INSTITUTIONAL SHAREHOLDING A MODERATOR TO AUDIT COMMITTEE CHARACTERISTICS AND EARNINGS MANAGEMENT OF LISTED CONGLOMERATE FIRMS IN NIGERIA

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ABSTRACT

The relevance of audit committee characteristics in constraining managerial opportunistic tendencies has been explored by various researchers; the confrontational view in terms of the direction of their relationship has paint a vague picture which begs the introduction of other monitoring mechanism that may give a clear cut picture on direction of this relationship. This study uses two-stage least squares model and examines the impact of audit committee characteristics, institutional shareholding on discretionary accruals of listed conglomerate firms in Nigeria. Secondary data were extracted from the annual reports of 6 most active listed firms on the Nigerian Stock Exchange for the period 2006 to 2015. After running the OLS regression, a robustness test was conducted for validity of statistical inferences. A multiple regression was employed using HACC Model. The study documents that audit committee characteristic and institutional shareholding has significant impact on earnings management of the firms, specifically, audit committee size, audit committee financial expertise and institutional shareholding are inversely related with earnings management, while audit committee independence is positively and significantly related with earnings management, but there is no such impact of audit committee meetings. Furthermore, institutional shareholding and audit committee size are inversely related with earnings management; audit committee independence and institutional shareholding are positively, strongly and significantly constraining earnings management, while audit committee financial expertise with committees' meetings and institutional shareholding reveals no impact on earnings management. In line with the findings, the study recommended that regulatory bodies like CAMA, SEC, and NSE should ensure that listed conglomerate firms in Nigeria strictly adhere with code of best practice so that the interest of various stakeholder's would be fully protected.

KEYWORDS: Institutional Shareholding, Audit Committee, Earnings Management, Listed Conglomerate Firms, Nigeria

1. Introduction

Sound financial disclosure reduces agency problems by connecting the information asymmetry gap that exists between management and shareholders. Conversely, poor financial disclosure often misleads shareholders and has adverse effects on their wealth; the wave of recent financial reporting scandals validates this claim. The sharp disparity in disclosure outcomes across firms, the reasons some firms choose

to exercise sound disclosure practices and others do not is vague. Therefore, identifying the factors affecting management's voluntary disclosure decisions is a fundamental research problem with implications for policy makers, the business community, and academics (Karamanou & Vafeas, 2005).

The scandals and the crumple of some multi-national corporations across the globe such as Cendant Corp, Informix, McKesson HBO, Micro Strategy, Rite-Aid, Sunbeam Corp., Waste Management Inc., Enron, WorldCom to mention a few is as a result of the unethical Accounting practices. earnings manipulations is one of such unethically issues in Accounting that come under the umbrella of earnings management and serves as a tactical tool used by management under the excuse of maximizing firm's value and curbing risks. The loopholes in the application of Generally Accepted Accounting Principles (GAAP) gave birth to earnings manipulation.

The idea of Earnings management entails management inducement, influence or manipulation of reported earnings by subjective application of some specific accounting technique or changing methods; recognizing one-time non-current items, deferring or increasing expenses or revenue transactions or using other methods designed to influence short term earnings (Rahman & Sharif, 2013). This practice causes attrition in the quality of earnings, and consequently the quality of financial reporting will lose out to delusion (Bala & Kumai, 2015). Earnings management is not always alleged as wrong. Proponents of earnings management believed that there is a good side of earnings management and that it can be a signaling mechanism to convey inside information to the market, enabling share price to better reflect the firm's future prospects. The accounting profession has also accepted that not all earnings management techniques are misleading. However, the current accepted idea among accountants, regulators and standard setters is that, more often than not, earnings management is detrimental for it is used by managers to trick investors which dwindled the dependability of financial reporting (Uadiale, 2012).

Consequently, to curb the recent financial disclosure scandals, the U.S. Congress, the Securities and Exchange Commission (SEC), and the major stock exchanges focused on corporate boards as crucial vehicles for improving the quality of financial information provided by firms. In particular, standing board audit committees have come to the forefront of public attention because they are the core decision-making body that is expected to monitor the internal control and financial reporting practices. Blue Ribbon Committee's (1999) report a code of best practice for the functioning of corporate audit committees which is the initiative by the stock exchanges. As a result, the New York Stock Exchange (NYSE) has recently approved new corporate governance rules (SR-NYSE-2002-33). Similarly, aggravated by the Sarbanes-Oxley Act of 2002, the SEC adopted new standards relating to listed company audit committees rule 33-8220 (Karamanou *et al*, 2005).

Audit committee is a sub-committee of the Board that specializes in, and is responsible for, ensuring the accuracy and reliability of the financial statements provided by management (Kuang, 2007). In Nigeria, section 359 (6) of the Companies and Allied Matters Acts CAMA (1990), laws of the federation of Nigeria, provide that the functions of audit committee are to review the audited and unaudited financial statements as well as other special investigation of the company in accordance with the legal requirement and agreed ethical practices and to ensure that the company maintains effective system of accounting and internal control as well as to review the scope and results of external auditors thereby reaffirming their objectivity.

Monitoring mechanisms other than Audit committee may reduce the level of earnings management. Investment institutions with substantial shareholding in a firm are believed to have the resources and incentives to monitor and influence management decision. Therefore, an increase in institutional shareholding is considered as an important channel via which minority shareholders are protected against expropriation of controlling shareholders in emerging markets (Oehl, 2000). However, it can be argued that if institutions hold a large amount of equity shares of a company, that in itself may exert an enormous pressure on the part of managers to manipulate earnings in order to please these institutions (Hassan & Ahmed, 2012). Whether the institutions actually monitor and exert pressure on managers is an empirical question.

Nigeria is no exception to the global scandals and failure of corporations as evident by the Cadbury plc, Intercontinental Bank Plc, Oceanic Bank and the case of Arik air been taken over by AMCON. Cadbury Nigeria plc which was audited by Akintola Williams Delloite (AWD) saw it share price declined from #86.52 per share to #8.65 per share between the time frame of 4years (2005-2009) which led to it delisting from the Securities and Exchange Commission (SEC). The auditor and registrars (Union Registrars Limited) of Cadbury were call before Administrative Proceedings Committee (APC) of the Commission to defend themselves for violating the provisions of the Investment and Securities Act 1999, the SEC Rules and Regulations 2000 (as amended), Code of Conduct for Capital Markets Operators and their Employees and the code of Corporate Governance in Nigeria. Data obtained from the Nigerian Stock Exchange indicate that in July 2017, companies such as Beco Petroleum Product Plc, MTECH Communications Plc, MTI Plc, UTC Plc and Ashakacem Plc were delisted for regulatory issues which make it a round figure of 20 companies been delisted in 2016 to 2017 and a total of 90 companies within 2002 to 2017. This has brought about doubt in the minds of shareholders on the credibility and reliability of financial reports which begs the indulgence of researchers to investigate the effect of corporate governance mechanism on earnings management.

More so, the literature on the relationship between audit committee characteristics and earnings management is blessed with divergent outcomes and inconclusive. Some studies found positive relationships, while others found negative association and other researchers reported no relationship. These mix finding makes the direction of this relationship to be vague. It was argued that audit committee size plays a vital role in improving the quality of earnings. Some studies report that smaller audit committee are more efficient in monitoring the financial reporting process and reducing earnings management while others argued that more hands are better than few (Beasley & Selterio, 2001). Furthermore, several studies support the negative relationship between audit committee independence and earnings management for example, (Klein, 2002) whereas other studies indicate that audit committee independence is positively and significantly associated with earnings management (Shah, Butt & Hassan, 2009). Again, prior studies shown that audit committee financial expertise is negatively associated with earnings management (Sharma & Kuang, 2013) while others indicated that financial expertise is not significantly related with earnings management.

