EFFECT OF AUDIT FIRM ATTRIBUTES ON EARNINGS QUALITY OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

BY

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BEING A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY ZARIA, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc) DEGREE IN ACCOUNTING AND FINANCE

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DECLARATION

I declare that the work in this dissertation entitled "Effect of audit firm attributes on earnings quality of listed consumer goods firm in Nigeria" has been performed by me in the Department of Accounting, Ahmadu Bello University, Zaria. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this dissertation was previously presented for another degree at this or any other institution.

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Hirhyel Abba IBRAHIM ***DATE***

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CERTIFICATION

This dissertation, entitled **EFFECT OF AUDIT FIRM ATTRIBUTES ON EARNINGS QUALITY OF LISTED CONSUMER GOODS FIRMS IN NIGERIA** by Hirhyel Abba IBRAHIM meets the regulations governing the award of the degree of Master of Science (M.Sc) in Accounting and Finance of the Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This dissertation is dedicated to Almighty God, the giver of knowledge and good health, and also to my beloved husband and children Ibrahim, Israel, Ivana-Minki and Iriana.

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ABSTRACT

External auditors have been identified by researchers to have an immeasurable role in enhancing the earnings quality of companies. However an important audit attribute which is industry specialised auditor have not been considered in the non financial sector in Nigeria and available literatures in this area have not considered the consumer goods sector in Nigeria. Therefore this study investigates the effect of audit firm attributes on earnings quality of listed consumer goods firms in Nigeria. Earnings quality is the dependent variable while industry specialized auditor, audit compensation, audit tenure and audit firm type are the independent variables. Data for the study were obtained from the audited annual report of the 13 sampled consumer goods firms for a period of 8 years covering 2007 to 2014. The study employed ordinary least square regressions as tool for analysis. The result shows that industry specialized auditor and audit firm type (Big4) have significant positive influence on earnings quality of listed consumer goods firms in Nigeria, however audit tenure and audit compensation have no significance influence on earning quality of the firms. For consumer goods firms to achieve higher earnings quality and provide quality financial information for effective decision making, it is therefore recommended that they should employ the services of industry specialized auditor and big four audit firm type who have the capability of influencing the quality of earnings of the company.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Investors and all stakeholders use financial statements which provide information about the economic activities of an entity for major decision making. One of the vital variables of financial report that investors, creditors, employees, shareholders, financial expertise and regulators use for efficient decision making is the accounting earnings which are expected to be reliable, verifiable, understandable and timely. A quality accounting information gives certainty that the report provided is sensibly free from error and bias and it truly represents what it intends to represent and the presentation is not misleading or ambiguous to Users (Shehu, 2013). Investors and other users are interested in high- quality financial accounting information for effective decision making.

At the end of the last 20th century through the beginning of 21st century, series of corporate Accounting scandals has been experience globally in big corporations such as Enron, HealthSouth, Parmalat, Tyco, WorldCom and Xerox (Habbash, 2010). The core of this high profile accounting scandals is lack of good corporate governance practice as well as reliable auditors who have the capability of ensuring quality in the financial reporting system (Basiruddeen, 2011). The aftermath of these corporate accounting scandals have put auditors under pressure to ensure that their report constitute assurance to Investors that their funds are put into good use and properly accounted for. Kantudu and Samaila (2015) in their view posited that the collapse of such big companies in the past has exposed the intentional misconduct of Managers.

Corporate governance mechanisms have been broadly recognized as constraining factors of earnings management (Baxter & Cotter 2009; Lin & Hwang 2010). Fama and Jensen (1983) opined that achieving credibility and transparency of financial reporting practice of a company depend on the effectiveness of the monitoring mechanism that the company employs. Regulators and financial statements analysts as well as auditors are expected to ensure that the information in the financial statement is true, fair and free from opportunistic and unprincipled judgments, which destroy the quality of financial reporting (Umar, 2014).

The need for auditors to ensure high quality in the financial report prepared by managers is of great importance to regulators, as a result the International Auditing and Assurance Standards Board (IAASB, 2013) stated that audit service gives an assurance that the financial report prepared by managers is true, fair and free of both intentional and unintentional errors. Auditing mechanism has been considered useful in ensuring integrity of the financial report by scrutiny managers' excesses that usually arise as a result of information asymmetry (Abubakar, 2014). External auditors have been commended in playing a highly crucial role in ensuring the credibility, validity and reliability of the financial report, as such shareholders employs external auditors who will serve as third parties in providing assurance that the financial report is accurate (Wallace, 1987 & Larcker, 2011).

The ability of auditors to report managers opportunistic behavior in the financial statement depend on the quality of the auditor and auditor independence (DeAngelo,1981). Audit quality needs to be in accordance with certain accounting rules and it adds value if the quality enables financial statements to reflect the economic performance position of a firm and ensure that good

performing firms can be distinguished from bad performing firms (Abbasali, Naser, Milad & Elham, 2013)

Researchers such as Jessen, Willian, Mark and Mohan (2015), Rasha and Andrew (2012) and Dechow and Dichev (2002) predict that an auditor's ability to detect errors is a function of auditor effort and effectiveness and that an auditor's incentives to report or correct errors depend on factors such as litigation risk, reputation costs, and auditor independence. The ability of auditors to provide high earnings quality is credited to some attribute of the audit firm, which include audit firm type, audit independence, industry specialize audit, audit fees, joint audit service and audit tenure (DeAngelo, 1981).

Hence, this study is motivated by the crucial role of auditor in ensuring quality of financial reporting with regard to earnings quality. The study focus on four major audit firm attributes (industry specialized audit, audit compensation, audit firm type (Big 4), and audit tenure) in relation to earnings quality using data from the consumer goods firms in Nigeria. This is informed by the fact that Nigeria as a country was not left out in the corporate accounting scandals that cause the failures of companies like Oceanic Bank, Savannah bank, Societal General Bank, Afribank plc and Intercontinental bank among others, which shortly before their failures their financial report did not show any signal of collapse despite the auditors' endorsement that the financial reports are true and fair, and are in accordance with the relevant rules and regulation. The consumer goods sector of every country plays a vital role to the economic development of a country, consumer goods firm are mostly in to manufacturing and they deals with heavy assets, large volume of transactions and accruals. Managers can use this large transactions and accruals to hide accounting irregularities, misstatement and earnings

management, which have adverse effect on reporting quality (Shehu, 2011, & Augustine, 2014). Therefore the adverse consequence of poor quality report and the need to ensure quality financial report necessitated this study on earnings quality in Nigeria.

1.2 Statement of the Problem

Financial reports are supposed to provide relevant and reliable information to the stakeholders of an organization for informed decision making. It is therefore important that they report should convey true and accurate information; However in a situation where financial information does not represent true and accurate economic position of the entity, shareholders and all prospective investors will make wrong assessment about the organization which will affect their decisions. The discretion of managers over accounting numbers may be done to their own advantage thus making it difficult to differentiate opportunistic earnings management from legitimate exercise of accounting discretion (Dechow & Skinner, 2000 and Kothari, 2000). This opportunistic behavior of managers which should have been pointed out by auditors before stating their unqualified opinion has led to the collapse of many firms both in developed and developing countries and this has further raised a lot of questions about the integrity of the external auditors. Every firm that is tilting toward growth, need reliable financial information for proper economic decision. Hence achieving quality financial statement also depends on the integrity, independence and objectivity of external auditors in discharging their responsibility, among other factors (Larcker, 2011). External Auditors report serves as assurance to the shareholders of the credibility of the financial statement (Gallegos, 2004). Ling and Nopmanee (2015) opined that the near meltdown in financial services of 2008 and 2009, which auditors fail to mitigate or at least warn of the potential disaster ahead has made the issue of auditor's independence tighter.

Auditor's independence is always questioned when a firm goes bankrupt shortly after its financial statement shows no indication of any failure.

Many studies have been conducted on the relationship between audit attributes and earnings quality. Some of these studies include Imen and Pascal (2014), Lin and Hwang (2010) and Habbash (2010) which were conducted in UK, Australia and Europe respectively. Few studies such as Abubakar (2014), Fariba and Hassan (2014), Umar (2014), Augustine, Famous and Augustine (2014) and Masoyi, Abubakar and Peter (2015) were conducted in Nigeria. The studies that were conducted in the developed countries did not cover companies in the developing countries like Nigeria. However most of the studies which were conducted in developing countries including Nigeria did not made use of industry specialized auditor as an audit attributes.

It have been found in the literature that most of the studies that have been conducted produce mix result concerning all the variable under this study. The presence of these lingering divergent views in the literature could be attributed to difference in country or domain, methodology, variables, and time variation in which the studies were carried out. Hence this current study attempt to include an important variable of audit attribute which is industry specialized auditor which was not used by most of the studies conducted. This variable is important as it enables the auditor to understand the financial reporting complexity of a firm in an industry by auditing more than one- third of the firms in that industry. To the best of our knowledge few studies conducted in developed countries such as (Lin & Hwang, 2010; Imen & Pascal, 2014; Habbash, 2010) and one Nigerian study conducted by Abubakar (2014) made used of industry specialized auditor as a proxy for audit quality. However, the study conducted in Nigeria was in the financial services

and it made used of loan loss provision as proxy for earnings management and found a contrary result from those studies conducted in the developed countries. This study is an attempt to further examine the impact of external audit attributes on earnings quality of listed consumer goods firms in Nigeria using industry specialized auditor as one of the audit attributes and accruals quality as proxy for earnings quality with data from non financial services.

Another motivation for this study is that the consumer goods sector in Nigeria has not been considered by previous works in the area of audit attribute and earnings quality. The consumer goods sector is involved in both manufacturing and marketing of its products and also plays a significant role in the economic development of the country because of the wide used of its product and the employment its generate.

1.3 Research Questions

The specific research questions to be answered in this study include:

i) What is the effect of industry specialized auditor on earnings quality of listed consumer good firms in Nigeria?

ii) How does audit compensation affect earnings quality of listed consumer goods firm in Nigeria?

iii) What is the effect of audit tenure on earnings quality of listed consumer goods firms in Nigeria?

iv) How does audit firm type (Big 4) affect earnings quality of listed consumer goods firms in Nigeria?

1.4 Objectives of the Study

The main objective of this study is to examine the effect of audit firm attribute on earnings quality of consumer goods firms in Nigeria. The specific objectives are to:

i) examine the effect of industry specialized auditor on earnings quality of listed consumer goods firms in Nigeria

ii) assess the effect of audit compensation on earnings quality of listed consumer goods firm in Nigeria

iii) determine the effect of audit tenure on earning quality of listed consumer goods firms in Nigeria.

iv) examine the effect of audit firm type (Big 4) on earnings quality of listed consumer goods in Nigeria.

1.5 Statement of Hypothesis

In line with the above objectives of the study, the following hypotheses are formulated.

H_{01}: Industry specialized auditors has no significant effect on earnings quality of listed Consumer goods firms in Nigeria

H_{02}: Audit compensation has no significant effect on earnings quality of listed consumer goods firm in Nigeria

H_{03}: Audit tenure has no significant effect on earnings quality of listed consumer goods firms in Nigeria.

H_{04}: Audit firm type has no significant effect on earnings quality of listed consumer goods firms in Nigeria.

1.6 Scope of the Study

This study was carried out on audit firm attributes as it affects earnings quality of listed consumer good firms in Nigeria. The study cover the period of eight years from 2007 – 2014. Earnings quality was represented by accruals quality and the study adopted the Dechow and Dichev (2002) model as modified by McNichols (2002) of the listed consumer good firms during the period covered by the study. Also, audit firm attribute in this study cover industry specialized auditor, audit compensation, audit tenure and audit firm type.

1.7 Significance of the Study

A study on the effect of audit attribute on earnings quality of consumer goods sector is significant in view of the fact that the consumer goods sector of every economy plays not only the important role of employment generation and providing the nation with goods for primary or secondary use but it also creates opportunity for investment in a country. The study is of great significance in view of the recent search by accounting regulators for measures that could protect and improve earnings quality in the corporate world. The study also serves as response to the call made by International Auditing and Assurance Standard Board (IAASB 2013) for a framework on audit quality; which includes awareness of key rudiment of audit quality and encouraging key stakeholders to challenge themselves to do more to increase audit quality in their particular environments.

