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## MODERATING EFFECT OF AUDIT COMMITTEE EFFECTIVENESS ON THE RELATIONSHIP BETWEEN AUDIT QUALITY AND REAL EARNINGS MANAGEMENT OF NON-FINANCIAL FIRMS IN NIGERIA

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### **ABSTRACT**

*Expectation for improvement in audit quality of firms has been on a rising trend in view of frequent cases of corporate scandals originating from managers' activities, viz-à-viz, the earnings management practices. This study examined the moderating effect of audit committee effectiveness on the relationship between audit quality and real earnings management of listed non-financial firms in Nigeria. Longitudinal research design was adopted with a study population of 116 non-financial companies quoted on the Nigeria Exchange Group (NGX), from which a sample of 50 firms was selected and data extracted from their audited annual reports for the period 2011-2020. Using Eviews 9, the study employed multiple regression technique to analyze the data. Results showed that audit-committee-effectiveness had a significant moderating effect on the relationship between audit-firm-size, auditor-tenure and auditor-industry-specialization, and real earnings-management, but had no significant moderating effect on the relationship between audit-fees and real earnings-management. It was thus concluded that audit-committee-effectiveness facilitated monitoring activities over the auditor to ensure greater financial reporting quality. The study, therefore, recommended the need for companies, stakeholders, finance/accounting regulators, to consider an expanded approach in constraining real earnings management by ensuring that audit committee members have financial expertise to enhance their effectiveness.*

**Keywords:** *Audit-committee-effectiveness, Non-financial-firms, Audit quality, Real-earnings-management*

**JEL Classification:** *C1, C10, C23, C52, M41, M42*

### **INTRODUCTION**

The devastating global financial scandals in corporate firms during 2007/2008 as well as the most recent collapses (2018-2020) including organisations like Carillion in Patisserie Valerie, London Capital and Finance (UK), Transnet (South Africa), South African Airways, and the 1MDB scandal in Malaysia, have exposed serious corporate governance failures that have a global concern and doubt on the effectiveness of the corporate governance function, audit quality and the regulatory framework, as well as the auditors for their failure to prevent such crises from happening. Studies on audit quality and earnings quality remain important to

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policymakers, investors and regulators, and many of such studies lend themselves towards the legitimacy of earnings management manipulations, and the functions of corporate governance and external auditing, serving as direct monitoring mechanisms of the company's financial reporting processes. Bearing in mind that earnings management practices are classified accruals and real activities manipulations, several authors, including Pouraghajan, Tabari, Emamgholipour and Mansourinia (2013), opined that the combined effectiveness of corporate governance monitoring mechanisms in constraining accruals earnings management has been extensively investigated. However, real activity earnings management has not received as much attention in literature, particularly, within emerging economies like Nigeria. Thus, research in this area represents a fertile area for further investigation in general. On audit quality and earnings management in Nigeria, scholars, such as Okolie and Izedonmi (2014) and Okolie (2014) focused more on accrual-based earnings manipulation as a proxy for earnings management, and so have limitations in making generalization of findings concerning the effect of audit quality on real earnings management in non-financial companies, which have been ignored by prior studies, and so leaving a gap in the literature that this study has filled. The main objective of this study examined the moderating effect of audit committee effectiveness on the relationship between audit quality and real earnings management of listed non-financial firms in Nigeria, with specific objectives that include:

- i. Assessing the moderating effect of audit committee effectiveness on the relationship between audit fees and real earnings management of listed non-financial firms in Nigeria.
- ii. Examining the moderating effect of audit committee effectiveness on the relationship between audit firm size and real earnings management of listed non-financial firms in Nigeria.
- iii. Determining the moderating effect of audit committee effectiveness on the relationship between audit tenure and real earnings management of listed non-financial firms in Nigeria.
- iv. Ascertaining the moderating effect of audit committee effectiveness on the relationship between audit industry specialization and real earnings management of listed non-financial firms in Nigeria.

The remaining part of this paper consists of sections covering: conceptual review, theoretical framework, empirical review, research methodology, findings, conclusion and recommendations.

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## LITERATURE REVIEW

### Conceptual Review

#### *Audit Quality*

To be able to maintain transparency in financial reporting, firms must ensure that activities undertaken by their audit committees will constrain earnings management practices. An audit must, therefore, ensure there is the degree of confidence of intended users in the financial statements (International Auditing and Assurance Standards Board, IAASB, 2011]). An audit report must express an opinion on whether the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework. Audit quality is defined in numerous ways that link it to the risk of failure to modify audit reports of financial statements that contain material misstatements (Watkins, Hillison & Morecroft, 2004). As explained by DeAngelo (1981, “quality of audit service is the market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system; and (b) report the breach”. Breach detection is related to the auditor's abilities and competence in exercising control over the quality of reported information through assuring conformity with standards, while reporting a breach is related to the auditor's independence, which is an important driver for the demand of audit service. Thus, quality of audit service calls for the auditor's abilities and competence in exercising control over quality of reported information where a detection of material misstatement is duly reported.

