

Effect of Managerial Ownership and Audit Committee Financial Expertise on Earnings Management of Listed Manufacturing Companies in Nigeria

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ABSTRACT: *Earnings management research has a long and rich history. However, the effect of managerial ownership and audit committee financial expertise on earnings management is rarely conducted in the developing countries like Nigeria. Therefore, this study examines how managerial ownership and audit committee financial expertise on earnings management of listed manufacturing companies in Nigeria. This study used the Roychowdhury approach to measure real earnings management. Thirty-four (34) manufacturing companies out of seventy-three (73) population that were listed on the Nigerian Exchange (NGX) from 2007 to 2021 was selected as sample size. Data was gleaned from the annual financial reports of the sampled companies for this study. Descriptive statistics, Pearson correlation, and quantile regression analysis are the econometric techniques used to test the analysed data and for hypothesis testing. Results from the study showed that managerial ownership significantly affects real-earnings management. When the effect was moderated by the financial expertise of the audit committee, the effect of ownership structure on real earnings management disappears. The result from the study show that managers of manufacturing firms in Nigeria should be encouraged to own more shares in the companies they manage in order to minimize real earnings management. The evidence can theoretically serve as a solid foundation for regulatory action, notably through improving the alignment of managers' and shareholders' interests. The results from this study have important implications for regulators, who will gain from understanding how managerial ownership affects real earnings management and improve the accuracy of financial reporting. The findings will also help policymakers and academics to understand how managerial ownership affects real earnings management in Nigeria.*

KEYWORDS: managerial ownership, audit committee financial expertise, earnings management, real earnings management

INTRODUCTION

In the accounting literature, Real Earnings Management (REM) has gotten a lot of attention, and this typically thought to have serious negative implications on corporate firms (Osma et al.,2022). To attain specific desired target earnings, management often times consciously alter the timing and structure of investment, operating, and financing events. Businesses use earnings management to avert losses and convey the impression that they continuously generate profits. Managers mainly employed two methods for managing earnings these are; Accruals Earnings Management (AEM), and Real Earnings Management (REM). A manager's decisions about R&D and advertising costs, sales price reductions (lenient sales terms), asset sales, excessive production, or stock repurchases result in REM (Habib et al., 2022). Increased information risk is usually the consequence of REM using opportunistic activities like aggressive price cuts, overproduction, and cutting back on discretionary spending like advertisement and research and development (R&D). This is because these opportunistic practices hide the true economic performance of a firm.

According to Graham et al. (2005), corporate managers prefer to manage profits using REM as opposed to AEM because the latter has a greater likelihood of going undetected. According to Healy and Wahlen (1999), is the modification of a company's financial performance by managers to deceive some stakeholders about the company's true economic success or to influence contract outcomes that depend on accounting profit. Lo (2008) contends that these actions lower the quality of earnings and other accounting figures leading to financial statement fraud.

It is argued that Managerial Ownership (MO) is a factor that affects REM because MO aligns managers' interests with those of investors and reduces the conflict of interest that typically results from separating ownership from management (Jensen & Meckling,1976; 2007; Ramli et al., 2013). Furthermore, high managerial ownership has an impact on REM because it offers management more power to influence business decisions as they are now also owners of the business. Thus, high managerial ownership decreases information asymmetry (conflicts of interest) but increases management's opportunities for REM (Aygün et al., 2014). The effect of MO is anticipated because as contented by Morck et al. (1988), increased ownership might give managers stronger anchoring and, as a result, more room for opportunistic action.

Sales, discretionary spending, and overproduction are examples of real discretionary behaviors (decisions) that cause REM (Roychowdhury, 2006). Although REM is the most popular kind of earnings management, REM needs to be stemmed because REM does more damage to a firm as it impacts negatively on both current and future cash flows (Kim & Sohn, 2013). Dong et al. (2020) concluded that while REM can be delightful, it is bad! it is like riding a tiger, you cannot get off from it without being eaten. Dropping stock prices, corporate takeovers, a decline in investor trust in the stock market, and corporate failure, which is the ultimate cost, are some examples of consequences of REM.

Literature is replete with examples of how managerial ownership can prevent opportunistic behavior in organizations, but there is a dearth of systematic evidence demonstrating whether managerial ownership has a significant effect on REM, necessitating the present assessment (Debnath et al., 2021; Potharla et al., 2021; Pawar et al., 2021; Wang & Wang, 2021). The Financial Reporting Council (FRC) of Nigeria and the Nigerian Exchange Group (NGX) will use this study's findings to guide them in making decisions about institutional ownership.

