both tests. This implies that low-levered companies opt to big three audit firms and vice versa. Further, it is clear that the same 375 observations which report lower leverage also depict a lower mean in terms of earnings management proxies. This supports the assertion of higher debt induces earnings management practices in companies within companies, and hence would opt for lesser independent auditors (Non-big three audit firms).

Moreover, clients of big three report better corporate governance practices as opposed to the non-big three. Even though board size and CEO Duality are not statistically different between the groups, the mean values of the group suggest that CEO duality is lesser in the clients of big three. Furthermore, Board independence is both statistically significant and higher in the clients of the big three.

4.6 Chapter Summary

This chapter presents the comprehensive analysis conducted to identify whether audit quality has an impact on the degree of earnings management practices in quoted companies of Sri Lanka. The variables were analysed using descriptive statistics in order to provide a general overview of the sample. The analysis highlighted that the mean value of absolute discretionary accruals reported is economically significant and is higher in comparison to the other developing countries. Further, the analysis revealed a big three domination in the segment of listed companies. Subsequently, correlation and multivariate analysis were used to analyse the hypothesized relationships. The results of the correlation analysis revealed that a weak statistically insignificant correlation between audit quality proxies (audit size and audit independence) and earnings management proxies (Discretionary accruals, Small positive earnings and Earnings smoothing). The results also indicated a positive significant (at 1% level of significance) correlation between audit committee independence and the absolute value of discretionary accruals.

In terms of multivariate analysis, the results indicated that both audit size and audit independence has a statistically insignificant relationship with the degree of earnings management under all three models. The tests further indicate, that audit committee independence and board independence report an insignificant association between the degree of earnings management, despite the majority of the companies operating with much higher proportion of independent directors on the boards and audit committees than noted in prior studies.

Furthermore, additional test of univariate analysis was performed to support the findings of the prior tests and test for differences between the clients of big three and non-big three audit firms. The results reported a statistically insignificant difference in earnings management proxies between big three and non-big three groups. However, the mean values of the groups indicate that earnings management in listed entities audited by the big three report lesser degree of earnings management in comparison to entities audited by the non-big three. After considering the results of the study, the following chapter will present the conclusion of the study and avenues for future research.

CHAPTER FIVE: SUMMARY AND CONCLUSIONS

5.1 Introduction

This chapter intends to provide the summary of the discussion and draw conclusions from the analysis performed in the preceding chapter. The chapter begins with presenting the summary of findings and the conclusion for each of the objectives of the study. The chapter then discusses the policy implications of such findings. Subsequently the limitations of the study are presented and the chapter concludes with thoughts for future research work.

5.2 Summary of Findings

Focus on earnings management has increased considerably, since the fall of well-known corporates owing to scandals. Studies have been conducted to identify factors which induce or restrain earnings management practices and one such area which has received much attention is the impact of audit quality on the degree of earnings management.

The need for audit arises as a solution to the agency problem of conflicting interest. Hence, quality of audit is paramount to monitor and restrain sub-optimal behaviour. However studies investigating the said relationship have reported contradicting results. Furthermore, extensive studies have been conducted based on developed markets such as the US and the UK, while studies focusing on developing markets remain comparatively scarce. Limited published studies have been conducted in the area of audit quality and earnings management in Sri Lanka. To the researcher's knowledge, there has been no published study done to examine such impact of audit quality. Thus, the broad objective and the theoretical significance of the study was to fill this gap by examining the impact of audit quality on the degree of earnings management in the context of Sri Lanka using information from public listed companies in the CSE.

5.2.1 Evolution in the scope of audit quality

The first objective of the study was to examine whether the scope of audit quality has evolved over time. The study performed an extensive literature analysis reviewing literature from 1981 to 2014 along with reports published by key institutions (such as IAASB and PCAOB) relating to audit quality. Based on the literature reviewed and analysed, the summary of the findings are given below.