#### *Auditor Size (or Audit Firm Size)*

According to Lawrence, Minutti-Meza and Zhang (2011) audit firm size is associated with more robust training programs, standardized audit methodologies, and more options for appropriate second partner reviews, leading to a positive association with superior audit quality. As observed by Bae and Lee (2013), the Big4 Audit firms differ considerably in size as measured by revenues, the number of offices, and professional headcounts, and this is significantly associated with the audit quality and audit fee differences across Big4 Auditors. DeAngelo (1981) theorized that larger firms perform better audits because they have a greater reputation at stake; and because they have more resources at their disposal, they can attract more highly skilled employees. Others have theorized that large auditors attract a fee premium because their greater wealth reduces clients' exposures in litigation (the deep pockets theory). Others have theorized that there is no real audit quality difference, but the perception exists because large firms are well known and have gained a reputation for high quality. For this study, Audit Firm Size leans on

three criteria, viz, audit partners' wealth; the size of the partners' client portfolios; and the number of audit partners in the firm.

#### *Audit Fees*

International Standards on Auditing (IAS), issued by IAASB (2011), defined audit fees as the amount that remunerates the financial auditor's activity, the certification of financial statements. The Code of Ethics for professional accountants states that audit fees should be calculated in an objective way and the auditor's independence should not be influenced by them. A number of researches have been carried out on the determinants of audit fee. Most of the research findings showed that the major determinants of audit fees may include firm size, business complexity, auditor type, audit tenure, company performance, etc. Ramadan (2015) defined audit fees as all charges that the companies pay to the external auditors against the audit services and non-audit services, e.g. management advisory and consultants. The Securities and Exchange Commission (SEC) defined audit fee as the fees paid for annual audits and reviews of financial statements for the most recent fiscal year. Robu, Chersan, Mironiuc and Carp (2012) also defined audit fee as the sums payable/paid to the auditor, for the audit services offered to the auditee. In simple terms thus: audit fee is the amount charged by the audit firm to carry out its work to a client.

#### *Audit Tenure*

Adeyemi, Okpala and Dabor (2012) opined that for effective and quality audit, the audit-firm tenure is also considered because it is of great influence. Audit tenure is the length of the audit-firm-client relationship as of the fiscal year-end covered by the audited financial statements. Prior studies (e.g., Pierre & Anderson, 1984; Stice, 1991) indicated that audit tenure may be short-term (two or three years) or long-term (nine or more years) in which the same auditor has audited the financial statements of a company. The tenure could also be described as medium-term when the same auditor has audited the financial statements for four to eight years. In summary, audit tenure may be defined as the continuous engagement relationship period (in years) of the Auditor and its client.

#### *Auditor Industry-Specialization*

Industry specialist auditors are auditors who have gained great training and experience concentrated in a specific industry. Solomon, Shields, and Whittington (1999) believed that industry specialist auditors have more accurate non-error frequency knowledge than non-industry specialists; as Owhoso, William and Lynch

(2002) suggested that they can more effectively detect seeded errors in staff work papers during the audit review process, that is, the auditors' industry specialization improves their audit risk assessments; enhances the effectiveness of auditors' work because of their greater industry-specific knowledge. In this study, 'Auditor Industry-Specialization (AIS)' refers to the specialized knowledge acquired by an auditor with respect to a specific industry that gives him advantage over other auditors.

#### *Audit Committee Effectiveness*

This concept was popularized by the American Institute of Certified Public Accountants (AICPA), which recommended in 1967 for the establishment of audit committee boards to assist with reporting process (AICPA, 2016). Some scholars (e.g., Yermack, 1996; Jensen, 1993) argued that small board size enhances firm value and can improve the efficiency of audit committee monitoring and control; this may be so because small size is less likely to be encumbered with bureaucratic problems, as compared to large board size associated with delays and administrative bottlenecks (Goodstein, Gautam, & Boeker, 1994). However, the Companies and Allied Matters Act (CAMA) (2020) specifically stated that the audit committee of a public company should have five (5) members, comprising three (3) shareholders and two (2) non-executive directors. Thus, size is an imperative attribute of an effective audit committee and can have a significant effect on the monitoring of earnings management (e.g., Pincus, Rusbarsky & Wong, 1989). Although the size of audit committee is affected mainly by the size of the firm and its board of directors, the audit committee size should not be too small as it would decrease its monitoring effectiveness (Vafeas, 2005), neither should it be too large as to cause decline in the directors' performance due to the coordination and process problems that will lead to weak monitoring (Jensen, 1993; Vafeas, 2005). The bottom-line is that a reasonable audit committee size should be one that increases the efficiency of its monitoring function of financial reporting integrity. This study viewed Audit Committee Effectiveness as relating to how effective it is in discharging its responsibility accurately and within required time period.