It appears that the audit committee is a useful instrument for limiting REM but not many researches has conducted in this area. In Nigeria, audit committees are tasked with reviewing financial reports, reviewing whether management's choice of accounting policies and disclosures is appropriately applied in light of acceptable accounting standards, ensuring that the management submits accurate financial statements, critically examining unusual transactions and accounting estimates, and take a position on whether the financial reports present are factual and just scrutiny of the business (Inaam et al., 2012). The audit committee must be financially savvy (the concept referred to in this study as audit committee financial expertise) to accomplish the aforementioned goals. The Blue-Ribbon Panel contends that audit committee members ought to have a strong financial understanding, according to Xie et al. (2003). If audit committee members do not have financial expertise, they will not understand accounting gimmicks to prevent earnings management and consequently ensure that there is financial reporting quality, they may only serve as formality.

The main objective of this study is to examine whether audit committee financial expertise moderates the effect of managerial ownership on REM of manufacturing firms in Nigeria. To achieve this objective, the following hypotheses were formulated and tested

Ho₁: Managerial ownership has no significant effect on the REM of listed manufacturing companies in Nigeria.

Ho₂: Audit committee expertise does not significantly moderate the effect of managerial ownership on REM of listed manufacturing companies in Nigeria. The moderation of the effect of managerial ownership on REM with audit committee financial expertise is an addition to the existing body of knowledge. Financially literate audit committee will ensure that audit process evaluates the possibility of material misstatements and reduces the risk of undetected misstatement to a manageable level. This study focuses on the manufacturing companies since there are more chances for managers to engage in REM in manufacturing industries than in other sectors. Managers of businesses in the manufacturing sector, for instance, have more power to influence sales, production, and discretionary expenditure. In this study, secondary data was used covering a 15-year period from 2007 to 2021. Since this period extends to the most recent year with availability of the financial report needed for the research the study's time frame is deemed acceptable.

The remaining part of this study is organized as a literature review, methodology, data presentation and analysis, conclusion and recommendations. The literature review was done in Section 2. The methodology was described in Section 3. Data presentation and discussion of

our findings were done in Section 4. Section 5 finally reports the conclusion and recommendations.

LITERATURE REVIEW

Conceptual Framework:

The conceptual framework for the study is depicted in figure 1, where the predictor variable is managerial ownership, while REM is the dependent variable and ACFE is the moderating variable. The figure also shows growth and firm size as control variables.

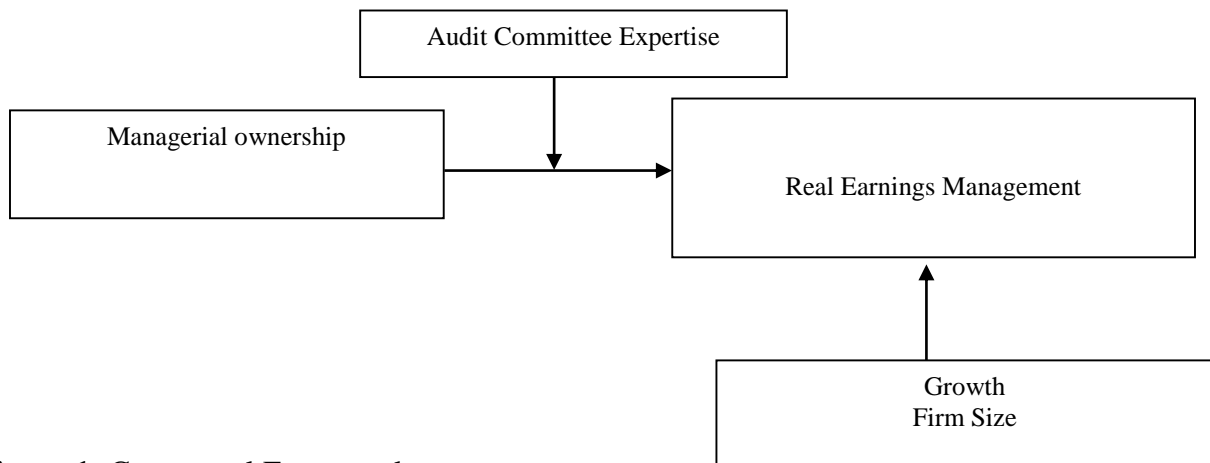


Figure 1: Conceptual Framework

Source: Researcher's Compilation, 2022

Real Earnings Management

Generally, the practice of "earnings management" in corporations, entails managers using their discretion in financial reporting or structuring transactions so that the reported profit is at a predetermined level to deceive some stakeholders about the company's true economic performance or to sway the terms of contracts that are based on reported accounting numbers. There are two basic types of earnings management: cash-based earnings management, also known as real earnings management (REM), and accruals-based earnings management.