It is evident that initially the scope of audit quality was concentrated on auditor quality. Such a view on audit quality could have originated owing to the environmental influences where the role of audit was perceived to detect corporate frauds. To accomplish such a role, the auditor was expected to have high level of independence and technical expertise. This led to the view that audit quality is solely dependent on auditor's ability to detect and report material misstatements (i.e. auditor quality). Hence audit quality proxies were more biased towards capturing the quality of the auditor.

However, the corporate failures and scandals notably Enron and the fall of formerly one of the big-five, Arthur Anderson, had a greater impact on the trust and perception of audit. The shift in the focus is evident through the subsequent definitions and indicators. Definitions and indicators, which were earlier focused on technical know-how and independence of the auditor was later reoriented to be more outcome driven, focusing on ethical and regulatory compliance. This further highlight the scope of the audit quality has been responsive to adapt to events of corporate scandals and changing regulatory and accounting environment. Furthermore, with the concept of earnings management gaining more attention, earnings quality and market based variables were used to measure audit quality. Though such proxies were not heavily incorporated in literature initially, subsequently it gained more acceptance and was widely used.

An important event in the evolution of audit quality was the introduction of FRC's audit quality framework in 2008. This was the first formal attempt to codify audit quality and the use of framework suited the multifaceted nature of the concept. The main weakness of FRC's framework is the insufficiency to address all needed aspects The framework only addressed the surface matters and hence was seen as a mere

strategy to gain legitimacy. Following the approach of FRC, Francis (2011), PCAOB (2013) and IAASB (2014) presented several other frameworks which are much wider in scope than the preceding models. The recently issued IAASB (2014) is highly comprehensive but is much qualitative which lowers the measurability of the concept further.

5.2.2 Relationship between audit quality and the degree of earnings management.

The second objective of the study was to identify the relationship between audit quality and the degree of earnings management practices in listed companies in Sri Lanka. Both audit quality and earnings management are unobservable concepts (Alzoubi 2016; Li & Lin 2005; Yasar 2013). Hence, requires the use of proxies to measure the concept. Earnings management was measured using discretionary accruals as per Modified Jones model. Additionally to test for robustness, earnings management was also measured using additional proxies such as small positive earnings and earnings smoothing. Audit quality was measured using two proxies commonly used in extant literature; audit firm size and auditor independence. The choice of proxies was restricted, due to the limited information disclosed in annual reports relating to the audit matters.

The objective was tested using two hypotheses. The first hypothesis was that audit firm size is significantly negatively associated with degree of earnings management. The second hypothesis was that audit independence is significantly negatively associated with degree of earnings management. Data was gathered from the annual reports of listed companies in Sri Lanka. The sample of the study includes companies with a financial year end of March in all sectors of the CSE, excluding the banks, finance and insurance sector, investment trusts sector and the closed ended funds sector. The research period was from 2013/14 to 2015/16. The final sample consisted of 141 listed companies in the CSE with a total of 423 firm-years. This final sample represents approximately 48% of the listed companies in Sri Lanka as at 30th September 2016.

The one sample t-test indicates that the listed companies in Sri Lanka do practise earnings management. Furthermore, the descriptive statistics indicate that the average

value of absolute discretionary accruals is economically significant at a level exceeding 0.10 (Balsam, Krishnan & Yang 2003). This is much higher compare to other emerging nations such as Jordon (Alzoubi 2016) and Malaysia (Rahman & Ali 2006) but is much lesser compare to developed countries such as the US (Chung & Kallapur 2003) and the US (Rusmin 2010).

The study indicated a much higher big three domination than in prior studies (Rahman & Ali 2006; Piot & Janin 2007; Rusmin 2010; Gerayli, Yanesari & Ma'atoofi 2011; Okolie 2013) where 89% of the sample companies are audited by big three audit firms. Further, all companies within the sample have broadly conformed to the corporate governance principles. All companies operate with an audit committee with on average 85% of the members being independent and non-executive. The average board size is in line with the optimum number advocated by Lipton and Lorsch (1992). Even though 5.4% of the companies still operate without segregating the role of CEO and Chairman, it denotes an improvement in comparison to the findings of Palipana et. al (2015).