Government is concerned in knowing companies that operates successfully and those who failed to take the necessary measures to avoid crises of insolvency. Investors are also interested in

knowing the ability of consumer goods companies to pay their obligations based on the indicators of success of the companies. Conducting this study has become necessary as it will enhance reporting quality which has continued to be relevant to stakeholders of all firms in Nigeria. The study is also significant to management of consumer goods firms in appointing auditors who are independent and have the ability of pointing out signal of corporate scandals in firms. Finally the study contributes to the empirical literature in the Nigeria context in the consumer goods sector; controlling for the effect of IFRS when testing audit attribute on earnings quality.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literatures relevant to audit attribute and earnings quality. The chapter is in three broad sections conceptual literatures, empirical literatures and theoretical framework that underpin audit firm attribute and earnings quality. These literatures served as a point of references to the findings of this research.

2.2 Conceptual Issues

In this section the concept of earnings quality and the concept of audit firm attribute are discussed.

2.2.1 The Concept of Earnings Quality

Financial report should always provide reliable, relevant understandable and comparable information to assist users in decision making (Kamaruzaman, Mazlifa & Maisarah, 2009). Jonas and blanchet (2000) state that financial reporting is not only a final output of financial transaction but the quality of the process on each part, including disclosure of the company's transactions, information about the selection and implementation of accounting policies and knowledge of the judgments made. Accounting earnings is a major factor that conveys signals to the capital market, and it is considered as high quality if the chances of errors and misstatements are low or absent (Ewert & Wagenhoper, 2010). As such, firms' earnings quality is measured in terms of accruals quality; that is, earnings with less accruals and high cash flow components.

The concept of earnings quality is fundamental in accounting, yet there are deep disagreements about how to define earnings quality and how to measure it (Dichev, Campbell, Shiva, 2012).

Penman and Zhang (2002), defined earnings quality from the perspective of an analyst as reported earnings before extraordinary income statement that is good indicator of future earnings. Their assertion is that the use of accounting method consistently will lead to sustainable report which is deemed of high quality that can be used to predict future earnings. Tate (2001) defines earnings quality as accounting earnings that reflect information about value of company. Similarly, Schipper and Vincent (2003) defined the earning quality as the degree to which reported earnings of an entity truly reflect the Hicksian income. In their notion earnings quality is measured with reference to Hicksian income, that the closeness of earnings to hicksian income infers higher quality. Dechow and Schrand (2004) define earnings quality as a measure of how well earnings reflect the actual performance of a firm. In their assertion what makes earnings qualitative is when it presents the true firms performance.

According to Vincent (2004), the quality of earnings is decision usefulness of the reported earnings to the users. In this context, the quality of earnings is how earnings information is indispensable to users in making decision on resources allocation. Subsequently, Chan, Jegadeesh and Lakonishok (2006) defined earnings quality as the degree to which reported earnings indicate operating fundamental of an entity. This measure of quality is interested on the ability of reported earnings to predict future performance of entity. Dechow, Ge, and Schrand (2010) state that higher quality earnings provide more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker. They further explained that Earnings quality is conditional on the decision-relevance of the information and the quality of reported earnings number depends on whether it is informative about the firm's financial performance. This definition suggests that quality could be evaluated with respect to any decision that depends on an informative representation of financial

performance, and it does not restrain quality to imply decision usefulness in the context of equity valuation decisions. Srinidh, Gul and Tui (2011) describe earnings quality as the ability of current reported earnings to reflect the future cash flow and earnings. In this context earnings quality refers to how best current reported earnings can predict future performance of entity.

According to the various definitions, there seems to be two underlying concept that earnings quality reflect firm performance as an indication for future earnings and for decision purposes. For the purpose of this study earnings quality is defined as the extent to which reported earnings reflect the actual economic activities and financial performance of an entity in order for effective decision making by stakeholders.

Earnings quality is the product of accounting system that reflects unobservable construct that inherently involves estimations and judgment, and thus has the potential for unintentional errors and intentional bias like earnings management (Ewert & Wagenhoper, 2010). They further explain that earnings quality is one of the most important characteristics of accounting systems. High quality financial report improves capital market efficiency; as such investors and other users should be interested in high-quality financial accounting information. For that reason, standard setters strive to develop accounting standards that improve earnings quality, and many recent changes in auditing, corporate governance, and enforcement have a similar objective (Dechow *et al.*, 2010).

Proxies of Earnings Quality

Proxies of earnings quality classified into three broad categories namely (i) properties of earnings, (ii) investor responsiveness to earnings, and (iii) external indicators of earnings misstatements according to Dechow *et al.* (2010). Properties of earnings, includes earnings

persistence and accruals, earnings smoothness, asymmetric timeliness and timely loss recognition, and target beating. Target beating show the distance of earnings from a target (small profits) indicating earnings management, were by earnings management is assumed to erode earnings quality. Second category, investor responsiveness to earnings, includes use of earnings response coefficient (ERC) or the R square from the earnings-returns model as a proxy for earnings quality and that relate the ERC to another construct such as accruals quality. Third category is external indicators of earnings misstatements, which includes Accounting and Auditing Enforcement Releases (AAERs), restatements, and internal control procedure deficiencies reported under the Sarbanes Oxley Act, all of which are viewed as indicators of errors or earnings management.

Earnings persistence is in the first category of proxies of earnings quality and most of the researches on earning persistence centered on the usefulness of earnings to equity investors for valuation. Researches on earnings persistence have two broad streams. The first stream are motivated by an assumption that more persistent earnings will yield better inputs to equity valuation models, and thus a more persistent earnings number is of higher quality than a less persistent earnings number. (Penman & Zhang, 2002; Francis *et al.*, 2004). The study conducted by Dichow *et al.* (2010) aimed at identifying financial characteristics associated with persistent earnings. They found limited contribution to evaluate persistence as a proxy for earnings quality because of the maintained assumption that more persistent earnings are more decision useful for equity valuation.

The second stream of researches attempts to address the broader issue of whether earnings are decision useful in that they improves equity valuation outcomes. Higher beta implies more persistent earnings, the rationale behind earnings persistence being a quality metric can be

illustrated: If firm A continually records a more persistent earnings stream than firm B, it means that firm A, current earnings is a more useful summary measure of future performance; and firm A income current earnings in will give smaller valuation errors than income current earnings in firm B. hence higher earnings persistence is of higher quality when the earnings is also value-relevant (Dechow *et al.*, 2010).

Accruals is another proxy in the first category, the introduction of statement of cash flow has made accruals to be defined more often as the difference between earnings and cash flows where cash flows are obtained from the statement of cash flows. Dechow *et al.* (2010) Distinguishes between "abnormal" from "normal" accruals, and they state that normal accruals are meant to capture adjustments that reflect fundamental performance, while the abnormal accruals are meant to capture distortions induced by application of the accounting rules or earnings management (due to an imperfect measurement system). They opined that these measures attempt to directly capture problems with the accounting measurement system and so are particularly relevant to accounting researchers. The general interpretation is that if the "normal" component of accruals is modeled properly, then the abnormal component represents a distortion that is of lower quality.

They also state that an important point to note when reviewing accruals models is that, the measures of abnormal accruals obtained from the models tend to be positively correlated with the level of accruals. In other words, a firm with extreme accruals also has extreme abnormal accruals, and that the correlation raises concerns about whether abnormal accruals reflect accounting distortions or whether they are the result of poorly specified accruals model and include a component that measures fundamental performance.

Earnings smoothness is also in the first category of earnings quality proxies, a basic theory of an accrual-based earnings system is that earnings smooth random fluctuations in the timing of cash payments and receipts and making earnings more informative about performance than cash flows. While the concepts do not state that "smoothness" is necessarily a desirable property of earnings or an objective of the accruals process, Statement of financial accounting concept (SFAC) no. 1 does recognize that accrual earnings help mitigate problems associated with a "mismatch" of cash receipts and payments when reporting accounting information for finite periods. In addition, SFAC No. 1 concludes that accrual earnings will provide "a better indication of an enterprise's present and continuing ability to generate favorable cash flows than information limited to the financial effects of cash receipts and payments." Thus, the standard setter's goal is a representation of fundamental performance that improves cash flow predictability. Accruals that lead to smoothness can hide or delay the measurement of changes in fundamental performance, which presumably would be decision useful if revealed (Dechow, et al., 2010).

In assessing smoothness as a measure of earnings quality, two things are considered, the conceptual ability of smoothness to reflect decision usefulness and the absent consideration of a firm's accounting choices in applying the measurement system. The International Public Sector Accounting Standard Setters have effectively made the choice to establish an accrual system of accounting rather than a cash-based system. An underlying assumption of the standard setter's choice is that accrual earnings is a better measure of fundamental performance than is a measurement system based on cash receipts and payments.

The second assessment of smoothness as a measure of earnings quality is the effect of a firm's accounting choices. Smoother earnings may be more informative if the accrual-based measurement system in the absence of accounting choice and the firm's implementation of an accrual-based system (both of which influence smoothness) better reflect fundamental performance than other accounting method, estimate or real activities. On the other hand, a firm's accounting choices may be opportunistically motivated and may not improve the decision usefulness of earnings.

Investor responsiveness to earnings

Investor responsiveness to earnings is in the second category of proxies of earnings quality, this category involves the evaluation of an earnings response coefficient (ERC), most often short-window, or the R square from the earnings-returns model (Dechow, *et al.*, 2010), a measure of investor responsiveness to earnings and the studies explicitly state (or at least strongly imply) that investor responsiveness to earnings is a direct proxy for earnings quality (or for earnings informativeness). Liu and Thomas (2000) provide more direct evidence on the ERC as a proxy for earnings quality relative to the studies on the determinants of ERCs. They specifically state that the ERC can be viewed as a measure of earnings quality, if the ERC regressions are high when the correlation between unexpected earnings and forecast revisions is high.

External Indicators of Earnings Misstatements

External indicators of earnings management is the third category of earnings quality. According to Dechow *et al.,* (2010), the external indicators of earnings misstatements include: SEC in the case of Accounting and Auditing Enforcement Releases (AAERs), the management team itself in the case of restatements and the auditor in the case of internal control procedure deficiencies

reported under the Sarbanes Oxley Act (SOX). All these three are used as measures of earnings misstatements, either intentional (i.e., earnings management) or unintentional (errors).

Earnings Management Incentives

Healy and Wahlen (1999) argued that, despite the popular wisdom that earnings management exists, it is remarkably difficult to document it convincingly. They recommend that analysts should first identify conditions in which managers' incentives to manage earnings are likely to be strong, and then test whether patterns of unexpected accruals are consistent with these incentives. Many incentives for earning management have been examined in the literature. However, Healy and Wahlen (1999) identified three main types of incentives, namely, capital market, managers contracts written in terms of accounting numbers, and political and regulatory requirements. This section will illustrate these three main types of incentive.

Stock Market Incentives

The interaction between reported earnings and stock prices can push management towards earnings management. Kim and Yi (2006) find that discretionary accruals for publicly traded firms are greater than those for privately held firms by a magnitude of 1.2 percent of lagged total assets. This result supports the notion that stock markets create incentives for public firms to engage in earnings management. Prior researches are typically concerned about four main issues: First, incentive for managers to meet stock market participants' expectations; second, incentives for managers to manipulate earnings before initial public or seasoned equity offerings; third, tests of whether investors are deceived by earnings management; and fourth evidence on the capital market consequence of earnings management (Habbash, 2010).

Developed countries such as the UK are known for their widespread share ownership and their liquid and efficient stock markets. Investors often rely on the forecasts of stock market analysts to put together a portfolio of potentially successful firms. Bartov and Mohanram (2004) opined that, Meeting the analysts‟ expectations is important as firms that meet or beat expectations generate higher returns, even when it is likely that this is achieved through earnings management. Likewise, missing an earnings benchmark has great negative effect for stock returns (Matsunaga & Park, 2001).Therefore, it is considered highly importance to meet the analysts‟ forecasts in order to attract potential investors and this may encourage companies to engage in earnings management.