Furthermore, different findings were established by previous studies that discussed the relationship between audit committee meetings and earnings management. Some studies reported that frequency of audit committee meeting is negatively associated to discretionary accruals (Chtourou, Bédard, & Courteau, 2001) whereas others argued that meeting more than twice is positively associated with earnings management (Xie, Davidson III & Dadalt, 2003). This study tends to address the confrontational association by moderating audit committee and earnings management with institutional shareholding. To protect their hug investment, investment institutions are concerned with the objectivity of the audited and unaudited financial report as well as the internal control system of the firm they invested in, thus, they lay much emphasis on ensuring that audit committee characteristics such as audit committee size, audit committee financial expertise and audit committee meetings are in accordance with the best corporate practice as audit committees are the core corporate governance mechanism that is saddled with the responsibility of checkmating the aforementioned activities.

The main objective of this study is to empirically investigate the effect of institutional shareholding, audit committee characteristics on earnings management. Thus, the specific objectives are;

i. To determine the influence of audit committee size on earnings management of listed conglomerate firms in Nigeria.

ii. To find out the effect of audit committee independence on earnings management of listed conglomerate firms in Nigeria.

iii. To ascertain the extent to which audit committee financial expertise affects earnings management of listed conglomerate firms in Nigeria.

iv. To examine the influence of audit committee meetings on earnings management of listed conglomerate firms in Nigeria.

v. To investigate the effect of institutional shareholding on earnings management of listed conglomerate firms in Nigeria.

In line with the objective of this study the following null hypotheses were formulated.

 H_{01} Audit committee size has no significant effect on earnings management of listed conglomerate firms in Nigeria.

 H_{02} Audit committee independence has no significant impact on earnings management of listed conglomerate firms in Nigeria.

 H_{03} Audit committee financial expertise has no significant effect on earnings management of listed conglomerate firms in Nigeria.

 H_{04} Audit committee meetings have no significant influence on earnings management of listed conglomerate firms in Nigeria.

 H_{05} institutional shareholdings have no significant influence on earnings management of listed conglomerate firms in Nigeria.

This study is expected to contribute immensely to the existing literature. Even though there are a lot of literature on the audit committee characteristics and earnings management around the globe, to the best of the researcher's knowledge there is limited evidence from previous literature that empirically investigates the separate and joint effect of institutional shareholding, audit committee characteristics and earnings management of listed conglomerate firms in Nigeria. This will therefore serve as a reference for further researchers in this area, by critically looking at the empirical finding thereby discussing the implication from the Nigerian perspective. More so, The Government will find it very relevant, in the sense that earnings manipulation will in one way or the other affect the earnings of companies, which in turn affects their profit, from which the government is expected to receive its portion.

In order to achieve the above objectives, this paper is divided into five different sections. Section one is the introduction. It captures key elements relating to institutional shareholding, audit committee characteristics and earnings management in Nigeria. Section two is on theories underlying institutional shareholding, audit committee characteristics and how they relate with earnings management and literature review. Section three covers research methodology. Section four focuses on data presentation, analysis and discussion of findings relating to this study. Section five is on conclusion and recommendations emerging from the study.

2.1 Theoretical Development and Practice

In this section, related literature on institutional shareholding, audit committee and earnings management are reviewed and the theoretical framework for the study is presented.

2.2 Audit Committee Size and Earnings Management

Prior studies have documented conflicting results regarding the effect of audit committee size and earnings management. Using a sample of 8 listed and active companies on the Nigerian Stock Exchange, Bala *et al* (2015) investigates the relationship between audit committee characteristics and earnings management for the period between 2009-2014. They found a negative and significant between audit committee size and earnings management. This work focused on Food and Beverages Firms which has different governance structure from that of the conglomerate firms. Similarly, Fodio, Ibikunle and Oba (2013) examined the interaction between corporate governance mechanisms and reported earnings quality. 25 quoted insurance firms were selected during the period 2007-2010 using Yaro Yamane formula, they found a negatively and significantly associated between audit committee size and earnings management. This work uses SPSS software as tool of analysis which fails to give room for robustness test that will guide the selection of the best model to be reported. In the same vein, Lin and Hwang (2010) document a negative relationship

between audit committee size and earnings management, using meta-analysis techniques to synthesize and evaluate the findings from the large number of existing studies on the determinants of earnings management. Though, this study was carried out in the situation of developed countries, hence the differences of economies and regulatory frameworks across the globe call for an examination into the context of developing countries such as Nigerian. Conversely, using a sample of 20 out 33 Malaysian GLCs firms for the period of 2003 to 2009, Nelson and Jamil (2011) investigated audit committees and financial reporting quality following the government transformation program in Malaysia. They underpinned their study with agency theory and resource dependence theory. The study shows a positive relationship between audit committee size and earnings management.

2.3 Audit Committee Independence and Earnings Management

Fodio *et al* (2013) examined the interaction between audit committee independence and earnings management using 25 Nigerian quoted insurance firms during the period 2007-2010. They found positive relationship between audit committee independence and discretionary accruals. This work uses SPSS software as tool of analysis which fails to give room for robustness test that will guide the selection of the best model to be reported. Similarly, Bala *et al* (2015) document a positively and significantly relationship between audit committee independence to earnings management, Using a sample of 8 listed and active companies on the Nigerian Stock Exchange for the period between 2007-2014. They adopted Modified Jones Model (1995) to measure earnings quality. This work focused on Food and Beverages Firms which has different governance structure from that of the conglomerate firms. Also, from another direction, Chtourou *et al* (2001) found independent non-executive directors who are not managers in other firms is negatively associated to both the absolute and positive levels of discretionary accruals. In order to increase the power of their tests they used two groups of US firms, one with relatively high and one with relatively low levels of discretionary accruals in the year 1996. They employed modified Jones (1991) cross-sectional model to estimate the discretionary component of the total accruals. They used chi-square for data analysis, which is a less effective technique for instituting causality and effect of a relationship.

2.4 Audit Committee Financial Expertise and Earnings Management

Using the role that an audit committee financial expert plays in mitigating earnings management for a broad sample of NYSE and NASDAQ firms in 2003, Carcello, Hollingsworth, Klein and Neal (2006) examined the effect Audit Committee Financial Expertise, Competing Corporate Governance Mechanisms, and Earnings Management; looked at various types of audit committee financial expertise. They found that accounting and certain types of non-accounting financial expertise reduce earnings management for firms with weak alternate corporate governance mechanisms and they also found that independent audit committee members with financial expertise are most effective in mitigating earnings management. The short fall of this study is that its results are based on data for only one year which however may change over time. Using meta-analysis techniques to synthesize and evaluate the findings from the large number of existing studies on the determinants of earnings management, Lin et al (2010) found a negative relationship between audit committee financial expertise and earnings management. However, this study was carried out in the context of developed countries, the differences of economies and regulatory frameworks across the globe call for an investigation into the Nigerian scenario. Contrarily Using Modified Jones model to measure discretionary accruals (as a proxy of earnings management) and the sample of 167 Firms, and 613 Firms all from the population of UK financial Time Stock Exchange as the study comprises of two empirical studies. Rohaida (2011) found significant and positive relationship between audit committee financial expertise and earnings management. This study was carried out in the situation of developed country; hence the differences of economies and regulatory frameworks across the globe call for an examination into the context of developing countries such as Nigerian.