The results of correlation analysis did not report any strong significant coefficients exceeding 0.80. No statistically significant correlation was evident between the audit quality proxies and the earnings management proxies. Furthermore, the corporate governance variables did not indicate any statistically significant correlation with the earnings management proxies, except for board independence. A statistically significant (at 10% level of significance) positive correlation was evident, between board independence and discretionary accruals, and between audit committee independence and discretionary accruals.

The results of multivariate and univariate analysis do not support the hypotheses of the study. The multivariate results indicated an insignificant association between the audit quality variables (audit firm size and audit independence) and earnings management variable (Discretionary accruals, Small positive earnings and Earnings smoothing). The results are consistent to the findings of Chung and Kallapur (2003), Maijoor and Vanstraelen, (2006), Piot and Janin (2007) Yasar (2013) and Ching et al. (2015). The revised literature advocates that an insignificant relationship between audit quality and earnings management is evident when there is no effective mechanism to oversee and regulate auditors.

Such an ineffective oversight mechanism is evident through the results of the study. Though a higher compliance to corporate governance regulations is highlighted through the results of the descriptive statistics, an insignificant association is reported between the audit committee independence, board size, board independence and CEO duality and the earnings management proxies (Discretionary accruals, Small positive earnings and Earnings smoothing). This implies that though companies comply with such regulations, the mechanisms put in place are not effective in restraining the degree of earnings management. The studies argue that an ineffective monitoring mechanism indicates a weak audit environment and institutional setting and therefore does not motivate audit firms to provide a high quality audits (Jeong & Rho 2004; Maijoor & Vanstraelen 2006; Yasar 2013).

5.3 Conclusion

In relation to the first objective, expansion in scope is evident in all three avenues of direct definitions, indicators/proxies and frameworks. From the widely known definition by DeAngelo (1981), which emphasizes a more technically driven and fraud detection role of audit, the scope of audit quality has widened to a point which views the role of audit as to protect public trust on financial reporting. Similarly, in terms of proxies, the focus progressed from auditor/firm related indicators to a more outcome and engagement specific indicators. Scope expansion was evident where initially focus was highly vested on too general and simple indicators such audit firm size, brand name etc. Subsequently focus was shifted to more client specific and complex indicators such as earnings quality. A key event highlighting the shift in audit quality from a unidimensional to a multidimensional view was through the development of frameworks. The recent attempt by IAASB to put forward a framework to better address the multifaceted concept marked a distinct scope expansion where focus on firm level audit quality was widened to include audit quality drivers at national and engagement level. Furthermore, it is also clear that the influence of the wider environment played a significant role in the scope expansion as the concept has been responsive to the environmental influences and aligned accordingly.

Hence the study concludes that the scope of audit quality has expanded over time, due to the influence exerted by the wider environment. The scope expansion has been in line with development in the role of the audit over time, where focus has been diverted from defining audit quality in a too general manner using single and narrow dimensions, to an engagement specific focus incorporating broader and complex factors.

In relation to the second objective, it is clear based on the results that both hypotheses of the study are unsupported. Therefore, based on these findings, this study concludes that audit quality has no significant impact on the degree of earnings management in Sri Lankan listed companies. These results were supported by tests for additional analyses as well as the prior studies (Chung & Kallapur 2003; Ching et al. 2015; Maijoor & Vanstraelen 2006; Rahman & Ali 2006; Piot & Janin 2007; Yasar 2013).

The insignificant association could be due to the presence of a weak oversight mechanism that fails to motive auditors to improve quality (Chung & Kallapur 2003; Ching et al. 2015; Maijoor & Vanstraelen 2006) or due to earnings considered in the study have been already rectified for any material misstatements. Nevertheless, the results of the study confirms the claim of Yasar (2013, p. 160) and Ching et al. (2015, p. 228) that the notion of audit quality constraining the degree of earnings management is not always valid in developing countries.