Management Compensation Contracts Incentives

Management compensation contracts incentives is a motivation for managers to engage in earnings management in order to meet expectations and thus to influence stock prices as (Kim & Yi, 2006). This type of opportunistic behavior may be even more likely when managers also gain financial benefits from the firm's financial performance. Therefore, it is argued that, in order to reduce agency costs and align shareholders‟ interests with managers‟ objectives, managers will enter into monitoring and bonding contracts which will help to align the interests of managers and shareholders. An example of such contracts is when the management compensation plan is tied to its reported earnings. In this regard, accounting numbers are usually used to establish the agreement conditions of compensation contracts and to monitor whether or not these conditions are breached. Watts and Zimmerman (1986) argue that managers in firms with earnings-based compensation contracts have incentives to report earnings results that maximize the value of their bonus awards. Managers have economic incentives to manipulate earnings in order to increase their cash compensation (Healy, 1985). The first study to investigate the effect of

executive compensation plans on accrual decisions and accounting choices were conducted by Healy (1985) and it find that managers have an economic incentive to manipulate earnings in order to increase their cash compensation. If compensation, stock option, bonus and other performance related payments are tied to earnings, there is an incentive for managers to manipulate earnings and an information asymmetry problem is created by offering unreliable and irrelevant financial statements (Leuz,Nanda &Wysocki, 2003)

Political and Regulatory Requirements Incentives

In addition to earnings management in order to influence shareholders ‟ opinions and decisions, managers can also manage reported earnings in response to other stakeholders" concerns. Governmental regulations that are based on accounting numbers, and tax laws, may be considered as possible sources of motivation for earnings management. Regulatory rules can put pressure on firms that would make them more prone to earnings management practice (Habbash 2010). Haw, Qi, Wu and Wu (2005) found a strong motivation for earnings management practice, in his study on income-increasing earnings management in China as a response to governmental regulations demanding a minimum of 10% return on equity (ROE) for firms that desire to offer shares or issue bonds,

Johnston and Rock (2005) document evidence of income-decreasing earnings management in companies threatened by the Superfund Act. Moreover, D‟‟Souza, Jacob and Ramesh (2001) present evidence for firms using earnings management to reduce labor renegotiation costs. In terms of industry regulations, Key (1997) studies the role of accounting information in the political process surrounding regulation of the cable television industry. He investigates whether

cable TV managers select accounting choices to mitigate congressional scrutiny and potential regulations and he find that such political costs can motivate earnings management practice.

2.2.2 Audit Firm Attributes

Auditors are mediators between the management of a firm and external parties having interests in the firm (Porter, Simon, & Hatherley, 2014).External audit is a monitoring mechanism that review and evaluate a firms internal control and audit financial statement in order to prevent material misstatement and provides reasonable assurance that financial statements are reliable and thus the interests of stakeholders are protected (Larcker. 2011). Investors demand audited financial statement, because it provides information that is useful for proper investment decision, therefore auditors are expected to reduce manager's incentives to manage reported earnings (Wallace 1980). Auditing research uses several proxies for audit attributes, such as audit firm size (DeAngela, 1981), the tenure of firm (Lin & Hwang 2010), audit fees (Reynolds & Francis, 2004) and joint audit (Mahmoud, 2015). Recent auditing research has made use of audits by industry specialists firms and found more consistent and reliable results.

Audit firm type (big4) is considered as financially independent and highly experienced, and hardly subjected to pressure from the clients to overlook their role of reporting accounting irregularities (DeAngelo, 1981). Big 4 auditors have more to lose if any scandal arises, because they attach high value to their reputation than the non- Big N audit firms. Prior research such as the study of Francis, Maydew and Sparks (1999), Brenda and Ann(2005) reported that Big 4

audit firms have reported higher accrual quality (Earnings quality) as measured by lower absolute values of discretionary accruals, and their clients are less likely to manage earnings.

Similarly industry specialized auditor is another characteristics of audit quality that is used in relation to earnings quality, auditor industry specialist is the ability of an auditor to understand the complexity of financial reporting system of firms in an industry and to report lower discretionary accruals (Krishnan, 2003). Solomon, Shields and Whittington (1999) and O'Keefe, King, and Gaver (1994) states that industry specialized auditors have deeper knowledge of complexities in financial report of firms the audit than non industry specialized auditors due to greater experience in the industry, and this enables them to make more accurate audit judgments and thus to conduct higher quality audit work and they exhibit greater compliance with auditing standards than non- industry specialized auditors.

Auditor's compensation is also a measure of audit quality that is use in relation to earnings quality. The perception of some researchers is that audit fee reflects additional audit effort which will lead to a higher level of audit quality (Carcello, Hermanson, Neal & Riley, 2002). Francis, LaFond, Olsson and Schipper (2004) has a contrary opinion that quality may decrease with fee dependence if marginal forces associated with managerial influence overwhelm those associated with the scope of activities involved.

In the same vein audit tenure is another characteristic of audit quality and is use in studies of earnings quality as a proxy for audit attribute. Audit tenure is the length at which an audit firm has been auditing financial report of a company. There are two arguments in relation to auditor's independence in the audit client relationship (Odia, 2015). Some are of the opinion that as audit client – relationship lengthens, independence will be impaired leading to poor audit quality (Lys

& Watts, 1994). Others are of the opinion that as the audit client – relationship lengthens auditors' gain better understanding of their client business and there by develop their expertise (Ling &Nopmance, 2015).

In this study, external auditor independence will be measured, following prior literature, using the audit tenure while external auditor quality will be measured, according to prior literature, using industry specialized audit, audit compensation, audit firm type (Big 4).

2.3 Financial Reporting Regulation and Standard

Regulation of accounting information is aimed at ensuring that users of financial statements receive information that will enable them take meaningful business decisions. Bodies that are responsible for these regulations are constitutional agencies such as the Accounting Standards Board, Securities and Exchange Commission and the Stock Exchange. The larger part of this framework is usually contained in Accounting Standards. The Nigerian Accounting Standards Board is the body responsible for the issuance of Accounting Standards in Nigeria. The board was initially an advisory body responsible for the production of standards that will serve as a guide to Accountants in the preparation of financial statements. Until 2003, when the Nigerian Accounting Standards Board Act was enacted, this made it mandatory for accountants preparing corporate reports to adhere strictly to the provisions of the Accounting Standards. The standards were treated as just generally accepted accounting principles. Nigerian Accounting Standard Board Act No 22, 2003 was repealed in the year 2011 and Financial Reporting Council of Nigeria Act was enacted in its place.

Signing the Financial Reporting Council into Law by the legislation is not only meant to create the enabling environment for the implementation of the IFRS and to guarantee credible financial

reporting regime in both public and private sector entities in Nigeria but also to create wealth and economic transformation (Aganga, 2011).

Accounting Standard is defined as an information system through which financial and monetized information is generated for economic, social and political decisions (Izedonmi, 2001). Statements of accounting standards are developed to ensure a high degree of standardization in publishing financial statements. They provide necessary guides on how accounting information should be prepared and presented in order to enhance the value of its contents and facilitate thorough understanding.

Accounting theory through the issuance of standards provides direction and guidance on how business enterprises could achieve the goal of proper record keeping, transparency, uniformity, comparability and enhancing public confidence in financial reporting (Vantendeloo & Vanstraelon, 2005). Thus, failure on the part of the firm to apply the requirements of accounting standard would result in inconsistencies, lack of accountability and transparency, and distortions in financial reports, which in turn results to poor financial reporting practices and dissemination of accounting information that is of less value to any particular group of users. Josiah, Okoye and Adediran (2013) state that lack of objectivity, reliability, credibility and comparability, in preparation and presentation of financial statements resulting in fraudulent business practices, which subsequently lead to business failure, and become devastating on the national economy.

2.4 Review of Earnings Quality Model

There are different accruals model that are used by researchers some of which focus on the potential of the model to identify abnormal accruals that represent a distortion and earnings management. Jones (1991) defined the accrual process (working capital accruals and

depreciation) as a function of sales growth and Property plant and equipment PPE, while sales growth and investment in PPE are reasonable and intuitive drivers of firm value. The general view in her model is that accounting fundamentals, such as revenues or assets, should explain accruals. The objective is thus to divide accruals and the estimation into two components: normal, non-discretionary accruals associated with the firm's fundamental earnings process; and abnormal, discretionary accruals which stem from intentional or unintentional accounting errors. The Jones model confirms a correlation between fundamental firm attributes and accruals and the explanatory power of the Jones model is low explaining only about 10% of the variation in accruals (Dechow, et al., 2010).

Dechow et al. (2010) opined that both the Jones Model and the Modified Jones model were misspecified when applied to samples with extreme performances. Kothari et al. (2005) also propose a modified version of the Modified Jones Model, as a control in which they include ROA as an additional repressor besides sales and PPE. However Dechow et al. (2010) also note that his approach is likely to add noise to the measure of discretionary accrual.

Dechow and Dichev (2002) have different perspectives they view the matching function of accruals to cash flows as being of primary importance and thus model accruals as a function of current, past, and future cash flows because accruals anticipate future cash collections/payments and reverse when cash previously recognized in accruals is received/paid. They focus on short-term working capital accruals and do not attempt to model long-term accruals and their relation to cash flows. Dechow and Dichev (2002) model is based on the fact that accruals shift the recognition of cash flows over time as better measure of firm performance. Higher portion of unexplained accruals, indicate lower quality of accruals, earnings and financial reporting as well.

Since its inception, the DD model has been firmly established as one of the primary earnings quality measures and since accruals are based on estimates, the incorrect estimates must be corrected in future accruals and earnings; as a result, estimation errors are noise that reduces the beneficial role of accruals. Dechow and Dichev (2002) predict that the quality of accruals and earnings decreases when the magnitude of estimation errors increases, this model did not distinguish intentional estimation errors from the unintentional ones, since all errors signify poor accruals quality, regardless of their underlying intent. The model is built up as a regression of the change in working capital accruals on last year, present, and future cash flows.

$$\Delta WCit = \alpha + \beta_1 CFO_{it-1} + \beta_2 CFO_{it} + \beta_3 CFO_{it+1} + \varepsilon_{ti}$$

Changes in working capital are the Dechow-Dichev measure of accruals. The error term shows the extent to which accruals map into realized cash flows, and the variance hereof is a proxy for accruals quality. High variance in the estimation errors yields non-persistent earnings, and it is an inverse measure of earnings quality.

According to Francis et al. (2005), the Dechow-Dichev (2002) model is a powerful earnings quality measure. Schipper and Vincent (2003) found that the DD Model avoids several of the problems associated with the accounting fundamental approach by Jones (1991).However McNichols (2002) argued that measurement error in the Dechow-Dichev (2002) model may preclude the model from controlling for the fundamental factors influencing accruals. She suggests that the model is misspecfied; more specifically, the residuals from the Dechow-Dichev (2002) model are correlated with change in sales, indicating that cash flow from operations is a noisy proxy for the cash flow recognized in the accruals. She thus extends the model to include additional explanatory variables, which are important in forming expectations about current

accruals. The extent to which accruals map into cash flows, change in sales and property, plant and equipment (PPE) is thus an inverse measure of accruals quality. This yields the following regression:

$$\Delta WCit = \alpha + \beta_1 CFO_{it-1} + \beta_2 CFO_{it} + \beta_3 CFO_{it+1} + \beta_4 \Delta Rev_{it} + \beta_5 PPE_{it} + \varepsilon_{ti}$$

The modified Dechow and Dichev (2002) model deviates from the Jones model, which attempts to capture only earnings management, and the additional variables in the modified DD (2002) model has significantly increases the explanatory power of the model and reduces measurement errors. Therefore, the modified model Dechow and DIchev (2002) model was adopted for this study.

2.5 Review of Empirical Literature on Audit firm Attributes and Earnings Quality

Various empirical literatures on the relationship between audit firm attributes and earnings quality both in developed and developing countries have provided mixed result. This discrepancy in their findings could be methodological, measurement or environmental peculiarity. This study is designed to provide evidence from Nigeria, using four audit firms' attributes; industry specialized audit, audit compensation, auditor tenure and audit firm type (Big 4). The study review empirical literature in relation to audit firm attributes and earnings quality.

2.5.1 Industry Specialized Auditor and Earnings Quality.

Industry specialized auditor is a situation where an auditor or audit firm have deep understanding (awareness) and long experiences of the client's exact business and industry operations and specific accounting and auditing guidance which are required for doing a high quality audit. The nature of the client's business and industry affects clients' business risk and the risk of material

misstatements in the financial statements (Arens et al., 2011 & Cohan *et al.*, 2010). Rittenberg, Johnston and Gramling (2010) and Balsam, Krishnan and Yang1 (2003) are of the opinion that firms that engage the services of specialized auditor in their audit process will be able to select and implement audit procedures that are more precise and effective than the non- specialized auditor. The competence and expertise are obtained from repetition of the same audit procedures in certain industries for many years. For this reason it is expected that such auditor should detect financial reporting misconduct and mis-statement, as such reducing earnings management arising from discretionary accruals.

Financial expertise of external auditors as a measure for specialization have been used by researchers such as Badard and Biggs (1991), but this can be argued to be distortion of specialization since hardly can any reputed auditor be inexperienced in financial reporting process. Researchers have come up with substitute measure which state as any auditor that audit one-third of the firms in an industry is regarded as a specialist, as used by (Abubakar, 2014).