2.5 Audit Committee Financial Meetings and Earnings Management

Chtourou *et al* (2001) found that audit committee composed only of independent directors that meets more than twice a year is positively associated with earnings management. They drew their sample from the the population of US firms that appear on Compustat in 1996. To increase the power of their tests, they used firms with the largest amount (both negative and positive) of discretionary accruals and firms with close to

zero discretionary accruals. They used chi-square for data analysis, which is a less effective technique for instituting causality and effect of a relationship. In the same vein, using a sample of 282 firms from the S&P 500 index of year 1992, 1994 and 1996. Xie, *et al* (2003) examined the roles of the board and audit committee on earnings management. They found that audit committee meeting frequently is associated with reduced levels of discretionary current accruals. The disparity in governance structures and regulatory frameworks call for an assessment of similar fact in the Nigerian scenario. Similarly, using two step regression to determine the discretionary accruals of 8 sampled listed and active companies on the Nigerian Stock Exchange for the period between 2007-2014. Bala *et al* (2015) found that meetings frequently has a positively and significantly relationship with earnings management. This work focused on Food and Beverages Firms which has different governance structure from that of the conglomerate firms.

Othman, Ishak, Arif and Aris (2014) examine the Influence of audit committee characteristics on voluntary ethics disclosure using the top 94 companies listed on Bursa Malaysia. The study employs content analysis and multiple linear regressions to look at the relationships between voluntary ethics disclosure and audit committee characteristics. They documented no significant positive relationship between frequency of audit committee meetings and voluntary ethics disclosure. The disparity in governance structures and regulatory frameworks call for an assessment of similar fact in the Nigerian scenario.

2.6 Institutional Shareholdings and Earnings Management

Yang, Chun and Ramadili (2009) examine the interaction between board structure and institutional ownership structure on earnings management. Using Modified Jones Model with cross sectional approach to determine abnormal current accruals of 613 sampled listed firms from 3 sectors (construction, industrial and consumer) of Bursa Malaysia for the period of 3 years (2001-2003). They observed no relationship between the proportion of institutional shareholders and the degree of earnings manipulation. The study might have revealed different result if conducted in the Nigerian scenario. Similarly, García-meca and Sánchez-ballesta (2009) examine the effect of corporate governance on earnings management: using metaanalysis to synthesize and evaluate the findings from 35 studies on the relationship between corporate governance and earnings management. They found that the overall meta-analysis of ten studies on institutional ownership and earnings management are non-significant. They divide the sample according to the sign of accruals (signed and absolute), They found a weakly positive association between signed accruals and institutional ownership whereas the relationship between the absolute value of accruals and institutional ownership is negative. From another direction, using the sample of 20 active quoted firms on the Nigerian Stock Exchange for the period between 2008-2010, Hassan et al (2012) investigated the effect of institutional investors on earnings management. They found that institutional investors have positive and a strong impact on earnings management. The study only covers a period of 3 years which fail to capture current issues such as the changes in the current corporate governance code of 2011 by the Nigeria Securities and Exchange Commission.

For the purpose of this research, agency theory is adopted. The theory involves a contract under which the owners/shareholders called principal engages the services of a controller/managers called agent(s) to perform some services on their behalf, where some powers of decision making are delegated to the agent (Jensen & Meckling 1976). Hence it is expected of the agent(s) (managers) to carry out this fiduciary contract with utmost sense of transparency and accountability. This means that they are expected to ignore their selfish interest and act in such a manner that benefits the shareholders. Though, in practice, the existence of information asymetry that gives the managers information privilege which may lead to the violation of their principal agency arrangement as managers are tempted to use their positions for self benefits, thus the agency problem (Hassan *et al*, 2012). Audit committee is one of the important mechanisms put in place to align the interests of the agents and principals since their composition constitutes equal number of shareholders and managers/directors.

Figure 1: Conceptual Framework



3. Methodology and Data

This work is a correlation research that links institutional shareholding, audit committee characteristics and discretionary accruals. The study consists of all the 6 listed conglomerate firms that are active on the Nigerian Stock Exchange as at 31st December, 2016 and whose data for the period of study, which is 2006-2015 are available. Thus, we have 60 firm-year observations. Secondary source of data was used to extract information from the annual report and accounts of selected firms between the period been studied. Multiple linear regression (two stage least square) were used as a technique of data analysis. The justification for this technique was that it has the ability to test the statistical association between two or more variables and allows for the prediction of the expected outcome.

Variables	Definition and Measurement		
Earnings Management	Measured by absolute values of the residuals (discretionary		
	accruals) using Modified Jones model by Dehow, Sloan &		
	Sweeney (1995). This will be explain bellow		
Audit Committee Size(ACSIZ)	Measured as the total number of audit committee members		
Audit Committee Independence	Proportion of non executive directors in the audit		
(ACIDP)	committee to total number of the audit committee		
Audit Committee Financial expertise	Proportion of audit committee members with financial		
(ACFEP)	expertise (financial knowledge) in the audit committee to		
	total number of the audit committee		
Audit Committee Meetings(ACMT)	The number of meetings held by the audit committee		
	during the year		
Institutional Shareholding(IS)	Proportion of shares owned by institutional shareholders to		
	total outstanding shares.		

Table 1 Variable Measurement

Source: Authors Review, 2018

A cross-sectional regression of the Modified Jones Model (1991) is utilized in this paper to estimate the discretionary accruals which represent the extent of earnings management. This model is selected because it has been found to be the most powerful, widely used and accepted model in detecting the earnings management practice (Dechow *et al.* 1995 and Adibah, Ismail, Kamarudin, Zijl, & Dunstan, 2013). Total accrue (TACC)I is defined as the difference between net income (NI), which is the earnings before taxation and extraordinary item and cash flow from operating activities (OCF). Total accruals can be dissect into discretionary and non-discretionary accruals. Discretionary accruals represent subjective accounting choices made by managers whereas non-discretionary accruals depend on the level of activity of the firm.

 $TACC_{it} = NI_{it} OCF_{it} - \cdots - (i)$

 $TACC_{it}/TA_{it} = \alpha[1/TA_{it}] + \beta_1[(\Delta REV_{it} - \Delta REC_{it})/TA_{it}] + \beta_2[PPE_{it}/TA_{it}] + \epsilon_{it} - \dots - (ii)$

Where:

TACC = is the total accruals (NI $_{-}$ OCF)

The model that examines the hypotheses of the study is presented as follows: $DA_{it}=\alpha+\beta_1ACSIZ_{it}+\beta_2ACINP_{it}+\beta_3ACFEP_{it}+\beta_4ACMT_{it}+\beta_5ISHR_{it}+\epsilon_{it}-----(iv)$

 $DA_{it} = \alpha + \beta_1 (ACSIZ_{it} * ISHR_{it}) + \beta_2 (ACINP_{it} * ISHR_{it}) + \beta_3 (ACFEP_{it} * ISHR_{it}) + \beta_4 (ACMT_{it} * ISHR_{it}) + \epsilon_{it} + \beta_4 (ACMT_{it} * ISHR_{it}) + \beta_4 (ACM$

.....(v)

Where:

 $\begin{array}{l} \alpha = \text{Intercept} \\ \beta_1 - \beta_5 = \text{parameters} \\ \text{i} t = \text{firm i in time t} \\ \text{ACSIZ} = \text{Audit committee size} \\ \text{ACINP} = \text{Audit Committee Independence} \\ \text{ACFEP} = \text{Audit Committee Financial Expertise} \\ \text{ACMT} = \text{Audit Committee meetings} \\ \text{ISHR} = \text{Institutional Shareholdings} \\ \epsilon = \text{error term (other factors that were not captured by the model)} \end{array}$

4.1 Results and Discussions

This section covers the presentation, analysis and discussion of the results of the study. Results from the descriptive statistics of all the variables are presented, the correlation matrix and regression results are presented and discussed. Finally, the section closes with the implication of finding.

