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Earnings Management and Financial Performance of Quoted Non-Financial Firms in Nigeria

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Abstract

This study investigates the relationship between earnings management and the financial performance of listed firms in Nigeria. Using secondary data over the period from 2005 to 2020 of 76 firms listed on the floor of the Nigerian Exchange Group (NXG), the generalized method of moments (GMM) results reveal that while two of the measures of earnings management (Jones' Model and Kazsnix's Model are positively significant with firm performance (ROA); the remaining six measures (Modified Jones' Model of Dechow et al; Kothari's et al Model; Larcher and Richardson's Model; Key's Model; Dechow-Richardson-Tuna's Model and Kangsiv's Model) are negatively and statistically significant with firm performance (ROA). The study concludes with some recommendations.

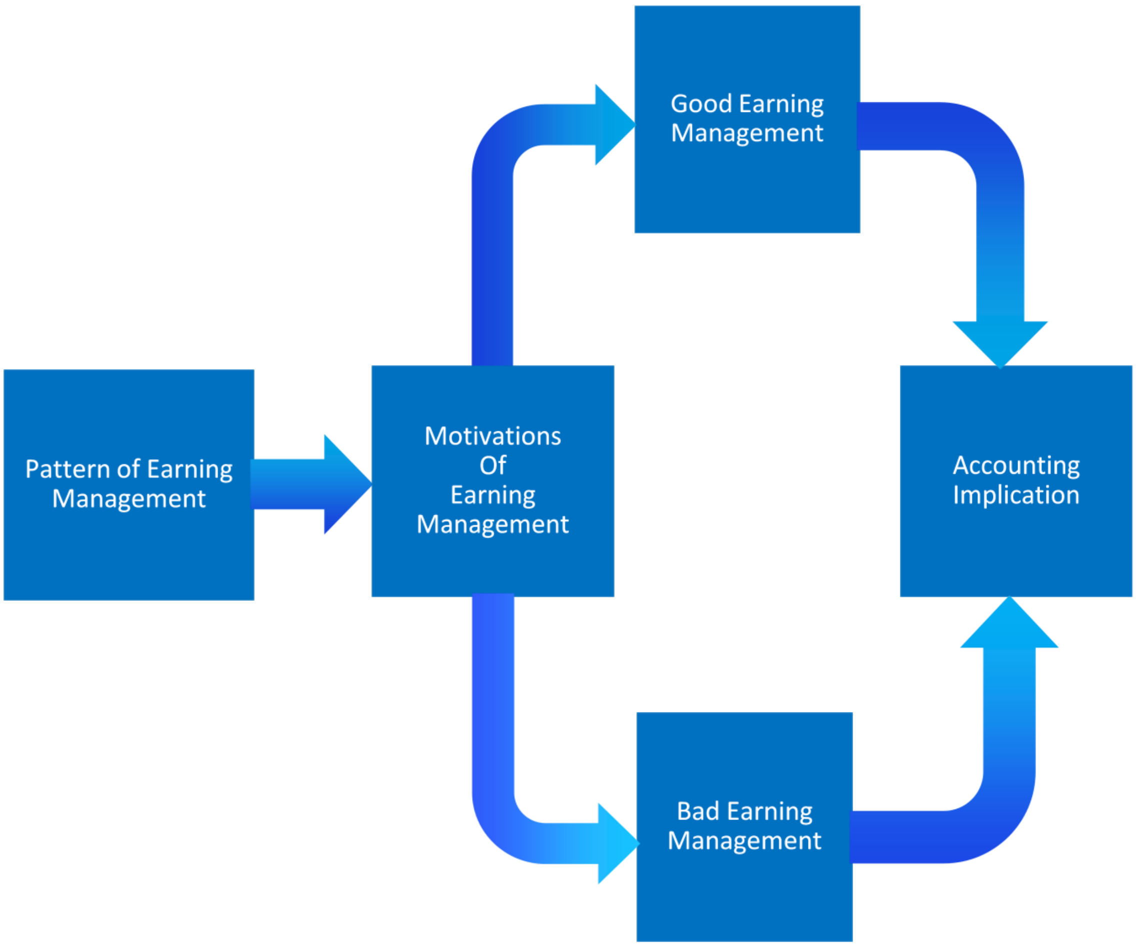
Keywords: *Earnings management, Performance, Quoted Non-Financial Firms, GMM, NXG.*

