MODERATING EFFECT OF INSTITUTIONAL SHAREHOLDING ON THE RELATIONSHIP BETWEEN AUDIT COMMITTEE CHARACTERISTICS AND EARNINGS MANAGEMENT OF LISTED MANUFACTURING FIRMS IN NIGERIA

BY

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DECLARATION

I hereby declare that this Dissertation entitled "Moderating Effect of Institutional Shareholding on the Relationship between Audit Committee Characteristics and Earnings Management of Listed Manufacturing firms in Nigeria" has been carried out by me in the Department of Accounting. The information derived from the literature has been duly acknowledged in the text and list of references provided. No part of this work was previously presented for another degree or diploma at this or any other institution.

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Fatima Muhammed GIDADO Date

CERTIFICATION

This Dissertation entitled MODERATING EFFECT OF INSTITUTIONAL SHAREHOLDING ON THE RELATIONSHIP BETWEEN AUDIT COMMITTEE CHARACTERISTICS AND EARNINGS MANAGEMENT OF LISTED MANUFACTURING FIRMS IN NIGERIA by Fatimah Muhammed GIDADO meets the regulations governing the award of MASTER OF SCIENCE (M.Sc.) Degree in ACCOUNTING AND FINANCE of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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Prof. S. Z. Abubakar Date
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DEDICATION

This work is dedicated to the entire members of my family for their support and encouragement.

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ABSTRACT

The study examined the moderating effect of institutional shareholding on the relationship between audit committee characteristics and earnings management in listed manufacturing firms in Nigeria. The population consisted of all the 58 manufacturing firms listed on the Nigerian Stock Exchange (NSE) as at 31st December, 2016. The data were collected from secondary source, which were available through the published annual reports and accounts of the firms for the period 2007 to 2016. Fixed effect regression technique was used to analyze the data after subjecting it to the Hausman specification test because of the panel nature of the data. The study found that audit committee size has a negative effect on earnings management. On the contrary, both audit committee meetings and tenure has significant positive effect on earnings management. The result also showed that institutional shareholding moderates the relationship between both audit committee independence and tenure, and earnings management of listed deposit money banks in Nigeria. It is on these basis that the study recommends among others that there should be legislation, either through the Code of Corporate governance for listed public firms or through statutory provisions, to reduce the audit committee members' tenure to a maximum of 3 years as it encourages the practice of earnings management.

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CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

Earnings management has consistently being a subject of debate among regulators and practitioners especially after the high-profile accounting scandals that involved once well-respected corporations such as Enron, WorldCom and Xerox. Since then an important issue that underlies the discussion on financial reporting is that of adequate corporate governance mechanisms that could check managerial excesses in order to improve investors' confidence in the reporting process in the United States. The New York Stock Exchange (NYSE) and National Association of Securities Dealer Automated Quotation System (NASDAQ) proposed new governance rules with regards to boards of directors and audit committees for listed firms in August 2002 (Zhou & Chen, 2004). In Nigeria, a code of best governance practices was introduced in 2003 with a view to aligning managerial interest with that of shareholders. However, the efficacy of the code in solving agency problem has been questioned as fresh cases of corporate malpractices have been reported in Nigerian firms such as Lehman Brothers Nigeria PLC (Now Unilever Nigeria PLC) and Cardbury Nigeria PLC.

Earnings management relates to management's deliberate intervention in financial reporting process to either mislead investors about the current economic condition of a firm or in order to achieve some contractual benefits (Healy & Wahlen, 1999). It is a practice that produces less reliable accounting earnings that do not reflect a firm's financial performance. Such practice is likely to reduce the quality of reported earnings and its usefulness for investment decisions; thus reducing investor confidence in the financial reports. It is generally believed that accounting earnings are more reliable and of higher quality when managers' opportunistic behaviour is reduced using monitoring systems (Wild, 1996; Dechow, Sloan & Sweeny, 1996). One important monitoring system is corporate governance. Its primary objective is to resolve

agency problems by aligning management's interests with the interests of shareholders (Demsetz & Lehn, 1985).

A good corporate governance mechanism is necessary in today's business environment because it has become a common practice by managers to take advantage of their position to pursue their own selfish interest at the expense of shareholders. This situation is made possible because of the separation of ownership from control of modern corporations that gives rise to agency problem. In today's corporate environment, good governance structures include an adequately functioning audit committee, a thoughtfully composed board of directors, a balanced ownership structure, and an independent and vigilant external auditor (Habbash, 2010). The essence of all governance mechanisms therefore is to align as nearly as possible the interest of managers with shareholders and thereby minimizing, if not eliminating, corporate malpractices including earnings management.

Generally, responsibility for the quality of financial reports is laid on board of directors and its committees. Audit committee is a committee of board of directors that is saddled with responsibility of monitoring the preparation of financial statements with a view to ensuring integrity of financial reports. Most prior studies have given serious attention to the committee as the main agent in ensuring integrity of financial information and dealing with issues related to external audit (Abbott & Parker, 2000). Like all corporate governance measures, the Committee plays its monitoring role in order to protect shareholders' interest. Reported earnings are thus considered by shareholders to be value relevant and useful in estimating future returns and thus earnings and share returns are expected to be related.

As a sub-committee of the board of directors, the audit committee provides formal communication between the board, the internal monitoring system and the external auditor. It acts as an arbiter between management and auditors. In view of this, audit committees are

expected to be independent from management so as to be able to conduct effective monitoring, which will result in less opportunistic management behaviour such as earnings management. The quality and credibility of financial reporting can be badly affected when there is low or no audit committee independence. According to Habbash (2010), the committee adds to effectiveness of corporate governance in constraining earnings management at two levels. Firstly, by overseeing the financial reporting process and examining major accounting measurement and choices, thus mitigating earnings management practices. Secondly, by coordinating both internal and external audits, and above all, assuring external auditors independence and freedom from managerial pressure.

Audit committee and how it relates to earnings management has been explored in the literature using various constructs of audit committee effectiveness such as size of the Committee (Klein, 2002; Shehu & Abubakar, 2011), composition and independence (Klein, 2002; Shehu, 2011), and audit committee meetings (Beasley, 1996: Zhou & Chen, 2004). Regarding the committee size, it has been observed that the larger the board of directors, the more likely it is to uncover and resolve issues bordering on financial reporting process (Rickling, 2014). This observation could be extended to the audit committee to mean that the more the members of the committee the more likely they are to be effective in ensuring quality of financial reports. In this regard, Shehu (2011) found that audit committee size determines the strength and quality of financial information in Nigerian firms. Klein (2002) found a negative relation between audit committee independence and abnormal accruals, and that reductions in audit committee independence are accompanied by large increases in abnormal accruals. With respect to audit committee meetings, the argument is that the more the committee meets the more they are likely to uncover earnings management by managers and hence curtail it. In this regard, Xie *et al.* (2003) found that audit committee meeting frequency is associated with reduced levels of discretionary current accruals.

Studies have also acknowledged the importance of audit committee tenure in financial reporting process (Carcello, Hermanson & Ye, 2010; Rickling, 2014). The argument is that directors with longer tenure on the audit committee are likely to be more closely affiliated with management and less likely to challenge management decisions. This has also seen increased agitations by stakeholders that term limits for board members should be considered by regulators in light of evidence that long-tenured board members are more closely affiliated with management as exhibited by long-tenured members' tendency to approve higher compensation to the CEO. Although, this argument focused on the overall board itself, Rickling (2014) notes that it can be applied to the audit committee given its role in ensuring financial reporting integrity.

A number of mechanisms have been proposed by researchers and policy makers in order to enhance the strength of an audit committee regarding its role in ensuring the integrity of financial reports. Nonetheless, there exists controversy of the results of empirical studies that investigated the relationship between audit committee characteristics and earnings management. Both positive and negative effects of these characteristics have been reported. This suggests that there are factors that affect the relationship between the audit committee characteristics and earnings management. This study argues that one of such factors is institutional shareholding, which has the tendency to reduce information asymmetry and consequently leads to alignment of the interest of corporate managers and that of shareholders.

Institutional investors has been given attention by prior studies can be deemed as knowledgeable shareholders regarding the business, leading to an increase in the monitoring mechanisms and mitigation of opportunistic behaviour. It is argued that institutional investors can play a pivotal role in monitoring managers' behaviour, which is considered as complementary to internal corporate governance. This is because stock holding by these sophisticated investor controls managers' opportunistic behavior and thereby causing them to

allocate resources more efficiently (Ren, Chandrasekhar & Li, 2012). Since the role of the audit committee is to ensure the integrity of the financial reporting process, its effectiveness is likely to be enhanced where there is less goal divergence between parties to the firm. In fact, it has been observed that the power of the audit committee can be affected by other governance players, such as the board of directors and institutional investors (Malik, 2014).

The audit committee is affected by institutional shareholding in two ways. Firstly, committees that are composed of more representatives of the shareholding of institutions are expected to be better monitors of organizational resources and financial reporting processes because of their wealth of experience and resources. This is expected to influence the audit committee independence in a way that enhances integrity of financial reports. Secondly, because institutional investors can be long term in nature, they are expected to serve longer on the boards of companies. As such they are well acquainted with the organizations financial reporting process which gives them an edge in the monitoring process as compared to short term individual investors. These two reasons justify the moderation of institutional shareholding with audit committee independence and tenure.

The manufacturing sector in Nigeria consists of sub-sectors which contribute immensely to the development of the economy. Due to its strategic importance, successive governments have tried to improve the performance of the sector in terms of its contribution to Gross Domestic Product (GDP). The sector experienced some corporate scandals in 2006 when Cadbury Nigeria Plc was reported to have misstated its reported earnings to the tune of approximately 100 million dollars. This makes the sector relevant for the assessment of earnings management. Also, recently, the federal government has reiterated the need to develop the sector in order to move Nigeria from an import-based to an export-based economy, following the unprecedented decline in oil prices. Thus, the sector provides a good motivation for assessing earnings management practice in Nigeria.

1.2 Statement of the Problem

Empirical studies that examined the effect of audit committee characteristics on earnings management have yielded inconsistent results. For example, Cornett, McNutt and Tehranian (2007) found a positive association between larger committees and abnormal accruals in sample of U.S. firms; suggesting that the committees connive with board of directors in order to expropriate minority shareholders' wealth. However, Lin, Li and Yang (2006) found a negative and significant effect of the size of the committee on financial reporting quality in the United States listed firms. The finding of the study may not be extended to the Nigerian manufacturing firms given the differences in institutional settings between the two countries.

Similarly, Abubakar and Shehu (2011) failed to document a significant relationship between audit committee characteristics and earnings management in Nigerian banks. Beasley (1996) found a negative relation between the percentage of independent directors on the committee and the likelihood of financial fraud, whereas Dechow *et al*. (1996) found that firms with a large percentage of independent directors on the audit committee are less likely to be subject to Securities and Exchange Commissions (SEC) enforcement actions for alleged violations of GAAP in U.K. firms. Also Zhou and Chen (2004) suggested that the number of times an audit committee meets is an important resource in improving the effectiveness of boards in U.S. firms. However, in U.S. boards, Vafeas (1999) found that annual number of audit committee meetings is inversely related to firm value, which is due to increases in board activity following share price declines.

Audit committee, independence, meeting frequency and tenure are expected to influence the effectiveness of the Committee, which in turn are related to levels of earnings management by manufacturing firms. Rickling (2014) notes that there has been more empirical focus on components of the audit committee effectiveness such as size, independence and financial

expertise and this has shaped the provision of codes of corporate governance in some jurisdictions. However, there is an increased focus on audit committee member characteristics beyond size and independence and number of meetings. Thus, along these lines, Carcello, Hermanson and Ye (2011) note that there is a need to develop better measures of board and audit committee characteristics, especially the audit committee member tenure. Studies in this area are also characterized by mixed findings. These include Yang and Krishnan (2005) who found that earnings management is lower when audit committee members have longer tenure. On the contrary, Dhaliwal, Naiker and Navissi (2010) showed that accruals quality is positively related to lower tenure. All these studies used non-Nigerian data such as U.S., U.K and Australia. Because of difference in institutional and regulatory settings the findings of these studies may not be applicable to Nigeria.

In Nigeria, several studies examined the effect of audit committee characteristics on earnings management (Shehu, 2011; Fodio, Ibikunle & Oba, 2013; Bala, Gugong & Kumai, 2014; Omoye & Eriki, 2014; Ayemere & Elijah, 2014; Miko & Kamardin, 2015; Dabor & Dabor, 2015). However, these studies suffer some limitations, which provide the opportunity to examine the same phenomenon using a more convincing methodology. For example, Shehu (2011), Fodio, Ibikunle and Oba (2013) and Dabor and Dabor (2015) focused on the financial sector and therefore its finding cannot be generalized to other sectors, such as the manufacturing industry. This is because what constitute substantial accruals differs from one industry to another. For example in the banking industry, the provision for loan losses are what is considered as the substantial accruals that managers use to engage in earnings management. In the insurance industry however the claim loss reserves are what is used to manage earnings. Also, the difference in institutional and regulatory requirements of different industries make findings from the financial sector different possibly from the manufacturing industry.