	DCC	ACSIZ	ACIND	ACFEP	ACMT	ISHR
Mean	0.0699183	5.716667	0.3816667	0.2903333	3.583333	2.069018
Std. dev	0.0656282	0.84556	0.1206503	0.1235213	1.02992	0.3661264
Minimum	0.00454	4	0.17	0.17	2	1.622214
Maximum	0.27207	9	0.6	0.6	6	2.886751

Table 2: Descriptive statistics

Source: Extracted from STATA 13 Output

Table 2 shows that Discretionary accruals of listed conglomerates firm in Nigeria have a mean of 0.0699183 with standard deviation of 0.0656282, Discretionary accruals also have minimum and maximum values of 0.00454 and 0.27207 respectively. The result indicates that the average manipulation of

Discretionary accruals by managers in Nigerian conglomerate firms is 0.0699183 to 0.27207. The minimum value Discretionary accruals value of 0.00454 implies that the lowest earnings management by managers is not serious to cause significant distortion in the financial statement. Audit Committee size average stood at 5.791667, ranging from 4 to 9. Audit Committee Independence averages 0.3816667, lying between 0.17 and 0.6. The average of Committee Financial Expertise is 0.2903333, ranging between 0.17 to 0.6. Audit Committee meetings averages 3.583333, ranging between 2 to 6. The average of institutional shareholding is 2.069018, lying between 1.622214 and 2.886751. There is negligible dispersion of all the standard deviation from their mean, implying that the data is not skewed and is fit to produce a reliable result.

	DCC	ACSIZ	ACIND	ACFEP	ACMT	ISHR
DCC	1.0000					
ACSIZ	-0.2671	1.0000				
ACIND	0.1530	0.0446	1.0000			
ACFEP	-0.1231	0.0171	0.3314	1.0000		
ACMT	0.1403	0.2125	0.0766	-0.1708	1.0000	
ISHR	-0.1542	0.0450	-0.0596	-0.1156	-0.0426	1.0000

 Table 3: Correlation Matrix

Source: Extracted from STATA 13 Output

From the Table 3 shows the correlation between all pairs of independent variables and the dependent variable in the model. It is observed that there is negative relationship between Discretionary Accruals and Audit Committee Size, Audit Committee Financial Expertise and institutional shareholding. This is inferred from the correlation coefficient of -0.2671, -0.1231 and -0.1542 respectively. This indicates that there are inverse relationships between audit committee size, audit committee financial expertise, institutional shareholding and earnings management of listed conglomerate firms in Nigeria. Similarly, it shows a positive association between Discretionary Accruals and Audit Committee Independence and Audit Committee Meetings which is evident by the correlation coefficient of 0.1530 and 0.1403 respectively.

Table 4: Robustness test	
Variables	
Mean VIF	1.14
Hettest Chi ²	6.65
Hettest Sig	0.0099
Hausman Chi ²	0.30
Hausman Sig	0.9995
LM Test Sig	1.0000
Common Entro at a d fuoro f	TATA 12 044

Source: Extracted from STATA 13 Output

Multicollinearity is conducted to check whether there is a correlation between independent variables which will mislead the result of the study. The variance inflation factor and the tolerance values are good measures of evaluating multicollinearity. The multicollinearity test using the variance inflation factor (VIF) pointed out that excessive correlation does not exist as all the factors are above 1.0 and all the tolerance values are below 10. The mean of the VIF stood at 1.14. The result is not shown for brevity. Considering the nature of the domain conglomerate, the study further tested for linearity between the moderator and earnings management. The test indicates that their relationship is inverse which call for transforming the moderator using inverse square root. Test for heteroscedasticity was conducted to check whether the variability of error terms is constant or not. The result of the test reveals that there is a presence of heteroscedasticity because the hottest chi2 (1) is 6.65 with a probability of 0.0099 which is statistically significant at 1% indicating that the data are not homoscedastic but heteroscedastic. This therefore suggests that the original OLS regression will not suit the study.

However, as a result fixed effect model was ran which suggest that this work should interpret the result of the random effect model because the Hausman test is not significant at any level of significant (0.9995).

LM test is conducted in order to be guided in deciding which regression model best fit the study between the random effect regression model result and the OLS regression model result. This is because there is no significant difference between the two regression models. However, the result of the LM test with a chibar2 significant of 1.0000 suggests that OLS regression model best suits the study which leads this work to run for HACC model that correct for heteroscedasticity and Auto-correlation which is meant to be suitable. The reason for the presence of heteroscedasticity in the model is because of the significant difference in the businesses been conduct by conglomerates and also the difference in world corporate governance which each business will adopt that best suit the nature of their operations.

Variables	Coefficient	Z-value	P-value	Model
				summary
Intercept	0.224812	3.40	0.001	
ACSIZ	-0.0246144	-2.97	0.003	
ACIND	0.1081484	1.70	0.089	
ACFEP	-0.1169688	-1.84	0.066	
ACMT	0.0099577	1.23	0.218	
ISHR	-0.0291568	-1.74	0.081	
R-square				0.2964
Wald Chi ²				19.75
Prob. Chi ²				0.0014

 Table 5: Summary of Regression Result

Source: Extracted from STATA 13 Output

4.2 Audit Committee Size and Earnings Management

Table 5 reveals that Audit Committee Size has a Z-value of -2.97 and a beta coefficient of -0.0246144 which is significant at 1%. This signifies that Audit Committee Size is negatively and statistically impacting on earnings management of listed conglomerate firms in Nigeria. This implies that, 1% increase in the Audit Committee Size will lead to a decrease in earnings management of listed conglomerate firms in Nigeria by 2.46%. Thus, the result is not surprising because larger Audit committees will provide a robust scrutiny of financial statement provided by management; guarantee that the company maintains effect system of accounting and internal control as well as reviewing the scope and result of the external auditors to ensure their objective. It can therefore be concluded that large Audit committee Size in the Nigerian conglomerate firms helps to mitigate the agency problem. Consequently, this result produce a basis for reject the first null hypothesis formulated which presumed that audit committee size has no significant effect on earnings management of listed conglomerate furms in Nigeria. This finding extends the finding of Bala *et al* (2015) they documented that audit committee size have a negative and significant associated with earnings management Using a sample of 8 listed and active Food and Beverages Firms in Nigeria for the period between 2009-2014. It is also support the findings Fodio *et al* (2013) and Lin *et al* (2010) whereas Nelson *et al* (2011) are of contrary opinion.