#### *Audit Committee Financial Expertise*

On the financial expertise of members of the Audit Committee, CAMA (2020: A230) specifies that "all members of the audit committee shall be financially literate, and at least one member shall be a member of a professional accounting body in Nigeria established by an Act of the National Assembly." Juhmani (2017) asserted that the

availability of an accounting/financial knowledge in the audit committee would enhance its efficiency and its ability in detecting and moderating earnings management. This means that the presence of a member with financial literacy or knowledge in accounting, finance or financial management will enhance the quality of the financial report, as opposed to the general support that financial expertise may include the certified public accountant, auditor, financial officers, or controllers, or anyone that has worked in a supervisory role involving financial statement preparation. Dhaliwal (2007) in his investigation on various types of expertise against audit quality insisted that only accounting expertise had a significant effect on audit quality. Our working definition will hold that Audit Committee Financial Expertise involves the number of audit committee members with financial/accounting literacy

#### *Real Earnings Management*

Earnings management may be viewed simply as a company's deliberate use of accounting procedures to manipulate its financial reporting in order to match a pre-determined intention. Under real earnings management, firms change their operating activities to meet or beat short-term earnings targets and so adapt the timing or structure of real transactions. Earnings management has several names such as accounting numbers game (Mulford & Comiskey, 2002), creative accounting (Balaciu, Bogdan & Vladu, 2009), income smoothing (Tucker & Zarowin, 2006), and so on. Healy and Wahlen (1999) associated earnings management with the altering of financial statements using judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers. Earnings management arises when managers exercise discretion over accounting numbers, with or without restrictions (Fields, Lys & Vincent, 2001), in order to maximize either firm value (shareholders' wealth) or the selfish interest of managers (opportunistic earnings management). Even though the scholars' views may be at variance, in this study, earnings management is viewed as a sharp practice involving companies' deliberate use of accounting techniques to make their financial reports look artificially good.

#### **Theoretical Framework**

Essentially, agency theory, signaling theory, and auditors' theory of inspired confidence justify the key function of auditing as a mechanism for mitigating

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information asymmetries among related parties. For this study only signaling theory and agency theory are discussed.

### *Signaling Theory*

Signaling through auditor choice stands on the agency theory, and is a manner by which managers and/or directors may impart to the market additional information about their company and their own behaviour. Signaling theory suggests that companies with good performance use financial information disclosure to send signals to the market. Craven and Marston (1999) show that firms will attempt to accept the same level of disclosure as similar firms operating in the same industry since if a firm does not keep up with the same level of disclosure as others, it may be perceived by stakeholders that it is hiding bad news or negative information. This is relevant as the types of financial statements produced have become standardized, potential information differentiation that a company can use to send a signal to the market through its financial statements is reduced. Companies are thus, provided an incentive to signal, other than through transparency in their notes to the accounts and other voluntary disclosures, through their choice of auditor. Moreover, even voluntary disclosures that may be used as signals achieve enhanced credibility in the presence of a quality auditor. To our study, a high-quality audit sends a signal to the market that the financial statements are more credible than those audited by lower quality auditors. The market perceives audit firm size and specialist auditors to be of a higher quality than others and rewards (punishes) companies with larger improvements (or falls) in share prices accordingly (Teoh & Wong, 1993; Menon & Williams, 1994).

Furthermore, signaling theory does not actually require higher audit quality, it merely needs the market to believe that top-tier firms are associated with higher audit quality because of the fee premiums they are able to command (Moizer, 1997). This is suitable to our study as it has been shown that the market's perception of the quality of the company's auditor influences that company's share price. As such, directors and management may want to signal to the stakeholders that their interest is being well monitored. Therefore, signaling should, theoretically, affect the demand for audit quality over and beyond the monitoring function alone.

### *Agency Theory*

This theory developed by Jensen and Meckling (1976) views directors as the agents of the shareholders and states that shareholders expect the agent to act and make decisions in the principal's interest. On the contrary, the agent may not necessarily

make decisions in the best interests of the principals (Padilla, 2002); a problem first highlighted by Smith (1776) in the 18th century and subsequently explored by Jensen and Meckling (1976). This is obviously a weakness of this theory. There is also a consequential practice by managers who may sometimes pursue opportunistic behaviour that conflicts with the goal of the owners (principals) and, therefore, destroy the wealth of the shareholders, despite the fact that the theory stresses the separation of ownership (principal) and managers (agent). Advocates of the agency approach view the manager (directors) as an economic institution that should mitigate the problems and serve as the guardian to shareholders (Hermalin & Weisbach, 2003). In this theory, its strength is that the principals delegate the running of business to the directors/managers, the shareholders' agents (Clarke, 2007). However, the argument by Daily, Dalton and Canella (2003) depicted weakness from the following assertions; first its conceptual nature and second the theory's reduction of the corporation to just two participants of managers and shareholders. It also suggests that employees or managers in organizations can be self-interested. Furthermore, Davis, Schoorman and Donaldson (1997) confirmed the notion of problems arising from the separation of ownership and control in this theory, where the agent may be succumbed to self-interest, opportunistic behavior and falling short of congruence between the aspirations of the principal, and other stakeholders. It has, however, been argued that even with agents' wage fixed without any incentive component (as against providing fluctuating incentive payments), which may provide a fair assessment, corporate misconduct may not be eradicated or even minimized (Muogbo, 2013). Here, the positivist approach is used where the agents are controlled by principal-made rules, with the aim of maximizing shareholders' value. Hence, a more individualistic view is applied in this theory (Clarke, 2007). Indeed, agency theory can be employed to explore the relationship between the ownership and management structure. However, where there is a separation, the agency model can be applied to align the goals of the management with that of the owners.