Roychowdhury (2006) defined REM as deviations from the regular operating procedures made by managers to trick at least some stakeholders into believing that certain financial reporting objectives have been met the normal course of operations. Although REM aids managers in meeting their personal reporting targets, these departures do not increase a firm's worth. For instance, boosting sales through generous discounts and lenient credit terms may cause customers to anticipate lower sales prices in the future, compelling the company to mark down the price of its products. Businesses that produce more goods in an effort to increase their gross margin ratio may face greater carrying costs and put forth more effort to sell the extra inventory.

REM also occurs when long-term investments and assets are timed to be sold during periods of low earnings (Cohen & Zarowin, 2010; Bartov, 1993), when there is overproduction to lower fixed costs per unit and ultimately unit costs and costs of sales (Chi et al., 2011), and when discretionary expenses like R&D, advertising, selling, and administrative costs are manipulated (Cheng, 2004; Osma, 2008). In this regard, REM has an impact on free cash flows since it requires the sacrifice of some value-maximizing operations because certain actions done to boost earnings in the present may have a detrimental impact on cash flows in the future (Graham et al., 2005; Cohen et al., 2008; Abubakar et al., 2020).

Managerial Ownership

Managerial ownership is the percentage of shares owned by the corporate managers, commissioners, those directly involved in the management of the corporations (Agustia et al., 2018). therefore, the proportion of shares owned by a company's management are referred to as managerial ownership. One of the most crucial components of the corporate ownership structure, is thought to be. The management ownership structure can be explained using either the agency technique or the imbalance approach. The management ownership structure is viewed from an agency perspective as a tool or instrument for reducing agency conflict between shareholders and managers of a corporation. The managerial ownership structure is considered a means to lessen the knowledge asymmetry between insiders and outsiders under the imbalance approach.

Increasing managerial ownership is a technique to boost transparency because doing so will inspire managers to perform better, which will benefit the business and lead to goal congruence. Greater managerial ownership will encourage management to be more committed to enhancing their performance since management must satisfy the desires of shareholders who are none other than himself. 2016 (Alzoubi). Because the advantages of those decisions will be passed directly to management, decision-making will be more cautious. Furthermore, if management makes the wrong choices, losses result. Because the advantages of those decisions will be passed directly to management, decision-making will be more cautious. Furthermore, if management makes the wrong choices, losses result.

Numerous earlier research suggested that managerial ownership may resolve the agency issue by balancing the interests of managers and owners in a business (Ali et al., 2010; Mat-Nor & Sulong, 2007; Ramli et al., 2013). Accounting theory holds that management objectives significantly affect how earnings are managed. With managerial ownership, the manager will act in the best interests of the company's stockholders because they are stockholders themselves. The incentives for managers to act opportunistically rise when there is a low level of managerial ownership (Alves, 2021).

Additionally, Putri and Yuyetta (2013) provide an explanation for the relationship between managerial ownership and the incidence of earnings management. The degree of earnings management increases with decreasing managerial ownership. This shows that managers have a greater responsibility to run the business and provide financial reports with accurate and honest information. Because they will share in the repercussions of their decisions, managerial

ownership will inspire managers to create the best possible firm performance. According to Rustiarini (2010), managerial ownership is calculated by dividing the percentage of shares held by members of the board of directors by the total number of outstanding shares. As in earlier research, managerial ownership is measured in the current study as the ratio of total shares held by directors to total shares outstanding (Ali et al., 2010; Alves, 2012; Alzoubi, 2016; Amran & CheAhmad, 2013; Aygun et al., 2014; Kamran & Shah, 2014; Masmoudi et al., 2014; Mustapha & CheAhmad, 2011; Ramadan, 2015).

Audit Committee Financial Expertise

Audit committees are designed to continually look at the process of financial reporting and limit opportunistic managerial reporting. This position reflects the principles of agency theory and the requirement to watch over managers to limit their capacity to take rent from the company (Badolato et al., 2014). Audit committees have a wide range of responsibilities, including monitoring the selection of accounting policies and principles, assessing compliance with regulations and corporate ethics, and oversight of the hiring, performance, and independence of the external auditor (Larcker & Tayan, 2011). For example, Arcay and Vazquez (2005) argued audit committee ensures information clarity, relevance, and completeness. Thus, they are parties in ensuring that there is transparency in financial reporting (Allegrini & Greco, 2013) and aligning the management and the shareholder's interests (Laksmana, 2008).

The essence of the audit committee is based on two strands of accountability; first, management's accountability to the board, and secondly, the board's accountability to the shareholders. The audit committee's role stems directly from the board's oversight function as it oversees, both, internal and external audit processes (Collier & Gregory, 1999; Bédard et al., 2004; Lee et al., 2004). Audit committee expertise would provide members with the necessary knowledge to understand the audit committee's primary functions and act effectively. The board, internal, and external auditors must work closely together as part of a sound corporate governance framework. The composition and functioning of the audit committee significantly affect the accuracy of the financial reporting (Vicknair et al., 1993; Cadbury, 1995).