Empirical studies have found Industry specialized auditors to be beneficial. Krishnan, 2003 and Balsam *et al.* (2003) found that clients of non-specialized auditor's report absolute discretionary accruals that are higher than the discretionary accruals reported by clients of specialized auditors. Financial analysts rank industry-specialist auditors higher than non specialized auditors in terms of disclosure quality (Dunn & Mayhew, 2004). Habbash (2010) conducted a study on the effectiveness of corporate governance and external audit on constraining earnings management practice in UK using univariate and multivariate techniques to determine if corporate governance attributes and external auditor factors significantly constrain discretionary accruals. The sample size for the study was top 350 companies listed on the London Stock Exchange. Firms in the

financial, mining and regulated industries are excluded due to different accrual choices and valuation processes. The study covers the period of four years from 2003 to 2006. The study found industry specialized auditors having significant negative relationship with earnings management. The finding posits that earnings management is reduce when auditors are specialist in an industry. This study was conducted in developed country and different result can be recorded in a developing country. Besides that, the scope of the study stopped at 2006; As such, it may not have captured recent happening in the field of earnings quality.

Similarly Lin and Hwang (2010) conducted a study on the relationship between Audit Quality, Corporate Governance, and Earnings Management. The study used regression model to investigate the effects of audit quality on abnormal discretionary accruals. The study was a metal analysis compressing 48 prior studies, and the data was collected from October to November 2007. The study found industry specialization auditor having a significant relationship with earnings management. The result indicates that auditors who have audited one-third of the firm in an industry tend to reduce earnings management because they are familiar with the procedures used in that sector. It is however observed that despite a metal - analysis its time coverage stopped at 2007. The finding may not be the same with a study conducted more recently. Similarly, Mahdi, Abolfaz, and Ali (2011) conducted a study on the effect of Audit Quality on Discretionary Accruals using 90 non financial firms listed in Iran during the period 2004 to 2009 The study uses multiple regression analysis to test the relationship between audit quality and earnings management. The findings of the study reveal that Discretionary Accruals are negatively related to Auditor industry Specialization. The finding of this study is also in line with the studies of Habbash (2010), Lin and Hwang (2010) and Imen and pascal (2014) which were

conducted in developed countries; however a different result could be recorded from a study conducted in Nigeria.

Imen and Pascal (2014) examined the complementary effect of audit regulation and audit quality on earnings quality, with a sample of 4,219 listed firms from 15 European countries over a period of 4 years from 2007 -2010. The study found a significant negative relationship between audit firm expertise and earnings management. Based on their findings earnings management is reduced when the auditors that audit the firm are specialist in the industry. This study provides evidence from developed country, however the period covered is small and a different result can be recorded using a longer period. However, Abubakar (2014) examined the influenced of audit quality on earnings management in Deposit Money Banks in Nigeria. He used loan loss provision in estimating earnings management of eight deposit money banks listed on the Nigeria Stock Exchange for the period of five years (2008 to 2013). Using fixed effect regression model as tool for analyses, the study found a significant positive relationship between industry specialize auditor and earnings management, This study though conducted in Nigeria used loan loss provision in the banking sector, a different result could be recorded when conducted in a non financial services. The study though conducted in Nigeria did not cover the non financial firms.

2.5.2 Audit Compensation and Earnings Quality

Audit compensation is also known as audit fees, there are different views in the literature regarding the relationship of audit compensation and earnings quality, some are of the opinion that audit compensation has reasonable relationship with earnings quality, in the sane that increase in audit fees is commensurate to increase in quality (Francis & Ke, 2006). Carcello, Hermanson, Neal and Riley (2002) opine that audit fees reflect additional audit effort which

leads to a higher level of audit quality. In the same vein, Geiger, Lennox, and North (2008) are of the view that a positive relationship exist between audit fees and qualified audit opinions, which implies that additional audit effort results in more accurate audit opinions. Hence it can be inferred that the results of the study imply that audit firms receiving higher fees are perceived to have high audit quality, which translates into greater earnings quality of a firm. There has been a debate in the literature on the effects of the various components of auditor's compensation on auditor independence. Simunic (1984) and Francis *et al.* (2004) are of the opinion that auditor independence and audit compensation are positively related. However, audit firm financial dependence on a client may also increase the chances of auditor consenting to management's requests leading to lower quality financial statements (Campbell & Kracaw, 1980).

Prior studies have indicated a significant relationship between earning quality and audit fees. Habbash (2010) in his study, the effectiveness of corporate governance and external audit on constraining earnings management practice in UK, found Audit fees have significant negative relationship with earnings management. This finding indicates that earnings management is reduce when auditors are paid high compensation. Despite the fact that the study was conducted in developed country, the scope of the study however, stopped at 2006, as such it may not have captured recent happening in the field of earnings quality. Similarly, Umar (2014) conducted a study on audit attribute and financial reporting quality, using data from Nigeria building material firms in the year 2002- 2011. The study used OLS multiple regression as tool of analysis and the model adopted for this study was Dechow and Dichev 2002 model as modified by McNichol (2002) as a measure of (dependent variable). The study found a positive significant relationship between audit compensation and financial reporting quality. However, in spite of the fact that the study was conducted using data from the building materials in Nigeria and using Dechow and

Dichev modified model of (2002), its time coverage was stopped in 2011. A study with more recent time coverage including the post adoption of IFRS period may show a different result.

However, Fariba and Hassan (2014) conducted a study on the relationship between audit fees, board independence and earnings quality in 104 listed accepted companies in Tehran stock exchange market, during the year (2007-2012), using descriptive correlation method. The study found no relationship between Audit fees and earning management. It was observed that the study was conducted for the period of six years only. However, a study with larger and more recent time coverage may produce a different result. While, Augustine, Famous and Augustine (2014) conducted a research on the audit quality and accrual – based earnings management of quoted companies in Nigeria, the study used 57 quoted companies for the period of six years (2006 to 2011) and used OLS regression analyses, the study used residuals from the Jones 1991 model as measure for amount of discretionary accruals. The result of the study found a significant negative relationship between audit fees and accrual – based earnings management which indicates that an increase in audit fees is equal to a decrease in earnings management. However, beside the fact that the study was conducted using Jones 1991 mode, its time coverage was stopped at 2011. A study with more recent time coverage and using a different earnings management model may show a different result.

Similarly, Mohammad (2016) conducted a study on the impact of external audit quality on earnings management in Jordanian Banking Firms listed on Amman Stock Exchange during the year 2006 to 2010, with a sample of 13 Jordanian's working commercial banks, the study used OLS regression model, Discretionary accrual is measured using the modified Jones model 1995 the findings of the study reveals that audit fees has significant relation on earnings management.

It is observe that the study used discretionary accrual instead of loan loss provision since it is a financial service. A study conducted using loan loss provision in that same sample may yield a different result as it has been established in the literature that loan loss provision is most suitable in the financial sector.

2.5.3 Auditor Tenure and Earnings Quality.

Audit tenure is the length of time an audit firm has been auditing financial statement of an organization. A lot of debates have evolved in the academic literatures and accounting profession on the relationship among audit tenure and audit quality (Jenkins & Vermeer, 2013; Blandon & Bosch, 2015). The center of the argument is the issue of auditor's independence in the auditor-client relationship; which is the ability of auditors to maintain an unbiased position in performing their audit assignments, issuing audit opinion and ensuring high quality audit report (Odia, 2015). There have been two opposing views on the effects of audit tenure on audit quality. Some are of the view that as the auditor–client relationship lengthens, the auditor may develop a close relationship with the client and impair independence which will eventually result in poor audit quality and allows for greater earnings management (resulting in lower earnings quality) (Becker, DeFond, Jiambalvo &Subramanyam1998; Lys & Watts, 1994).The other view is that as audit tenure lengthens, auditors increase their understanding of their clients' business and develop their expertise during the audit exercise and gain better insights into the clients operations and business strategies as well as internal control over financial reporting which will result in higher audit quality (Arens, Elder & Beasley, 2005; ling & Nopmanee, 2015).

Prior studies have recorded mixed result on the relationship of audit tenure and earnings quality. Lin and Hwang (2010) in their study, audit quality, corporate governance and earnings

management. Found a negative significant relationship between audit tenure and earnings management, hence the study posit that when audit tenure lengthens, earnings management reduces. It is, however, observed that though the study was conducted in a developed country, its time coverage stopped at 2007. The time coverage on the study may have excluded recent event within the context of earnings quality. However Augustine, Famous and Augustine (2014) in their study, audit quality and accrual based earnings management of quoted companies in Nigeria, found no significant relationship between audit tenure and accrual based earnings management which indicates that the length of time of audit client relationship does not have any effect on earnings management. This study, though conducted in the non financial firms in Nigeria stopped in 2011; it could have not captured resent event in earnings quality.

The study conducted by Mohammed (2016) on the impact of external audit quality on earnings management by banking firms in Jordan, found a negative significant relationship between audit tenure and earnings management, indicating that manager ability to manipulate earnings is reduced when audit tenure is elongated. It is observe that the study use discretionary accruals from Jones model instead of loan loss provision as it has been established in the literature to be the most applicable in financial firms. Thus study conducted using loan loss provision in that same sample may yield a different result.

2.5.4 Big 4 and Earnings Quality

The support for this surrogate is drawn from the theory that large audit firm have more to lose in the event of a loss of reputation. DeAngelo (1981) and Ireland and Lennox (2002) are of the opinion that since large audit firms could not be so financially dependent on the fees of a particular client, they are to some extent less likely to be subject to pressure from clients to

compromise in the event of discovering accounting irregularities as they have more to lose should a scandal arise; in that their brand names and reputations are more valuable compared to smaller audit firms. Becker *et al.* (1998) and Francis, Maydew and Sparks (1999) concluded that clients of the Big 4 firms have been evident to have higher accrual quality, usually measured as lower absolute values of discretionary accruals, and are less probable to manage earnings, as shown by income increasing accruals, small positive earnings changes. On another note, Behn, Choi and Kang (2008) report that the stock market response to earnings surprise is greater and forecast of analyst are on the average more accurate for clients of Big 4 firms which is suggesting that higher audit quality contributes to more informative earnings disclosures and better informed analyst. Research has shown that audit quality is positively associated with audit firm size (Krishnan & Schauer, 2000; Lennox, 1999). On the other hand, other evidence shows that size may not always be positively related to audit quality and that the largest accounting firms may not always provide higher quality audits than small accounting firms (Tate, 2001; Lam & Chang, 1994).

Prior studies have examined the relationship between the Big four audit firms and discretionary accruals, however, the findings have been inconsistent. Branda and Ann (2005) studied the relationship between earnings management and audit quality in Europe. From the private client segment market, the study investigated audit quality in Big 4 and Non Big 4 private client segment market using all private firms in six European countries for the period of 5 years from 1998 to 2002. The study found lower aggregate earnings management for firms that use Big 4 audit firms than those that use non – Big 4 audit firms. This study though conducted in developed countries, the result could be different when conducted today because of the time coverage which stopped in 2002. Memis and Cetenak (2012) conducted a research on the

relationship between earnings management and audit quality on Legal Environment. The study used 1507 firms as sample size from listed companies in private firms across 8 different emerging countries, for the period of two years (2008 -2009). The modified Jones model was used to measure discretionary accruals and regression technique was employed as tool for analysis. The result shows that only Brazilian and Mexican companies showed a significant relationship between discretionary accruals and audit quality proxy by big 4 audit firm, but for the other countries there was no significant relationship. It can be observed that beside the fact that the study was conducted in the developed country, the time coverage is only two years, and a study with a larger coverage may produce a better result.

The study of Augustine et al (2013), reveals that Big 4 audit firm has significant negative relationship with earnings management, which indicates that the more as the services of big audit firms are employed; the less the managers are able to manage the earnings. This study though conducted in Nigeria and in the non financial services, only covered up to 2011 and left out more recent years. However, the study conducted by Umar (2014) on audit attributes and financial reporting quality of 4 listed building materials firms in Nigeria, found insignificant relationship between Big 4 audit firm and earnings quality. This study though conducted in the non financial sector covers the period before the adoption of IFRS, a better result can be recorded in a study that cover the post IFRS adoption era. Similarly, Imen and Pascal (2014) also found an insignificant relationship between Big 4 audit firms and earnings management in the listed firms in the European countries. It can be observed that the study though covered a large sample size it only covered up to 2010, a better result can be recorded if the period is extended to capture recent years.