Bala, Gugong and Kumai (2014), however studied a sub-sector of the Nigerian manufacturing firms by using a sample of listed food and beverages firms. The study used a sample of eight (8) firms over a period of 5 years and as such the findings could be said to be questionable. One problem with the sample is that the Modified Jones (1991) model requires twelve (12) cross-sections in order to document a convincing evidence, which was not the case with the study. Lastly, to the best of the researcher's knowledge, there is no Nigerian study that examined the effect of audit committee members' tenure on discretionary accruals. All studies that investigated auditor tenure focused on external auditor tenure, that is, auditor-client relationship (e.g., Okolie, 2014; Miko and kamardin, 2015). Thus, there exists variable inclusion gap in the Nigerian studies.

It is important to note that gaps still exist in audit committee and earnings management research given the contradictions in findings with respect to size, independence and meeting frequency. These differences are as a result of methodological variations, domain and country and sample size. In relations to audit committee directors' tenure, there is still the dearth of empirical evidences in Nigeria. In addition, the review of empirical studies revealed that there is no study that examined the moderating role of institutional shareholding on the effect of audit committee characteristics on earnings management. This is an important literature gap that needs to be filled. This is because the extent of earnings management is dependent on the level of information asymmetry, which may be reduced by institutional shareholders who have both the resources and the required expertise to monitor the financial reporting process. It is therefore expected that a well structured audit committee, may reduce earnings management more effectively in the presence of institutional shareholding. It is against this backdrop the presents study seeks to examine the moderating role of institutional shareholding on the effect of audit committee characteristics on earnings management of listed manufacturing firms in Nigeria.

1.3 Research Questions

Specifically, the study seeks to provide answers to the following questions;

i. What is the effect of audit committee size on earnings management in listed manufacturing firms in Nigeria?

ii. What is the effect of audit committee independence on earnings management in listed manufacturing firms in Nigeria?

iii. What is the effect of audit committee number of meetings on earnings management in listed manufacturing firms in Nigeria?

iv. What is the effect of audit committee members' tenure on earnings management in listed manufacturing firms in Nigeria?

v. What is the moderating effect of institutional shareholding on the relationship between audit committee independence on earnings management of listed manufacturing firms in Nigeria?

vi. What is the moderating effect of institutional shareholding on the relationship between audit committee tenure on earnings management of listed manufacturing firms in Nigeria?

1.4 Objectives of the Study

The main objective of this work is to determine the impact of audit committee on earnings management in listed manufacturing firms in Nigeria. The specific objectives are to;

i. examine the impact of audit committee size on earnings management in listed manufacturing firms in Nigeria;

ii. examine the impact of audit committee independence on earnings management in listed manufacturing firms in Nigeria;

iii. examine the impact of audit committee meetings on earnings management in listed manufacturing firms in Nigeria;

iv. examine the impact of audit committee tenure on earnings management in listed manufacturing firms in Nigeria; and

v. examine the moderating effect of institutional shareholding on the relationship between audit committee independence and earnings management of listed manufacturing firms in Nigeria.

vi. examine the moderating effect of institutional shareholding on the relationship between audit committee tenure and earnings management of listed manufacturing firms in Nigeria.

1.4 Hypotheses of the Study

Sequel to the study objectives, the following hypotheses are formulated for testing:

$H0_1$: Audit committee size has no significant effect on earnings management of listed manufacturing firms in Nigeria.

$H0_2$: Audit committee independence has no significant effect on earnings management of listed manufacturing firms in Nigeria.

$H0_3$: Audit committee meetings has no significant effect on earnings management of listed manufacturing firms in Nigeria;

$H0_4$: Audit committee tenure has no significant effect on earnings management of listed manufacturing firms in Nigeria.

H05: Institutional shareholding has no significant moderating effect on the relationship between audit committee independence and earnings management of listed manufacturing firms in Nigeria.

H06: Institutional shareholding has no significant moderating effect on the relationship between audit committee tenure and earnings management of listed manufacturing firms in Nigeria.

1.5 Scope of the Study

This research focuses on manufacturing firms listed on the Nigerian Stock Exchange (NSE) for the period 2007 to 2016. The period covered is considered suitable considering that it encompassed the boom days when the market witnessed significant rise in reported earnings and fierce competition for fresh capital as the result of mergers and acquisitions. Researchers have argued that this competition is an incentive to manage earnings (Yero, 2011). It also captures the era during which the economic meltdown struck. The event may also induce managers of firms to possibly resort to managing earnings, in order to hide their poor results. The period also coincides with the time when the code of best governance mechanisms was introduced by various regulatory bodies in Nigeria, such as the Code of Corporate Governance for Public Listed companies in 2011. This provides the opportunity to test whether audit committee has served the important purpose of providing its oversight and monitoring function in Nigerian manufacturing firms.

The study also pays attention to audit committee variables of size, independence, meetings and members' tenure. These variables are very important in corporate governance discussions and they have been on the attention of policy makers in designing code of best governance practices in recent times.

1.6 Significance of the Study

Generally, corporate governance has assumed a center stage in policy discussions since the global financial melt that shook big firms. The effects of the variables prescribed since then on earnings management have been explored in the literature especially in the U.K., U.S., Australia and other countries. The findings of this study increases our understanding of corporate governance measure of audit committee and how effective it is in curbing managerial opportunistic tendencies. This is evident in the introduction of the audit committee tenure as a variable of interest.

There are studies that examine some aspects of the audit committee in relation to earnings management, such as the presence of an audit committee. This study is one of the few empirical studies that attempts to investigate the effect of audit committee on discretionary accruals in Nigerian firms by looking at various dimensions of the committee. The findings, therefore, provides additional evidence that will guide future studies and also help in making best governance recommendations with respect to the audit committee.

The result of the study also reveals to investors and policy makers the effect of the prescription of certain codes of audit committee as a corporate governance variable and the role that the mechanism plays in aligning managerial and shareholders' interest. Since capital market set securities' prices based on reported firm performance, this work is relevant as it will reveal that both investors and the capital market can rely on the information drawn from it to assess the possibility of how audit committee may have underscored the reliability of reported earnings.

The study is also relevant to regulators in that it highlights the role of audit committee variables conditioned on institutional shareholding in constraining discretionary accruals in Nigerian manufacturing firms. This helps in the design and implementation of best code of corporate governance with regard to the composition of the committee.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter discusses the issues bordering on the conceptualization of audit committee characteristics and earnings management and provides a review of both theoretical and empirical literature on the association between the variables of the study. The section concludes with the theoretical framework of the study.

2.2 Concept of Earnings Management

Earnings management has been defined in various ways according to researchers' focus and perspectives. According to Barnea, Ronen and Sadan (1976), earnings management is the deliberate dampening of fluctuations about some level of earnings considered as being normal for the firm. In this definition, focus is made only on the income-smoothing aspect of earnings management, which is just one side of the coin. As such this definition is hardly comprehensive and neglects other aspects of earnings management. Schipper (1989) defined earnings management as disclosure management in the sense of a purposeful intervention in the external financial reporting process, with a view to obtaining private gain for shareholders or managers. Thus, simply put, earnings management is the deliberate intervention in financial reporting process to achieve personal goals by firm managers. Healy and Wahlen (1999) defined earnings management as the altering of financial statements through the use of judgment in structuring transactions to either mislead the firm's stakeholders about the true economic picture of the firm or to achieve some contractual benefit that is based on accounting numbers. Earnings management, in this sense, is the manipulation of financial statement by managers, using accounting choices, estimates and methods, to achieve some objectives that are largely in conflict with the underlying economic status of the firm.

The definitions by Barnea et al. (1976), Schipper (1989) Healy and Wahlen (1999) suggest that earnings management are deliberate attempts to affect financial reports to achieve some personal benefits by managers. This corresponds with the submission of Fields, Lys and Vincent (2001) stated that earnings management occurs when managers exercise their discretion over accounting numbers with or without restrictions. Such discretion can be either firm value maximising or opportunistic.

Thus, there are two types of earnings management, opportunistic and informative. Opportunistic earnings management means that managers seek to mislead investors by pursuing the management's interests. The literature on this type of earnings management mainly originated with Healy (1985) who found that managers use accruals to strategically manipulate bonus income. Stockholders lose when earnings management results in abnormal private gains for managers. This could take the form of increased compensation (Healy, 1985). Indeed, evidence supports a widespread association between managerial compensation and higher degrees of earnings management. Bergstresser and Philippon (2006) and Cheng and Warfield (2010) documented that the use of discretionary accruals is more common at firms where top management compensation is closely tied to the value of stock and that this applies particularly when stock options are involved. Informative earnings management which aims to enhance value maximisation was first enunciated by Holthausen and Leftwich (1983) cited in Beneish (2001). Here, managerial discretion is a means for managers to reveal to investors their private expectations about the firm's future cash flows. Stockholders gain when earnings management is used to signal managers' private information or to reduce political costs (Watts & Zimmerman, 1986).

Another term which is often associated with earnings management is fraudulent financial reporting or simply accounting fraud. As opposed to perceptions of ordinary people, it is widely accepted in the literature that a considerable portion of earnings management remains within

the boundaries of the flexibility embedded in accounting standards. Shehu (2011) noted that this is one of the reasons why auditors might not find formal grounds to undo the earnings management actions.

Of all the above definitions, Schipper's (1989) seems to be the most comprehensive as it emphasises that earnings management is a deliberate action, and that it includes any sort of manipulation that can affect financial reporting either through earnings numbers or any other accounting items, and can be either legitimate (within the Generally Accepted Accounting Principles (GAAP) or illegitimate (accounting frauds). This manipulation can be committed to meet management objectives (opportunistic earnings management) or shareholders' objectives (informative earnings management). Thus, this study defines earnings management in line with Schipper (1989) as a way of using opportunities provided by the accounting system to engage earnings by adopting accounting methods for a specific purpose.

Measuring Earnings Management

According to Habbash (2010), earnings management propensity is invisible and it can be considered successful only if it goes undetected. This makes measuring of earnings management measurement a challenging task for researchers. It is hard for investors to detect earnings management from looking at single cases but detection is less difficult if this phenomenon is studied using a large set of data to uncover systematic patterns. Many empirical accounting studies examine whether managers manage earnings and under what conditions earnings management can be expected. In these studies it is commonly believed that accruals provide management with the opportunity to alter earnings. Therefore, abnormal accruals are used as an empirical indicator of earnings management (Dechow *et al*., 1995)

McNichols (2000) discusses the research designs of the three most commonly applied designs in the earnings management literature: aggregate accruals, specific accruals and the distribution

of earnings. One of the main arguments against using aggregate accruals models is that there is insufficient knowledge on how these accruals behave in the absence of earnings management. Thus, McNichols (2000) argues that the way forward in earnings management research is specific accruals research design.

In earnings management studies, it is important to segregate discretionary accruals from total

accruals. In his information content study, Subramanyam (1996) regress annual stock returns on operating cash flows, non-discretionary income and discretionary accruals. He finds that discretionary accruals were associated with annual stock returns. The author interpreted this as implying that discretionary accruals are informative with respect to stock returns. Many studies show that accrual based accounting earnings are more informative with respect to stock returns than cash flows (Dechow (1994).

Since discretionary accruals are not directly observable, many proxies and estimation techniques for detecting them are suggested. For example, Healy (1985) uses total accruals as a proxy for discretionary accruals and DeAngelo (1986) uses the change in total accruals as a proxy for discretionary accruals. Jones (1991) employs a more sophisticated approach to estimating earnings management

The aggregate accruals model is the most commonly used method by previous studies to measure earnings management. The accounting accruals consist of discretionary accruals, which are management determined, and non-discretionary accruals, which management cannot determine because they are economically determined. Discretionary accruals allow managers to exercise their discretion over accounting choices and estimates, and the literature documents that firms use discretionary accruals to practice earnings management (Dechow *et al*, 1995; Habbash, 2010)

Earnings management studies rely upon total accruals rather than specific accruals to detect the incidence of earnings management. Healy and Wahlen (1999) argue that there is remarkably little evidence on earnings management using specific accruals. They add that specific accruals research can provide useful information for standard setters about the deficiency of standards. Similar to the aggregate accruals studies, this alternative approach models the behaviour of each specific accrual in order to identify its discretionary and non-discretionary components.

The distribution of earnings approach proposes that managers have incentives to meet certain earnings thresholds such as reporting positive profits, or avoiding losses. The distribution of reported earnings around these thresholds can be identified if the incidence of amounts is above or below the thresholds and are distributed smoothly, or if they reflect discontinuities due to earnings management practice. Healy and Wahlen (1999) contend that this approach has failed to detect the extent of earnings management and the specific methods or accruals that are used for earnings management.