4.3 Audit Committee Independence and Earnings Management

Table 5 shows that audit committee independence is positively and significantly associated with earnings management of conglomerate firms in Nigeria with Z-value of 1.70 and beta coefficient of 0.1081484 which is at 10% level of significance. This implies that for every 1% increase of non executive directors in the audit committee the earnings management of listed conglomerate firms of Nigeria will also increase by 10.8%. This signifies that audit committee independence may not serve as a means of reducing earnings manipulation by managers. This is not surprising as it is within the researcher's prior expectation. In Nigeria, as most independent audit committee are not financially literate and don't have the requisite expertise which will allow effective monitoring. The result oppose agency theory which argues as the presence of non executive directors (as agents) in the audit committee is suppose to align the interest of the managers and that of the shareholders which will curb the agency problem. However, this result serves as a justification for the rejection of the second null hypothesis formulated which stated that audit committee independence has no significant impact on earnings management of listed conglomerate firms in Nigeria.

The finding is contrary to Chtourou *et al* (2001) whereas it extends the findings of Fodio *et al* (2013) and Bala *et al* (2015).

4.4 Audit Committee Financial Expertise and Earnings Management

To test hypothesis three which state that audit committee financial expertise has no significant effect on earnings management of listed conglomerate firms in Nigeria. Table 5 reveals a Z-value of -1.84 and a beta coefficient of -0.1169688 which is at 10% level of significance. This signifies that audit committee financial expertise has negative, statistical and significant impact on earnings management of listed conglomerate firms in Nigeria. This implies that, 1% increase in audit committee member with financial expertise will decrease earnings management of listed conglomerate firms in Nigeria by 11.7%. The result is not far away from reality as audit committee that are financially literate provide a better checkmate of financial statements and recommend a better accounting and internal control system that will deter the opportunistic behaviors of managers, thus, it validates agency theory. This provides an evidence for rejecting the third hypothesis. The finding is consistent with that of Carcello *et al* (2006) and Lin *et al* (2010), also in contradiction of Ruhaida (2011).

4.5 Audit Committee Financial Meetings and Earnings Management

Table 5 provides evidence of an insignificant positive relationship between audit committee financial meetings and earnings management of listed conglomerate firms in Nigeria. This can be deduced from the beta coefficient of 0.0099577 and Z-value of 1.23, which is not significant at any level. This insignificance association indicates that audit committee financial meeting is not in any way contributing to earnings management of conglomerate firms in Nigeria. This result contradicts the prior expectation of the researcher as audit committee members frequent meeting is supposed to give room for the members to use their gumption and knowledge to scrutinize the audited and unaudited financial statement as well as checkmating the internal control and system of accounting been adopted by the listed conglomerate firms in Nigeria and also to provide a financial statement that can be relied upon by various stakeholders. This result serves as an evidence for failure to reject the fourth hypothesis. This contradicts the finding of Chtourou *et al* (2001), Xie, *et al* (2003) and Bala *et al* (2015), also in support of Othman *et al* (2014).

4.6 Institutional Shareholdings and Earnings Management

In addition, the result in table 5 shows that institutional shareholding has a Z-value of -1.74 and a beta coefficient of -0.0291568 which is significant at 10%. This signifies that institutional shareholding is negatively and statistically influencing earnings management of listed conglomerate firms in Nigeria. This implies that for any 1% increase in the number of shares held by institutions will lead to a decrease in earnings management of listed conglomerate firms in Nigeria by 2.92%. This revelation is hardly surprising judging from the fact that institutions holding substantial shares in a firm would have no other choice but to deploy all it resources, skills and incentives to monitor and constrain management opportunistic tendencies, hence, interest of both existing and prospective stakeholders will be covered. Thus, validating agency theory. This result provide a basis of rejecting hypothesis five of the study which state that institutional shareholding has no significant impact on earnings management of listed conglomerate firms in Nigeria. This finding extend the finding of Hassan *et al* (2012), also in support of Yang *et al* (2009) and García-meca *et al* (2009).

Overall, the combined impact of the regressors (audit committee size, audit committee independence, audit committee financial expertise, audit committee meetings and institutional shareholding) on earnings management of listed conglomerate firms in Nigeria, is shown on the model summary of the regression results. The Wald Chi2 of 19.75 which is significant at 1% (0.0014) reveals that the model is well fitted and that the study findings can be relied upon, while the R-square suggests that the regressors are able to explain regress and (discretionary accruals) to the extent of 30% (approximately), the remaining 70% are explained by other factors that are not captured in the model.

Variable	Coefficient	Coefficient	P-value
ACSIZ	-0.0246144		0.003
ACIND	0.1081484		0.089
ACFEP	-0.1169688		0.066
ACMT	0.0099577		0.218
ISHR	-0.0291568		0.081
ACSIZISHR		-0.0445175	0.097
ACINDISHR		0.05500951	0.057
ACFEPISHR		-0.3454459	0.228
ACMTISHR		0.0427801	0.196

Table 6: Regression results with Moderator

Source: Extracted from STATA 13 Output

4.7 Audit Committee Size, Moderator and Earnings Management

Audit committee size and earnings management before the introduction of the moderator has a beta coefficient of -0.0246144 which was significant at 1%, indicated by a P-value of 0.003. However, after the introduction of the moderator the relationship dwindled a little bit showing a beta coefficient of -0.0445175 and a P-value of 0.097 which is at 10% level of significance. Even with the fact that the significance level escalated from 1% to 10%, the result from table 6 indicate that investment institutions as monitoring mechanism has an effect on audit committee size that helps in reducing the opportunistic tendencies of managers as they ensure that conglomerates strictly adhere with the provision of Companies and Allied Matters act CAMA (2004) of having equal representation of shareholders and that of the directors. Thus, agency problem will be solved.

4.8 Audit Committee Independence, Moderator and Earnings Management

Audit committee independence and earnings management without the moderator has a beta coefficient of 0.1081484 and a P-value 0.089 which is statistically significant at 10%. When the moderator was introduced the result shows a beta coefficient of 0.05500951 which is significant at 10%, indicated by a P-value of 0.057. The result in table 6 reveal that the relationship between audit committee independence and earnings management did not change even with the introduction of institutional investors as a monitoring mechanism. This shows that even with the fact that non-executive directors possess no interest as they don't take part in the day to day management of the firms been studied, they may lack the required financial knowledge and industrial experience that is needed to curb the opportunistic tendencies of managers.

4.9 Audit Committee Financial Expertise, Moderator and Earnings Management.

Audit committee financial expertise and earnings management has a negative, statistical and significant association before the introduction of the moderator; this can be deduced from a beta coefficient of -0.1169688 and a P-value of 0.066 which is significant at 10%. The beta coefficient of -0.3454459 and a P-value of 0.228 shows the presence of a negative and insignificant relationship with the introduction of the moderator. This indicates that investment institutions have an undue influence on the integrity of members on the audit committee with financial knowledge which affect their objectivity that made them not to bat an eye on the opportunistic behaviors of managers of conglomerate firms in Nigeria. This supported the argument that investment institutions are short-term minded which enable them go any lent in employing their numerous resources to protect their investments.

4.10 Audit Committee meetings, Moderator and Earnings Management.

Table 6 shows that before the moderator was introduced, audit committee meetings and earnings management has a positive and insignificant relationship which is observed by the beta coefficient of 0.0099577 with a P-value of 0.218. When the moderator was introduced the result was still the same as a

beta coefficient of 0.0427801 and a P-value of 0.196 was obtained from table 6 which also indicate that there is a positive and insignificant relationship between audit committee meetings, institutional shareholding and earnings management. This implies that even though investment institutions are supposed to have the resources and incentives to monitor and influence management decision, meetings more than five times do not guarantee better monitoring of earnings management of listed conglomerate firms in Nigeria. This is because it can be observed that audit committees of the sampled firms met two to six times within the period of the study.