However, Abubakar (2014) in his study, The Influence of audit quality on earnings management in deposit money banks in Nigeria, found that Big 4 audit firm has significant negative relationship with earnings management, which indicate that an increase in number of firms audited by the big 4 auditors would lead to a reduction in earnings management of deposit money banks in Nigeria. Similarly, Masoyi, Abubakar and peter (2015) carried out a study on the effect of audit quality on earnings management of listed deposit money banks in Nigeria. The study used OLS regression technique and loan loss provision was used to estimate earnings management of 10 listed deposit money banks in Nigeria, for the period of 8 years (2006 to 2013). The result of the study reveals that the Big 4 audit firm has negative and significant effect on earnings management. The findings of this study shows that the more Big audit firms are used the less earnings will be managed and higher reporting quality will be achieved. These two studies though conducted in Nigeria used loan loss provision to ascertain earnings quality as is the measure in the financial sector. However, a different result can be recorded in the non financial sector using accrual quality model to determine the earnings quality.

2.5.6 Control Variables

In addition to the audit firm attributes discussed above, a number of control variables are included in this study to control the firm characteristics that can influence the extent of earnings quality. The review of prior literature reveals that these control variables are relevant to any study in this area. These control variables are International financial reporting standard (IFRS), Firm size, leverage, profitability which are reviewed individually.

International Financial Reporting Standard (IFRS)

Since 2012, publicly listed companies in Nigeria are required to prepare financial statements in accordance with IFRS. This study sample covers the period from 2007 to 20014; hence, this covered period before and after IFRS adoption. IFRS has had a large effect on firm's measurement and reporting methods, as documented by previous research. Daske, Hail, Leuz and Verdi (2008) state that IFRS adoption tends to increase firm's market liquidity, decrease its cost of capital and increase its equity valuation. IFRS has a direct effect on earnings management (Habbash, 2010).

Arum (2013) investigated the effects of IFRSs adoption on the quality of financial information in Indonesia and found that the adoption of IFRS has resulted in better, more relevant and reliable financial reporting quality and is capable of reducing moral hazard in the financial statements to conduct earnings management through accrual policy. More recently, Shehu (2015) investigate the effect of IFRS adoption on earnings quality in listed deposit money banks in Nigeria. The study found that firms attributes has a significant influence on earnings quality of listed deposit money banks in Nigeria after the adoption of IFRS, while the pre period shows that the selected firm attributes has no significant effect on earnings quality.

Firm Size

Large firm size can obscure any relationship between managers and owners because of its complexity. As the firms size increases, the agency costs are expected to increase and allow for greater managerial discretion and opportunism (Jensen & Meckling, 1976). Watts and Zimmerman (1986) stated that larger firms face higher political costs and hence have stronger incentives to manage earnings in order to reduce the potential political risk. Other schools of thought are of the opinion that larger firms have a lot of pressure by regulators to ensure

credibility in their financial report and that makes it difficult for them to manage earnings. Thus, the size of the firm is likely to affect various audit attribute and earnings quality

Leverage

Leverage represents the debt structure of a company and is used in numerous studies to proxy debt covenant violation (Augustine et, al 2014). Leverage is found to be positively correlated with earnings management practice, as understating liabilities or overstating assets may be used to avoid debt covenant violations. Efendi *et al*. as cited by Habbash (2010) suggest that when a firm is close to default on accounting-based debt covenants, the management may mis-state the accounting numbers to avoid the consequences of default. However, Becker *et al*. (1998) found that leverage is negatively associated with the absolute value of discretionary accruals. In the literature on audit quality and earnings quality, leverage is widely used as a control variable. (Brenda & Ann, 2005; Habbash, 2010 & Augustine *et al*., 2013).

Profitability

Return on asset is an accounting based measure used for firm's performance or profitability, ROA is used in many studies on audit quality and earnings quality (Kothari *et al*., 2005; Brenda & Ann, 2005) ROA is an indicator of the management's ability to efficiently utilize corporate resources (assets) that belong to shareholders. Return on asset can be considered as a robust measure of firm performance. Habbash (2010) found a significant positive relationship between audit quality and earnings management. However, Shehu (2015) found a significant positive relationship between profitability and earnings quality, which implies that firm with high profit are less likely to manage earnings.

2.6 Theoretical Framework

In this section we discuss theories that were used to underpin this study; these theories include (i) agency theory (ii) inspired confidence theory.

Agency theory

The agency theory is based on the relationship between the principal (owners) and the agent (Managers). It arises as a result of separation of owners from managers. Eisenhardt (1989) opined that agency relationship is a contract under which principal(s) engages an agent to perform some service on behalf of the principal and delegate some decision-making authority to the agent. Whenever there are conflict of interest between the principal and the agent, the agent may act in his own interest not the principal's. This quest of self interest increases costs to the firm, which could include the costs of the formation of contracts, loss due to decisions being taken by the agents and the costs of observing and controlling the actions of the agents. Leuz *et al*. (2003) opined that the effects of such behavior usually reflect in the firm earnings.

Management has an incentive to manage the company's reported earnings in order to meet earnings targets with the hope to receive any bonuses that may be tied to the company's earnings (performance-related pay). This creates an information asymmetry in that managers can apply the discretion they have on accruals, which in turn reduces the relevance and reliability of reported earnings, and the whole financial statements. Davidson *et al*. (2005) argued that when management provides inaccurate financial reporting information, it introduces earnings management as a type of agency cost.

In order to avoid conflict of interest, the principal can establish monitoring system. One of the monitoring mechanisms to establish is financial statement audit which will help to reduce information asymmetry and protect the interest of the principal and all shareholders by providing

assurance that financial statement prepared by management reflects the 'true' economic condition and operating results of the entity (Watts and Zimmerman, 1986). The quality of the auditors that are employed as monitors determines how effective they can detect and report material misstatements or omissions in the financial statements. Hence high quality information should be positively correlated to high quality auditor, because of their ability to reduce misstatement to a reasonable extend.

Inspired confidence theory

In the same vein, inspired confidence theory, addresses both the demand and the supply for audit services. According to Limperg's theory of inspired confidence, "the demand for audit services is the direct consequence of the participation of outside stakeholders (third parties) in the economy"(Hayes & Russel, 2005). These parties demand accountability from the management, in return for their investments in the company. Accountability is realized through the issuance of periodic financial reports. However, since this information provided by the management may be biased, and outside parties have no direct means of monitoring, an audit service is required to assure the reliability of this information. For supply of audit assurance to be achieved, auditors are required to always strive to meet the stakeholder's expectations. These stakeholders demand accountability from the management, in return for their contribution to the company, because of a possible divergence between the interests of management and outside stakeholders, thus audit of this information is necessary. However, the level of audit assurance that the auditor provide, depends on the ability of the auditor to act in such a way that he does not disappoint the expectations of outsiders, while, on the other hand, he should not arouse greater expectations in

his report than his examination justifies. So, given the possibilities of audit technology, the auditor would do everything to meet reasonable public expectations.

Therefore, it is based on the above theoretical frameworks that this study attempt to investigate the relationships between audit firm attribute proxied by (industry specialized auditor, audit compensation audit tenure and audit firm type big4) and earnings quality of listed consumer goods firms in Nigeria. Specifically, both agency theory and the theory of inspired confidence are used in underpinning the findings of this study.

The former theory links the shareholders and managers who provide financial information to be audited and the later links manager to auditor who gives assurance to the outside party of the credibility of the report prepared by the managers. The two theories are complimentary.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was adopted for assessing the effect of audit firm attributes on earnings quality of consumer goods firms in Nigeria. It highlights the study design and source of data collection. It also presents the population and sample of consumer goods firms under study, method of data collection, techniques of data analysis, justification for the techniques and method employed and variables names and their measurement.

3.2 Research Design

The study adopts correlational research design. A correlational research design is used to describe the statistical relationship between two or more variables and the making of predictions regarding these relationships. Therefore, correlational design is chosen because it is consistent with the objective of this study in assessing the relationship between audit firm attribute and earnings quality.

The study is designed to be in two stages. In the first stage, it estimates the measure of earnings quality. While in the second stage, it estimates the effect of audit firm attribute (industry specialize audit, audit compensation, audit tenure, and big four audit firm type) on the earnings quality.

3.3 Population and Sample of the Study

The population of the study consists of all the twenty seven (27) listed consumer goods firms on the Nigeria Stock Exchange as at 31st December 2014. List of firms that constitute the population are in the table 3.1.

Table 3.1 **Population of the study**

S/NO	Consumer Goods Firms
1	7-up Bottling company plc
2	Cadbury Nigeria plc
3	Champion Breweries plc
4	Dangote Flour Mills
5	Dangote Sugar Refinery
6	DN Tyre and Rubber plc
7	Flour mills of Nigeria plc
8	Golden Guinea Breweries
9	Guinness Nigeria plc
10	Honeywell flour mills
11	International breweries
12	McNichols
13	Multi-Trex integrated food
14	Nascon Allied Industry
15	National salt company of Nigeria plc.
16	Nestle Nigeria plc
17	Nigeria breweries plc
18	Nigeria enamelware
19	Northern Nigeria flour mill plc
20	P.s Mandrides & Co
21	Premier Breweries
22	PZ cusson Nigeria plc
23	Unilever Nigeria plc
24	Union dicon salt plc
25	UTC Nigeria plc
26	Vitaform Nigeria plc
27	Vono product plc

Source: Nigerian Stock Exchange 2014

In order to arrive at the sample size, the following criterion was used: A firm must be listed before the year 2006 and remain in operation during the period of the study (2006 to 2015). This is so because the model of accrual that was used in this study required one year before the start period and one year after the end period. As a result of the above criterion thirteen (13) firms

meet the requirement to form the sample size of the study. List of sample firms are in the table 3.2.

Table 3.2 **Sample size**

S/NO	Consumer Goods Firms
1	7-up Bottling company plc
2	Cadbury Nigeria plc
3	Flour mill of Nigeria plc
4	Guinness Nigeria plc
5	National salt company of Nigeria plc.
6	Nestle Nigeria plc
7	Nigeria breweries plc
8	Northern Nigeria flour mill plc
9	PZ cusson Nigeria plc
10	Unilever Nigeria plc
11	Union dicon salt plc
12	Vitaform Nigeria plc
13	Vono product plc

3.4 Sources and method of data collection

The data for this study was sourced from the financial report of the sampled consumers' goods firms in Nigeria. for the period under study 2006 to 2015. The data was collected from the company's annual report. The study considers the use of secondary data more reliable; based on the objective of the study and the nature of the research it was best achieved using secondary data.

3.5 Techniques of Data Analysis

The research paradigm that underpins this study is quantitative in nature and for it to be consistent with the objectives of this study. Ordinary Least Square (OLS), regression technique of data analysis was employed. Fixed effects and random effects regression were conducted.

Hausman specification test was also carried out to determine which of the two techniques, fixed effects or random effects to employ. The reason for the choice of regression as the tool of analysis in this study is due to the fact that, the technique is effective in estimating the effect of one variable on another. The technique is also consistent with the objectives of this study and the correlation research design employed study and the objective of this study

3.6 Variables Measurement and Models Specification

Table 3.3 below represents the definition and measurements of the variables that was used in this study.