The aggregate accruals models seem to have significant advantages over other models, both theoretically and empirically. Furthermore, the large number of studies that used aggregate accruals models indicates a wide acceptance of the aggregate accruals approach as a proper proxy for earnings management. As a result, the measurement of total accruals in this research is based on aggregate accruals (discretionary accruals model) using the Modified Jones (1991) Model was therefore used to divide accruals into discretionary and non-discretionary items. The level of discretionary accruals was then used as an empirical indicator of earnings management.

2.4 Concept of Audit Committee Characteristics

Parker (1992), as cited in Collier and Gregory, (1996) defined an audit committee as "A committee appointed by a company as a liaison between the board of directors and the external

auditors, this committee normally has a majority of non-executive directors and is expected to view the company's affairs in a detached and dispassionate manner". In this definition two issues are glaring. Firstly, the committee should serve as a liaison between the board and external auditors implying that the financial reports prepared must be endorsed as true and fair by them even in the face of pressure from directors. Secondly, they should view the company as a client who relinquishes the responsibility of ensuring financial reporting on them and that relationship must be treated as fiduciary.

An audit committee plays an important monitoring role to assure the quality of financial reporting and corporate accountability (Carcello and Neal, 2000). From this definition, the ultimate goal of an audit committee is to ensure that financial reports reflect the true economic view of firms. This is to say anything short of that renders the committee ineffective. It is worth noting that since the committee is appointed by the firm, their role in financial reporting process can be relegated based on the needs of the board. Klein (2002) states that as a link between the external auditor and the firm, an audit committee bridges the information asymmetry between them, facilitates the monitoring process, and enhances the independence of an auditor from management.

Information asymmetry, which gives managers privilege information since they are the controllers of the firm can be minimized by a well-functioning audit committee. Because as experts in financial and accounting numbers they will be able to detect managerial discretion in reported earnings. The Sarbanes-Oxley Act (2002) sees an audit committee as a committee (or equivalent body) established by and among the board of directors of an issuer for the purpose of overseeing the accounting and financial reporting processes of the issuer and audits of the financial statements of the issuer. Although this definition is widely used in the literature, it seems inconclusive because it fails to acknowledge the importance of the committee as a mediator between the board and external auditor.

From the above definitions, an audit committee can be seen as a sub-committee of the board of directors which provides formal communication between the board, the internal monitoring system and the external auditor. It acts as an arbiter between management and auditors. Thus should be independent from management so as to be able to conduct effective monitoring, which results in less opportunistic management behaviour such as earnings management. The quality and credibility of financial reporting can be badly affected when there is low or no audit committee independence.

The code of best governance practices in Nigeria suggests that the committee should be largely independent, highly competent and possess high level of integrity. These criteria are essential in achieving the overall objectives of an effective committee which are summed up by Shehu (2011) to include commenting on and approving accounting policies, reviewing the financial statements, and maintaining and reviewing the adequacy of internal controls. Thus, auditing is used by firms to reduce agency cost. Additionally, audit committees are expected to play an important role in enhancing the effectiveness of external auditors over financial reporting quality by assuming responsibilities for the appointment and remuneration of external auditors, and discussing the scope of and reviewing the auditors work. Basiruddeen (2010) concludes that the quality and credibility of financial reporting can be badly affected when there is low or no audit committee independence.

The purpose of the audit committee is to ensure the accuracy of the financial reports (Buchalter & Yokomoto, 2003). Regulators around the world have acknowledged the important function of audit committees in financial reporting even before financial scandals occurred at the end of the last decade. For instance, in the 1980s the NYSE introduced a requirement for all companies listed on the major American stock exchanges to maintain an audit committee. Its existence is seen as providing an essential monitoring that will protect investor interests and maintain confidence in stock markets. Wallace (1980) argues that investors demand audited financial

statements because these statements provide information that is useful for their investment decisions; thus external audit is supposed to serve as a monitoring device that reduces managers' incentives to manipulate reported earnings. Therefore, the audit process is valued as a way of improving the quality of financial information; hence it is expected that higher audit quality will be associated with lower earnings management activities by managers.

Different components of the audit committee have theoretical linkage to earnings management. With respect to audit committee size, the number of directors that serve on the committee has been used as an indication of resources available to this committee. Larger audit committees, with legitimate power delegated by boards, are expected to contribute to the effectiveness of the committee, given audit committee effectiveness as a function of audit committee power (Kalbers and Fogarty 1993). It is observed that the larger the committee, the more likely it is to uncover and resolve issues bordering on the financial reporting process (Bedard, *et al*. 2001) because it is likely to provide the necessary strength and diversity of views and expertise to ensure effective monitoring (Habbash, 2010).

An independent audit committee is one that is composed of independent non-executive directors. Zhou and Chen (2004) maintain that audit committee composition has been the focus of many governance reform efforts, and all companies listed on major stock exchanges such as NYSE and NASDAQ must maintain an audit committee with at least three solely independent directors, except in certain restricted circumstances (e.g., BRC, 1999 and SEC, 2003). As mentioned earlier, the code of best governance practices in Nigeria suggests that the committee should be largely independent, highly competent and possess high level of integrity. Much like board independence, because outside members do not play a direct role in the management of the company, their existence may provide an effective monitoring tool to the board and thus produce higher quality financial reports. Fama and Jensen (1983) claim that board of directors is the most important mechanism in internal governance structure and its effectiveness in the

monitoring process lies in its composition. In addition, because they do not have self interest in the firm, the external directors can stand pressure from management to manipulate financial reports.

With respect to meeting frequency, Habbash (2010) observes that directors on boards that meet frequently are more likely to discharge their duties in accordance with shareholders' interests because more time can be devoted to monitoring issues such as earnings management, conflicts of interest and monitoring management. Conversely, boards that rarely meet may have no time to find out about such complex issues and may perhaps have time only to rubber-stamp management plans. He further noted that the frequency of meetings indicates an active audit committee that devotes time to rectifying any immediate issues and offers a better review and oversight environment, which, in turn, may assist in detecting earnings management.

There are several views on the impact of tenure length of audit committee members on their ability to fulfill their duties competently and effectively. A popular view in the extant literature is that longer board service allows directors to gain more firm specific knowledge and better equip themselves to deal with complicated committee proceedings, hence resulting in improved performance in protecting shareholder's interests (Ghafran, 2013). However, a contrary view holds that the longer the members' serve on the committee the more likely they are to be complacent to managements' output and hence overlook other important corporate decisions that may hamper quality of financial reports.

From the foregoing, it is clear that audit committee characteristics has ramifications on earnings management and financial reporting quality. The relationship can be viewed from the agency theory perspective which holds that the composition of board of directors and its sub-committees can be used to resolve agency conflict in corporate settings.

2.5 Review of Empirical Studies on Audit Committee Characteristics and Earnings Management

The Audit committee is a governance mechanism that reviews and evaluates a firm's internal controls and audits its financial statements in order to prevent material mis-statements. Auditors of higher quality are less willing to accept doubtful accounting methods and are more likely to report errors and irregularities revealed during the audit work. Thus, the internal auditor is considered to have an impact on the efficacy of a firm's monitoring function, and hence constrains the incidence of earnings management. In this section, a review of empirical studies on audit committee and earnings management is carried out.

2.5.1 Audit Size and Earnings Management

The findings of prior studies on the effect of audit committee size on earnings management are mixed and inconclusive. Xie *et al*. (2001) used a sample of 282 US firms to examine the role of audit committee on constraining earnings management for the years 1992, 1994 and 1996 and using OLS multiple regression technique. They found that there is no significant association between audit committee size and aggressive earnings management. Similarly, Bedard *et al*. (2001) used a sample of 300 US firms in the year 1996 to test the effect of audit committee on agressive earnings management. They applied different methods to capture earnings management incidence, and control for different factors. The study reported findings similar to in Xie *et al*. (2001). Baxter and Cotter (2009) investigated whether the size of audit committee is associated with earnings quality for a sample of Australian listed companies in 2001, prior to the introduction of mandatory audit committee requirements in 2003. They used two measures of earnings quality based on the Jones (1991) and Dechow and Dichev (2002) models. Their results indicated no association between audit committee size and earnings quality in either measure. Abbott *et al*. (2004) examined 41 firms that issued fraudulent reports

and 88 firms in Australia which restated annual results in the period 1991-1999. They found that audit committee size had no significant impact on financial reporting quality. However, their study did not use discretionary accruals as a measure of earnings quality. Instead, it used financial restatements for a very small sized sample of 41 firms.

Lin, Li and Yang (2006) found a negative association between audit committee size and financial restatement. They examined the association between certain characteristics of audit committees that were recommended by the Blue Ribbon Committee in 1999 such as size, independence, financial expertise, activity, and stock ownership on the one hand and earnings restatement on the other hand using 106 publicly-held corporations in the USA for the year 2000. Their findings suggested a negative association between size of audit committee and earnings restatement. Additionally, Abdul Rahman and Ali (2006) investigate the extent of the effectiveness of the audit committee in reducing earnings management among 97 Malaysian listed firms over the period 2002- 2003. Their study revealed no significant relationship between audit committee size and earnings management.

Shehu (2011) investigated the impact of corporate governance on financial reporting quality in Nigerian banks. The sample consisted of 21 banks listed on the NSE for the period 2007 to 2010. Using Dechow and Dichev (2002) model to estimate financial reporting quality, the study documented that audit committee size determines the strength and quality of financial information in Nigerian banks. Because, this study focused on deposit money banks in Nigeria, its findings can not be extended to Nigerian manufacturing firms. Hence the need for this study.

In addition, Hamdan, Mushtaha and Al-shartawi (2013) used sample of 50 industrial companies listed on the Amman Stock Exchange for the period 2004 to 2009 to examine the influence of audit committee characteristics on earnings quality. Two models were used to measure earnings quality: one which depends on earnings continuity as an indication of quality, and one which

depends on the decrease of discretionary accruals of quality, using pooled data regression for the two tests (Ordinary Least Squares OLS and Binary Logit). The study found that there was an a positive influence of of audit committee size on earnings quality. This finding suggests that larger committees may possess the required financial expertise to constrain earnings management through accruals. The shortcoming of the study is that it does not take into account the possibility of panel effect in the data, hence the use of pooled regression as the technique of analysis.

More so, Fodio, Ibikunle and Oba (2013) assessed the impact of corporate governance on reported earnings quality of listed insurance companies in Nigeria with data of 25 quoted firms listed for the period 2007 to 2010. Multiple regression analysis was used to document that audit committee size is inversely associated with earnings management. The study used the modified Jones model by Dechow et al. (1995). A glaring limitation of the study is the use of the residual from the aggregate accruals model to proxy for earnings quality, which is grossly inadequate. This is because substantial accruals of insurance firms arise from provision for claim loss reserves and not from the manipulation depreciation and receivables as suggested by the modified Jones model.

Bala et al. (2014) hypothesized that audit size committee has no significant effect on earnings management in listed food and beverages firms in Nigeria. Data were collected from eight firms for 2009 to 2014 and OLS regression was employed as the technique of analysis. It was reported that audit committee size had inverse relationship with discretionary accruals estimated from the modified jones (1991) model. This study suffers a major shortcoming in relation to the estimation of the Modified Jones (1991) model. The model has three parameters to be estimated, thus requiring at least twelve (12) cross-sectional observations in order to produce a reliable result. Alternatively, applying the time-series version of the model requires

at least 12 years observation for each firm. This was clearly not the case in the study, which raises serious doubt as to the reliability of the results.

Ayemere and Elijah (2015) assessed the interaction between audit committee attributes and earnings management in listed firms in Nigeria using a sample of 50 randomly selected companies for the period 2006 to 2013. The study used the regression residual from the modified Jones (1991) model to proxy for discretionary accruals and fixed effect regression as the technique for data analysis. It was documented that audit committee size has an inverse effect on discretionary accruals suggesting that few members on the committee are more effective in constraining earnings management. However, the study suffers serious limitation as it did not take into account differences in earnings management methods by different industries. For example, the modified Jones model does not apply to financial firms because their substantial accruals arise from loan loss provision for banks and provision for claim loss reserves in insurance. Therefore, the study could have filtered firms that belonged to the financial services sector in order to document are more convincing evidence.

It is clear from the foregoing that like most studies on corporate governance, the influence of the size of audit committee on opportunistic accounting is inconclusive. This is mainly because of differences in research domain and methodology as well as disparity in regulatory framework across countries. It is therefore, imperative to examine these research phenomena in the Nigerian setting.

2.5.2 Audit Independence and Earnings Management

The results of the studies that explored the interaction between audit independence and discretionary accruals are characterized by contradictory findings. Klein (2002) failed to document a significant relationship between audit committee independence and earnings manipulation. The study investigated the association between audit committee, board of

director characteristics and earnings management using 687 firms listed on the Standard and Poors (S&P) 500 as of March, 1992 and 1993. This study tested the association using 50% outside directors. However, the result is the same even when independence was proxied by 100% outside directors.