5.4 Policy implications of the study

The findings of the study have the following policy implications. The theoretical implication of the study is that it contributes to the existing literature on the scope of audit quality and the effect of audit quality on the degree of earnings management. It documents evidence on the expansion of the scope of audit quality and findings on the insignificant impact of audit quality over the degree of earnings management in Sri Lankan listed companies.

Furthermore, the study has practical implications for the regulatory bodies and investors. The study provides empirical support to regulatory bodies as it highlights effective regulation and constant monitoring is required to influence the quality of audit in Sri Lanka. Additionally the study stresses on the limited information available

relating to audit of listed companies, as it restricts the ability to conduct studies relating to audit quality. Regulatory bodies could improve disclosure requirements with regard to the audit provided (audit hours spent, non-audit services provider and related fees) so as to increase transparency.

The findings of the study provide evidence that though companies report a higher compliance to governance regulations, there is no effective control on earnings management. This would enable shareholders to question the role and importance of independent non-executive directors and whether they are indeed independent and knowledgeable to perform an effective oversight function.

5.5 Limitations

There are some limitations of the study that the users of this study must be aware when interpreting the findings of the study. The limitations can be broadly classified as sample based limitations and variables based limitations.

5.5.1 Sample based limitations

The scope of this study is limited to public limited companies listed on the Colombo Stock Exchange (CSE). Due to non-availability of publicly accessible data, this study does not include non-listed (mainly private limited) companies. This scope limitation confines the generalisability of the findings.

The selection of the sample companies out of all listed companies was based on predetermined sampling criteria. This is non-random sampling technique could have caused the sample to be biased and thus affected the findings of this study. Furthermore, the time period considered for the study is restricted to 3 years (2013/14 to 2015/16). A different relationship between audit quality and earnings management may have been reported for a longer research period.

5.5.2 Variables based limitations

The study is highly dependent on the proxies involved in measuring the independent and dependent variables. As audit quality and earnings management are unobservable concepts, the use of proxies were required to measure such concepts. Even though the

selection of the proxies is justified by previous literature, any limitation of the selected proxy becomes the limitation of the study. Furthermore, the discretionary accrual model (the modified Jones model) used in measuring the degree of earnings management, measure the accruals with error (Dechow, Ge & Schrand 2010). Thus limitations of the modified Jones model become a limitation of the study.

Moreover the analysis of audit quality is limited to the two proxies, due to the limited information disclosed in the annual reports of listed companies in Sri Lanka. Previous studies as highlighted earlier, have applied some notable proxies such as non- audit fees in measuring audit independence (Cahan et al. 2008), Audit firm revenue in measuring audit firm size and audit hours spent per audit client in measuring audit effort (Caramanis and Lennox 2008). However, non-availability of data to such level of detail impedes an in-depth analysis of audit quality and thus influences the final results of this study.

5.6 Avenues for Future Research

The findings and results of this research could stimulate future research in several areas. Following are some avenues recommended and lay open for future research efforts.

The study reports an insignificant relationship between audit quality and earnings management which could be due to the audit environment and institutional setting of the country considered, as highlighted by various literature (Chung & Kallapur 2003; Ching et al. 2015; Maijoor & Vanstraelen 2006). Hence, future studies could study the impact of the audit environment on the relationship between audit quality and earnings management in Sri Lanka or undertake studies to test the notion of Yasar (2013, p. 160) and Ching et al. (2015, p. 228), that audit quality constraining the degree of earnings management is not always valid in developing countries, by considering data from several developing countries.

Furthermore, this study excludes the Banking, Finance and Insurance Sector which is a key sector of the economy due to the difference in the nature of assets and liabilities as opposed to the non-financial firms. However, Sri Lanka has witnessed notable scandals from the financial sector companies (Pramuka Bank and

Golden Key PLC). Hence, future studies could focus on the impact of audit quality on the degree of earnings management in this sector.