### **Empirical Review**

Junaidu and Olanrewaju (2018) assessed the effects of firm size, audit quality on earnings management (EM) of Quoted Oil and Gas Marketing Companies in Nigeria. They used the entire eight (8) oil and gas marketing companies quoted on the Nigeria Exchange Group as at January, 2017 as their population. The extracted data from the firms' annual reports covering 2010-2016 constituted their required panel data set which was analysed by use of STATA software. Two research hypotheses were formulated and tested, from which findings indicated that firm size

and audit quality had no significant impact on EM. The limitation of the revealed literature showed shallowness of picking only firm size and audit quality to measure earnings management. This anomaly is corrected in this study by including more predictor variables.

Muogbo, Nneka and Ikena (2019) investigated the effect of tenure of auditor on earnings management of quoted companies in Nigeria. The study adopted ex-post-facto research design, using a population of 170 quoted firms on Nigeria Exchange Group as of 2017, from which a sample of 24 firms was selected, covering the period of 2007-2017. The Hausman Specification test was employed to determine which was more appropriate between fixed and random effects methods. Their findings indicated that audit tenure had significant positive effects on earnings management of the Nigerian quoted companies.

Another scholar, Sari (2018), examined how client business strategies moderate the relationship between specialist industry auditors and audit quality. The results show that auditor specialization negatively affects the audit quality, and client's business strategy negatively affects (weakens) the relationship between auditor specialization and auditor quality. They test results support the hypothesis of reduced knowledge gap.

Bergen (2013) investigated the association between auditor industry specialization and audit quality. Prior studies found a positive effect between those two items in the same year, but the limitation of those studies is that the effects of industry specialization require time to develop. Therefore, it might be that they will have a longitudinal effect. Extending the literature, the study by Bergen (2013) focuses on the longitudinal effect of auditor industry specialization on the audit quality in the period 2004-2007. Industry specialization is measured using the market share approach with total assets as the base. For determining the audit quality, abnormal accruals are used based on the abnormal working capital accruals model of DeFond and Park (2001). The absolute level of abnormal working capital accruals of clients of industry specialist audit firms are compared with those of non-specialist audit firms. After controlling for variables related to abnormal accruals, regression results show that there is no significant longitudinal effect of auditor industry specialization on audit quality. The hypothesis is rejected, and the conclusion can be made that audit quality of clients of industry specialist audit firms is not significantly different in the upcoming year than those of non-specialist audit firms.

## RESEARCH METHODOLOGY

This study adopted longitudinal research design involving panel data of non-financial firms, over a period of 2011-2020. A longitudinal study is a type of correlational research in which researchers repeatedly examine the same items or objects to detect any changes that might occur over a period; observe and collect data on a number of variables without trying to influence such variables. The population of the study consisted of 116 non-financial companies quoted on the Nigeria Exchange Group (NGX) as at 31st December, 2020, covering agriculture, conglomerate, consumer goods, industrial goods, healthcare, technology, real estate and construction, oil and gas, and services sectors, and natural resources. In selecting the study sample, stratified sampling method was used (because of the distinct nature of the study population) followed by the simple random sampling technique (employed to ensure each unit of the population had an equal opportunity to be chosen).

This initial sample size was obtained by using the Yamane (1967) formula  $N/(1 + Ne^2)$ , where  $N$  = population = 116 and  $e$  = error margin = 0.05.

Therefore,  $n = 116 / [1 + 116(0.05^2)] = 116/1.29$ , or  $n = 90$ .

Also using the adjusted Yamane formula for (adjusted) sample size,  $n_1 = n[1 + (n-1)/N]$ .

That is,  $n_1 = 90/[1 + (90-1)/116] = 50$  (required total sample size); and finally, using proportions, sample sizes for each sector of the study were determined as shown in Table 1.