Theoretical Review

A lot of theories on REM have been identified in prior literature such as Agency theory, Stakeholder theory, and Signaling theory. However, this study is hinged on Signaling and Agency theory. This is because for signaling theory and agency theory, information asymmetry appears in the relationship of managers with shareholders and companies with investors. Companies do not send signals or send incorrect signals which may be detrimental to investors. The managers who know the information but intentionally cover them up causing adverse selections for shareholders.

Signaling Theory: Signal theory (ST) was first mentioned by Akerlof (1970), then ST was further developed by M. Spence (1973) and Stiglitz (1975) as a part of asymmetric information. Such asymmetric information occurs when one partner holds the information and the other does not know the true message behind the information. Asymmetric information causes

adverse selection as the information is concealed before the signing of the contract. In a firm, information asymmetry appears in the relationship of managers with shareholders and companies with investors. Companies do not send signals or send incorrect signals which may be detrimental to investors. The managers who know the information but intentionally cover them up causing adverse selections for shareholders. Accordingly, the information enables the decision maker to adopt an action strategy in the form of a combination of different options that increase his expected utility function. Meanwhile, the effect of information on the utility function is based on an individual's ability to use its information and revise your actions according to the available information. In this sense, information contributes to the welfare of society by improving the decision-making of various parties in the market.

Companies cannot be considered completely efficient because management prepares financial statements that shareholders must rely on as part of their information. The resulting information asymmetry can take one of two forms: moral hazard and adverse selection. Moral hazard occurs because shareholders do not have the information to monitor management and assess whether it is working to maximize the value of their firms; resulting in different attitudes and motivations for each party. On the other hand, adverse selection occurs because managers have access to private information that allows them to make decisions for their own benefit and ignore shareholder value (Walker, 2013). It is, therefore, possible to assume a state of imperfect information in the company, when information is missing or incomplete.

In such uncertainty, shareholders who are at different levels of sophistication will not be able to make their decisions based on rationality. Meanwhile, uncertainty gives managers the opportunity to gloss over their failures or send messages they want to deliver to outsiders. Thus, signaling and screening occur when there is information asymmetry between insiders (e.g., management) and outsiders (e.g., investors). While insiders have better information, outsiders are imperfectly informed about product quality and firm performance. Accordingly, foreigners pay prices that reflect the quality they perceive of the firm and its products; which forces insiders to offer different qualities to different outsiders (Walker 2013).

Agency Theory: Jensen and Meckling introduced the agency theory in 1976. Agency disputes between the shareholders and management are the main focus of agency theory. The core tenet of agency theory is that because managers are selfish, they tend to steal, cheat, and lie, they don't make judgments that are in the best interests of shareholders (Arnold & Lange, 2004). An agency relationship may also bring about the issue of information asymmetry. Managers make daily financial and operational decisions on behalf of the shareholders, so they are better informed than the shareholders since they have access to different levels of information than the owners (Mallin, 2007).

According to agency theory, having an audit committee would guarantee that managers act in the best interests of shareholders. As a result, organizations create audit committees to improve the quality of financial reporting (Saleh, et al., 2007). The audit committee's primary responsibility is to control and keep an eye on managers' discretion and propensities to manipulate profits (Hamdan et al., 2012). Similar to this, the audit committee must assess the

company's financial reports and ensure that they accurately depict the company's economic performance (Klein, 2002). Additionally, regulatory and governmental organizations present the audit committee as a potential instrument that could improve the integrity and caliber of financial accounts (Bamahros & Bhasin, 2016).

Empirical Review

This section reviews relevant studies conducted that are related to managerial ownership and real earnings management. Istianingsih and IrukRanggaBawono (2021) in their study titled earnings management through real activities: the role of audit quality and ownership structure in Indonesia employed the manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2018, with the 175 company-years. The results from this study indicates that managerial ownership has a negative and insignificant effect on real earnings management. The possible reason for the insignificant relationship is that managerial ownership in Indonesia is still very small, only 1.7%. With this relatively small ownership, the ability of this ownership to monitor management is also small. This results cannot be generalized to Nigeria as the corporate governance laws are different and the socio-economic policies differ with what is obtainable in Nigeria.

Siraji and Nazar (2021) examined the effect of family and managerial ownership on REM of selected non-financial listed companies at the Colombo Stock Exchange (CSE) in Sri Lanka using a sample of 206 firms from 2015-2020. The study used multiple regression as the statistical tools and the study found that managerial ownership played a prominent role and is negatively related to real earning management activities.