With a sample consisting of 283 firms listed on New York Stock Exchange (NYSE) as at 31st December, 2003, Carcello, Hollingworth, Klein and Neil (2006) examine the relationship between audit committee financial expertise, competing corporate governance mechanisms and earnings management. The study revealed that independent audit committee with financial expertise reduces earnings management. However, the authors were critical to document that mere independence does not give members the technical know-how to detect earnings management but rather independence must go along with financial expertise. Using Jones (1991) Model, Bradbury (2006) found that audit committee independence is not associated with income-increasing earnings management. The study used a sample of 139 Singapore firms and 113 Malaysian firms to investigate the relationship between board and audit committee characteristics and accounting quality. He found audit committee independence is related to higher earnings quality. This relationship exists only when the discretionary accruals are income-increasing, which suggests that audit committees are effective in the financial reporting process by reducing the level of income-increasing earnings management.

Bedard *et al*. (2004) investigated the effect of audit committee characteristics, namely, expertise, independence and activity, on the extent of earnings management. They used the level of income-increasing and income-decreasing discretionary accruals applying the modified Jones (1995) cross-sectional model for a sample of 300 US firms in the year 1996. Their tests divided the sample into three groups; one with high income-increasing earnings management, one with high income-decreasing earnings management, and one with low levels of earnings management. The results obtained from logistic regression analyses suggested that

aggressive earnings management is negatively related to fully independent audit committees. Xie *et al*. (2001) examined the effect of some characteristics of the audit committee on constraining earnings management. They used discretionary current accruals (using the Jones (1991) model) to measure earnings management for a sample of 282 US firms for the years 1992, 1994 and 1996. They study the composition, activity and financial literacy of audit committees. Their results showed that audit committee independence is not significantly associated with reduced levels of earnings management.

Also, Abubakar and Shehu (2011) investigated whether corporate governance impacts on earnings management in Nigerian banks. Using a sample of six banks listed on the NSE for the period of 2006 to 2010, they documented that audit committee effectiveness as proxied by its size, independence and number of meetings does not significantly influence earnings management. The study used industry-specific accrual (loan loss provision) to measure earnings management. It is therefore important to examine the same relationship in the Nigerian manufacturing firms because of the differences in the requirements of codes of corporate governance for banks and that of the manufacturing firms.

Omoye and Eriki (2014) studied corporate governance determinants of earnings management of Nigerian quoted companies. The study used a large sample of 130 companies drawn from quoted companies on the Nigerian stock exchange over the period of 2005 to 2010 with a view to identifying the unique firm's corporate governance characteristics and control variables that influence firms' decision to engage in earnings management. Binary regression analysis was used to reveal that audit committee independence had a negative influence on adopting discretionary accruals. This study suffers at least one major limitation. The sample consisted of firms from both the financial and non-financial sectors. These sectors have different models for estimating earnings management because of the inherent systematic differences in them. The substantial accruals from the banks arise from provision for loan losses as opposed to

depreciation of property, plant and machinery in the manufacturing firms. This, therefore suggests that the use of the Healy (1985) model was inadequate. Two,

More so, Kusnadi, Leong, Suwardi and Wang (2015) investigated the effect of audit committees on financial reporting quality in Singapore. The study used data for 423 Singapore Exchange (SGX) listed companies in fiscal year 2010, which have financial information on COMPUSTAT Global database. It also employed the Dechow and Dichev (2002) measure of accruals quality based on how precisely the current accruals map into past, present and future cash flows; and use accruals quality as a proxy for the financial reporting quality. The study, however failed to document a convincing evidence that independence of audit committees enhance financial reporting quality. This finding could be, as the researchers opined, because audit committees already consist of a majority of independent directors in Singapore and the fact the study was on the incremental effect of the committee's independence.

2.5.3 Audit Committee Meetings and Earnings Management

Xie *et al*. (2001) argued that board and audit committee meeting frequency is associated with reduced levels of discretionary current accruals and expected that more active audit committees are more effective monitors. They studied a sample of 282 US firms for the years 1992, 1994 and 1996 and found that audit committee meeting frequency is associated with reduced levels of earnings management. Abbott *et al*. (2000) examined the relationship between audit committee activity and fraud. They used 78 firms that were subject to SEC sanctions and 78 matched non-fraud firms in the period 1980 to 1996. They measured audit committee effectiveness using a dummy variable that takes the value of one if the audit committee consists entirely of outsiders and meet at least two times per year, and a value of zero otherwise. They found a negative relationship between their audit committee measure and corporation fraud.

Chtourou *et al.* (2001) explored the effect of corporate governance on abusive accounting. Using a sample drawn from the population of U.S. firms that appear on Compustat 1996, they find that financial expertise, independent directors and active committees are inversely related with discretionary accruals. The study used chi-square as a tool for data analysis, which is argued to be a less effective tool for establishing cause and effect relationship. Ebrahim (2007) examined the relation between earnings management and the activity of both the board and the audit committee. Using a sample of US manufacturing companies for two years, 1999 and 2000, he found that earnings management, as measured by the modified Jones model, is negatively related to both board and audit committee independence and he documents that this relation is stronger when the audit committee is more active.

Apart from Abott *et al*. (2001), all the studies mentioned in this section share the same shortcomings. Firstly, they considered only some particular years of interest (mostly cross-sectional regressions). It is argued that for sound policy implication to be documented more number of years should be included because the variable (audit meeting) does not change significantly and rapidly over time. Secondly, the studies run panel regression but did not employ the Hausman Specification Test to decide between fixed effect and random effect regressions.

Chandrasegaram, Rahimsa, Rahman, Abdullah and Nikmat (2013) assessed the impact of audit committee characteristics on earnings management of Malaysian listed public firms. Data of 153 firms in year 2011 were used to regress discretionary accruals estimated from the modified Jones model against audit committee variables. The result of the OLS analysis showed among other things that audit committee meetings had positive and significant impact of earnings management. The unexpected finding may be as a result of the cross-sectional data that was used. It is argued that earnings management studies require data that span across a number of years based on the fact that it is eventually reversed in the future. Also, the data consisted of

firms drawn from different sectors which have different earnings management estimation models. This makes the result unreliable and unsuitable for policy recommendation.

Emeh and Appah (2013) examined the effect of audit committee and timelines of financial reports for thirty five firms quoted in the Nigerian Stock Exchange (NSE) for the period 2007-2011. Secondary data were collected from the annual reports and accounts, which were analyzed using relevant pooled least square and granger causality test. The result suggested, among other things, that audit committee meetings is not significantly related to the timeliness of financial reports. It is obvious that the study concentrated on the timeliness of financial reports, which is measured as the difference between the company's fiscal year end and the date of audit report, as opposed to earnings management as used by the present study.

Dabor and Dabor (2015) investigated the relationship between audit committee characteristics, board characteristics and financial reporting quality of listed deposit money banks in Nigeria. The data were drawn from the annual reports of 9 banks for the period 2006 to 2014 and ordinary least square regression was used as the technique of analysis. It was reported that audit committee meeting frequency positive impacts on financial reporting quality. The study has some serious shortcomings. Firstly, it used actual provision for loan losses to proxy for earnings management in the banking industry. This is grossly in adequate because accruals are composed discretionary and non-discretionary elements and as such there is the need to segregate the two in order to obtain the actual discretionary accrual (proxy of financial reporting quality). Secondly, the study was restricted only to the deposit money banks and therefore its findings cannot be extended to the manufacturing sector, which has different methods for accrual estimation and earnings management.

Also, Bala et al. (2015) studied the relationship between audit committee characteristics and earnings quality of listed food and beverages firms in Nigeria using data from 2007 to 2014.

The OLS multiple regression analysis revealed an insignificant effect of audit committee meetings frequency and discretionary accruals which was generated from the modified Jones (1991) model by Dechow et al. (1995). It should be noted that the study is limited to the domain of the listed Food and Beverages Firms in Nigeria and as such, the findings and recommendations may not be precisely applied to the whole manufacturing firms.

2.5.4 Audit Committee Tenure and Earnings Management

Studies on the influence of audit committee tenure have only recently started to attract the attention of researchers. Using a sample U.S. 252 firms for the period 1994 to 2000 Vafeas (2005) studied the relationship between audit committees and board of directors with financial reporting quality. The study used pooled OLS multiple regression as the technique of analysis and it was documented that there is a positive association between the mean tenure of audit committee members and poor earning quality measure, showing an inverse relationship between the average tenure and earnings quality. The study therefore suggested that the length of service on the committee increases the tendency to manage reported earnings. It was observed that the study did not recognize the likelihood of the panel effect in the data that could have influenced the finding. There is the need to explore the panel regression, especially the fixed and random effect, in order to document a more convincing evidence particularly when dealing with large samples that involves different industries.

Rickling (2014) examined the relationship between audit committee characteristics and earnings management through meeting or beating analysts' forecast. The study used quarterly data of listed firms in the U.S. for the period 2005 to 2007 yielding 3,521 observations. Multivariate regression analysis was employed to document that the proportions of audit committee directors with long tenure is positively associated with the likelihood of a firm repeatedly meeting or just beating analyst forecasts. The fact that the study was conducted in

the U.S. which has different audit committee requirements and regulatory structure makes it worthwhile to examine the same relationship using Nigerian data.

In the same vein, Ghafran (2013) investigated the effect of audit committee characteristics on financial reporting quality using data of 350 listed firms on the London Stock Exchange for the period 2007 to 2010. McNichols (2002) model was used to estimate residuals that proxy for financial reporting quality and OLS multiple regression was used as the technique of Analysis. It was reported that there is an inverse relationship between committee tenure and financial reporting quality. The audit committee tenure was measured using the proportion of audit committee members with over 9 years tenure on the board as well as a variable representing the proportion of audit committee members with over 6 years tenure on the board. This study observes that an alternative and more robust measure could have been the mean number of years by the members as argued by Vafeas (2005). Also, because the study was conducted using U.K. data the findings may not be extended to the Nigerian case.

In another context that is closely related to this study, Othman, Ishak, Arif and Aris (2014) examined the influence of audit committee characteristics on voluntary ethics disclosures in Malaysia. The data were drawn from the top 94 companies listed on Bursa Malaysia for the period 2009 to 2013. The study employs content analysis of company's annual report and multiple linear regressions to assess the relationships between voluntary ethics disclosure and audit committee characteristics. The result suggested that only two audit committee characteristics (tenure and multiple directorships) are associated with the voluntary ethics disclosure. Specifically, it showed that audit committee tenure has inverse effect on voluntary disclosure. The inference that can be drawn from this finding is that the longer the same directors serve on the audit committee the more likely they are to conceal certain aspect of the financial report to their own advantage. In this instance therefore, audit committee tenure is likely to have a positive effect on discretionary accruals.

Miko and Kamardin (2015) studied the effect of audit committee and audit quality on preventing earnings management in the pre and post Nigerian corporate governance codes 2011. Both regression analysis and sample t-test were used to measure the mean difference between the effectiveness of auditor tenure in constraining discretionary accruals in the periods of SEC code of Corporate Governance 2003 and that of 2011. The study did not report the test statistics results but concluded that audit committee tenure and audit quality help in mitigating earnings management. It should be noted that the regression analysis was neither presented nor discussed and therefore no clear-cut finding was documented. Also, the study was not clear as to the measure of audit tenure; audit committee or external auditor tenure.

There are other strands of Nigerian empirical literature that studied audit tenure and earnings management. However, these studies focused on tenure of external auditors and the audit committee members. These include Okolie, Izedonmi and Enofe (2013) who assessed the effect of audit quality and accrual-based earnings management of quoted companies in Nigeria. The study used data of 57 quoted companies in Nigeria between 2006 and 2011 and OLS regression as the technique of analysis. Also, Okolie (2014) tested the relationship between auditor tenure, auditor independence and accrual – based earnings management of quoted companies in Nigeria using same sample, scope and technique of analysis as Okolie et al. (2013). Both studies revealed inverse influence of auditor tenure on discretionary accruals.. As mentioned earlier both studies examined external auditor tenure and not the tenure of the audit committee members.

In a similar context, Adeyemi, Okpala and Dabor (2012) investigated factors affecting audit quality. A mixed method research was employed, where primary data were collected from 430 respondents that cut across several stakeholders in the fields of financial reporting and auditing. The secondary data were generated from the financial statements of forty companies listed on the Nigerian Stock Exchange in year 2009. It was reported from the logistic regression result

that auditor tenure has negative but not significant impact on audit quality. The present study differs from Adeyemi et al. (2012) as it focuses on role of the tenure of the audit committee in constraining discretionary accruals and not the tenure of external auditor as a determinant of audit quality.