**Table 1 Population and Study Sample size**

S/N	Sector	No. of firms	Computation	No. of firms selected
1	Agriculture	5	5/116*50	2
2	Conglomerate	6	6/116*50	3
3	Consumer goods	23	23/116*50	10
4	Industrial goods	13	13/116*50	6
5	Healthcare	10	10/116*50	4
6	Technology	9	9/116*50	3
7	Real estate/construction	9	9/116*50	3
8	Oil and Gas	12	12/116*50	5
9	Services	25	25/116*50	11
10	Natural resources	4	4/116*50	1
	<b>Total</b>	116		50

*Source: Researcher's computation 2022*

This study employed panel regression technique of data analysis because the technique is appropriate for studies that combine cross-sectional and time-series data. Regression technique is effective in assessing causal relationships and in view of the panel nature of the study data, different regression models were employed, including Ordinary Least Squares (OLS), Fixed Effect (FE) Model and Random Effect (RE) Model. Suitable tests such as Hausman Specification Test and Breusch and Pagan Lagrangian Multiplier Test for Random Effects were used to select the most suitable model for the study. Using the Eviews 9, subsequently, regression diagnostics were carried out to ensure the validity and fitness of the results. In order to comply with the classical assumptions of OLS and the model of the study in general, tests for Heteroskedasticity and Multicollinearity were accordingly carried out.

**Model Specification**

Specifying the relevant working model is predicated on Audit Quality Attributes and Real Earnings Management. Audit quality plays an important role in reducing earnings management since auditors perform a certification task concerning financial statement credibility. Audit committee on the other hand is commissioned to ensure credibility of financial reporting, hence, the study hypothesizes that the presence of an audit committee with financial experts can mitigate the relationship between external auditor attributes and real earnings management as reflected in the following model:

$$REM_{it} = \beta_0 + \beta_1 AF_{it} + \beta_2 AFS_{it} + \beta_3 AT_{it} + \beta_4 AIS_{it} + \beta_5 ACE_{it} + \beta_6 AF_{it} * ACE_{it} + \beta_7 AFS_{it} * ACE_{it} + \beta_8 AT_{it} * ACE_{it} + \beta_9 AIS_{it} * ACE_{it} + \mu_{it} \dots \dots \dots (1)$$

Where: REM= Real Earnings Management; ACE= Audit Committee Effectiveness; AF= Audit Fees; AIS= Auditor Industry Specialization; AT= Auditor Tenure; AFS= Audit Firm Size;  $\beta_0$ = is the intercept;  $\beta_1 \dots \beta_9$ = coefficients to be estimated;  $\mu_{it}$ = error term for firm i in year t.

**Table 2 Measurement of Variables/Validity**

Variables	Variable type	Measurement
	<b>Dependent</b>	
REM	Real Earnings Management	REM is measured by summing up the standardized differences between actual and computed abnormal cash flow from operations, abnormal production cost and abnormal discretionary expenses.
	<b>Moderator Variable</b>	
ACE	Audit Committee Effectiveness	ACE indicates Audit Committee Financial Expertise, and represents the audit committee members with financial literacy
	<b>Independent</b>	
AFS	Audit Firm Size	Dichotomous: '1' if company is audited by a Big4, '0' if otherwise
AF	Audit Fees	Natural Log of the audit fees paid by the company.
AT	Auditor Tenure	Length of auditor-client relationship: '1' if 3 years <sup>+</sup> and '0' if otherwise.
AIS	Auditor Industry Specialization	Measured by dichotomous variable: 1 for the companies audited by industry specialist auditors and 0 for non-specialist auditors.

*Source: Researcher's compilation, 2022*

## ANALYSES AND RESULTS

The data extracted for all variables from the financial statements of the sampled non-financial companies formed the basis for our analysis.

### *Descriptive Statistics*

Table 3 contains the description of the properties of the variables ranging from the mean of each variable to the minimum, maximum and standard deviation values. The outcomes in Table 3 indicate that the measure of real earnings management (REM) (the inverse of absolute discretionary accruals) has an average value of 0.2211 with standard deviation (SD)=0.2498, and minimum/maximum values of -0.3801/0.9470, respectively.

**Table 3: Descriptive Statistics of variables**

	REM	AFS	AT	AF	AIS	ACE	AFS_ACE	AT_ACE	AF_ACE	AIS_ACE
Mean	0.221165	0.708000	0.832000	202534.6	0.446000	2.470000	1.726000	2.034000	441552.6	1.136000
Median	0.164792	1.000000	1.000000	13127.50	0.000000	3.000000	2.000000	2.000000	28750.00	0.000000
Maximum	0.947017	1.000000	1.000000	5416667.	1.000000	3.000000	3.000000	3.000000	1083333	3.000000
Minimum	-0.380124	0.000000	0.000000	18.00000	0.000000	1.000000	0.000000	0.000000	18.00000	0.000000
Std. Dev.	0.249862	0.455138	0.374241	692202.0	0.497573	0.588040	1.215681	1.063535	54.00000	1.322498

*Source: Eviews 9 Output, 2022.*

The extent of the absolute value of discretionary accruals in the sampled firms has a mean of .22% with SD of .24%, indicating that the deviation between companies is very small. The firms tend to record a reasonably high earnings management in some years than in others as indicated in the wide variation between the minimum and maximum values. Also, given that the SD is higher than the mean is an indication of significant differences in earnings management practices of non-financial companies.