Debnath et al. (2021) carried out a study on ownership structure and REM in Bangladesh from 2000 - 2017. The sampled 2,195 firm - year observations of non-financial companies listed on the Dhaka Stock Exchange. The dependent variable REM was proxied by Roychowdhury 2006 approach which has three variables; accelerating sales value through more lenient or price discount; reducing the cost of goods sold through increased production and reporting lower discretionary expenses. Ownership structure was measured with insider ownership, institutional ownership and foreign ownership. Data was collected and analysed with the use of descriptive statistics and multiple regression which test the association between ownership structure and REM. The findings from the study revealed that institutional ownership had a positive significant effect on REM. Debnath et al. (2021) findings goes further to illustrate that firms which are dominated by institutional ownership, engage more in REM through more discount, lenient credit terms and lowering discretionary expenses. This study was carried out in Bangladesh, a country that issued the corporate governance guidelines in 2006 to protect stockholder/shareholders from questionable business practices as against Nigeria that established the corporate governance code in 2018.

Abubakar et al. (2020) examined the role of ownership structure on REM of listed non-financial firms in Nigeria. The sample involved 72 firms over five years, from 2014-2018. Data from the study were handpicked from annual reports of the companies. REM was measured using Rowchowdhury approach while ownership structure was represented by managerial,

institutional and foreign ownership. Results using multiple regression revealed that managerial ownership has a significant and positive effect on REM, suggesting that managerial ownership can deter management from committing REM. Although the study is Nigerian specific, it does not employ a longer time period to arrive at robust findings. The study period also does not extend to most recent years, hence, could not capture the effect of recent happenings in corporate governance, such as the introduction of financial reporting council of Nigeria combine code of corporate governance 2018.

Dong et al (2020) in their study titled the nexus between ownership structure and real earnings of listed Chinese companies from 2003-2014 proxied ownership structure by managerial ownership which was defined as the proportion of shares owned by top management team including the board of directors. Sample for the study comprised of 7,143 firm year observations after correcting for sample selection bias using Heckman procedure. Dong et al analysed their data using descriptive statistics, probit regression and linear multiple regression. REM was proxied by overproduction and abnormal discretionary expenses. The findings revealed that managerial ownership has a significant and negative effect on REM. The results indicated that, Chinese firms with more managerial ownership are less likely to perpetrate REM. The results were al robust to several sensitivity test that addressed potential endogeneity problem. The results are useful guide for policy formulation however, suffered from two major limitations. First, the sample was restricted to Chinese firms which are from a closed economy, unlike open economies with western principles such as Nigeria. Secondly, the study was limited in terms for variables used as proxies for ownership structure.

Pambudi (2020) conducted a study on the relationship between managerial ownership and earning management in Indonesia. The study used all the manufacturing companies listed on the Indonesia Stock Exchange for the period of 2017-2018. The statistical analysis method used for the study is multiple regression and the results from the study showed that managerial ownership has a positive and insignificant effect on earnings management. In Poland, Piosik and Genge (2019) conducted a study on the influence of a company's ownership structure on upward REM using 1,053 listed on the Warsaw stock exchange from 2008 to 2017. The dependent variable for the study is REM and one of the instruments of REM is manipulating discretionary expenses which measures earnings manipulation in selling, general, and administrative expenses. The study employed the use of descriptive statistics and panel data regression models and the results from the study revealed that the presence of managerial investors, affects upward REM practices which reduces the magnitude of total upward REM. The study confirms the existence of the negative correlation between total upward REM and managerial ownership, thereby indicating that the greater the managerial ownership, the smaller the magnitude of upward REM, thus managerial ownership increases financial transparency. This study suffers from domain gap, results from this study cannot be completely relevant in Nigeria, because of cultural and socio-economic diversity.

Amir et al. (2019) conducted a research on ownership structure and REM in Malaysia using a sample size of 650 firm-year observations from Malaysian non-financial corporations from

2012 -2016. The researchers used multiple regression as the statistical tool for analysis and the study discovered that managerial ownership has a negative and significant effect on REM.

Almashaqbeh et al. (2019) investigated the relationship between managerial ownership and REM in Jordan. The study used 101 companies from 2011-2015. The statistical method used was the GLS regression model and the findings from the study show that institutional ownership negatively influences REM. The outcome suggest that managerial ownership should be encouraged in listed companies so that it can replace for the weakness of other corporate governance (CG) mechanisms in reducing REM.