Table 3.3: **Variables Definitions and Measurements**

Variable Type	Variable name	Variable measurement	Expected sign	Source(s)
DV	Earnings quality (EQ)	The standard deviation of the residuals from the modified Dechow and Dechev (2002) as Modified by McNichos (2002)		Shehu (2013) & Jinhan (2011)
IV	Industry specialized Auditor (ISA)	Dichotomize as (‘1’ if they audit 1/3 and above of the firms, and 0 if otherwise)	+	Abubakar (2014)
	Audit compensation (AC)	Natural Log of the Audit Fees Paid by the company	+	Umar (2013)
	Audit Tenure (AT)	If it is 3yrs and above is Is dichotomize as 1 and ‘0’ If less than 3yrs.	+	Augustine *et al.* (2013)
	Audit firm type (Big4)	(‘1’ if audited by any big4 audit firm and ‘0’ if otherwise	+	Masoyi *et al.* (2015)
CV	International financial Reporting standard (IFRS)	Dichotomize as ‘1’ if firm use IFRS and ‘0’ if otherwise	+	Habbash (2010)
	Firm size (FS)	Measure as natural log of total Asset	_	Mohammed (2016)
	Leverage (Lev)	Measured as total liability divided By total asset	_	Augustine *et al.* (2013)

Profitability (ROA)	Measured as profit after tax divided by total asset	+	Brenda and Ann (2005)

Source: Author's design base on literatures

3.7 Model Specification.

For the purpose of this study, the researcher adopts the accrual quality model of Dechow and Dechev (2002) as modified by McNichols (2002) and used by Francis et al., (2005) and Chen *et al.*, (2007) we took the standard deviation of the residual from the model as a measure of earnings quality of listed consumer goods firms in Nigeria. The model is mathematically presented as follows:

$$\Delta WCit = \alpha + \beta_1 CFO_{it-1} + \beta_2 CFO_{it} + \beta_3 CFO_{it+1} + \beta_4 \Delta Rev_{it} + \beta_5 PPE_{it} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots i$$

Where:

a = is the intercept

β_1-β_5 = are the parameters estimate in equation

ΔWC = working capital in year t less revenues in year t-1 for firm i, scaled by lagged, total assets

CFO_{it-1}= Last year Cash flow from operation of firm I at time t, scaled by total assets

CFO_{it} = Current year Cash flow from operation of firm I at time t, scaled by total assets

CFO_{it+1}= A year ahead Cash flow from operation of firm I at time t, scaled by total assets

ΔREV_{it} = Change in revenue of firm I at time t, scaled by total assets

PPE_{it} = Natural log of Gross property, plant and equipment of firm i at time t

ε_t = error term/residual

This model has been used by existing studies which investigated the effects of audit firm attribute on earnings quality. The model captures the extent to which working capital accruals of a period are not explained by current period, previous period and next period operating cash flows (Sengupta & Shen, 2007). From the above model and the theoretical framework underpinning this study, the standard deviation of the unexplained portion (residuals) of total current accrual model above is used as measure of earnings quality in this study. This measure is used in the second model of the study to test the hypotheses of the study. The model for to the hypotheses test is represented as follows:

$$EQ_{it} = \beta_0 + \beta_1 ISA_{it} + \beta_2 AC_{it} + \beta_3 AT_{it} + \beta_4 BIG\text{-}4_{it} + \beta_5 IFRS_{it} + \beta_6 FS_{it} + \beta_7 LEV_{it} + \beta_8 ROA_{it} + \mu_t \quad \text{.....ii}$$

Where:

β_0 =	is the intercept
β_1-β_8 =	are the parameters estimate or coefficients in the equation
$_{i,t}$=	firm i, time t
EQ =	Earnings quality
ISA =	Industry specialized auditor.
AC =	Audit compensation
AT =	Audit tenure
BIG-4	Audit firm type
IFRS =	International financial reporting standard
FS =	Firm Size
LEV =	leverage
ROA =	Return on asset
μ =	error

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter analyses and interprets the results obtained from the tests conducted on the data collected for the study. The chapter is divided into four sections. The first section deals with the preliminary analysis of the sample using descriptive statistics. The second section presents correlation analysis between the explained and explanatory variables. This is followed by discussion of the various robustness tests conducted in order to improve the validity of the results. The last section ends with testing of the hypotheses of the study as well as discussion of major findings and policy implications of the findings.

4.2 Summary of Descriptive statistics

The summary statistics of the explained and the explanatory variables are presented in Table 4.1 where minimum, maximum, mean and standard deviation of the data collected for the variables in the study are described.

Table 4.1: **Descriptive Statistics of the Variables**

Variables	***Obs***	***Mean***	***Std. Dev***	***Min***	***Max***
EQ	*104*	*13.5898*	*1.8523*	*8.2399*	*16.7588*
ISA	*104*	*0.5962*	*0.4930*	*0.0000*	*1.0000*
AC	*104*	*9.5870*	*1.3765*	*0.0000*	*12.1005*
AT	*104*	*0.9615*	*0.1932*	*0.0000*	*1.0000*

Big4	*104*	*0.7788*	*0.4170*	*0.0000*	*1.0000*
IFRS	*104*	*0.3942*	*0 .4911*	*0.0000*	*1.0000*
FS	*104*	*6.8857*	*0 .9204*	*4.7919*	*8.2874*
LEV	*104*	*151.9613*	*335.3278*	*32.5031*	*1657.31*
ROA	*104*	*1.9668*	*32.5097*	*-188.954*	*28.5725*

Source: Descriptive Statistics Result using STATA 11 Appendix

Table 4.1 shows the detail account of the descriptive statistics for the explained and explanatory variables. Earnings quality (EQ) which is the dependent variable of the study has a minimum value of 8.2399 and a maximum value of 16.7588. The average value of the EQ is 13.5898 with standard deviation of 1.8523, signifying that the data deviate from the mean value by 1.8523. This implies that there is no variation across the sample firms because the standard deviation is not close to the mean.

The summary statistics from the table with respect to industry specialized auditor (ISA) which is dichotomous variable (0 or 1) shows minimum and maximum values of 0 and 1 respectively. The average value of ASI is 0.5962 with a standard deviation of 0.4930. The average of 0.5962 signifies that over 50% of the firms in the sample size were audited by industry specialized auditors. The table also indicates that the minimum and maximum values of the natural log of audit firm compensation (AC) are 0.0000 and 12.1005 respectively, with the mean value of 9.5870 and a standard deviation of 1.3764. This shows that there is variation of audit compensation across the sample firms.

The result also indicates that Audit Tenure (AT) has minimum and maximum value of 0 and 1 respectively since it is also a dichotomous variable. The average value of the audit tenure is 0.9615 and a standard deviation of 0.1932. The high average is an indication that more than 90% of the audit client relationship last for three years and above. The table also indicates that audit

firm type (BIG4) has a minimum of 0 and a maximum of 1, on average 77.8% of the listed consumer goods firms in Nigeria are audited by BIG4 audit firm as indicated by the mean value of 0.7788 with standard deviation of 0.4170. Regarding the control variables in the summary statistics, IFRS has an average of 0.3942 with a standard deviation of 0.4911. The low average of the IFRS indicates that only about 39.4% of the companies complied with IFRS requirement base on the scope of the study. Firm size has an average of 6.8857 and a standard deviation of 0.9204, leverage has an average of 1.5196 and a standard deviation of 3.3353 and return on asset has an average of 1.9668 and standard deviation of 32.5097 showing large variations across the sample firms.

4.3 Correlation Matrix

The correlation coefficient represents the linear association or relationship between two variables (explained and explanatory) and also between the explanatory variables themselves. The most widely used type of correlation coefficient is Pearson(r) which is also called linear or product moment correlation. Table 4.2 shows the correlation matrix with the values displaying the Pearson correlation coefficient between all pairs of variables and the asterisk beside each Pearson correlation coefficient shows the significance of these coefficients. Observing the pattern of the correlation between the explained and explanatory variables, the result reveals that there are no high correlations among variables. According to Gujirati (2004), all variables that have less than 0.80 correlation coefficient are considered safe and can be included in the same regression model, since there is no interdependency among the independent variables. The summary of the Pearson correlation Coefficients of the variables of the study are presented in Table 4.2

Table 4.2 **Coefficient of Correlation**

	EQ	***ASI***	***AC***	***AT***	***BIG4***	***IFRS***	***FS***	***LEV***	***ROA***
EQ	*1.0000*								
ISA	*0.5687**	*1.0000*							
AC	*0.4620**	*0.3395**	*1.0000*						
AT	*0.1467*	*0.1411*	*0.1659*	*1.0000*					
BIG4	*0.6242**	*0.5530**	*0.4120**	*0.2549**	*1.0000*				
IFRS	*-0.0381*	*0.1026*	*0.1407*	*0.1613*	*0.0032*	*1.0000*			
FS	*0.7859**	*0.4160**	*0.5803**	*0.1830*	*0.5286**	*0.0687*	*1.0000*		
LEV	*-0.5060**	*-0.3274*	*-0.3701**	*0.0130*	*-0.5139**	*0.0985*	*-0.6107**	*1.0000*	
ROA	*0.5469**	*0.3791**	*0.3496**	*0.1377*	*0.5621**	*0.0911*	*0.5901**	*-0.7218**	*1.0000*

Source: Correlation matrix result using STATA 11 Appendix

**correlation is significant at 0.01 level*

Table 4.2 shows the correlation of the variables under study which are earnings quality (EQ) and audit firm attributes variables (Industry specialized auditor, Audit compensation, Audit tenure and Audit firm type Big4) in the listed consumer goods firms in Nigeria. The result shows that there is a significant positive relationship between earnings quality (EQ) and Industry specialized audit (ISA) from the correlation coefficient of 0.5687, which is significant at 0.01 level of significance. The result suggests that earnings quality will likely increases with an increase in industry specialized auditor. The result from the table indicates that there is a positive

relationship between earnings quality and audit compensation (AC) from the correlation coefficient of 0.4620, which is at 0.01 level of significance.

Similarly, the table shows a positive relationship between earnings quality and audit tenure (AT), from the correlation coefficient of 0.1467. This implies that earnings quality likely increases with an increase in audit tenure. In the same way, the table shows that there is a significant positive relationship between audit firm type (BIG4) and earnings quality as shown by the correlation coefficient of 0.6242, significant at 0.01 level of significance. The result implies that earnings quality increases with an increase in the services of audit firm type (big4).

Considering the control variables, the result shows a positive relationship between earnings quality and firm size (FS) and also a positive relationship between earnings quality and return on asset (ROA). However the result shows a negative relationship between earnings quality and international financial reporting standard (IFRS) and also a negative relationship between earnings quality and leverage (LEV).

Following the analysis of the relationships between the earnings quality and audit firm attribute (ISA, AC, AT, and BIG4) in the listed consumer goods firms in Nigeria, the study proceeds with the analysis of the regression results of the model of the study, from which the hypothesis of the study was be tested. Conclusion was drawn about the effect of audit firm attribute on the earnings quality of listed consumer goods firms in Nigeria.

4.4 Results of Robustness Test

In this section, the results of multicollinearity test, heteroskedasticity test, hausman specification test, and *Langrangian Multiplier test* are presented and discussed, as shown in table 4.3 as follows;

Table 4.3 **Result of the Robustness Test of the Model of the Study**

Variables	***Multicollinearity Test***	
	VIF	TV
LEV	*2.66*	*0.375897*
ROA	*2.55*	*0.311402*
FS	*2.31*	*0.431990*
BIG4	*2.06*	*0.484623*
AC	*1.59*	*0.62182*
ISA	*1.51*	*0.660943*
AT	*1.16*	*0.862246*
IFRS	*1.13*	*0.886915*

Source: STATA Output Appendix

The classical assumption of OLS regression model assumes among others, that the error terms are normally distributed and independent (that is the error terms are uncorrelated); the explanatory variables are not perfectly correlated (absence of multicollinearity); and the variance of the error terms is constant (Homoskedastic). When these assumptions have not been met, the estimators are biased and cannot be used in drawing any inference. However, the results from Table 4.4 proved that there is no existence of excessive correlation among the independent variables, because the smallest tolerance value (TV) is 0.3114, while the highest variance inflation factor (VIF) is 2.66. The rule of thumb for the Tolerance Value is that any value of 0.1 and below and the VIF value of 10 and above imply the presence of multicollinearity in the estimates (Gujarati, 2004). To test for the existence of heteroskedasticity, this study uses the Breusch- Pagan or cook – Weisberg to test for normality of the data, the result reveals that chi2 is 0.61 and the prob>chi^2 is 0.4339, this indicate the absence of the effects of heteroskedasticity, that is, there is constant variance in the residuals.

Hausman specification test was conducted to choose the most appropriate model for the study, The test suggests that Random Effects Regression Model is the more appropriate model for the study as evidenced by the chi2 of 5.64 and p-value of 0.6874 which is not significant. However, the Breusch and Pagan Lagrangian Multiplier Test for Random Effects, indicated that there is no

statistical significant different between the effects of random and the OLS result as evidenced by the p-value of 0.9550. Considering the results of the OLS and the Random Effects regression models, there is no major difference that can alter the interpretations and inferences drawn in this study (that is, same conclusions will be made using either OLS or Random Effects models). Based on this, the study used OLS model. Following the robustness of the results, the ordinary least square regression estimators were used for the test of hypotheses formulated in this study.

4.5 Regression Results

In this section, the regression results of audit firm attribute variables and earnings quality are presented and analyzed.