For audit firm size (AFS), the regression result on Table 3 shows a mean value of 0.7080 and a corresponding standard deviation of 0.4551. This shows that about 70% of the firms under study deploy the use of Big4 auditors for their audit assignments and the value of the standard deviation, which is relatively close to the mean, signifies a reasonable level of agreement with the data. The minimum is 0 while the maximum is 1 suggesting that the data is in binary form. The descriptive statistics from Table 3 also indicate that the mean of the audit tenure (AT) is 0.8320, signifying that on the average about 83.20% of the companies had retained their auditors for more than three years on the audit engagement. This result is said to be true given the value of standard deviation which is less than the mean. The audit firm size showed a minimum and maximum of 0 and 1, respectively. Table 3 also indicates that the sampled firms had an average Audit Fee (AF) of ₦202534.6 with SD = ₦692202.0. That is  $AF = ₦202534.6 \pm ₦692202.0$  whose absolute values ranged from ₦489667 to ₦894737. This range shows that there was a high level of variance in the audit fees paid by companies. The descriptive statistics in Table 3 also show that on average, the use of auditor industry specialist (AIS) stood at 44.60%, from the mean value of 0.4460 with SD=0.4975. This means that on average, 44% of the firms used auditors that were specialists in auditing non-financial firms. As seen on Table 3, SD (=49.75%) > mean (44.60%), indicating high level of variance in the data. The auditor industry-specialization shows a minimum of 0 and maximum of 1, respectively; while the descriptive statistics show that on the average, two (2) members of the audit committee were financially literate with the standard deviation showing high level of variance. The result also indicates that the maximum number is 3 and the minimum is 1, implying that the companies were complying with the stipulation in the code of corporate governance. The descriptive statistics also show that the moderation of audit firm size and audit committee effectiveness produced a mean of 1.726

signifying that an average of at least 172% of the companies audited by Big4 had an audit committee with financial expertise. The value of the maximum=3 while the minimum=0. Also, the interaction between auditor tenure (AT) and ACE had a mean of 2.0340 and SD=1.0635. This infers that on average 203% companies had auditors who stayed for at least three years and had audit committees with financial expertise as indicated on Table 3 output. However, the value of SD=106% (close to the mean) signals a high-level compliance with the data, as further confirmed by the value of minimum and maximum of 0 and 3, respectively. Furthermore, the descriptive statistics show that the moderation of audit fees (AF) and audit committee effectiveness (ACE) produced an average log fee for companies to a tune of ₦441552.6 with a corresponding SD = ₦54.0000. The maximum value is ₦10,833,334 while the minimum is ₦18.00000. Finally, the descriptive statistics show that the interaction between audit committee financial expertise (shown by ACE) and auditor industry specialization (AIS) had a mean of 1.1360 with a corresponding SD = 1.3224. This signals that 113% of real earnings management would be reduced by the presence of both ACE and AIS, even though the standard deviation of 132% (above the mean), is an indication that data from the individual companies had high variances.

### Correlation Matrix

Table 4 shows the correlation between the dependent variable (REM), and the independent and moderator variables, AFS, AT, AF, AIS and ACE, on one hand, and among the independent variables themselves, on the other hand.

**Table 4: The Correlation Matrix**

	REM	AFS	AT	AF	AIS	ACE	AFS_ACE	AT_ACE	AF_ACE	AIS_ACE
REM	1.000000									
AFS	0.105540	1.000000								
AT	-0.100469	-0.012391	1.000000							
AF	-0.004920	-0.100862	-0.047665	1.000000						
AIS	-0.040125	0.126949	-0.070340	0.005512	1.000000					
ACE	0.106372	0.588664	-0.095798	-0.049558	0.117736	1.000000				
AFS_ACE	0.103642	0.847383	-0.075211	-0.084563	0.142840	0.918286	1.000000			
AT_ACE	-0.058426	0.250407	0.860255	-0.063205	-0.024926	0.387759	0.359465	1.000000		
AF_ACE	0.078917	0.365538	-0.104305	0.675285	0.107975	0.687307	0.611516	0.232776	1.000000	
AIS_ACE	-0.046679	0.235377	-0.103559	0.016847	0.958309	0.296446	0.313230	0.030901	0.247066	1.000000

*Source: Eviews 9 Output, 2022*

Generally, a high correlation is expected between dependent and independent variables while low correlation is expected among independent variables. According to Gujarati (2004), a correlation coefficient between two independent variables of 0.80 is considered excessive and thus certain measures are required to correct that anomaly in the data. From Table 4, all the correlation coefficients among the independent variables are below 0.80; thus, indicating absence of possible multicollinearity; as confirmed by variance inflator factor (VIF) and tolerance value (TV) tests (Table 5). Multicollinearity is a situation where two or more independent variables in a regression are highly (or even moderately) correlated.