1.0 Introduction

One of the metrics used to determine how consistently an economic unit achieves its goals is financial performance. It is the organization's ability to achieve financial goals using financial representation like profitability, liquidity or any other financial measurements. It reveals the position of the economic unit and helps in knowing the extent to which the economic unit has improved in terms of its use of resources to provide services (Egbadju, 2023a). That is, firm performance or profitability is a measure of how successful a business has thrived in its efforts to provide goods and services to its customers. It shows how efficient a firm can employ its assets and liabilities to generate sustainable revenue. It reveals information about the financial health of a firm whether it can continue to generate revenue or to be liquidated. Financial statements are expected to be a genuine source of important information for parties who substantially rely on them to make intelligent company decisions. It is essential that these reports provide current and prospective investors with accurate accounting facts. Since financial statements are summaries of all business transactions as well as other events, management uses these financial statements to demonstrate accountability to interested stakeholders including shareholders, creditors, investors, managers, and the government, to name a few (Egbadju et al., 2023). As a result, it is anticipated that the accounting information contained in financial statements will be very helpful to all stakeholders in assisting them in making business decisions in a way that is effective, economical, and efficient (Egbadju & Odey, 2023). The accuracy of financial reporting will likely have a substantial impact on the decisions that investors make, such as accurately estimating future cash flows, because maximizing wealth is their main objective. According to Umaru (2014), erroneous financial reporting encourages management to manipulate earnings to their benefit or to meet investors' expectations, which leads to investors making bad business decisions.

Earnings management is the term used to describe how managers manipulate their company's profits. The global phenomena of earnings management typically takes place when managers are put under pressure to meet or exceed specified earnings benchmarks or targets anticipated by management or investors (Egbadju, 2023b). Earnings management is the practice of utilizing aggressive accounting procedures so as to artificially increase and/or decrease sales, profit, or earnings numbers for all earnings, That is, a manager may decide on accounting principles or take practical actions that have an impact on earnings in order to achieve a certain target for reported earnings. Some people's definitions are influenced by the notion that earnings management is negative. For example, Schipper (1989) defined it as purposeful intervention in the external financial reporting process with intent to obtain some private gains. In contrast, Healy and Whalen (1999) provide a more nuanced definition, stating that "earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the company's underlying economic performance or to influence contractual outcomes that depend on reported accounting numbers." The various definitions of earnings management made Soon and Wee (2019) to ask the question whether earnings management is good or bad as depicted in Figure 1 below?

FIGURE 1 Flow of Earnings Management



Source: Soon and Wee (2019)