The study is confined to examine the influence of audit quality on accrual based earnings management. However as highlighted by Cohen, Dey and Lys (2008), the use of real earnings management has increased significantly as opposed to accrual based earnings management after stringent mechanisms (such as the SOX Act) have been placed. Future studies could focus on this aspect.

Additionally, focus toward qualitative studies can be attempted by critically analysing the framework on audit quality by IAASB. Future research could focus on improving the measurability of the framework by developing a comprehensive set of indicators suitable to measure the elements of the framework.

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APPENDICES

Appendix 1: Sample of the Study

No.	Code	Company Name	Year End	Sector
1	BFL.N0000	BAIRAHA FARMS PLC	31-Mar	Beverage, Food and Tobacco
2	CARG.N0000	CARGILLS (CEYLON) PLC	31-Mar	Beverage, Food and Tobacco
3	BREW.N0000	CEYLON BEVERAGE HOLDINGS PLC	31-Mar	Beverage, Food and Tobacco
4	CCS.N0000	CEYLON COLD STORES PLC	31-Mar	Beverage, Food and Tobacco
5	CTEA.N0000	CEYLON TEA SERVICES PLC	31-Mar	Beverage, Food and Tobacco
6	SOY.N0000	CONVENIENCE FOODS (LANKA)PLC	31-Mar	Beverage, Food and Tobacco
7	DIST.N0000	DISTILLERIES COMPANY OF SRI LANKA PLC	31-Mar	Beverage, Food and Tobacco
8	HARI.N0000	HARISCHANDRA MILLS PLC	31-Mar	Beverage, Food and Tobacco
9	HVA.N0000	HVA FOODS PLC	31-Mar	Beverage, Food and Tobacco
10	KFP.N0000	KEELLS FOOD PRODUCTS PLC	31-Mar	Beverage, Food and Tobacco
11	LAMB.N0000	KOTMALE HOLDINGS PLC	31-Mar	Beverage, Food and Tobacco
12	LMF.N0000	LANKA MILK FOODS (CWE) PLC	31-Mar	Beverage, Food and Tobacco
13	LION.N0000	LION BREWERY CEYLON PLC	31-Mar	Beverage, Food and Tobacco
14	RWSL.N0000	RAIGAM WAYAMBA SALTERNS PLC	31-Mar	Beverage, Food and Tobacco
15	RAL.N0000	RENUKA AGRI FOODS PLC	31-Mar	Beverage, Food and Tobacco
16	COCO.N0000	RENUKA FOODS PLC	31-Mar	Beverage, Food and Tobacco
17	TSML.N0000	TEA SMALLHOLDER FACTORIES PLC	31-Mar	Beverage, Food and Tobacco
18	CHMX.N0000	CHEMANEX PLC	31-Mar	Chemicals and pharmaceuticals
19	CIC.N0000	CIC HOLDINGS PLC	31-Mar	Chemicals and pharmaceuticals
20	HAYC.N0000	HAYCARB PLC	31-Mar	Chemicals and pharmaceuticals
21	ASPH.N0000	INDUSTRIAL ASPHALTS (CEYLON) PLC	31-Mar	Chemicals and pharmaceuticals
22	MORI.N0000	J.L. MORISON SONS & JONES (CEYLON) PLC	31-Mar	Chemicals and pharmaceuticals
23	LCEY.N0000	LANKEM CEYLON PLC	31-Mar	Chemicals and pharmaceuticals
24	MULL.N0000	MULLER AND PHIPPS (CEYLON) PLC	31-Mar	Chemicals and pharmaceuticals
25	SPEN.N0000	AITKEN SPENCE PLC	31-Mar	Diversified Holdings
26	FLCH.N0000	BROWNS CAPITAL PLC	31-Mar	Diversified Holdings
27	BIL.N0000	BROWNS INVESTMENTS PLC	31-Mar	Diversified Holdings
28	CTHR.N0000	C T HOLDINGS PLC	31-Mar	Diversified Holdings
29	CARS.N0000	CARSON CUMBERBATCH PLC	31-Mar	Diversified Holdings
30	CSEC.N0000	DUNAMIS CAPITAL PLC	31-Mar	Diversified Holdings
31	EXPO.N0000	EXPOLANKA HOLDINGS PLC	31-Mar	Diversified Holdings
32	HAYL.N0000	HAYLEYS PLC	31-Mar	Diversified Holdings
33	HHL.N0000	HEMAS HOLDINGS PLC	31-Mar	Diversified Holdings
34	JKH.N0000	JOHN KEELLS HOLDINGS PLC	31-Mar	Diversified Holdings
35	RICH.N0000	RICHARD PIERIS AND COMPANY PLC	31-Mar	Diversified Holdings
36	SHL.N0000	SOFTLOGIC HOLDINGS PLC	31-Mar	Diversified Holdings
37	SUN.N0000	SUNSHINE HOLDINGS PLC	31-Mar	Diversified Holdings
38	CFLB.N0000	THE COLOMBO FORT LAND & BUILDING PLC	31-Mar	Diversified Holdings
39	VONE.N0000	VALLIBEL ONE PLC	31-Mar	Diversified Holdings