Ramadan (2015) conducted a study on effect of managerial ownership on a firm's ability to practice earnings management using 77 Jordanian industrial companies listed at Amman Stock Exchange (ASE) for the period 2000-2014 were selected resulting in 1089 firm-year observations. The study econometric analysis utilizing unbalanced panel data regression and found out that managerial ownership has a negative relationship with earnings management. This study only used industrial companies in Jordan leaving out other subsector like food and beverages, cement and building materials, tobacco which would have yielded a different result. Teshima and Shuto (2008) investigate nonlinearities in the relationship between managerial ownership and directional earnings management in the developed economy of Japan. To that end, they use quadratic and cubic forms of managerial ownership which is proxied by the fraction of shares held by all directors. Further, they employ the modified Jones model to estimate the absolute value of income increasing and decreasing discretionary accruals. Accordingly, two subsamples emerge from an original sample of 18,196 firm-year observations from 1991-2000. Interestingly, the findings document (i) the incentive alignment effect in firms with low and high levels of managerial ownership, and (ii) the entrenchment effect at intermediate levels of ownership. More specifically, the first subsample (i.e. Income-increasing absolute abnormal accruals) is (i) negatively related to managerial ownership at the levels below and above 13.6% and 38.8%, respectively, and (ii) positively related to managerial ownership at the range between 13.6% - 38.8%. In terms of the second subsample, only linear relationship is found significant. That is, the results show that managerial ownership is negatively related to income-decreasing absolute value of abnormal accruals.

METHODOLOGY

This section discussed the population of the study, sample size, the models for this study, variables and their measurements, sources of data collection and methods of data analysis. This study population is comprised of 73 manufacturing companies listed on the Nigerian Exchange (NGX) from 1st of January 2007 to 31st December 2021. The study covers all the firms that engage in productive activities listed on NGX. A filter rule was used to arrive at the sample using the criteria in Table 1.

Table 1*Sample Selection Criteria*

Criteria	Number of Firms
Initial population	73
Companies listed after 1 st January, 2006	1
Companies delisted within the study period	1
Companies with incomplete data required for the study	37
Sample size	34

Source: Researcher's Compilation, 2022

After applying the criteria stated in Table 1, 34 companies were selected as sample size

Sources of Data and Techniques of Analysis: The annual reports of these sampled companies from 2007 to 2021 served as the source of secondary data for this study. This study employed quantile regression model to test the functional relationships between the dependent variable and the independent variables. Normality test, linearity test, heteroscedasticity and multicollinearity test were conducted to test the assumptions of the regression.

Model Specification: The model for this study is in two steps which is adapted by Roychowdhury (2006), Gunny (2010), Cohen and Zarowin (2010), Zang (2012), Ge and Kim (2013), and Razaque et al. (2016) and presented as follows:

$$REM_{it} = \alpha + \beta_1 MANOW_{it} + \beta_2 FS_{it} + \beta_3 GROW_{it} + \varepsilon_{it} \dots\dots (1)$$

$$REM_{it} = \alpha + \beta_1 MANOW_{it} + \beta_2 ACFE_{it} + \beta_3 MANOW_{it} * ACFE_{it} + \beta_4 FS_{it} + \beta_5 FG_{it} + \varepsilon_{it} \dots\dots (2)$$

Model 1 tests the effect of managerial ownership on REM and two control variables firm size and firm growth were introduced while model 2 tests the moderating effect of audit committee financial expertise on the relationship between managerial ownership and REM.

Where:

REM = Real Earnings Management

MANOW = Managerial Ownership

ACFE = Audit Committee Financial Expertise

FS = Firm Size

GROW = Firm Growth

i = number of firms' observation

t = the index of time period

ε = the error component for firms

β_0 = Intercept of the model "constant"

In equation (2), ACFE* MANOW is the interaction variable, moderating the relationship between the dependent variable and the independent variable. If β_3 is significant at 5% significance level, the ACFE is said to be a significant moderator on the relationship between MANOW and REM. The study follows Roychowdhury's (2006) measure of real earnings management (*REAL_EM*) using three separate proxies: (1) abnormal discretionary expenses (*ABNDISX*); (2) production expenses (*ABNPROD*); and (3) cash flow from operations (*ABNCFO*) as shown in the table 2.