5. Conclusion and Recommendations

This study examines the interaction between four aspects of audit committee characteristics, institutional shareholding and discretionary accruals of listed conglomerate firms in Nigeria. Consequently, based on the findings of the study the following conclusions are drawn.

- i. The study concludes that, the observed negative significant relationship between audit committee size and earnings management of listed conglomerate firms in Nigeria with and without the monitoring effect of institutional shareholders was due to the fact that larger audit committee with equal representation are expected to compose experience personnel who will be eligible to come up with useful strategies to be implemented that will serve as guide against earnings management. However, it is believed that with good strategies both existing and prospective stakeholder's interest will be covered.
- ii. The study concludes that, the appearance of positive significant association between audit committee independence, institutional shareholding and earnings management of listed conglomerate firms in Nigeria explains the believe that non executive directors may not have the requisite financial sophistication and industrial experience that can aid in deterring earnings management.
- iii. The study conclude that, the presence of negative significant relationship between audit committee financial expertise and earnings management of listed conglomerate firms in Nigeria before the introduction of the moderator and the presence of a negative insignificant interaction when the moderator was introduced indicate that to protect their short-term mindedness investment institutions influenced the integrity of members on the audit committee with financial knowledge which affect their objectivity.
- iv. The study conclude that, the existence of a positive insignificant relationship between audit committee meetings, institutional shareholding and earnings management of listed conglomerate firms in Nigeria is consistent with the evidence that audit committees meetings more than twice will not result in more effective monitoring even with the resources and incentives of institutional investors.
- v. Finally, the study concludes that, the presence of a negative but significant relationship between institutional shareholding and earnings management listed conglomerate firms in Nigeria indicate that investment institutions will employ the necessary resources to protect their investment which will dwindled the earnings management provided by managers.

In line with the findings and the conclusions of the study, the following recommendations are made: Regulatory bodies like CAMA, SEC, and NSE should ensure that listed conglomerate firms in Nigeria strictly adhere with code of best practice so that the interest of various stakeholder's would be fully protected.

- i. The individual and institutional shareholders of listed conglomerate firms in Nigeria should ensure strict compliance with the provision of having six members equal representation (three shareholders and three directors) as proposed by Companies and Allied Matters act CAMA (2004), because it is observed that some of the firms been studied at a particular period of time have only four audit committee members. SEC and other regulatory bodies should providing a fine or penalty on any company that is found wanting of not abiding strictly by these rules and regulations.
- ii. SEC and NSE should clearly spell out the composition of audit committee members so as to enable them carry out their functions effectively. Instead of dwelling laying much emphasis on independence, It should be in such a way that independent members should have financial knowledge and specific industrial experience.

- iii. The minimum number of members with financial expertise in the audit committees should be increased for better checkmating of financial report presented by managers to reduce their opportunistic tendencies and also avoid undue influence of investment institutions. SEC and other regulatory bodies should make it compulsory that the chairman of the audit committee should be a person with requisite financial background or professional accountant.
- iv. There is the need for regulators like SEC to have a stand on the maximum number of meetings to be held by audit committees as it is not the number of meetings that determine the monitoring of the opportunistic attitude of managers but the intelligence of the members to understand the economic implications of management decisions.
- v. Regulatory authorities should emphasize the need for participation of investment institutions in firms. They help to mitigate the agency problems, thereby aligning the interest of the managers and that of the shareholders.

REFERENCES

- Adibah, W., Ismail, W., Kamarudin, K. A., Zijl, T. Van, & Dunstan, K. (2013). Earnings quality and the adoption of IFRS-based accounting standards: Evidence from an emerging market. *International Journal of Accounting*, 21(1), 53–73. https://doi.org/10.1108/13217341311316940
- [2] Bala, H., & Kumai, G. B. (2015). Audit committee characteristics and earnings quality of listed food and beverages firms in Nigeria. *International Journal of Accounting, Auditing and Taxation*, 2(8), 1–13.
- [3] Beasley, M.S., & S.E., Salterio. (2001). The relationship between board characteristics and voluntary improvements in audit committee composition and experience. *Contemporary Accounting Research*. 18 (4): 539-570.
- [4] Carcello, J. V, Hollingsworth, C. W., Klein, A., & Neal, T. L. (2006). Audit committee financial expertise, competing corporate governance mechanisms, and earnings management.
- [5] Chtourou, S. M., Courteau, J., & Lucie, B. (2001). Corporate governance and earnings management. http://papers.ssrn.com/abstract=275053, 4(418), 1–39.
- [6] Dechow, P.M., R.G. Sloan, & A.P. Sweeney. (1995). Detecting earnings management. *The Accounting Review* 70 (2): 193-225.
- [7] Fodio, M. I., Ibikunle, J., & Oba, V. C. (2013). Corporate governance mechanisms and reported earnings quality in listed Nigerian insurance firms. *International Journal of Finance and Accounting*, 2(5), 279–286. https://doi.org/10.5923/j.ijfa.20130205.01
- [8] García-meca, E., & Sánchez-ballesta, J. P. (2009). Corporate governance and earnings management : A metaanalysis. An International Review, 17(5), 594–610. https://doi.org/10.1111/j.1467-8683.2009.00753.x
- [9] Hassan, S. U., & Ahmed, A. (2012). Intitutional investors and discretionary accruals : The case of listed manufacturing firms in Nigeria. *International Journal of Advanced Research in Management and Social Sciences*, 1(1), 1–16.
- [10] Irene Karamanou and Nikos Vafeas. (2005). The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis. *Journal of Accounting Research*, 43(3), 1–34. https://doi.org/10.1111/j.1475-679X.2005.00177.x
- [11] Jensen, M., & Meckling, W., (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Finance and Economics*, 3, 305-360
- [12] Klein, A. (2002), "Audit committee, board of director characteristics and earnings management", *Journalof Accounting and Economics* 33, 375-400.
- [13] Kuang, C. (2007). Audit committee characteristics and earnings management in New Zealand.
- [14] Lin, J. W., & Hwang, M. I. (2010). Audit quality, corporate governance, and earnings management: A meta-analysis. *International Journal of Auditing*, 14(77), 1–21. https://doi.org/10.1111/j.1099-1123.2009.00403.x
- [15] Nelson, S. P., & Jamil, N. N. (2011). Audit committees and financial reporting quality following the government transformation program : Evidence from MALAYSIA, 2007(January), 1–11.
- [16] Othman, R., Ishak, I. F., Arif, S. M. M., & Aris, N. A. (2014). Influence of audit committee characteristics on voluntary ethics disclosure. *Procedia - Social and Behavioral Sciences*, 145, 330–342. https://doi.org/10.1016/j.sbspro.2014.06.042
- [17] Rahman, M., & Sharif, J. (2013). Techniques, motives and controls of earnings management. International Journal of Information Technology and Business Managent, 11(1), 1–13.
- [18] Rohaida. B. (2011). The relationship between governance practices, audit quality and earnings management. UK Evidence, *Durham E-theses, Durham University*. http://etheses.dur.ac.uk/1382/
- [19] Shah, S. Z. A; Butt, A. S; & Hassan, A. (2009). Corporate governance and earnings

http://dx.doi.org/10.19085/journal.sijbpg041001

Management: an empirical evidence from Pakistani listed companies, *European Journal of Scientific Research*, 26 (4), 624-638

- [20] Sharma, V. D., & Kuang, C. (2013). Voluntary audit committee characteristics, incentives, and aggressive earnings management: Evidence from New Zealand. *International Journal of Accounting*, 5(1), 1–14. https://doi.org/10.1111/ijau.12013
- [21] Uadiale, O. M. (2012). Earnings management and corporate governance in Nigeria. *Research Journal of Finance and Accounting*, 3(3), 1–11.
- [22] Xie, B., Davidson III, W.N., & DaDalt, P.J., (2003). Earnings management and corporate governance: The role of the board and the audit committee. *Journal of Corporate Finance*, Vol. 9, pp. 295-316
- [23] Yang, W. S. H. I., Chun, L. O. O. S. I. N., & Ramadili, M. (2009). The effect of board structure and institutional ownership structure on earnings management earnings management with board structure. *International Journal of Economics and Management*, 3(2), 332–353.