From the result of empirical studies that examined audit committee members' tenure in relation to managements' use of discretion to misreport earnings, it is observed that most studies suggested that audit committee tenure has a positive association with earnings management, indicating that it reduces financial reporting quality. This variable has been explored in the context of developed countries such as the U.S. and the U.K. To the best of our knowledge, there is no Nigerian work that studied this relationship and this study therefore seeks to pioneer this line of research.

2.5.5 Moderating Effect of Institutional Shareholding

Institutional investors are institutions other than natural persons that have the capacity to influence the investment of other. Yang, Chun and Ramdili (2009) classified them into six namely; insurance companies, pension funds, investment trusts, financial institutions, investment companies and other nominee companies. The relevance of these organizations in corporate governance framework is that have the required resources as well as the needed expertise to monitors, discipline and influence a manager's decision in the firm. Empirical studies have supported this argument by demonstrated that institutional shareholding inversely relates to earnings management and positively affect firm value (Habbash, 2010; You Tsai & Lin, 2003). This suggests that institutions with large shareholdings play an active role in monitoring managerial opportunism in managing the reported earnings. This is because when the institutions invest in the long term period, they are more concerned about the underlying profitability of the companies and be wary of the use of discretional accruals to manage the

earnings. Also, because institutions make bulk purchases of shares, quite often than not their representatives are appointed to the Board of Directors. It follows therefore that they may be part of the audit committee and therefore can influence corporate entities on the financial reporting process.

Malik (2014) in his review of audit committee composition and effectiveness of post-SOX literature recommended future research to investigate whether the ability to attract competent and expert audit committee members varies with company characteristics such as company reputation, size, and agency conflicts, and audit committee compensation policy, among others. From this recommendations on the company characteristics, institutional investors may be included because it is presumed to affect agency conflict by affecting managements' decisions. In this regard Kouki and Guizani (2010) investigated the moderating effects of ownership and board leadership structure on the relationship between outside directors and firm performance. It was reported among other things that largest shareholders ownership influences the strength of the outside directors and firm performance relationship. Because institutional investors are usually the largest shareholders, it may inferred that it moderates the relationship between outside directors (who are usually members of the audit committee) and corporate outcomes. Based on this premise, it is expected that audit committee monitoring effectiveness with respect to financial reporting integrity will be enhanced by institutional shareholding.

2.6 Theoretical Framework

Three theories are recurrent in the literature in explaining the association between corporate governance in general and earnings management. They are agency theory, stakeholder theory and stewardship theory. Agency theory developed as a result of the seperation of ownership from control of modern corporations. The theory conceptually reduces the corporation to two participants, that is, managers and shareholders and it suggests that the managers can be self-

interested. This gives rise to agency problem which entails lack of harmony between the owners and the managers' goals, which results in cost associated with resolving these conflicts. Eisendhert (1989) notes that governance structures or mechanisms become necessary because not all managerial actions are fully observable and corporate information are not common knowledge. It is such information asymmetry that induces managerial opportunistic tendencies.

The stakeholder theory views the firm as a nexus of relationship among various interested parties. The role of the manager therefore extends beyond mere accountability to shareholders: it encompasses ensuring a harmony among various stakeholders. Freeman (1984) contends that the nexus of relationship among various interest groups can impact on the decision making processes as stakeholders theory is concerned with the nature of these complex relationships in terms of both processes and outcomes for the firm and its stakeholders. John and Senbet (2003) argue that the existence of many parties to a firm induces competing interests among the parties.

On the other hand, the stewardship theory assumes that managers as stewards of the shareholders who are senior executives have the motivation to serve the organization in a fair and objective manner towards its overall success. This means that they are organizationally centered because through firm performance the steward's utility functions are maximized (Davis, Schoorman & Donaldson, 1997). The issue of self-interest or opportunism referred to in agency theory disappears. The theory advocates personal power of the stewards in serving the organization rather than coercive power of the executives as advocated by agency theory. Barclift (2007) notes that the theory attempts to restore the trust that should exist based on the fiduciary relationship between shareholders and senior executives that is often the bane of agency theory.

From the review of the three theoretical frameworks mentioned above, this study adopts the agency theory as the theory that underpins it. This is because of the lapses of both the

stakeholders theory and the stewardship theory that have been pointed out in the literature. It is obvious that due to complexity of modern corporations, managers will not always align their interest with that of the shareholders as assumed by the stewardship theory. Thus, it can be argued that the arguments of the theory are simplistic and do not conform to the corporate realities on ground. Secondly, Davis *et al*. (1997) argue that psychologically, a board's lack of non-executive directors may encourage managers to commit fraud. On the other hand the stakeholders theory suffers a major limitation as a theoretical bases that explains the relationship between corporate governance and earnings management. It fails to solve the problem of methods to align the interest of all stakeholders of the firm (if it is possible to do so).

The theory is therefore more preferred as the theoretical framework of this study because of its relevance in solving the agency problems that are imbedded in modern day businesses. It is argued that the theory has been instrumental in the development of corporate governance standards, principles and codes. Theoretically, the manager is expected to act in such a manner that conforms to that of the shareholders. However, this is not always the case as the manager enjoys some privilege information that makes it possible to pursue his own interest at the expense of shareholders. This may eventually temper with the value maximization objective of the firm. If audit committee as monitoring corporate governance mechanism is effective, the interest of both the owners and controllers of firms' resources are expected to converge. Audit committee characteristics should thus be inversely related with opportunistic tendencies of managers.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the research design relating to the methods of data collection and tool of analysis used in the course of the study are discussed. The population and sample size and the selection procedure adopted are also presented. This section also describes the variables used in the study and how each variable is measured, and specifies the model of the study.

3.2 Research Design

The study adopts positivism as research paradigm, which is associated with scientific, experimental, quantitative and deductive frameworks where researchers seek specific quantifiable observations thus regularly using statistics and experiments to test their hypotheses, the most appropriate research design to be employed is correlation. The correlational research design is employed to test the relationship between audit committee and earnings management of listed manufacturing firms in Nigeria. The design is widely used in quantitative studies where the effect of a set of independent variables are tested against some independent variable(s). The quantitative approach has its root in positivism and inductive methods, which enables the researcher to use theory to frame and thus understand the problem at hand, use systematic measurement and statistical analyses to obtain findings. Thus, the design is relevant because it describes the statistical association or variability between two or more variables.

3.3 Population and Sample of the Study

The study comprises all the 58 manufacturing firms listed on the Nigerian Stock Exchange (NSE) as at 31st December, 2016. Three categories of firms are included; Conglomerates (6

firms), Consumer Goods (27 firms) and Industrial Goods (20 firms). The study uses criteria as follows to filter firms;

i. Those whose data were not available throughout the sample period.

ii. that have been delisted (disappeared) from the trading schedule of the NSE as at December, 2016.

Based on the filters mentioned, a sample size of 20 firms was used for analysis. The list of the firms that form the sample of the study is given in Appendix A.

3.4 Sources of Data and Methods of Data Collection

The study uses secondary data collected from the annual reports of the sample firms. The secondary source were used because all information relating to the data required for this work are available therein. According to Clark (2004), the secondary source, which is appropriate to the positivism approach is data base surveys based on analysis of published sources. More so, given the nature of this study all the data required for the study are readily available in the secondary form

3.5 Technique of Data Analysis

Panel multiple regression is used as a technique for data analysis. Like most earnings management studies two-step regression was used in this research. The study further employed the Hausman Specification Test to determine the best model to be used between fixed effect and random effect regressions. This test is necessary owing to the fact that there is a trade-off between the efficiency of the random effect approach and the consistency of the fixed effect approach (Habbash, 2010). The fixed effect model removes the effect of those time-invariant characteristics from the predictor variables in order to assess the predictors' net effect, while

the random effect model assumes that the unobserved heterogeneity should not be correlated with the independent variables.

3.6 Robustness Tests

Furthermore, variance inflation factor (VIF) is employed to check for multicollinearity among the individual dependent variables included in the model. The test is necessary because high correlations lead to inflated standard errors and biased estimates. Existence of excessive correlation means that the variables cannot be accommodated in the same regression model hence the need to drop one or more of the highly correlated independent variables.

Another robustness test performed is the test of the homoskedasticity. It is desirable for the residuals to be free from heteroskedasticity, in order to have more reliable inferences. The test for heteroskedasticity was conducted using the Breusch-Pagan/ Cook-Weisberg test. A significant chi square statistics is an indication that heteroskedasticty is present and hence the need to employ corrective measures such as robust OLS regression.

3.6 Variables Measurement and Model Specifications

The dependent variable (earnings management) and independent variables (audit size, audit independence, audit meetings and audit committee tenure) used in the study including the moderating and control variables are measured as follows:

i. Dependent Variable

The first task of the accruals model is to disentangle discretionary component of accruals from the non-discretionary components. This was be done using the modified Jones Model (1991) based on the argument of Dechow *et al*. (1995), who note that the model is more powerful in detecting earnings management among the existing models. The residual from the model was

be used as the dependent variable in the second regression. Dechow et al. (1995) noted that the weakness of the Jones (1991) model lies in its assumption that total revenues are non-discretionary and they assumed that only collected revenues are non-discretionary. Dechow et al. (1995) provide evidence that their model is more powerful than the Jones model at detecting cases of revenue manipulations.Total accruals are defined as the difference between net income, which is the earnings before taxation and extraordinary item and cash flow from operating activities. Mathematically it is represented as follows:

$$TACC = NI - OCF \qquad \text{(i)}$$

Where: TAC_i is defined as the total accruals for firm i,

NI_i is defined as net income of firm

OCF_i is defined as operating cash flow of firm i

The equation above can be subsumed in equation (ii)

$$\frac{TAC_{it}}{A_{it-1}} = a_0\left[\frac{1}{A_{it-1}}\right] + a_{1i}\left[\frac{\Delta REV_{it}-\Delta REC_{it}}{A_{it-1}}\right] + a_{2i}\left[\frac{PPE_{it}}{A_{it-1}}\right] + \varepsilon_{it} \qquad \text{(ii)}$$

Where: ΔREV is change in revenue

ΔREC is change in receivables

PPE is Gross property, plant and equipment

e is the residual (error term)

To control for heteroskedasticity, all variables are scaled by previous year's total assets. Al-Fayoumi, Abuzayed and Alexander (2010) noted that change in revenue is included to control for economic circumstances of each firm in the sample, while gross plant, property and equipment are included to control for the total proportion of accruals relating to non-

discretionary expenses caused by changing conditions (Jones, 1991). The residual from the model is used as the proxy for earnings management (discretionary accruals).

ii. Independent Variables

The audit committee variable are audit size *(ACS),* audit independence *(ACI),* audit meetings *(ACT)* and audit committee members' tenure *(SCT).* Firm size *(FS)* and Leverage (*LEV*) will be included in the model as a control variable.

Audit Size (ACS): This refers to the total number of directors on the committee. The governance code (2011) requires firms to have at least three directors as members of the committee. Zhou and Chen (2004) observe that a larger audit committee with increased organizational status and power delegated by the board of directors is more likely to be recognized as an authoritative body by the management and the external and internal auditors.

Audit Independence (ACI): independence of the audit committee is measured as the ratio of independent non-executive directors on the board to total number of directors. Substantial evidence exists in the literature that audit independence has a positive relationship with the contents of financial reporting (Klein, 2002). The use of discretion to manage earnings can be directly linked to the audit committee independence depending on their choice of a course of action. An audit committee that is composed of all outside directors is considered to be an independent one (Shehu, 2011).

Audit Meetings (ACM): This refers to the number of times the audit committee meets during the fiscal year. The number of times the audit committee meets during the year represents the effectiveness of the monitory role of the board. Audit committee effectiveness can be measured by the number of meetings (Menon and william, 1994). The code of best governance practices stipulates that the committee should meet at least four times a year.

Audit Committee Tenure (ACT): This is measured as mean number of years that the members served on the Committee (Vafeas, 2005). The information on the tenure of audit committee members will be collected by looking at the biographical details i.e. the appointment date of the audit committee members disclosed in the annual reports of each company.

iii. Control Variables

Firm Size (FS): is used in this study to control for the likely impact of firm size on the discretionary accruals of the sample firms. It is defined as the nature log (ln) of total asset. It is argued that the larger the firm size the higher the expected agency problem that the firm is likely to experience. Also, given the fact that larger firms have more resources and earn higher profits, Grey and Clarke (2004) note that, they are more likely to avoid managing earnings through discretionary accruals. Quite a number of studies control for firm size in corporate governance studies including Zhu and Tian (2009) and Shehu (2011).

Leverage (LEV): is measured the ratio of debts to total assets. It is also used as control variable in the study. A lot of earnings management studies controlled for leverage based on the debt-equity hypothesis which holds that managers of firms with high agency costs of debt are more likely to make strategic accounting choices to relieve potential constraints on their behaviour (Abubakar & Shehu, 2011). Also empirical studies found that leverage was positively correlated with earnings management practice, as understating liabilities or overstating assets may be used to avoid debt covenant violations (Habbash, 2010; Abubakar & Shehu, 2012).

iv. Moderator Variable

Institutional Shareholding (IS): It is first measured as the ratio of shares (units) held by institutional investors to total shares in issue. However, a dummy variable was used to

dichotomize between high and low institutional shareholding. Shareholding above the median value equals 1, while shareholding below the median equals 0.