Table 2*Variables Definition, Measurements and Sources*

S/N	Variables	Proxy	Definition	Measurement	Sources
Dependent Variable					
i	Real Earnings Management	REM	REM is the sum of ACFO-APROD + ADISX, where ACFO is the level of abnormal cash flows from operations, APROD is the level of abnormal production costs, and ADISX is the level of abnormal discretionary expenses.	Abn.CFO +Abn. Prod. Cost + AbDisex (see details in equation (i)-(v))	Dechow et al (1998); Rowchowhury, (2006); Cohen & Zarowin (2010); Zang (2012); Razzaque et al. (2016); Abubakar et al. (2020); Mardessi & Fourati (2020)
Independent Variables					
ii	Managerial Ownership	MANOW	Managerial ownership is defined as the percentage of shares held by management or directors within the firm and their families.	Measured as the proportion of shares owned by executive directors to the total number of issued shares of a firm.	Rustiarini (2010); Alves (2012); Alzoubi (2016); Abubakar et al. (2020); Debnath et al. (2021)
Moderating Variable					
iii.	Audit Committee Expertise	ACE	Number of financial and accounting experts in the audit committee	AC Financial and Accounting Expertise 1 if at least one member of the committee has accounting experience, and 0 otherwise.	(Krishnan, Wen, & Zhao, 2011; Sani et al., 2018; Mardessi & Fourati, 2020;)
Control Variables					
iv	Firm Size	FS	The natural log of total assets	Natural logarithm of total assets	(Becker et al., 1998; Myers et al., 2003, Ashbaugh et al., 2003; Nagy, 2005; Abbott et al., 2006; Mardessi & Fourati, 2020; Nguyen et al 2021)
v	Firm Growth	FG	The ratio of the market value of equity to book value of equity.	Firm growth is measured as the change in total assets scaled by lagged total assets.	(Beatty et al., 2002; Johnson et al., 2002; Nagy, 2005, Yu, 2008; McNichols & Stubben, 2008; Almashaqbeh et al., 2019)

Source: Researcher's compilation, 20

RESULTS AND DISCUSSIONS

The outcomes of the data analysis and hypothesis testing are presented in this section. The presentation and analysis of the descriptive statistics and quantile regression findings are presented first.

Descriptive Statistics of the variables: Table 3 presents the descriptive statistics results for the three measures of the REM, ACFE financial expertise and managerial ownership, and other relevant control variables.

Table 3

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
REM	510	0	2.863	-12.1	46.918
MANOW	510	.092	.139	0	.783
ACFE	510	.927	.26	0	1
FS	510	16.474	1.86	12.301	21.592
GROW	510	.364	2.42	-.999	46.186

Source: *Stata14.2 Output*

REM descriptive statistics are presented in Table 3. The companies used in the study had, on average, no REM. It shows that sampled manufacturing companies in Nigeria use actual operations to manage earnings both upwardly and downwardly. The vast range of REM from a minimum of -12.1 to a maximum of 46.918 serves as proof of this. A further indication that there are outliers in the REM of listed manufacturing companies in Nigeria is the large discrepancy between mean REM and standard deviation of REM. ACFE has a mean of 0.927 indicating that 92.7% of the sampled companies have a financial expert as a member of the audit committee. This suggests that most companies adhere to the FRC of Nigeria Corporate Governance Code, which stipulates that members of the audit committee must have financial knowledge. ACFE has a minimum value of 0 and a maximum value of 1. This also implies that there are certain companies whose audit committees lack financial knowledge.

Diagnostic Checks: To guarantee that the findings of this study are reliable, the regression assumptions were checked. A Pearson correlation coefficient was first generated to look at the link between the predictors in order to rule out multicollinearity. The coefficient ranged from ($r = 0.1838$ to 0.2556), indicating that the multicollinearity assumption was upheld. Additionally, the VIF readings, which range from 1.00 to 1.11, did not suggest that the assumption had been broken. Breusch-Pagan hetttest was then used to examine the hypothesis that the error term (residuals) was constant (homoscedasticity). The outcome shows that the homoscedasticity of the residuals assumption is broken, with $\chi^2 = 207.838$, $P < 0.001$. Appendix B has a report of statistics of the Breusch-Pagan hetttest results.

The Shapiro-Wilk normality test was also used to verify whether the residuals are normally distributed. Evidence suggests that the error term is not normally distributed with Shapiro-Wilk ($z = 422$, $P 0.001$ (given in Appendix B). Since the Shapiro-Wilk z-value is significant, it can

be concluded that residuals are not normally distributed. Finally, Cook's distance values were calculated to ensure that no influential cases were biasing the model. All values were below 1, suggesting that no cases were biasing the model. Quantile regression, also known as median regression, was used for the analysis to fix the breaches of the classical regression assumptions. Quantile regression, in contrast to OLS regression, gives more reliable and comprehensive estimates when the normality assumption is broken, the data contains outliers or long tails, and the residuals are linked with heteroscedasticity problems.

Results of Regression Analysis: A quantile multiple regression analysis was carried out to see whether managerial ownership significantly predicts how REM is carried out by the listed manufacturing firms in Nigeria and to test the hypotheses. The analysis investigates whether ACFE moderates the effect of managerial ownership on REM. Results from the analysis of Models 1 and 2 are shown in Tables 4 and 5 respectively, while Appendix B contains detailed results.