40	PCHH.N0000	ADAM CAPITAL PLC	31-Mar	Diversified Holdings
41	AHUN.N0000	AITKEN SPENCE HOTEL HOLDINGS PLC	31-Mar	Hotels and Travel
42	CONN.N0000	AMAYA LEISURE PLC	31-Mar	Hotels and Travel
43	ALHP.N0000	ANILANA HOTELS AND PROPERTIES PLC	31-Mar	Hotels and Travel
44	AHPL.N0000	ASIAN HOTELS & PROPERTIES PLC	31-Mar	Hotels and Travel
45	BBH.N0000	BROWNS BEACH HOTELS PLC	31-Mar	Hotels and Travel
46	CHOT.N0000	CEYLON HOTELS CORPORATION PLC	31-Mar	Hotels and Travel
47	REEF.N0000	CITRUS LEISURE PLC	31-Mar	Hotels and Travel
48	STAF.N0000	DOLPHIN HOTELS PLC	31-Mar	Hotels and Travel
49	EDEN.N0000	EDEN HOTEL LANKA PLC	31-Mar	Hotels and Travel
50	CITH.N0000	HIKKADUWA BEACH RESORT PLC	31-Mar	Hotels and Travel
51	HSIG.N0000	HOTEL SIGIRIYA PLC	31-Mar	Hotels and Travel
52	HUNA.N0000	HUNAS FALLS HOTELS PLC	31-Mar	Hotels and Travel
53	KHL.N0000	JOHN KEELLS HOTELS PLC	31-Mar	Hotels and Travel
54	CITK.N0000	KALPITIYA BEACH RESORT PLC	31-Mar	Hotels and Travel
55	KHC.N0000	KANDY HOTELS COMPANY (1938) PLC	31-Mar	Hotels and Travel
56	MRH.N0000	MAHAWELI REACH HOTELS PLC	31-Mar	Hotels and Travel
57	MARA.N0000	MARAWILA RESORTS PLC	31-Mar	Hotels and Travel
58	PALM.N0000	PALM GARDEN HOTELS PLC	31-Mar	Hotels and Travel
59	PEG.N0000	PEGASUS HOTELS OF CEYLON PLC	31-Mar	Hotels and Travel
60	RENU.N0000	RENUKA CITY HOTEL PLC	31-Mar	Hotels and Travel
61	RPBH.N0000	ROYAL PALMS BEACH HOTELS PLC	31-Mar	Hotels and Travel
62	SHOT.N0000	SERENDIB HOTELS PLC	31-Mar	Hotels and Travel
63	SIGV.N0000	SIGIRIYA VILLAGE HOTELS PLC	31-Mar	Hotels and Travel
64	TAJ.N0000	TAL LANKA HOTELS PLC	31-Mar	Hotels and Travel
65	TANG.N0000	TANGERINE BEACH HOTELS PLC	31-Mar	Hotels and Travel
66	RHTL.N0000	THE FORTRESS RESORTS PLC	31-Mar	Hotels and Travel
67	SERV.N0000	THE KINGSBURY PLC	31-Mar	Hotels and Travel
68	LHL.N0000	THE LIGHTHOUSE HOTEL PLC	31-Mar	Hotels and Travel
69	NEH.N0000	THE NUWARA ELIYA HOTELS COMPANY PLC	31-Mar	Hotels and Travel
70	TRAN.N0000	TRANS ASIA HOTELS PLC	31-Mar	Hotels and Travel
71	CITW.N0000	WASKADUWA BEACH RESORT PLC	31-Mar	Hotels and Travel
72	CTLD.N0000	C T LAND DEVELOPMENT PLC	31-Mar	Land and Property
73	CABO.N0000	CARGO BOAT DEVELOPMENT COMPANY PLC	31-Mar	Land and Property
74	CHOU.N0000	CITY HOUSING & REAL ESTATE CO. PLC	31-Mar	Land and Property
75	EAST.N0000	EAST WEST PROPERTIES PLC	31-Mar	Land and Property
76	EQIT.N0000	EQUITY ONE PLC	31-Mar	Land and Property
77	ETWO.N0000	EQUITY TWO PLC	31-Mar	Land and Property
78	KDL.N0000	KELSEY DEVELOPMENTS PLC	31-Mar	Land and Property
79	ONAL.N0000	ON'ALLY HOLDINGS PLC	31-Mar	Land and Property
80	IDL.N0000	SERENDIB ENGINEERING GROUP PLC	31-Mar	Land and Property
81	SLND.N0000	SERENDIB LAND PLC	31-Mar	Land and Property
82	YORK.N0000	YORK ARCADE HOLDINGS PLC	31-Mar	Land and Property
83	MHDL.N0000	MILLENNIUM HOUSING DEVELOPERS PLC	31-Mar	Land and Property
84	ABAN.N0000	ABANS ELECTRICALS PLC	31-Mar	Manufacturing
85	ACL.N0000	ACL CABLES PLC	31-Mar	Manufacturing