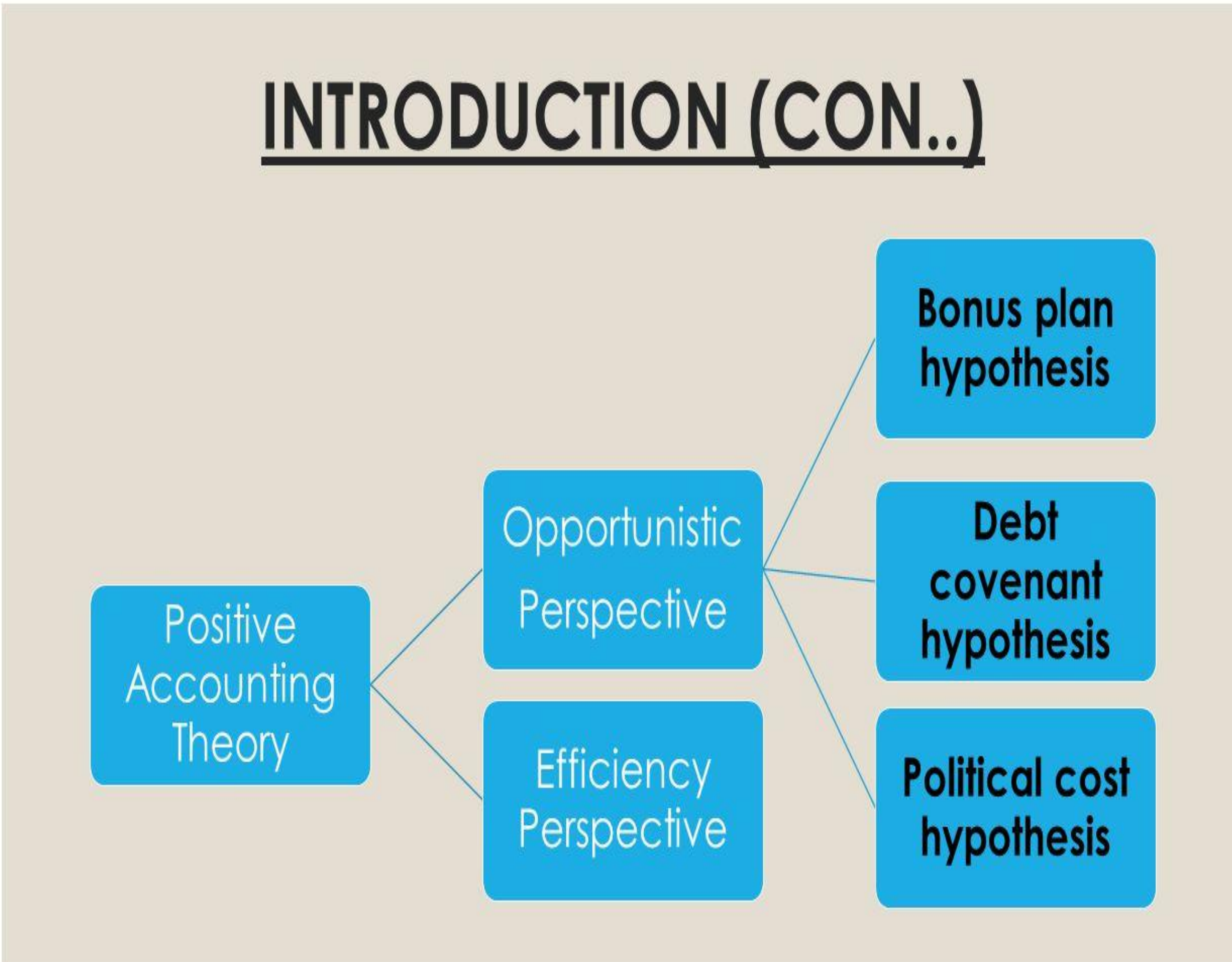
If earning management is correctly implemented for the advantage of the companies prior to accomplishing the main performance aim of the companies, there is undoubtedly a good or positive aspect to it. Proper and acceptable procedures are essential to good earnings management. Bad earning management is when managers manipulate earnings so as to opportunistically maximize their utilities in order to conceal genuine operating performance.