Table 4.4 **Regression Results**

	OLS Model		***Fixed Effect Model***		***Random Effect Model***		
Variables	*Coef*	*P- Value*	*Coef*	*P- Value*	*Coef*	*Z-value*	*P- Value*
ISA	*0.8555*	***0.001***	*0.7895*	***0.099***	*0.8555*	*3.46*	***0.001***
AC	*-0.0436*	*0.631*	*-0.0575*	*0.557*	*-0.0436*	*-0.48*	*0.630*
AT	*-0.4250*	*0.443*	*-0.3572*	*0.549*	*-0.4250*	*-0.77*	*0.441*
BIG4	*0.8767*	***0.012***	*1.3982*	***0.015***	*0.8767*	*2.52*	***0.010***
IFRS	*-0.4370*	***0.044***	*0.1990*	*0.521*	*-0.4371*	*-2.04*	***0.041***
FS	*1.3062*	***0.000***	*-0.6685*	*0.390*	*1.3062*	*7.98*	***0.000***
LEV	*0.0007*	*0.135*	*-0.0015*	*0.135*	*0.0007*	*1.49*	*0.135*
ROA	*0.0005*	*0.302*	*0.0034*	*0.534*	*0.0051*	*1.04*	*0.300*
Constant	*4.2429*	***0.000***	*17.6629*	***0.001***	*4.2829*	*3.85*	***0.000***
R^2		**0.7282**	R^2 within	0.1808			0.0838
Adj R^2		**0.7054**	R^2 between	0.1348			0.9537
			R^2 overall	0.1426			0.7282
F – STAT		**31.82**		2.29			-

Prob> F	**0.0000**	0.0288	-
Wald chi^2	-	-	254.59
Prob>chi^2	-	-	0.0000

Source: Stata 11 output appendix

In line with the panel nature of the data used in this study, the model of the study is subjected to other robust regression models in addition to OLS, due to the uncertainty as to the conformity with the classical assumptions of the OLS regression model. The fixed effect regression model shows R^2 within, between and overall of 18.08%, 13.48% and 14.26% respectively. Within R^2 means that independent variables explain 18.08% variations in the earnings quality in this panel from year to year. Between R^2 indicates that independent variables explain 13.48% variations in earnings quality from firm (cross-sectional unit) to other firm. While overall R^2 shows that independent variables explains 14.26% variations in the whole panel. The random effect regression model show R^2 within of this model is 8.38%, R^2 between is 95.37% while the overall R^2 of the panel is 72.82%. The result shows that both fixed and random effect model are significant at 1% and 5% level of significance respectively.

The results from table 4.4 indicate that the variables of the audit firm attribute (Industry specialized auditor, audit compensation, auditor tenure, big4 audit firm type and all the control variables) explained earnings quality variation of listed consumer goods firms in Nigeria by 72.82%, from the OLS R^2 coefficient of multiple determinations (R^2 value of 0.7282). The table also shows that the model is fitted as evidenced by the F- stst of 31.82 (as indicated by the P-value of 0.0000).

4.6 Hypotheses Testing

The hypotheses of the study were tested from the regression result presented Table 4.4

Hypotheses 1

The result from table 4.5 shows that industry specialized auditor (ISA) has a significant positive effect on earnings quality (EQ) of listed consumer goods firms in Nigeria as indicated by the coefficient of 0.8555 with P- value of 0.001 which is statistically significant at 1% level of significance. That is, industry specialized auditors are significant in improving the earnings quality of listed consumer goods firms in Nigeria. Based on this, the study reject the null hypotheses hypothesis one (H_{01}) which states that, industry specialized auditors has no significant effect on the earnings quality of listed consumer goods firms in Nigeria. The positive significant relationship indicates that 1% increase in industry specialized auditor will result to 1% increase on earnings quality of listed consumer goods firms in Nigeria.

Hypotheses 2

On the contrary, the results from the table shows that the audit compensation(AC) has a negative effect on earnings quality (EQ) of listed consumer goods firm in Nigeria, from the coefficient of -0.0436 which is not significant at all levels of significance (p-value of 0.631). This suggests that audit compensation has no significant effect on earnings quality of listed consumer goods firms in Nigeria during the period under study. Therefore, based on this evidence, the study fails to reject the null hypothesis two (H_{02}) which states that audit compensation has no significant effect on earnings quality of listed consumer goods firms in Nigeria. The negative insignificant relationship indicates that an increase or decrease in audit compensation will not result any effect on earnings quality of listed consumer goods firms in Nigeria.

Hypotheses 3

Similarly, the results from the table indicates that audit tenure has a negative effect on earnings quality of listed consumer goods firms in Nigeria, considering the coefficient of -0.4250 and p-

value of 0.443. This implies that the result is not significant at all levels of significance. Thus, based on this statistical evidence, the study fails to reject the null hypothesis three (H_{03}) which states that audit tenure has no significant effect on the earnings quality of listed consumer goods firms in Nigeria. The negative insignificant relationship indicates that an increase or decrease in audit client relationship or familiarity will not result to any effect on earnings quality of listed consumer goods firms in Nigeria.

Hypotheses 4

Table 4.4 shows a significant positive relationship between audit firm type (BIG4) and earnings quality of listed consumer good firms in Nigeria, This is evident from the coefficient of 0.8767 which is significant at 5% level of significance (from the p-value of 0.012). This implies that audit firm type contributes significantly in improving earnings quality of consumer goods firms in Nigeria. Based on this, the study therefore rejects the fourth null hypothesis (H_{04}) which states that Audit firm type has no significant effect on earnings quality of listed consumer goods firms in Nigeria. The positive significant relationship indicates that a 5% increase in big4 audit firm type will lead to the same level of increase on earnings quality of listed consumer goods firms in Nigeria.

4.7 Discussion of Major Findings

From the tests conducted on the data collected and the analyses of the results this study found that audit firm attribute are strongly associated with earnings quality in the listed consumer goods firms in Nigeria. Evidence from the regression results indicates that the variables of audit

firm attributes explained around 73% of the total variation in the earnings quality of listed consumer goods firms in Nigeria.

Industry Specialized Auditor and Earnings Quality

The result from the study reveals that industry specialized auditor in the listed consumer goods firms in Nigeria has positive effect on the quality of earnings of the sampled firms. This finding is in line with the opinion of Rittenberg et al (2010) that firms that engage the service of industry specialized auditor in their audit process will be able to select and implement audit procedures that are more precise and effective. This finding contradicts the study of Abubakar (2014) who found a significant positive effect between industry specialized auditor and earnings management, indicating negative effect on earnings quality. The finding supports those of Lin and Hwang (2010), Habbash (2010), Mahdi, Abolfaz and Ali (2011) and Imen and Pascal (2014), who found that earnings management is reduced when the financial reports are audited by specialist in the industry there for it enhance the quality of earnings. It is also in line with the agency theory that the ability of auditor to give assurance of the credibility of the financial report has to do with audit quality. The finding is also in accordance with the postulate (O'Keefe *et al.*, 1994) that auditors who are specialist in an industry have greater compliance with auditing standard.

Audit firm type (Big4) and Earnings quality

This study found that audit firm type (BIG4) has significant positive effect on earnings quality of listed consumer goods firms in Nigeria. This is in line with our theoretical expectation that the presence of high quality auditors may constrain earnings management by minimizing the propensity of corporate managers to manage earnings through the inflation of discretionary

accruals of listed consumer goods firms in Nigeria. The result also support the findings of Brand and Ann (2005), Piot, and Janin (2005), Masoyi *et al*. (2015), Gerayli, Yanesari and Maʺatoofi (2011) Augustine et al (2013) and Abubakar (2014), who found that the use of big4 audit firm reduced the ability of managers to manage earnings. The result also concurs with the postulate of Ireland and Lennox (2002) that Big-4 audit firms are mindful about reputation losses and litigation exposure. However the findings contradict those of Imen and Pascal (2005) and Umar (2014). Who found that big4 audit firm has significant negative effect on earnings quality.

Audit compensation and Earnings quality

This study found that audit compensation (AC) has no significant effect on earnings quality of listed consumer goods firms in Nigeria during the period under review. This implies that whether there is an increase or decrease in audit compensation the earnings quality may not necessarily change either by increasing or decreasing. This contradicts the view that audit fees reflect additional audit effort which leads to higher level of audit quality (Carcello, Hermanson, Neal & Riley, 2002). This could be that the auditor financial dependence on the client has increase the auditors chances to consent to managers request leading to low quality in the reported earnings. The result contradicts the findings of Geiger, Lennox, and North (2008), Habbash (2010) and Umar (2014) who reported significant relationship between audit fees and earnings quality.This could imply that auditing fees, though a necessary attributes might not be a sufficient condition in enhancing earning quality of the sample firms. However, the study agrees with the study of Fariba and Hassan (2014) and Mohammad (2016) who found no significant relationship between audit fees and accrual based earnings management.

Audit tenure and earnings quality

The study also found that audit tenure has no significant positive effect on earnings quality of listed consumer goods firms in Nigeria. This implies that whether there is an increase or decrease in audit tenure, the earnings quality may not necessarily change either by increasing or decreasing. This finding collaborates the postulate of Becker *et al.* (1998) and Lys and Watts (1994) that as audit –client relationship lengthens; the auditor may develop a close relationship with the client and impair independence which will eventually result in poor earnings quality. However, the finding contradicts the view of Nopmance & Ling, 2015 that as audit tenure lengthens it leads to expertise and better insights into the clients operation resulting to higher earnings quality. The result also contradicts the findings of Lin and Hwang (2010), Mohammed (2016). However, the result support the finding of Augustine *et al.* (2013) that audit tenure does not improve the quality of earnings.

Finding of control variables

Two out of the four control variables employed were found to be significant in determining earnings quality of listed consumer goods firms in Nigeria. Table 4.4 shows that international financial reporting standard (IFRS) has negative but significant effect on earnings quality of listed consumer goods firms in Nigeria, from the coefficient of -0.4370 and the p-value of 0.044. This implies that IFRS has a significant negative contribution in improving earnings quality of consumer goods firms in Nigeria. This findings contradict that of Arum (2013) found that the adoption of IFRS has resulted to better, more relevant and reliable financial reporting quality and is capable of reducing moral hazard in the financial statements to conduct earnings management through accrual policy. The contradiction of this result to other studies can be link to the fact that most of that companies of did not comply with the IFRS requirement in the same year as evidence with a small average of 39.42% from the descriptive statistics.

From the table 4.4 firm size (FS) has positive significant effect on earnings quality of listed consumer goods firms in Nigeria. This is evident from the coefficient of 1.3062 with a P-value of 0.000 which is significant at 1% level of significance. This concurs with the a priori expectation that larger firms have a lot of pressure by regulators to ensure credibility in their financial report and that makes it difficult for them to manage earnings. However, it contradicts the postulate of Jensen and Meckling (1976) which says that when the firm's size increases, the agency costs are expected to increase and this allows for greater managerial discretion and opportunism. On the contrary, the result show leverage (LEV) and return on asset(ROA) having positive but insignificant relationship with earnings quality of listed consumer goods firms in Nigeria as evidenced from the coefficient of 0.0007 and 0.0005 and the p-value of 0.135 and 0.302 respectively. This implies that leverage and profitability have no significant contribution on the quality of earnings of listed consumer goods firms in Nigeria.

4.8 Policy Implications of the Findings

This study focuses on the effect of audit firm attribute and earnings quality of the listed consumer goods firms in Nigeria, using features of audit firm such as industry specialized auditor, audit compensation, audit tenure and big four audit firm type. The results and findings from the analysis conducted have implications to policy makers, investors and management of listed consumer goods firms in Nigeria. The findings of this study contribute to the search by regulators on measures that could improve and protect earnings quality in the corporate world.

The analysis revealed that industry specialized auditor is positively and significantly influencing earnings quality of listed consumer goods firms in Nigeria. This implies that the more

experienced the auditors are, the higher the quality of earnings reported. This result has implication on the firm owners because as they employ auditors who audit other firms in the industry it becomes difficult for managers to hide their opportunistic behavior, because those auditors already know all the complexity in the financial report of firms in that particular industry.

Furthermore, the finding showed that audit firm type (big4) is positively and significantly influencing the quality of reported earnings of listed consumer goods firms in Nigeria. This implies that the more big4 audit firms which include Ernst and Young, Deloitte, PWC and KPMG are employed the higher the quality of earnings reported. This finding provides support in favor of the argument that big-N audit firms reflect audit quality. These findings have implication to shareholders that the employment of this big4 audit firm will ensure that all manipulation in the financial report is pointed out before releasing the financial statement. This is because the big audit firms have their reputation to protect since they have more to loss should a scandal arises in a firm they have audited.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study examined the relationship between audit firms attributes and earnings quality of listed consumer goods firms in Nigeria for the period, 2007 to 2014. Specifically, the study assessed the effect of industry specialized auditor, audit compensation, audit tenure and audit firm type (big4) on the earnings quality of listed consumer goods firms in Nigeria. The study used secondary data obtained from the company's annual reports of 13 of the listed consumer goods firms. Ordinary least square regression was used with the aim of explaining and predicting empirically the relationship between audit firm attributes and earnings quality of the companies.

The Hausman specification test showed that random effects model is the more appropriate model in this study, however the Breusch and Pagan Lagrangian Multiplier Test for Random Effects, indicated that there is no statistically significant difference between the random effects and the OLS model. Hence the study used the ordinary least square regression model. The results of

ordinary least square regression model reveal that industry specialized audit and audit firm type (Big4) has significant positive effect on earnings quality of the listed consumer goods firms, while audit compensation and audit tenure have insignificant relationship with earnings quality.