APPENDEIX

LISTED CONGLOMERATE FIRMS IN NIGERIA AS AT 31/12/2017.

1.	A.G. LEVENTIS NIGERIA PLC
2.	CHELLARAMS PLC.
3.	JOHN HOLT PLC.
4.	S C O A NIG. PLC.
5.	TRANSNATIONAL CORPORATION OF NIGERIA PLC
6.	U A C N PLC.

Variable	Obs	Mean	Std. Dev.	Min	Max	
dcc	60	.0699183	.0656282	.00454	.27207	
acsiz	60	5.716667	.84556	4	9	
acind	60	.3816667	.1206503	.17	.6	
acfep	60	.2903333	.1235213	.17	.6	
acmt	60	3.583333	1.02992	2	6	
Invs_SQRT	60	2.069018	.3661264	1.622214	2.886751	
Variable	Obs	Pr(Skewness)	Pr(Kurtosis) adj chi2	(2) Prob	>chi2
dcc	60	0.0002	0.0481	14.38	0.	8000
acsiz	60	0.0003	0.0009	18.32	Ο.	0001
acind	60	0.9295	0.0285	4.79	0.	0913
acfep	60	0.0064	0.8503	6.80	0.	0334
acmt	60	0.6042	0.5507	0.64	Ο.	7259
Invs_SQRT	60	0.0610	0.1037	5.82	0.	0544
	dcc	acsiz	acind acfep	acmt I	nvs_S~T	
dcc	1.0000					

acsiz	-0.2671	1.0000				
acind	0.1530	0.0446	1.0000			
acfep	-0.1231	0.0171	0.3314	1.0000		
acmt	0.1403	0.2125	0.0766	-0.1708	1.0000	
Invs_SQRT	-0.1542	0.0450	-0.0596	-0.1156	-0.0426	1.0000

Source	SS	df	MS		Number of obs	= 60
					F(5, 54)	= 2.31
Model	.04476706	5 .008	953412		Prob > F	= 0.0566
Residual	.209349567	54 .003	876844		R-squared	= 0.1762
					Adj R-squared	= 0.0999
Total	.254116626	59 .004	307061		Root MSE	= .06226
dcc	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
acsiz	0232147	.0098459	-2.36	0.022	0429546	0034749
acind	.1112985	.071964	1.55	0.128	0329806	.2555776
acfep	0936458	.0716802	-1.31	0.197	2373559	.0500643
acmt	.0096846	.008287	1.17	0.248	0069299	.026299
Invs_SQRT	0255277	.0223816	-1.14	0.259	0704	.0193447
_cons	.205453	.0796139	2.58	0.013	.0458367	.3650692

37.7	+
· · -	

Variable	VIF	1/VIF
acfep	1.19	0.838194
acind acmt	1.15 1.11	0.871644 0.902032
acsiz Invs_SQRT	1.05 1.02	0.948040 0.978548
Mean VIF	1.11	