Following Shehu (2011) and Abubakar and Shehu (2011) the regression model to test the effect of the four constructs of audit committee on earnings management of manufacturing firms Nigeria and includes the moderating effect of institutional shareholding:

$$AEM_{it} = a_0 + a_1 ACS_{it} + a_2 ACI_{it} + a_3 ACM_{it} + a_4 ACT_{it} + a_5 INS_{it} + a_6 ACI * INS_{it} + a_7 ACT * INS_{it} + a_8 FS_{it} + a_9 LEV_{it} + e_{it} \quad \text{III}$$

Where:

AEM= earnings management

ACS= Audit committee Size

ACI=Audit independence

ACM=Audit meetings

ACT = Audit Committee members' tenure

INS = Institutional shareholding

FS=Firm size

LEV= Leverage

$a_0 - a_9$= Parameters to be estimated

it= firm i at time t.

ε=error term

CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

The chapter presents the results of the data analysis together with the discussion of findings. The presentation is organized as follows: presentation of descriptive statistics; correlation matrix; robustness tests and the regression of results. Further, test of hypotheses and policy implication of findings are discussed.

4.2 Presentation of Results

In this section, the results of descriptive statistics, correlation matrix and regression results are presented.

4.2.1 Descriptive Statistics

The role of the descriptive statistics is to give an insight into the basic characteristics of the data. It however does not lead to drawing of conclusions to hypotheses tested. The statistics that are of relevance to this study includes mean, standard deviation, minimum and maximum. The descriptive statistics include the summary of the variables for the estimation of the residual (earnings management) as stated by the Modified Jones (1995) Model.

Table 4.1.1: Descriptive Statistics of Total Accrual Variables

Variable	TACC	DREV-DREC	PPE
Mean	0.0159	0.0971	0.3746
Std. Dev.	0.1346	0.3686	0.2037
Minimum	-0.3316	-0.7781	0.0004
Maximum	0.6771	4.2375	0.8131
Obs.	193	193	193

Source: Summary statistics from Stata 13

Table 4.1.1 shows the summary statistics of the total accruals model adopted from Dechow et al. (1995). The statistics shows that the mean total accrual for the period was 0.0159 and standard deviation of 0.1346, which indicates large variation in the accrual of the firms. It also revealed a minimum of -0.3316 and maximum of 0.6771 respectively. Change in revenue less change in receivables averaged 0.097 with a standard deviation of 0.3688. The minimum and maximum are -0.7781 and 4.2375 respectively. The property, plant and equipment has a mean of 0.3746 and standard deviation of 0.2037 indicating less variation in the fixed assets components of the total assets of the firms. The least value of 0.0004 and maximum of 0.8131 indicated that some firms have very low fixed assets components of less than one per cent. However, the largest fixed assets value recorded for a particular firm during the period is 0.8131.

Table 4.1.2: Regression Result for the Total Accrual Model

Variable	Coefficient	Std. Error	T. Value	Prob.
Constant	0.0971	0.0258	3.76	0.000
DREV-DREC	-0.0032	0.0141	-0.22	0.823
PPE	-0.2159	0.0502	-4.30	0.000
R-Squared	0.1065			
F. Stat.	9.35			
Prob.	0.0001			

Source: Summary of Regression from Stata 13

Table 4.1.2 shows that the total accrual variables, that is change in revenue and change in receivables and property, plant and equipment explain 10% of the variation in total accruals. The F. statistics of 9.35 and probability of 0.000 indicates that the model is well fitted in estimating earnings management. Overall, the result points that change in revenue less change in receivables and property, plant and equipment are important factors in determining the total accrual of the firms.

With regards to the individual variables change in revenue less change in receivable has insignificant negative effect on total accruals. The coefficient is -0.0032 and standard error 0.0141 while the t. value is -0.22 and probability of 0.823. This implies that as change in revenue minus change in revenue minus change in receivables increases, the total accrual variable decreases. Property, plant and equipment, on the other hand, has a negative and 1% significant level on total accruals. This means that an increase in property plant and equipment increases the total accrual decreases.

Table 4.1.3: Descriptive Statistics

Variables	EM	ACS	ACI	ACM	ACT	INS	ACIINS	ACTINS	FS	LEV
Mean	0.0909	2.9119	0.6650	4.9845	2.9585	0.5087	0.1803	0.6321	4.2366	0.5266
Std. Dev.	0.0888	0.2841	0.2419	1.3334	1.9458	0.2190	0.2430	0.2976	0.5907	0.1667
Min.	0.0014	2	0.3330	1	1	1	0	0	2.8580	0.0394
Max.	0.6067	3	1	7	9	0	0.6670	9	5.5654	1.0005
Obs	193	193	193	193	193	193	193	193	193	193

Source: Stata 13

The Table reveals that earnings management has a mean of 0.09, standard deviation of 0.08 with minimum of 0.0 and maximum of 0.6. There is little difference between the mean and the standard deviation indicating that earnings management does not vary significantly across the manufacturing firms. It is also clear that a particular firm has close to zero manipulation of earnings as indicated by minimum of zero. Also, the maximum of 0.6 indicate high provision of a particular firm within the period. The average number of directors that served on the audit committee is 0.29 and standard deviation of 0.28. Here also, the data are clustered around the means signifying most of the firms had 3 directors on the Committee. The minimum number of directors is 1, while the maximum is 3. This means that some firms have yet to comply with

the provision of CAMA that there should be 3 number of directors on the Committee and 3 from shareholders.

Audit committee independence averages 0.7 signifying that most of the firms have more of non-executive directors that the executives. However, the minimum and maximum are 0.3 and 1 respectively meaning that there are Committee that are composed of only non-executive directors as recommended by the Code of Corporate Governance for Public Companies (2011). More so, audit committee meeting has a mean of 4.9 with a minimum of 1 and maximum of 7 times. These show that the companies have met almost 5 times during the period. This conforms to the recommendation that the committee should meet at least 4 times during a fiscal year. Further, the average tenure of the board members is 3 years with standard deviation of 1.9. The minimum of 1 and 9 show that some committees are relatively newly constituted, while other are older (9 years). The divergence of the average tenure is desirable because it will give the required variation to test its effect on earnings management.

Institutional shareholding averages 0.5 per cent of issued share capital while the standard deviation is 0.2. The high maximum of approximately 89 per cent signifying high presence of institutional investors in Nigerian manufacturing firms. This conforms to the fact that institutional investors have the resources to make bulk purchases and hence have significant influence on the affairs of these firms. However, the least ownership is approximately 5 per cent.

The average of the interaction variable (audit committee independence and institutional shareholding) is 0.18 with standard deviation of 0.24. In addition, the mean of the interaction between audit committee tenure and institutional shareholding (ACTINS) is 0.63 and the standard deviation is 0.29. Both the interaction variables have large differences of means from their respective standard deviations.

With respect to the control variables, firm size (which is the natural log of total assets) has an average of 4.2, minimum of 2.9 and maximum of 5.6. The standard deviation of 0.6 indicates that there is significant differences of size among the sample firms. The other control variable, leverage has a mean of 0.5 and standard deviation of 0.2. This indicates that the firms are moderately levered, however, a particular firm is highly levered because debt is almost 100 per cent of total assets for particular firm. On the other end, there is a lowly levered firm that has a leverage value of 3 per cent of total assets.

Table 4.2: Correlation Matrix

	EM	ACS	ACI	ACM	ACT	INS	ACIINS	ACTINS	FS	LEV
EM	1.0000									
ACS	-0.1671	1.0000								
ACI	0.0661	-0.0022	1.0000							
ACM	0.1374	0.1277	0.0537	1.0000						
ACT	-0.0196	0.2047	0.1402	0.2044	1.0000					
INS	-0.2564	0.0440	0.1472	-0.0286	0.0209	1.0000				
ACINS	-0.1383	0.1006	-0.1872	0.0828	0.0169	0.5251	1.0000			
ACTINS	-0.1799	0.0787	0.1246	0.1303	0.4473	0.6755	0.6024	1.0000		
FS	-0.1532	0.1591	-0.1640	0.1675	-0.1418	0.1627	0.2267	0.2233	1.0000	
LEV	0.0479	-0.0248	-0.0617	-0.1311	-0.1799	0.0512	0.0437	-0.1067	0.0396	1.0000

Source: Stata 13

The correlation matrix table shows the relationship between earnings management and all the variables in the regression model. It also shows the correlation among all pairs of the regressors. The result shows that audit committee size and audit committee tenure inversely relate with earnings management. Similarly institutional shareholding, interactions of audit committee independence and tenure, and firm size have negative correlations to earnings management.

On the contrary, audit committee independence and meetings, and leverage exhibit inverse relationship with earnings management.

There is no excessive correlation among the independent variables because all the correlation coefficients are less than 0.80. This means that there is a possible absence of multicollinearity that could lead to spurious results. The highest correlations are between the interaction variables audit committee tenure and institutional shareholding (ACTINS) and institutional shareholding (0.6755) and audit committee independence and institutional shareholding (ACIINS) and institutional shareholding (0.6024). These high correlations are expected because of the interactions effect of the variables (that is audit committee tenure multiplied by institutional shareholding and audit committee independence multiplied by institutional shareholding).

4.2.2 Robustness Tests

The robustness tests conducted by the study includes test of multicollinearity using the Variance Inflation Factor (VIF), Breusch-Pagan/Cook-Weisberg test for heteroskedasticity and Hausman sepcification test.

Table 4.3: Multicollinearity Test

Variable	VIF	Tolerance Value
ACTINS	4.26	0.2346
INS	2.42	0.4141
ACIINS	2.10	0.4754
ACT	2.05	0.4875
FS	1.31	0.7636
ACI	1.22	0.8170
ACS	1.13	0.8834
ACM	1.13	0.8877
LEV	1.07	0.9353

Source: Stata 13

Table 4.3 tests the existence of multicollinearity using the VIF and the Tolerance Value (TV). Gujarati (2004) notes that if the variables have VIF values and/or the TVs above 10 and less than 0.10 respectively, there is a strong indication of the existence of excessive correlation. Since all the VIF values are less than 10, ranging from 1.07 to 4.26 and all the TVs are above 0.10, ranging from 0.23 to 0.94 and having the mean VIF of 1.85, it means there is zero multicollinearity among the independent variables.

Heteroskedasticity Test

The study uses the Breusch-Pagan or Cook-Weisberg to test for the existence of heteroskedasticity. The null hypothesis states that the variance of the residuals is constant (homoskedastic). If the p value is significant at 5%, then there is substantial evidence to reject the null hypothesis indicating the presence of heteroskedasticity. The result reveales that chi2 is 114.47 and the prob>chi2 is 0.0000 (See attached appendix). This indicates that there was no constant variance and that Ordinary Least Square regression may not be appropriate as the

technique of analysis. In order to correct for this anomaly, the study uses regression with robust standard errors.

Hausman Specification Test

Because of the panel nature of the data, the OLS regression may not provide efficient estimates. In order to examine whether panel effect exists, which could potentially lead to biased coefficients, the study performs Hausman specification test to make choice between fixed effect and random effect regressions. This test is necessary considering that there is a trade-off between the efficiency of the random effect and the consistency of the fixed effect approach. The test also determines whether the estimates of the coefficients, taken as a group, are significantly different in the two regressions. The aggregate null hypothesis is that all the independent variables are exogenous. If the F-statistic were significant, then the null hypothesis would be rejected, suggesting the appropriateness of the fixed effect. Otherwise, the random effect is used where the Lagrangian multiplier test indicates there is panel effect in the data set. A significant result is obtained from the Hausman test which indicates chi2 of 40.76 and p-value of 0.0000 implying that the assumptions of the fixed effect approach is not violated and therefore is more suitable for this study.

4.3 Regression Result

The results of the regression results (fixed effect) are presented for both the models in this section.

Table 4.4: Regression Results

Variable	Coefficient	T. Value	Sig
Constant	0.187	1.20	0.246
ACS	-0.075	-2.00	0.060
ACI	0.076	0.96	0.351
ACM	0.016	1.91	0.072
ACT	0.012	1.72	0.102
INS	-0.301	-3.27	0.004
ACIINS	0.163	2.18	0.042
ACTINS	-0.014	-2.10	0.049
FS	0.040	1.17	0.257
LEV	-0.086	-1.42	0.173
R-Squared	0.3421		
F. Stat.	5.25		
Prob.	0.0012		

Source: Stata 13 Summary of Regression Result

Table 4.4 contains the results of regression analysis. The model shows R-squared of 0.34 showing that audit committee characteristics and institutional shareholding causes 34% of the variation in earnings management, F. value of 5.25 and a probability that is significant at 5% indicates that model is fitted.