The result of the control variable show that IFRS and firm size has significant negative relationship and significant positive relationship on earnings quality of listed consumer goods firm in Nigeria respectively. While leverage and profitability has insignificant relationship on earnings quality of listed consumer goods firms in Nigeria.

The regression results indicated that the variables of audit firm attribute including the control variables explained more than 72% of the total variation in the earnings quality of listed consumer goods firms in Nigeria during the period covered by the study.

5.2 Conclusion

The need to ensure earnings quality in the financial report by companies is inevitable as stakeholders relies on it for effective decision making, and external auditors are theoretically considered to have an effect on the firm monitoring mechanisms and the incidence of earnings management. This study was an attempt to empirically examine the effect of audit firm attributes on earnings quality with data from the financial reports of 13 listed consumer goods firms in Nigeria for the period of 2007-2014.

After careful review of the results and discussion, as well as relevant literatures, the study concludes that the significant positive effect of industry specialized audit and audit firm type (big4) on earnings quality. This implies that, industry specialized audit and audit firm type (big4) have improved the earnings quality of consumer goods firms in Nigeria during the period covered by the study.

It is also concluded that the more experience and specialized an auditor is with firms in an industry the higher the quality of earnings recorded. Similarly, it is concluded that the larger the audit firm, the higher the quality of earnings reported by listed consumer goods firms in Nigeria.

The study also concludes that an increase or decrease in audit compensation of listed consumer goods firms in Nigeria does not affect the earnings quality. Similarly it is concluded by the study that no matter the length of audit- client relationship, earnings quality of listed consumer goods firms in Nigeria remains unchanged.

It is concluded that the adoption of IFRS negatively affect earnings quality of consumer goods firms since most of the firms did not comply with the adoption at the same time. It is also concluded that the larger the size of a firm the higher the earnings quality, that is less earnings management. The study also concludes that leverage and profitability have does not affect earnings quality in listed consumer goods firms in Nigeria.

5.3 Recommendations

In line with the findings and the conclusions of this study, the following recommendations made.

1) The shareholders of consumer goods firms should be more inclined in employing the services of audit firms that have experience and understands the financial complexity of firms in the industry. This is because such auditors will be able to select and implement audit procedures that are precise and effective when delivering their service. This may go a long way in improving earnings quality.
2) Policy makers should make policies that guide the selection of audit firms by companies as quality and independence is paramount in dictating and reporting errors in the financial report.

3) The shareholders of consumer goods firms should ensure employ the service of auditors who are financially independent. The Big4 audit firms are financially independent on fees of a particular client as such they are to some extent less likely to be subjected to pressure by client to compromise in an event were they discover accounting irregularities. They also have their reputation to protect should any scandal arises.

5.4 Limitation of the study

Like any other research, the result of the study is subject to some limitation due to the following factors.

1) This study focused on audit firm attributes that influence earnings quality of listed consumer goods firms in Nigeria. As such the study is only limited to a particular sector, this made the findings and recommendations only applicable to consumer goods firms in Nigeria.

2) There are still other audit firm attributes which the study did not cover. These include, non audit fees, auditor's independence, joint audit and Audit Client Importance among others,

5.5 Suggestions for further Research

This study has considered only four explanatory variables relating to earnings quality of listed consumer goods firms in Nigeria. Future studies may consider more variables; both audit quality and audit independence variables. There is also the need to conduct similar research using data of

a different sector, employing different earnings quality model like the Jones model and using different techniques of data analysis.

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Teaching Tool.

Appendix

Stata output

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  ___  ____  ____  ____  ____ (R)
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   11.0   Copyright 1984-2009
  Statistics/Data Analysis             StataCorp
                                       4905 Lakeway Drive
     Special Edition                   College Station, Texas 77845 USA
                                       800-STATA-PC        http://www.stata.com
                                       979-696-4600        stata@stata.com
                                       979-696-4601 (fax)

Single-user Stata license expires 31 Dec 9999:
       Serial number:  71606281563
         Licensed to:  STATAForAll
                       STATA

Notes:
      1.  (/m# option or -set memory-) 50.00 MB allocated to data
      2.  (/v# option or -set maxvar-) 5000 maximum variables

. edit

. *(11 variables, 104 observations pasted into data editor)

. xtset id year, yearly
       panel variable:  id (strongly balanced)
        time variable:  year, 2007 to 2014
                delta:  1 year

.
. summarize
    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
          id |        104           7    3.759777         1         13
        year |        104      2010.5    2.302384      2007       2014
          eq |        104    13.58977    1.852342   8.23989    16.7588
         isa |        104   .5961538   .4930435         0          1
          ac |        104    9.587006    1.376491         0    12.1005
-------------+---------------------------------------------------------
          at |        104   .9615385    .193239         0          1
         big |        104   .7788462   .4170337         0          1
        ifrs |        104   .3942308   .4910514         0          1
          fs |        104    6.88566   .9203667   4.79194    8.28735
         lev |        104   151.9613   335.3278   32.5031    1657.31
-------------+---------------------------------------------------------
         roa |        104   1.966773    32.5097  -188.954    28.5725

. pwcorr eq isa ac at big ifrs fs lev roa, star (0.05)
             |       eq      isa       ac       at      big     ifrs       fs
-------------+---------------------------------------------------------------
          eq |   1.0000
         isa |   0.5687*  1.0000
          ac |   0.4620*  0.3395*  1.0000
          at |   0.1467   0.1411   0.1659   1.0000
         big |   0.6242*  0.5530*  0.4120*  0.2549*  1.0000
        ifrs |  -0.0381   0.1026   0.1407   0.1613   0.0032   1.0000
          fs |   0.7859*  0.4160*  0.5803*  0.1830   0.5286*  0.0687   1.0000
         lev |  -0.5060* -0.3274* -0.3701*  0.0130  -0.5139*  0.0985  -0.6107*
         roa |   0.5469*  0.3791*  0.3496*  0.1377   0.5621*  0.0911   0.5901*

             |      lev      roa
-------------+------------------
         lev |   1.0000
         roa |  -0.7218*  1.0000
```

```
. reg eq isa ac at big ifrs fs lev roa
```

Source	SS	df	MS	Number of obs =	104
Model	257.371112	8	32.171389	F(8, 95) =	31.82
Residual	96.0395079	95	1.01094219	Prob > F =	0.0000
				R-squared =	0.7282
				Adj R-squared =	0.7054
Total	353.41062	103	3.43117107	Root MSE =	1.0055

eq	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
isa	.8554883	.2471595	3.46	0.001	.3648146	1.346162
ac	-.0436384	.0906901	-0.48	0.631	-.2236811	.1364043
at	-.424993	.552121	-0.77	0.443	-1.521092	.6711059
big	.876666	.3412491	2.57	0.012	.1992009	1.554131
ifrs	-.4370458	.2142282	-2.04	0.044	-.8623424	-.0117491
fs	1.306201	.1637748	7.98	0.000	.9810667	1.631335
lev	.0007196	.0004819	1.49	0.139	-.0002371	.0016763
roa	.0050506	.004871	1.04	0.302	-.0046196	.0147208
_cons	4.282942	1.112055	3.85	0.000	2.075233	6.490651

```
. vif
```

Variable	VIF	1/VIF
lev	2.66	0.375897
roa	2.55	0.391402
fs	2.31	0.431990
big	2.06	0.484623
ac	1.59	0.629829
isa	1.51	0.660943
at	1.16	0.862246
ifrs	1.13	0.886915
Mean VIF	1.87	

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of eq

         chi2(1)      =     0.61
         Prob > chi2  =   0.4339
```

```
. xtreg eq isa ac at big ifrs fs lev roa, fe

Fixed-effects (within) regression               Number of obs      =       104
Group variable: id                              Number of groups   =        13

R-sq:  within  = 0.1808                         Obs per group: min =         8
       between = 0.1348                                        avg =       8.0
       overall = 0.1426                                        max =         8

                                                F(8,83)            =      2.29
corr(u_i, Xb)  = -0.1671                        Prob > F           =    0.0288

------------------------------------------------------------------------------
          eq |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         isa |    .789548   .4726167     1.67   0.099    -.1504676    1.729564
          ac |  -.0574805   .0974521    -0.59   0.557    -.2513089    .1363479
          at |   -.357226   .5934651    -0.60   0.549    -1.537604    .8231523
         big |   1.398232   .5636374     2.48   0.015     .2771798    2.519284
        ifrs |    .1990139  .3087191     0.64   0.521    -.4150159    .8130438
          fs |  -.6685041   .7742328    -0.86   0.390    -2.208422    .8714139
         lev |  -.0014509    .000961    -1.51   0.135    -.0033624    .0004605
         roa |   .0034803   .0055717     0.62   0.534    -.0076015    .0145622
       _cons |   17.66289   5.286155     3.34   0.001     7.148944    28.17684
-------------+----------------------------------------------------------------
     sigma_u |  1.5671912
     sigma_e |  .94312349
         rho |  .73413145   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(12, 83) =     2.08                 Prob > F = 0.0269

. xtreg eq isa ac at big ifrs fs lev roa, re

Random-effects GLS regression                   Number of obs      =       104
Group variable: id                              Number of groups   =        13

R-sq:  within  = 0.0838                         Obs per group: min =         8
       between = 0.9537                                        avg =       8.0
       overall = 0.7282                                        max =         8

Random effects u_i ~ Gaussian                   Wald chi2(8)       =    254.59
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

------------------------------------------------------------------------------
          eq |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         isa |   .8554883   .2471595     3.46   0.001     .3710645    1.339912
          ac |  -.0436384   .0906901    -0.48   0.630    -.2213879     .134111
          at |   -.424993    .552121    -0.77   0.441     -1.50713    .6571444
         big |    .876666   .3412491     2.57   0.010     .2078301    1.545502
        ifrs |  -.4370458   .2142282    -2.04   0.041    -.8569252   -.0171663
          fs |   1.306201   .1637748     7.98   0.000     .9852081    1.627193
         lev |   .0007196   .0004819     1.49   0.135    -.0002249    .0016641
         roa |   .0050506    .004871     1.04   0.300    -.0044964    .0145976
       _cons |   4.282942   1.112055     3.85   0.000     2.103354     6.46253
-------------+----------------------------------------------------------------
     sigma_u |         0
     sigma_e |  .94312349
         rho |         0   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. est store random

. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
         isa |    .789548     .8554883      -.0659403        .4028383
          ac |  -.0574805    -.0436384      -.0138421        .0356681
          at |   -.357226     -.424993        .067767         .217631
         big |   1.398232       .876666       .5215659        .4485936
        ifrs |    .1990139   -.4370458       .6360597        .2222921
          fs |  -.6685041     1.306201      -1.974705        .7567128
         lev |  -.0014509     .0007196      -.0021705        .0008315
         roa |   .0034803     .0050506      -.0015703        .0027049
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        5.64
                Prob>chi2 =      0.6874
                (V_b-V_B is not positive definite)
```

```
. xtreg eq isa ac at big ifrs fs lev roa, re vce (robust)

Random-effects GLS regression                   Number of obs      =       104
Group variable: id                              Number of groups   =        13

R-sq:  within  = 0.0838                         Obs per group: min =         8
       between = 0.9537                                        avg =       8.0
       overall = 0.7282                                        max =         8

Random effects u_i ~ Gaussian                   Wald chi2(8)       =   2243.05
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

                                               (Std. Err. adjusted for 13 clusters in id)
------------------------------------------------------------------------------
             |               Robust
          eq |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         isa |   .8554883    .233776     3.66   0.000     .3972958    1.313681
          ac |  -.0436384   .0377586    -1.16   0.248     -.117644    .0303671
          at |   -.424993   .5391428    -0.79   0.431    -1.481694    .6317076
         big |    .876666   .4680404     1.87   0.061    -.0406764    1.794008
        ifrs |  -.4370458   .2625267    -1.66   0.096    -.9515886    .0774971
          fs |   1.306201   .1191815    10.96   0.000     1.072609    1.539792
         lev |   .0007196   .0004373     1.65   0.100    -.0001374    .0015766
         roa |   .0050506   .0042365     1.19   0.233    -.0032529     .013354
       _cons |   4.282942   .9513017     4.50   0.000     2.418425    6.147459
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  .94312349
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        eq[id,t] = Xb + u[id] + e[id,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                      eq |  3.431171        1.852342
                       e |  .8894819        .9431235
                       u |          0               0

        Test:   Var(u) = 0
                                 chi2(1) =     0.00
                              Prob > chi2 =     0.9550

.
```