. hettest

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

chi2(1) = 8.33 Prob > chi2 = 0.0039

Fixed-effects (within) regression				Number	of obs	=	60
Group variable	e: firm			Number	of group	s =	6
R-sq: within	= 0.1305			Obs per	group:	min =	10
betweer	n = 0.8319					avg =	10.0
overall	L = 0.1757				1	max =	10
				F(5,49)		=	1.47
corr(u i, Xb)	= 0.2228			Prob > 1	F	=	0.2166
dcc	Coef.	Std. Err.	t	P> t	[95%	Conf.	Interval]
acsiz	0214387	.0110609	-1.94	0.058	0436	664	.000789
acind	.0985171	.0910093	1.08	0.284	0843	729	.2814071
acfep	0891377	.0837681	-1.06	0.292	257	476	.0792005
acmt	.0085587	.0087869	0.97	0.335	0090	992	.0262166
Invs SQRT	0269714	.0240463	-1.12	0.267	0752	942	.0213514
_cons	.205891	.0843104	2.44	0.018	.0364	629	.3753191
sigma u	.00876587						
sigma e	.06481173						
rho	.01796428	(fraction	of variar	nce due t	o u_i)		
F test that a	ll u i=0:	F(5, 49) =	0.17		Pr	ob >	F = 0.9733
Random-effects	s GLS regress:	ion		Number	of obs	=	60
Random-effects Group variable	s GLS regress: e: firm	ion		Number (Number (of obs of group	= s =	60 6
Random-effects Group variable R-sg: within	s GLS regress: e: firm = 0.1300	ion		Number (Number (Obs per	of obs of group group:	= s = min =	60 6 10
Random-effects Group variable R-sq: within between	s GLS regress: e: firm = 0.1300 n = 0.8419	ion		Number o Number o Obs per	of obs of group group: :	= s = min = avg =	60 6 10 10.0
Random-effects Group variable R-sq: within between overal:	s GLS regress: e: firm = 0.1300 h = 0.8419 L = 0.1762	ion		Number (Number (Obs per	of obs of group group: :	= s = min = avg = max =	60 6 10 10.0 10.0
Random-effect: Group variable R-sq: within between overal:	s GLS regress: e: firm = 0.1300 h = 0.8419 L = 0.1762	ion		Number of Number of Obs per Wald ch	of obs of group group: : ; ;	= s = avg = max = =	60 6 10 10.0 10 10
Random-effects Group variable R-sq: within between overal: corr(u i, X)	<pre>s GLS regress: e: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assume)</pre>	ion a)		Number of Number of Obs per Wald ch. Prob > 0	of obs of group group: : i2(5) chi2	= s = avg = max = = =	60 6 10.0 10.0 10.0 11.55 0.0415
Random-effect: Group variable R-sq: within between overal: corr(u_i, X)	s GLS regress: e: firm = 0.1300 h = 0.8419 L = 0.1762 = 0 (assumed	ion d)		Number of Number of Obs per Wald ch. Prob > o	of obs of group: group: i2(5) chi2	= s = avg = max = = =	60 6 10 10.0 10 10 11.55 0.0415
Random-effect: Group variable R-sq: within between overal: corr(u_i, X) 	<pre>GLS regress: : firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef.</pre>	ion d) Std. Err.	z	Number o Number o Obs per Wald ch. Prob > o P> z	of obs of group group: i2(5) chi2 [95%	= s = avg = max = = Conf.	60 6 10 10.0 10 11.55 0.0415 Interval]
Random-effect: Group variable R-sq: within betweer overal: corr(u_i, X) 	<pre>s GLS regress: =: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147</pre>	ion d) Std. Err.	z -2.36	Number of Number of Obs per Wald ch. Prob > o P> z 0.018	of obs of group group: i2(5) chi2 [95%] 0425	= s = min = avg = max = = Conf.	60 6 10 10.0 11.55 0.0415 Interval]
Random-effect: Group variable R-sq: within between overal: corr(u_i, X) 	<pre>GLS regress: firm = 0.1300 h = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985</pre>	ion d) Std. Err. .0098459 .071964	z -2.36 1.55	Number of Number of Obs per Wald ch. Prob > o P> z 0.018 0.122	of obs of group: i2(5) chi2 [95% 0425 0297	= s = min = avg = = = Conf.	60 6 10 10.0 10 11.55 0.0415 Interval] 0039171 .2523453
Random-effect: Group variable R-sq: within between overal: corr(u_i, X) 	<pre>s GLS regress: e: firm = 0.1300 h = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985 0936458</pre>	d) Std. Err. .0098459 .071964 .0716802	z -2.36 1.55 -1.31	Number of Number of Obs per Wald ch. Prob > o P> z 0.018 0.122 0.191	of obs of group i2(5) chi2 [95% 0425 0297 2341	= s = avg = max = = Conf. 123 483 364	60 6 10 10.0 11.55 0.0415 Interval] 0039171 .2523453 .0468447
Random-effect: Group variable R-sq: within between overal: corr(u_i, X) dcc acsiz acind acfep acmt	<pre>s GLS regress: =: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985 0936458 .0096846</pre>	d) Std. Err. .0098459 .071964 .0716602 .002287	z -2.36 1.55 -1.31 1.17	Number (Number (Obs per Wald ch. Prob > (P> z 0.018 0.122 0.243	of obs of group i2(5) chi2 [95% 0425 0297 2341 0065	= = = = = = = = = = = = = = = = = = =	60 6 10 10.0 11.55 0.0415 Interval] 0039171 .2523453 .0468447 .0259268
Random-effects Group variable R-sq: within between overal: corr(u_i, X) dcc acsiz acind acfep acmt Invs_SQRT	<pre>s GLS regress: =: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985 0936458 .0096846 0255277</pre>	ion d) Std. Err. .0098459 .071964 .0716802 .008287 .0223816	z -2.36 1.55 -1.31 1.17 -1.14	Number (Number (Obs per Wald ch Prob > (P> z 0.018 0.122 0.191 0.243	of obs of group group: i2(5) chi2 0425 0297 2341 0065 0693	= = = = = = = = = = = = = = = = = = =	60 6 10 10.0 10.0 11.55 0.0415 Interval] 0039171 .2523453 .0468447 .0259268 .0183395
Random-effects Group variable R-sq: within between overal: corr(u_i, X) 	<pre>s GLS regress: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985 0936458 .0096486 0255277 .205453</pre>	ion d) Std. Err. .0098459 .071964 .071602 .008287 .0223816 .0223816 .0796139	z -2.36 1.55 -1.31 1.17 -1.14 2.58	Number (Number (Obs per Wald ch. Prob > (P> z 0.018 0.122 0.191 0.243 0.254 0.254	of obs of group group: ;; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	= = = = = = = = = = = = = = = = = = =	60 6 10 10.0 10 11.55 0.0415 Interval] 0039171 .2523453 .0468447 .0259268 .0183395 .3614934
Random-effect: Group variable R-sq: within between overal: corr(u_i, X) dcc acsiz acind acfep acmt Invs_SQRT cons sigma u	<pre>s GLS regress: =: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985 0936486 0255277 .205453 0</pre>	d) Std. Err. .0098459 .071964 .071964 .016802 .008287 .0223816 .0223816 .0796139	z -2.36 1.55 -1.31 1.17 -1.14 2.58	Number (Number (Obs per Wald ch. Prob > (P> z 0.018 0.122 0.191 0.243 0.254 0.010	of obs of group group: : :2(5) chi2 0425 0297 2341 0065 0693 .0494	= = s = min = = max = = 2 Conf. 123 483 364 577 948 126	60 6 10 10.0 11.55 0.0415 Interval] 0039171 .2523453 .0468447 .0259268 .0183395 .3614934
Random-effect: Group variable R-sq: within between overal: corr(u_i, X) dcc acsiz acind acfep acmt Invs_SQRT cons sigma_u sigma e	<pre>s GLS regress: =: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985 0936458 .00964846 0255277 .205453 0 .06481173</pre>	ion d) Std. Err. .0098459 .071964 .0716802 .008287 .0223816 .0796139	z -2.36 1.55 -1.31 1.17 -1.14 2.58	Number (Number (Obs per Wald ch Prob > (P> z 0.018 0.122 0.191 0.243 0.254 0.010	of obs of group group: i2(5) chi2 [95% 0425 0297 2341 0065 0693 .0494	= = = = = = = = = = = = = = = = = = =	60 6 10 10.0 11.55 0.0415 Interval] 0039171 .2523453 .0468447 .0259268 .0183395 .3614934
Random-effect: Group variable R-sq: within between overal: corr(u_i, X) dcc acsiz acind acfep acmt Invs_SQRT cons 	<pre>GLS regress: =: firm = 0.1300 n = 0.8419 L = 0.1762 = 0 (assumed Coef. 0232147 .1112985 0936458 .00964846 0255277 .205453 0 .06481173 0</pre>	ion d) Std. Err. .0098459 .071964 .0716802 .008287 .0223816 .0796139 (fraction	z -2.36 1.55 -1.31 1.17 -1.14 2.58	Number (Number (Obs per Wald ch. Prob > (P> z 0.018 0.122 0.191 0.254 0.010	of obs of group group: i2(5) chi2 [95% 0425 0297 2341 0065 0693 .0494 o u_i)	= = min = avg = max = = 2 Conf. 123 483 364 577 948 126	60 6 10 10.0 11.55 0.0415 Interval] 0039171 .2523453 .0468447 .0259268 0183395 .3614934

	Coeffi			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
acsiz	0214387	0232147	.001776	.00504
acind	.0985171	.1112985	0127814	.0557124
acfep	0891377	0936458	.0045081	.043348
acmt	.0085587	.0096846	0011258	.0029214
Invs_SQRT	0269714	0255277	0014437	.0087913

 ${\rm b}$ = 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

Breusch and Pagan Lagrangian multiplier test for random effects

dcc[firm,t] = Xb + u[firm] + e[firm,t]

Estimate	d results:	Var	sd = sqrt(Var)
	dcc e	.0043071	.0656282
	u	0	0
Test:	Var(u) = () chibar2(01) Prob > chibar2	= 0.00 = 1.0000

Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group vari	able:	firm			Number of d	obs	=	60
Time varia	ble:	year			Number of o	groups	=	6
Panels:		heteroske	dastic (ba	lanced)	Obs per gro	oup: min	=	10
Autocorrel	ation:	panel-spe	cific AR(1	.)		avg	=	10
						max	=	10
Estimated	covariar	ces	=	6	R-squared		=	0.2964
Estimated	autocorr	elations	=	6	Wald chi2(5	5)	=	19.75
Estimated	coeffici	ents	=	6	Prob > chi2	2	=	0.0014

	Het-corrected					
dcc	Coef.	Std. Err	. z	₽> z	[95% Conf.	Interval]
acsiz	0246144	.008294	-2.97	0.003	0408704	0083585
acind	.1081484	.0635866	1.70	0.089	0164791	.2327759
acfep	1169688	.0635795	-1.84	0.066	2415823	.0076447
acmt	.0099577	.0080885	1.23	0.218	0058954	.0258109
Invs_SQRT	0291568	.0167185	-1.74	0.081	0619246	.0036109
_cons	.224812	.0661977	3.40	0.001	.095067	.354557
rhos :	=1285409	.1597474	.2693271	.4922687	.63052153	3795573