For the individual variables, audit committee size has a negative coefficient of -0.06, t. value of -1.61, which is not significant at 1%. This implies that an increase in the size of audit committee directors will lead to fall in earnings management. Specifically, one per cent

increase in the Committee size leads to 5% decrease in the frequency of earnings manipulation. Audit committee independence has a coefficient of 0.076 and t. value of 0.96, which is above 10%. Thus audit committee independence shows positive but insignificant effect on earnings management.

In the same vein, audit committee meetings has positive coefficients of 0.018 and 0.016, t. values of 2.49 and 1.91 which is significant at 10%. This entails that audit committee meetings positively affects earnings management in the listed manufacturing firms. Further audit committee tenure has coefficients of 0.012, t. value of 1.2 and probability that is not significant at 10% level of significance.

The moderator variable, institutional shareholding exhibits negative influence on earnings management with coefficient of -0.300, and t. value of -6.00, which is significant at 1%. The results indicate that approximately one year increase in the tenure of the committee members will lead to about 3 per cent decline in the management of earnings.

The interaction of audit committee independence and institutional shareholding has a coefficient of 0.16, a t. value of 2.96 and a probability that is significant at 1%. This implies that 1% increase in the variable, holding other factors constant, will lead to 1.6% increase in earnings management. There is a change in the importance of the audit committee independence after the interaction with institutional shareholding as the variable becomes significant at 5%. On the contrary, the interaction of audit committee tenure and institutional shareholding has a negative coefficient of -0.014, which is significant at 1%. Thus, there is a negative and significant effect of audit committee tenure on earnings management. Here also, there is a change in the direction of the audit committee tenure variable from being positive but insignificant to negative and significant as it interacts with institutional shareholding.

With respect to the control variables, firm size has positive insignificant effect on earnings management. This finding debunks the political cost theory, which suggests that large firms avoid managing earnings because of the greater scrutiny placed on them by both investors and regulators. The result points to the possibility that these large firms may be induced to manage earnings because of the pressure on them to satisfy a variety of stakeholders. However, this is not conclusive because the effect is not significant at 1%. On Leverage, it is indicated that it has a negative effect on earnings management. This supports the debt covenant hypothesis, which predicts that debt-holders monitor highly indebted companies in order for them not to violate debt covenant, which prevents them from misreporting earnings.

4.4 Test of Hypotheses

In this section all the six (6) hypotheses formulated in Chapter One are tested. Model 2 is used in the hypotheses testing.

Hypothesis one: Audit committee size has no significant effect on earnings management of listed manufacturing firms in Nigeria

The result shows that audit committee size has negative effect on earnings management with t. value of -2.00, which is significant at 5% level. Based on this, the study rejects null hypothesis one.

Hypothesis two: Audit committee independence has no significant effect on earnings management of listed manufacturing firms in Nigeria

Audit committee independence has a t. value of 0.96 and probability 0.351. Because the computer value is less than the table value, there no enough evidence to reject the null hypothesis two.

Hypothesis three: Audit committee meetings has no significant effect on earnings management of listed manufacturing firms in Nigeria

Audit committee meeting has a t. value of 1.91 and probability of 0.072 indicating the committee meeting positively impacts on earnings management at 10% level of significance. Based on this, the study rejects null hypothesis three.

Hypothesis four: Audit committee tenure has no significant effect on earnings management of listed manufacturing firms in Nigeria

The result on audit committee tenure shows a coefficient of 0.01, t. value of 1.72 and probability of 0.102. The computed value is less than the table value as shown by a probability that is not significant at 10%. Therefore, there is evidence to reject the null hypothesis four.

Hypothesis five: Institutional shareholding has no significant moderating effect on the relationship between audit committee independence and earnings management

The interaction of audit committee independence and institutional shareholding has produced a coefficient of 0.163 and a t value of 2.18 that is less than 0.10. This implies that the effect of audit committee independence on earnings management is significantly condition on institutional shareholding. Because the variable is significant at 5%, the study rejects the null hypothesis five.

Hypothesis six: Institutional shareholding has no significant moderating effect on the relationship between audit committee tenure and earnings management

Audit committee tenure interacts with Institutional shareholding at a coefficient of -0.014 and a t. value of -2.10, which has probability of 0.049. The result shows that institutional shareholding significantly moderates the effect of audit committee tenure on earnings management. The moderating effect is evident in the change of the sign (direction) of the

relationship from positive to negative after incorporating of the moderator variable. Based on this, there is enough evidence to reject the null hypothesis six.

4.5 Discussion of Major Findings

The result with respect to the relationship between audit committee size and earnings management conforms to the findings of Lin and Hwang (2006), Shehu (2011) and Bala et al. (2015). However it contradicts the empirical results of Xie et al. (2001), Bedard et al (2001), Abbott et al. (2004), Abdul-Rahman and Ali (2006) and Baxter and Cotter (2009) and Fodio et al. (2013) who reported insignificant effect of the audit committee size on the quality of reported earnings. It further contradicts Hamdan, Mushtaha and Al-shartawi (2013) who documented positive effect of the variable using data of firms listed on Amman Stock Exchange. The result also consistent with the agency notion that larger audit committee are characterized by politeness and courtesy among the board member, which undermines the its role in curbing managerial opportunism. This means that the expectation that larger board committees may be composed of experts that can effectively monitor financial reporting process is not tenable.

Audit committee independence exhibit insignificant positive effect of the discretionary tendencies of managers. This is inconsistent with the studies of Omoye and Eriki (2013) who found significant negative influence the committee composition on earnings management in the Nigerian deposit money banks. It also debunks the findings of several other studies (Xie et al. 2001; Klein, 2002; Bradbury, 2006; Kusnadi et al., 2015). The result contravenes the prediction of the agency theory that committees composed mainly of outside directors are likely to act in the best interest of the shareholders. The reason for the positive but insignificant finding may be due to the fact that the independent directors in the committee may not be

experts in accounting and finance and therefore are unlikely to effectively monitor the financial reporting process.

The result of the effect audit committee meetings on earnings management is positive and significant at 10% implying that as board activity increases in terms of frequency of meetings so does discretionary accruals. This is in line with the empirical results of Chandrasegaram et al. (2013) who studied Malaysian listed public firms and Dabor and Dabor (2015) who examined Nigerian manufacturing firms. On the other hand, it contradicts the findings of Xie et al. (2001), Abbott et al. (2001), Chtourou et al. (2001) Ebrahim (2007) and Bala et al. (2015) who found audit committee meeting frequency to be associated with reduced level of discretionary accruals. The finding downplays the importance of meeting frequency as a reflection of the minority role of the committee in curbing agency conflict.

Audit committee tenure has positive but insignificant effect on earnings management. The finding is consistent with the studies of vafeas (2005), Ghafran (2013), Rickling (2014) and Miko and Kamardin (2015) who documented that the mean number of years that the committee members is positively associated with earnings management. An important reason that could be proffered for this finding is that as the audit committee member become more aware of the financial reporting process, they tend to use this awareness and knowledge to their advantage and further the expropriation of the minority shareholders' resources in connivance with the management. An alternative reason may be that the companies are not keen in changing the composition of the audit committee even when it is glaring that they do not fully understand the financial reporting process hence they stay on the committee for an unnecessarily longer period of time.

The variable audit committee independence with institutional shareholding has positive and significant effect on earnings management. This finding is contrary to our apriori expectation

that the effectiveness of the committee's independence in curtailing discretionary accruals is strengthened by the presence of institutional shareholding as each taken separately serves a monitoring mechanism. The finding points to the possibility that institutional shareholders may pressure managers during periods of decline in business profits to manage earnings so as to avoid serious decline in the value of shares of the firm. Since the outcome of audit committee independence as it affects earnings management is shown to be positive, although insignificant, it is also possible that institutional shareholders capitalize on the probable lack of accounting knowledge of the independent directors to induce earnings management. An alternative reason for this unexpected finding is that committee's composed mainly of outside directors are mainly representatives of the institutional shareholders, who may connive with managers to misreport earnings. Overall, the finding suggests that the role of the independence of the committee in mitigating discretionary accruals is conditioned on institutional shareholding.

An interesting finding is documented on the effect of audit committee tenure with institutional shareholding on the quality of earnings. The committee members' average tenure on its own has a positive but insignificant effect, however, this relationship has turned to negative when tenure is interacted with institutional shareholders. This means that the effectiveness of the audit committee tenure in ensuring financial reporting quality is strengthened by the presence of institutional shareholders. The finding supports the notion that because institutional investors have the required knowledge and resources to monitor discipline managers, they are associated with reduced level of discretionary accruals. Also, the argument that longer tenure audit committee's may be complacent in monitoring financial reporting process does not hold water in firms that have large institutional investors.

4.5 Implication Findings

The findings of this study has both theoretical and practical implications. Theoretically, the study explores the relevance of audit committee when interacted with institutional shareholding in mitigating earnings management. Despite the clamor for this approach by previous studies, this work represents one of the few empirical evidence in this regard. Consequently, future researchers may adopt this approach in order to understand better the behavior of the audit committee in relation to other corporate outcomes such as financial performance and timeliness of audit reports.

Policy-wise, the study demonstrates that the recommendations of the Code of Corporate Governance for Public Listed Companies (2011) on the audit committee may not in the best interest of shareholders as, in some cases, it exacerbates agency conflict. For example, the independence of the committee does not mitigate earnings management. In fact, it aggravates it in firms that have large presence of institutional investors.

Lastly, the findings of the study points to the need for regulators to have a comprehensive view of other corporate governance variables when prescribing recommendations on audit committees. This is because taking the committee's characteristics as individual items may not yield the desired result as they are affected by other governance factors.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

Audit committees are expected to play an integral part in reducing agency problem in modern corporations by ensuring the integrity of financial reports by overseeing preparation of financial statements and by liaising with external auditors in the process. Previous studies have tested the direct effect of the audit committee characteristics on financial reporting quality while ignoring the role of some corporate governance variables in the monitoring process. The present study adds to the extant literature by examining the effect of audit committee characteristics on earnings management of listed manufacturing firms in Nigeria. Six hypotheses were formulated with respect to the effect of the committee's attributes of size, independence, meetings and tenure together with the moderating effect of institutional shareholding on the hypothesized relationship.

The agency theory serves as the theoretical underpinning that explain the role of the audit committee as a monitoring mechanism of the corporate financial reporting process. Correlation research design based on the positivist paradigm is adopted and secondary source of data is generated from the published annual reports of the sample firms. The study covers twenty (20) manufacturing firms for the period 2007 to 2016 yielding an unbalanced panel data with 193 firm-year observations. Fixed effect regression analysis is used to test the effect based on the result of the Hausman specification test. While controlling for firm size and leverage, the results reveal that audit committee characteristics affect earnings management and that institutional shareholding significantly moderates this effect in the listed manufacturing firms in Nigeria. The finding provides additional evidence that are relevant for both theory and policy formulation that could enhance the monitoring of companies in Nigeria.

5.2 Conclusions

Based on the findings of the study, the following conclusions are made;

Audit committee size reduces agency conflict by mitigating the prevalence of earnings management of listed manufacturing firms in Nigeria. This supports the claim that more directors on the committee leads to chaos and difficulty in decision making and hence could be detrimental to the oversight and monitoring functions of the committee and the board in general.

Audit Committee independence does not significantly influence earnings management of listed manufacturing firms in Nigeria. Although, insignificant but the effect is positive contrary to the apriori expectation. The finding conforms raises the big question that are the independent directors may not really be independent. It suggests that they may be an alignment of interest between the top level managers and the independent directors.

Frequency of audit committee meetings is detrimental to the quality of financial reports because it leads to earnings management in listed manufacturing firms in Nigeria. Higher audit committee meetings signal the possibility of trying to "cook" the books in such a way that goes in line with what the managers want to portray to the market. Frequency of meetings therefore influences higher earnings manipulation.

Audit committee tenure has the tendency to increase the level of discretionary accruals (earnings management) in the listed manufacturing firms in Nigeria. Thus, the longer the tenure of directors' serve on the audit committee the more they compromise quality of earnings. This supports the clamour by some corporate stakeholders that audit committee directors should be rotated in such a way that minimizes familiarity threat which could compromise the quality of earnings.

Institutional shareholding interacts with the audit committee independence to increase earnings management in listed manufacturing firms in Nigeria. Thus, the efficacy of audit committee independence in reducing discretionary accruals is weakened by a high level of institutional ownership. There seems to be a collision between the institutional shareholding and top level management to expropriate resources to the detriment of minority shareholders.

The effect of audit committee tenure on earnings management of listed manufacturing firms in Nigeria is improved by the presence of institutional shareholding. That is, institutional shareholding significantly moderates the effect of audit committee tenure on earnings management. The effectiveness of long tenured audit committee in reducing earnings management is enhanced by the institutional investors.