2.0 Literature Review.

2.1 Theoretical Underpinning of Positive Accounting Theory (PAT).

Ross Watts and Jerold Zimmerman's Positive Accounting Theory (PAT), according to Kejriwal (2022), tries to understand and forecast the decisions managers make on accounting methods in various contexts. He noted that the fundamental objective of the positive method is to develop a theory and an assumption, the outcomes of which are rational, plausible, and systematic predictions for unobserved events which both explains and anticipates accounting behaviour. According to Watts and Zimmerman, "prediction in positive theory" refers to the forecast of accounting occurrences that have not yet been observed. These invisible forces do not directly foretell future occurrences, but rather those that have already occurred and are awaiting conclusive evidence (Kaya, 2017). Ex ante, the accounting standards offer a wide variety of readily accessible accounting systems for managers to select from, but ex post, they also promote opportunistic behaviour. That is the reason managers try to choose accounting practices that suit their self-best interests and maximize their utility, which eventually reduce contract efficiency (Scott, 2009 as cited in Coutinho et al., 2019). Thus, Watts and Zimmerman (1986) as cited in Coutinho et al., (2019) contended that such opportunistic approach arises from the problem of agency between shareholders (principal) and managers (agents) due to information asymmetry. The Positive Accounting Theory has been used in study to examine three aspects of accounting decisions: (1) why decisions are made, (2) when decisions are made, and (3) how decisions are made. Regarding the causes of the choices, three hypotheses were presented and tested. The Political Costs Hypothesis, the Bonus Plan Hypothesis, and the Debt Covenant Hypothesis (also known as the Debt-to-Equity Hypothesis) (Watts and Zimmerman, 1986 as cited in Coutinho et al., 2019) as shown in Figure 2 below.

FIGURE 2



Source: https://slideplayer.com/slide/6503393/

Sunder (1997) as cited in Turegun and Nida (2017) asserts that managers employ a variety of instruments to manage income simultaneously, in contrast to empirical studies of earnings management that only consider one or two instruments at a time. He emphasized that while the initial decisions and changes in accounting principles are visible to outside observers, adjusting on accounting estimates (such as the allowance for bad debt, the economic life for depreciation, and the discount rate for pension obligations, for example) gives management more latitude because it is difficult to tell when such discretion is being used to manage income.

2.2 Empirical Literature

Ibobo and Ogbodo (2023) empirically tested the impact of earnings management on on firm performance in Nigeria. The study made use of sampled 21 listed manufacturing firms between the period 2012 and 2021. The results of the ordinary least squares (OLS) showed that the Jones model of discretionary accruals (earnings management) positively and significantly influenced both earnings per share (EPS) and return on equity (ROE). This means that management engagement in earnings management increased profitability or management employed an income-increasing technique of discretionary accruals.
Kasmaei and Kari (2023) purpose of this study was to ascertain the connection between earnings management and business performance in Iran. The Tehran Stock Exchange's current listed companies from 2013 to 2018 were included in the research sample. A panel technique was used to examine the data for 105 companies. According to the findings, there was no connection between the Dechow et (1995) modified Jones (1991) model of earnings management and business performance.

Ahmed (2022) empirically examined whether earnings management has influenced corporate financial performance in Pakistan. The study used secondary panel data over eleven years period from 2009 to 2019 obtained for 200 firms listed on the floor of the Pakistani Stock Exchange (PSX). The OLS regression results indicated that the Roychowdhury (2006) real earnings management (REM) was negatively and statistically significant with returns on assets (ROA) meaning it reduced ROA. This means that management employed an income-decreasing technique of discretionary accruals.

Gajdosikova et al. (2022) carried out a research study to determine the extent to which earnings management had affected firms' profitability in Slovakia. Annual secondary panel data which covered the period 2017 to 2019 collected on 15,716 small, medium, large and very large businesses from several economic sectors were used. The OLS regression results using the Kasznik model of earnings management indicated that while small businesses engaged in aggressive earnings management by having positive discretionary accrual by using an income-increasing technique of discretionary accruals. ; medium-sized businesses engaged in conservative earnings management by having negative discretionary accrual by using an income-decreasing technique of discretionary accruals but the large ones do not engage in earnings management.
Fatzel et al (2022) researched on the extent to which earnings management has influenced corporate performance in Malaysia. The study used secondary panel data over two years period from 2020 to 2021 post COVID-19 obtained on 73 firms listed on the Bursa Malaysia. The OLS regression results indicated that Roychowdhury model of total earnings management (which is the sum of abnormal production costs, abnormal cash flows from operation and abnormal cash flows from operation) impacted positively but insignificantly on ROA, ROE and EPS respectively.

Ardaniel and Alfiandri (2021) embarked on this research to investigate the effect of earnings management on financial performance of firms in Nigeria. The study used secondarily sourced audited reports of 22 out of 88 real estate and property firms listed in the Indonesian Stock

Exchange (IDX) between the years 2005 and 2016. The results of the OLS revealed that the modified Jones (1991) model of Dechow et al (1995) and ROA were positively significant.