86	APLA.N0000	ACL PLASTICS PLC	31-Mar	Manufacturing
87	ACME.N0000	ACME PRINTING & PACKAGING PLC	31-Mar	Manufacturing
88	AGST.N0000	AGSTAR PLC	31-Mar	Manufacturing
89	ALUM.N0000	ALUMEX PLC	31-Mar	Manufacturing
90	CIND.N0000	CENTRAL INDUSTRIES PLC	31-Mar	Manufacturing
91	DPL.N0000	DANKOTUWA PORCELAIN PLC	31-Mar	Manufacturing
92	DIPD.N0000	DIPPED PRODUCTS PLC	31-Mar	Manufacturing
93	HEXP.N0000	HAYLEYS FIBRE PLC	31-Mar	Manufacturing
94	KCAB.N0000	KELANI CABLES PLC	31-Mar	Manufacturing
95	TYRE.N0000	KELANI TYRES PLC	31-Mar	Manufacturing
96	LALU.N0000	LANKA ALUMINIUM INDUSTRIES PLC	31-Mar	Manufacturing
97	CERA.N0000	LANKA CERAMIC PLC	31-Mar	Manufacturing
98	TILE.N0000	LANKA TILES PLC	31-Mar	Manufacturing
99	LWL.N0000	LANKA WALLTILES PLC	31-Mar	Manufacturing
100	LITE.N0000	LAXAPANA BATTERIES PLC	31-Mar	Manufacturing
101	GLAS.N0000	PIRAMAL GLASS CEYLON PLC	31-Mar	Manufacturing
102	CARE.N0000	PRINTCARE PLC	31-Mar	Manufacturing
103	REXP.N0000	RICHARD PIERIS EXPORTS PLC	31-Mar	Manufacturing
104	RCL.N0000	ROYAL CERAMICS LANKA PLC	31-Mar	Manufacturing
105	SIL.N0000	SAMSON INTERNATIONAL PLC	31-Mar	Manufacturing
106	SIRA.N0000	SIERRA CABLES PLC	31-Mar	Manufacturing
107	SWAD.N0000	SWADESHI INDUSTRIAL WORKS PLC	31-Mar	Manufacturing
108	PARQ.N0000	SWISSTEK (CEYLON) PLC	31-Mar	Manufacturing
109	TJL.N0000	TEXTURED JERSEY LANKA PLC	31-Mar	Manufacturing
110	TKYO.N0000	TOKYO CEMENT COMPANY (LANKA) PLC	31-Mar	Manufacturing
111	COLO.N0000	C M HOLDINGS PLC	31-Mar	Motors
112	DIMO.N0000	DIESEL & MOTOR ENGINEERING PLC	31-Mar	Motors
113	ASHO.N0000	LANKA ASHOK LEYLAND PLC	31-Mar	Motors
114	SMOT.N0000	SATHOSA MOTORS PLC	31-Mar	Motors
115	AUTO.N0000	THE AUTODROME PLC	31-Mar	Motors
116	UML.N0000	UNITED MOTORS LANKA PLC	31-Mar	Motors