5.3 Recommendations of the Study

Based on the findings of the study, the following recommendations are made.

i. The regulatory authorities such as the Securities and Exchange Commission (SEC) should make it compulsory and ensure full compliance that audit committees on Nigerian manufacturing firms should be composed of exactly three directors.

ii. The regulators should consider allowing executive directors to be members of audit committees because committees composed of purely independent directors have proven to be detrimental to the quality of reported earnings.

iii. The number of audit committee meetings during a financial year should be reduced to a minimum of 2 time and maximum of three because more meetings means high earnings management. In addition, regulators consider coming up with legislation on audit committee meeting such as reporting on meeting attendance and agendas to ensure more productive deliberations.

iv. There should be legislation, either through the Code of Corporate governance for listed public firms or through statutory provisions, regarding the average audit committee members' tenure as it encourages the practice of earnings management.

v. Institutional shareholders should be discouraged in firms that have only outside directors on their audit committees based on the finding that earnings management is exacerbated in such firms based on the interaction of the committee's independence and institutional shareholding.

vi. Institutional shareholding should be encouraged in firms that have longer tenure of audit committee directors because it improves the monitoring effectiveness of the committee.

5.4 Limitations of the Study

The study has the following notable limitations:

First, the study covers only listed manufacturing firms whose data are available during most of the period under review. The findings therefore may not be applicable to other domains such as the banking and insurance industry.

Secondly, the measure of earnings management adopted is the modified Jones Model by Dechow et al. (1995). Because there are various proxies for estimating the discretionary accruals, this may not be sufficient.

5.5 Areas for Further Research

Future studies may consider studying the effect of audit committee characteristics on earnings management in other domains such as the banking, insurance and oil and gas sector.

Also, there is the need to study the moderating effect of institutional shareholding on other governance variables because it has proven to affect the role of corporate governance on corporate outcomes.

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APPENDICES

Descriptive Statistics

Summary The Modified Jones Model (1995) variable

```
. summarize accta drevdrecta ppeta
```

Variable	Obs	Mean	Std. Dev.	Min	Max
accta	193	.0159087	.1346297	-.3315594	.677066
drevdrecta	193	.097156	.3685576	-.7780714	4.237512
ppeta	193	.3746268	.2036679	.0003669	.8130608

Regression for the estimation of the residuals

```
. reg accta drevdrecta ppeta, ro
```

```
Linear regression                               Number of obs =     193
                                                F(  2,   190) =    9.35
                                                Prob > F      =  0.0001
                                                R-squared     =  0.1065
                                                Root MSE      =  .12793
```

accta	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
drevdrecta	-.0031593	.0141379	-0.22	0.823	-.0310468	.0247281
ppeta	-.2158703	.0501826	-4.30	0.000	-.314857	-.1168836
_cons	.0970865	.0258439	3.76	0.000	.0461086	.1480644

Summary of Independent and dependent variables

```
. summarize aem acs aci acm act ins aciins actins fs lev
```

Variable	Obs	Mean	Std. Dev.	Min	Max
aem	193	.0909246	.0887992	.001367	.606741
acs	193	2.911917	.2841525	2	3
aci	193	.6650104	.2418789	.333	1
acm	193	2.958549	1.333988	1	7
act	193	4.984456	1.94582	1	9
ins	193	.5181347	.5009706	0	1
aciins	193	.1802953	.242957	0	.667
actins	193	2.632124	2.967604	0	9
fs	193	4.23659	.5907356	2.85804	5.56542
lev	193	.5265875	.166784	.039427	1.00055

Correlation Matrix

```
. correlate aem acs aci acm act ins fs lev aciins actins
(obs=193)
```

	aem	acs	aci	acm	act	ins	fs	lev	aciins
aem	1.0000								
acs	-0.1671	1.0000							
aci	0.0661	-0.0022	1.0000						
acm	0.1374	0.1277	0.0537	1.0000					
act	-0.0196	0.2047	0.1402	0.2044	1.0000				
ins	-0.2564	0.0440	0.1472	-0.0286	0.0209	1.0000			
fs	-0.1532	0.1591	-0.1640	0.1675	-0.1418	0.1627	1.0000		
lev	0.0479	-0.0248	-0.0617	-0.1311	-0.1799	0.0512	0.0396	1.0000	
aciins	-0.1383	0.1006	-0.1872	0.0828	0.0169	0.5251	0.2233	0.0437	1.0000
actins	-0.1799	0.0787	0.1246	0.1303	0.4473	0.6755	0.2267	-0.1067	0.6024

	actins
actins	1.0000

OLS REGRESSION

```
. regress aem acs aci acm act ins fs lev aciins actins
```

Source	SS	df	MS		
Model	.214082921	9	.023786991	Number of obs	= 193
Residual	1.29989576	183	.007103255	F(9, 183)	= 3.35
				Prob > F	= 0.0008
Total	1.51397868	192	.007885306	R-squared	= 0.1414
				Adj R-squared	= 0.0992
				Root MSE	= .08428

aem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
acs	-.0480522	.0227742	-2.11	0.036	-.0929861	-.0031184
aci	.0342062	.0278206	1.23	0.220	-.0206842	.0890966
acm	.0119037	.0048393	2.46	0.015	.0023557	.0214518
act	-.0017308	.0044771	-0.39	0.700	-.0105641	.0071025
ins	-.1088166	.0431696	-2.52	0.013	-.1939907	-.0236425
fs	-.01789	.0117828	-1.52	0.131	-.0411376	.0053576
lev	.0447027	.03771	1.19	0.237	-.0296995	.1191049
aciins	.0145357	.0363107	0.40	0.689	-.0571058	.0861773
actins	.0002225	.004232	0.05	0.958	-.0081273	.0085724
_cons	.285912	.082066	3.48	0.001	.1239948	.4478291

ROBUSTNESS TEST

```
. vif
```

Variable	VIF	1/VIF
actins	4.26	0.234557
ins	2.42	0.414050
aciins	2.10	0.475365
act	2.05	0.487490
fs	1.31	0.763612
aci	1.22	0.817009
acs	1.13	0.883416
acm	1.13	0.887730
lev	1.07	0.935266
Mean VIF	1.85	

```
. hettest

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

         chi2(1)      =   114.47
         Prob > chi2  =   0.0000
```

FIXED EFFECT REGRESSION FOR DIRECT EFFECT

```
. xtreg aem acs aci acm act ins fs lev, fe ro

Fixed-effects (within) regression               Number of obs      =       193
Group variable: id                              Number of groups   =        20

R-sq:  within  = 0.3004                         Obs per group: min =         9
       between = 0.0084                                        avg =       9.7
       overall = 0.0588                                        max =        10

                                                F(7,19)            =      3.11
corr(u_i, Xb)  = -0.6733                        Prob > F           =    0.0232

                                    (Std. Err. adjusted for 20 clusters in id)
------------------------------------------------------------------------------
             |               Robust
         aem |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         acs |  -.0522661   .0353259    -1.48   0.155    -.1262041    .0216719
         aci |   .0525159   .0791662     0.66   0.515    -.1131809    .2182127
         acm |   .0180154   .0076731     2.35   0.030     .0019553    .0340755
         act |   .0005381    .003537     0.15   0.881    -.0068649    .0079411
         ins |  -.2854593   .0772653    -3.69   0.002    -.4471774   -.1237413
          fs |   .0500699   .0304048     1.65   0.116     -.013568    .1137079
         lev |  -.0677985   .0709115    -0.96   0.351     -.216218    .0806211
       _cons |   .1210035   .1337039     0.91   0.377    -.1588421    .4008491
-------------+----------------------------------------------------------------
     sigma_u |  .07702784
     sigma_e |  .07049483
         rho |  .54419808   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

FIXED EFFECT REGRESSION FOR MODERATION EFFECT MODEL

```
. xtreg aem acs aci acm act ins fs lev aciins actins, fe

Fixed-effects (within) regression               Number of obs      =       193
Group variable: id                              Number of groups   =        20

R-sq:  within  = 0.3421                         Obs per group: min =         9
       between = 0.0016                                        avg =       9.7
       overall = 0.0690                                        max =        10

                                                F(9,164)           =      9.48
corr(u_i, Xb)  = -0.7156                        Prob > F           =    0.0000
```

aem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
acs	-.0750245	.0230061	-3.26	0.001	-.1204509	-.0295981
aci	.076187	.0391129	1.95	0.053	-.0010428	.1534168
acm	.0160569	.0048889	3.28	0.001	.0064036	.0257102
act	.0118436	.0048778	2.43	0.016	.0022123	.021475
ins	-.3005823	.0500868	-6.00	0.000	-.3994804	-.2016842
fs	.0401535	.0346483	1.16	0.248	-.0282608	.1085678
lev	-.0862958	.0533088	-1.62	0.107	-.1915558	.0189642
aciins	.1632661	.0550758	2.96	0.003	.0545169	.2720152
actins	-.0135773	.0046829	-2.90	0.004	-.0228238	-.0043309
_cons	.1867216	.1510625	1.24	0.218	-.1115565	.4849997
sigma_u	.08390729					
sigma_e	.0687797					
rho	.59811273	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(19, 164) =     5.83             Prob > F = 0.0000

. est store fe
```

RANDOM EFFECT

```
. xtreg aem acs aci acm act ins fs lev aciins actins, re

Random-effects GLS regression                   Number of obs      =       193
Group variable: id                              Number of groups   =        20

R-sq:  within  = 0.3200                         Obs per group: min =         9
       between = 0.0157                                        avg =       9.7
       overall = 0.1119                                        max =        10

                                                Wald chi2(9)       =     51.43
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

aem	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
acs	-.0639961	.0226222	-2.83	0.005	-.1083348	-.0196573
aci	.0741365	.0326145	2.27	0.023	.0102132	.1380598
acm	.0145179	.004799	3.03	0.002	.0051121	.0239237
act	.0050012	.0045306	1.10	0.270	-.0038787	.0138811
ins	-.1921599	.045802	-4.20	0.000	-.2819301	-.1023897
fs	.0018407	.0172414	0.11	0.915	-.0319519	.0356332
lev	-.0173498	.0457999	-0.38	0.705	-.107116	.0724164
aciins	.0764705	.0450334	1.70	0.089	-.0117933	.1647344
actins	-.0059015	.0043692	-1.35	0.177	-.0144649	.0026619
_cons	.2609425	.097131	2.69	0.007	.0705692	.4513159
sigma_u	.03858078					
sigma_e	.0687797					
rho	.23933863	(fraction of variance due to u_i)				

```
. est store re
```

HAUSMAN TEST

```
. hausman fe re
```

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
acs	-.0750245	-.0639961	-.0110285	.0041853
aci	.076187	.0741365	.0020505	.0215896
acm	.0160569	.0145179	.001539	.0009333
act	.0118436	.0050012	.0068424	.0018072
ins	-.3005823	-.1921599	-.1084224	.0202698
fs	.0401535	.0018407	.0383128	.030054
lev	-.0862958	-.0173498	-.068946	.0272799
aciins	.1632661	.0764705	.0867955	.0317071
actins	-.0135773	-.0059015	-.0076758	.0016851

```
                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(9) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       40.76
                Prob>chi2 =      0.0000
                (V_b-V_B is not positive definite)
```

FIXED EFFECT ROBUST REGRESSION

```
. xtreg aem acs aci acm act ins fs lev aciins actins, fe ro

Fixed-effects (within) regression               Number of obs      =       193
Group variable: id                              Number of groups   =        20

R-sq:  within  = 0.3421                         Obs per group: min =         9
       between = 0.0016                                        avg =       9.7
       overall = 0.0690                                        max =        10

                                                F(9,19)            =      5.25
corr(u_i, Xb)  = -0.7156                        Prob > F           =    0.0012

                                    (Std. Err. adjusted for 20 clusters in id)
------------------------------------------------------------------------------
             |               Robust
         aem |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         acs |  -.0750245   .0374547    -2.00   0.060    -.1534182    .0033691
         aci |    .076187   .0797402     0.96   0.351    -.0907112    .2430852
         acm |   .0160569   .0084144     1.91   0.072    -.0015546    .0336684
         act |   .0118436   .0068875     1.72   0.102     -.002572    .0262593
         ins |  -.3005823   .0918574    -3.27   0.004    -.4928421   -.1083225
          fs |   .0401535   .0343799     1.17   0.257    -.0318044    .1121114
         lev |  -.0862958   .0609394    -1.42   0.173    -.2138434    .0412518
      aciins |   .1632661   .0749259     2.18   0.042     .0064443    .3200878
      actins |  -.0135773   .0064698    -2.10   0.049    -.0271187    -.000036
       _cons |   .1867216   .1559583     1.20   0.246     -.139703    .5131462
-------------+----------------------------------------------------------------
     sigma_u |  .08390729
     sigma_e |   .0687797
         rho |  .59811273   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```