#### *Variance Inflation Factors (VIF) Test*

The Variance Inflation factors outputs are displayed on Table 5. The study adopted the centred VIF, as recommended by Hair, Black, Babin, Anderson and Tatham (2006).

**Table 5: Tolerance and VIF Values**

<b>Variable</b>	<b>Coefficient Variance</b>	<b>Uncentered VIF</b>	<b>Centered VIF</b>	<b>Tolerance (1/VIF)</b>
AFS	249964.7	1.580097	<b>1.226640</b>	<b>0.815235</b>
AT	40086.24	4.382779	<b>1.780566</b>	<b>0.561619</b>
AF	36548.05	1.307533	<b>1.186837</b>	<b>0.814257</b>
AIS	112444.5	3.120075	<b>1.641372</b>	<b>0.609246</b>
ACE	8319.738	2407.874	<b>1.609577</b>	<b>0.621281</b>
AFS_ ACE	32913.13	3.135175	<b>1.621038</b>	<b>0.616888</b>
AT_ ACE	112433.9	1.666858	<b>1.450641</b>	<b>0.689350</b>
AF_ ACE	16.32819	28.79988	<b>1.564855</b>	<b>0.639036</b>
AIS_ ACE	97.82205	6.921456	<b>1.496169</b>	<b>0.668373</b>
C	6093176	2361.534	<b>NA</b>	

**Source:** Author's Computation from Eviews9 Output, 2022

According to Hair et al. (2006), the common cut off threshold for centered VIF is a tolerance value of not less than 0.10, which corresponds to a VIF value of less than 10, for non-multicollinearity. Therefore, the VIF results obtained indicate that multicollinearity does not exist among all independent variables because VIF-values are less than 10 (see Centered VIF on Table 5).

*Test for Heteroscedasticity*

From output on Table 6, it was inferred that there was no problem of heteroscedasticity as the F-statistics (=1.705463) had  $p$ -value=0.4166>0.05, which is insignificant, implying that there was absence of heteroscedasticity (Levene, 1960).

**Table 6 Heteroskedasticity Test: (The Breusch-Pagan-Godfrey test)**

F-statistic	1.705463	Prob. F(9,490)	0.1409
Obs*R-squared	8.317117	Prob. Chi-Square(9)	0.1396
Scaled explained SS	4.993914	Prob. Chi-Square(9)	0.4166

Source: Eviews9 Output, 2022

*Hausman Specification Test*

**Table 7: Hausman Specification Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Period random	1.387510	9	0.9979	
Period random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
AFS	0.137692	0.137644	0.000029	0.9928
AT	0.206090	0.205112	0.000168	0.9399
AF	-0.076095	-0.075860	0.000020	0.9581
AIS	0.238036	0.241129	0.000033	0.5915
ACE	0.309386	0.307035	0.000145	0.8453
AFS_ACE	-0.053114	-0.052833	0.000007	0.9141
AT_ACE	-0.110753	-0.110066	0.000028	0.8965
AF_ACE	0.031562	0.031622	0.000002	0.9691
AIS_ACE	-0.110459	-0.111609	0.000006	0.6266

Source: Eviews9 Output, 2022

The Hausman Speciation Test conducted to choose between the fixed effects model and the random effects model revealed that the Chi2=1.387510 and  $p$ -value (Chi) = 0.9979. The insignificant value as reported by the probability of Chi2 meant that the Hausman Test was in favour of Random Effect (RE) model. From Table 8, the RE results revealed the overall adjusted R<sup>2</sup> of 0.192870 is the coefficient of multiple determination which gives the percentage of the total variation in the dependent variable explained by the independent and moderator variables jointly. This signifies that audit firm size, audit fees, auditor industry specialization, and auditors' tenure and audit committee financial expertise jointly explain 19.29% variations in real earnings management of listed Nigerian non-financial companies, while the remaining 80.71% of the total variation in the real earnings management was caused by factors not explained by the model.

**Table 8: Random Effects Test: Independent Variable: REMS**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.493018	0.338015	-1.458571	0.1453
AFS	0.137692	0.051751	2.660687	0.0081
AT	0.206090	0.143541	1.435753	0.1517
AF	-0.076095	0.056749	-1.340895	0.1806
AIS	0.238036	0.100252	2.374376	0.0180
ACE	0.309386	0.141581	2.185231	0.0294
AFS_ ACE	-0.053114	0.022044	-2.409410	0.0164
AT_ ACE	-0.110753	0.054549	-2.030348	0.0429
AF_ ACE	0.031562	0.022426	1.407369	0.1600
AIS_ ACE	-0.110459	0.039536	-2.793882	0.0054
Effects Specification				
Period fixed (dummy variables)				
R-squared	0.274209	Mean dependent var	-0.022137	
Adjusted R-squared	0.192870	S.D. dependent var	0.119094	
S.E. of regression	0.106995	Akaike info criterion	-1.530633	
Sum squared resid	1.327955	Schwarz criterion	-1.221821	
Log likelihood	113.4911	Hannan-Quinn criter.	-1.405152	
F-statistic	3.371197	Durbin-Watson stat	1.138789	
Prob(F-statistic)	0.000209			