Table 4

Result of Regression of Model 1

REM	Coef.	Std.Err.	t	P>t	[95% Conf.	Interval]
MANOW	-0.938	0.389	-2.410	0.016	-1.703	-0.173
FS	0.019	0.035	0.550	0.583	-0.050	0.088
GROW	1.023	0.005	190.010	0.000	1.012	1.034
_cons	-0.685	0.584	-1.170	0.242	-1.832	0.463
R-Squared	0.723					
Source:		<i>Stata</i>		<i>14.2</i>		<i>Output</i>

With an R-Square of 0.723, the model's prediction of managerial ownership's effect on REM suggests that managerial ownership and other control variables predict or otherwise account for around 72.3% of the variation in REM among listed manufacturing companies in Nigeria. At 5% significance level, the effect of MANOW on REM is negative and statistically significant ($\beta = -0.938$, $t = -2.410$, $p = 0.016$). The result implies that increase in managerial ownership will lead to a significant reduction in real earnings management of listed manufacturing companies in Nigeria. This result is consistent with agency theory, which holds that giving managers stock ownership in the company is one approach to match the interests of managers and owners. When managers have stock in the company, they will be more interested and do everything in their power to ensure its success.

Secondly, GROW also significantly affect the REM of listed manufacturing companies in Nigeria. The result indicates that a unit a change in GROW will lead to about 0.000 change in REM, *ceteris peribus*. This result implies that growth firm significantly engaged in REM. Based on the result, H_{01} : which demonstrates that MANOW has no appreciable impact on the REM of manufacturing firms in Nigeria, was rejected.

The output of Model 2 was used to examine the moderating effect of ACFE on MANOW and

REM. The output of Model 2 was used to examine the moderating effect of ACFE on MANOW and REM. The relationship between MANOW and ACFE is the relevant variable.

Table 5*Result of Regression of Model 2*

REM	Coef.	Std.Err.	t	P>t	[95%Conf.	Interval]
MANOW	-2.025	0.686	-2.950	0.003	-3.373	-0.677
1.ACFE	-0.000	0.184	0.000	1.000	-0.361	0.361
ACFE*MANO W	1.187	0.685	1.730	0.084	-0.159	2.533
FS	0.017	0.035	0.490	0.627	-0.051	0.085
GROW	1.023	0.005	193.120	0.000	1.013	1.034
_cons	-0.646	0.627	-1.030	0.304	-1.878	0.587
R-squared	0.725					

Source: *Stata 14.2 Output*

According to Table 5, $R^2 = 0.73$, which indicates that model 2 accounts for almost 73% of the variance in REM. This suggests that 73% of the variation in REM of listed manufacturing companies in Nigeria is predicted or explained by managerial ownership and other control variables. First, the coefficient of the interaction term between MANOW and REM changed from a negative to a positive value in model 2. This demonstrates that ACFE does not improve MANOW's effect on REM. This suggests that it is irrelevant whether ACFE is present in MANOW and REM relationship. The variable of interest (MANOW) after moderation exhibits a positive but statistically insignificant effect on REM at 5% REM ($\beta = 1.187$, $t = 1.730$, $p = 0.084$). Based on this result, H_0 was accepted leading to a conclusion that ACFE does not significantly moderate the effect of MANOW on REM of listed manufacturing companies in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The moderating effect of ACFE on MANOW and REM of listed manufacturing companies in Nigeria was examined in this study. The study centered on two specific goals. First, to assess whether MANOW significantly affect the REM of Nigerian listed manufacturing companies. Secondly, the study examined whether ACFE and MANOW jointly affect REM. Quantile regression analysis findings demonstrate that MANOW has a negative and significant effect on REM. When ACFE is employed as a moderator, the effect of INSO on the REM of listed manufacturing companies in Nigeria became statistically insignificant.

Based on the findings, this study recommended that manufacturing companies should encourage the managers to own more shares in the companies they manage, so as to align their interest with that of other investors and thereby reduce REM of listed manufacturing companies in Nigeria. This study will contribute to previous literature by extending the nexus between MANOW and REM to include the moderating effect of audit committee financial expertise.

This is also important in the demonstration of how managers can be part of the ownership of the companies, since the managers will now pursue the objective of the firm they manage. In addition, the managers will also be pursuing their own objective concurrently with that of the organizations. Additionally, the managers will put in their best efforts to ensure that even the financial reports are of quality that sure the true position of the organization. The practical contribution of this study includes motivating shareholders and managers to be own shares of the company which will make them see the company as theirs. If managers have the same concerns as the owners, they will be more communication among them, reduction in agency cost and less real earnings management.

Contribution to Future Research

The research's findings demonstrate the idea of managerial ownership and audit committee financial expertise on earnings management of listed manufacturing companies in Nigeria. Similarly, the study added to the body of knowledge by giving research work in this area of study and opening a door for future research on other sectors and using alternative earnings management measure. The study further contributed to theory by aligning with the signaling theory through its outcomes.

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