117	BUKI.N0000	BUKIT DARAH PLC	31-Mar	Oil Palms
118	GOOD.N0000	GOOD HOPE PLC	31-Mar	Oil Palms
119	INDO.N0000	INDO MALAY PLC	31-Mar	Oil Palms
120	SELI.N0000	SELINSING PLC	31-Mar	Oil Palms
121	SHAL.N0000	SHALIMAR (MALAY) PLC	31-Mar	Oil Palms
122	BOPL.N0000	BOGAWANTALAWA TEA ESTATES PLC	31-Mar	Plantations
123	ELPL.N0000	ELPITIYA PLANTATIONS PLC	31-Mar	Plantations
124	HOPL.N0000	HORANA PLANTATIONS PLC	31-Mar	Plantations
125	KGAL.N0000	KEGALLE PLANTATIONS PLC	31-Mar	Plantations
126	KOTA.N0000	KOTAGALA PLANTATIONS PLC	31-Mar	Plantations
127	MASK.N0000	MASKELIYA PLANTATIONS PLC	31-Mar	Plantations
128	NAMU.N0000	NAMUNUKULA PLANTATIONS PLC	31-Mar	Plantations
129	WATA.N0000	WATAWALA PLANTATIONS PLC	31-Mar	Plantations
130	HPFL.N0000	BROWNS HYDRO POWER PLC	31-Mar	Power & Energy
131	LIOC.N0000	LANKA IOC PLC	31-Mar	Power & Energy

132	LGL.N0000	LAUGFS GAS PLC	31-Mar	Power & Energy
133	PAP.N0000	PANASIAN POWER PLC	31-Mar	Power & Energy
134	HPWR.N0000	RESUS ENERGY PLC	31-Mar	Power & Energy
135	VPEL.N0000	VALLIBEL POWER ERATHNA PLC	31-Mar	Power & Energy
136	VLL.N0000	VIDULLANKA PLC	31-Mar	Power & Energy
137	ASIY.N0000	ASIA SIYAKA COMMODITIES PLC	31-Mar	Services
138	CTBL.N0000	CEYLON TEA BROKERS PLC	31-Mar	Services
139	JKL.N0000	JOHN KEELLS PLC	31-Mar	Services
140	LPRT.N0000	LAKE HOUSE PRINTERS AND PUBLISHERS PLC	31-Mar	Services
141	MSL.N0000	MERCANTILE SHIPPING COMPANY PLC	31-Mar	Services

[i] Throughout the study, the countries have been referred to as developed and developing. Such referencing is based on the United Nation's classification of nations for the year 2016. The classification can be accessed through *http://www.un.org/en/development/desa/policy/wesp/wesp_current/2016wesp_full_en.pdf*