**Source:** *Eviews9 Output, 2022*

### **Discussion of Findings**

Accordingly, the value of F-statistic is 3.371197 with a corresponding  $p$ -value=0.0002, signified model fitness. This served as substantial evidence to conclude that the audit quality attributes and the moderator variable selected for the study are suitable for the study. The overall results of this study suggested that audit committee effectiveness (ACE) had a strong explanatory power on the relationship between audit quality and real earnings management (REM). In particular, the results from the regression output indicated that audit committee effectiveness had a significant moderating effect on the relationship between audit firm size (AFS) and real earnings management, as  $\beta = -0.053114$  and  $p = 0.0164 < 0.05$  indicating that ACE significantly moderated the relationship between AFS and REM by lowering the effect of AFS on REM. In other words, audit firm size played an important function in limiting the level of real earnings management especially when the organisation had an audit committee with experts in finance and accounting as members.

The regression output also showed that for auditor tenure (AT),  $\beta=0.206090$  and  $p=0.1517$ , indicating that auditor tenure had no significant role in monitoring managerial opportunistic behaviour of listed non-financial firms in Nigeria. This finding is in consonance with those of Muogbo, et al. (2019) who found that audit tenure had significant positive effects on earnings management of the Nigeria quoted companies.

For AF\_ACE,  $\beta=0.031562$  and  $p=0.1600>0.05$  indicates that audit quality proxied by audit committee financial expertise had no significant moderating effect on the relationship between audit fees (AF) and real earnings management (REM). This means that the relationship between audit fees (AF) and real earnings management (REM) is not affected by ACE. Therefore, the study found no statistical evidence to conclude that the audit committee financial expertise (in audit committee

effectiveness) as a moderator had a significant effect on the relationship between audit fees and real earnings management. AF by itself with  $\beta = -0.076095$  and  $p = 0.1806$  indicates that it had an insignificant limiting effect on real earnings management. Theoretically, a higher level of audit fees is the major driver of enhanced audit quality, which in turn is used to reduce managers' flexibility to use real earnings management and to manipulate reported earnings. However, fees can be used as an incentive to conceal management intentional manipulation since audit fees are set by managers.

The study also found that auditor industry specialization had negative significant effect on real earnings management of non-financial companies in Nigeria as moderated by audit committee financial expertise that limited the practices of real earnings management. This finding suggested that industry specialist auditors were a necessary governance factor in reducing fraudulent financial reporting. This assertion is supported based on the fact that industry specialist auditors have gained great training and experiences concentrated in a specific industry and have more accurate non-error frequency knowledge than non-industry specialists. Furthermore, industry specialists' auditors can more effectively detect seeded errors in staff work papers during the audit review process. The auditor industry specialization (AIS) itself having a direct relationship with REM with the following parameters,  $\beta = 0.238036$  and  $p = 0.0180 < 0.05$ , shows a good positive and significant effect on real earnings management; this means auditor industry specialization had a strengthening effect on real earnings management. This assertion however is inconsistent with the findings of Bergen (2013) and also the work of Sari (2018).

## **CONCLUSION AND RECOMMENDATIONS**

The moderating effect of audit committee effectiveness on the relationship between audit quality and real earnings management of listed non-financial firms in Nigeria

was examined. Reviewed literature conceptualized study variables, and revealed empirical evidence that provided support that larger audit firms possessed better attributes to arrest the likelihood of real earnings management in the presence of audit committee effectiveness. The *agency theory* explained the role of directors/managers as agents of shareholders and the reason for them to act in the principals' best interest. In like manner, the *signaling theory* expects the managers/directors to use financial information disclosure to send signals to the market. The formulated model was analysed by use of Eviews 9; overall results showed that earnings management could be reasonably constrained in the presence of audit committee effectiveness where a financial expert member is in the committee. It is thus concluded that audit-committee-effectiveness as a corporate governance mechanism had a strong explanatory power on the relationship between audit quality and real earnings management; as reflected by the significant effects of audit firm size and auditor industry specialization on real earnings management of the listed non-financial firms in Nigeria.

The study, therefore, recommended that the choice of large audit firms should be highly considered as criteria for engagement of audit partners; this way, the audit firm size issue would be taken care of. Firms should also seek audit partners with industry specialization. Further, the aspects of 'audit fees' and 'auditor-tenure' should be down-played as analyses showed that they had a non-significant effect on real earnings management even in the presence of the moderating factor of audit committee effectiveness.

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