Ayisi et al (2021) empirically investigated if earnings management has impacted financial performance of firms in Ghana. The study used secondary panel data over the period from 2008 to 2019 obtained for 14 non-financial firms listed on the floor of the Ghanaian Stock Exchange.
The results of the OLS revealed that the modified Jones (1991) model of Dechow et al (1995) was positively and significantly related to both return on assets (ROA) and return on equity (ROE). This means that the technique of income-increasing discretionary accruals was employed by management for the period under review.

Hernawati et al.(2021) studied whether there is any relationship between earnings management on firm value in Indonesia. The researchers used annually sourced panel data collected over the period from 2015 to 2018 on 111 manufacturing firms listed on the Indonesia Stock Exchange (IDX). The results of the OLS revealed that the modified Jones (1991) model of Dechow et al (1995) was positively and significantly related to ROA. This means that management employed an income-increasing technique of discretionary accruals.

Firdausya et al. (2020) undertook a research study to verify whether there is any relationship between earnings management and the value to shareholders in Indonesia. The researchers used annually sourced panel data collected over the period from 2012 to 2016 on 652 selected firms listed on the floor of the IDX. The results of the OLS revealed that the modified Jones (1991) model of Dechow et al (1995) was positively and significantly related to ROA. This means that management used the technique of income-increasing discretionary accruals.

Wenfang and Ayisi (2020) attempted an empirical assessment of how earnings management had affected financial performance of firms in Ghana. The study used secondary panel data over the period from 2008 to 2018 obtained on 14 non-financial firms listed on the floor of the Ghanaian Stock Exchange. The results of the OLS revealed that the modified Jones (1991) model of Dechow et al (1995) as well as abnormal cashflow of Roychowdhury (2006) were positively and significantly related to both return on assets (ROA) and return on equity (ROE). This means that the technique of income-increasing discretionary accruals was employed by management for the period under review. However, the abnormal production cost and the abnormal discretionary expenses and measurements of real earnings management were not significant.

Altintaş et al. (2017) examined the relationship between earnings management financial performance of firms in Turkey. Secondarily sourced panel data over certain years obtained from 112 firms listed on the floor of the Istanbul Stock Exchange of Turkey (Borsa Istanbul-BIST) were used. The results of the OLS revealed that the modified Jones (1991) model of Dechow et al (1995) was positively significantly related to stock market returns (SR) as a measure of performance.
Asshiddiq (2016) carried out a research to determine the effect of earnings management on financial performance of firms in Indonesia. The study used annual secondary panel data obtained on 12 firms listed on the floor of the IDX covering the period 2012 to 2014. The results of the

OLS revealed that the modified Jones (1991) model of Dechow et al (1995) was positively insignificant.

Gap in Literature: Wenfang and Ayisi (2020) was the only study that used two measures of earnings management (modified Jones model as well as abnormal cashflow of Roychowdhury) in Ghana. All other authors used only one measure of earnings management. This study uses eight measures of earnings management (DECRICTUNA, JONES, KANGSIV, KASZNIX, KEY, KOTHARI, LARCKER, MJONES) which to the best of my knowledge none has used. This study also covers a longer time periods (2005 to 2020) than the other studies. With respect to the number of firms, it uses more firms, 76.

3.0 Research Design

Using the ex-post facto research design, often referred to as the descriptive or correlational research design, the study investigates if there is any relationship, if any, between earnings management and financial performance of enterprises in Nigeria. The population of the study consists of 106 non-financial enterprises listed on the floor of the Nigerian Exchange Group (NXG). In order to conduct this study, secondary data from 76 out of 106 organizations' annual reports were gathered over a period of sixteen (16) years, from 2005 to 2020, totaling 1,216 observations.

3.2 Model Specification

The functional equation of financial performance represented by the return on assets (ROA) to test the eight (8) hypotheses specified is stated as:

ROA= f (DECRICTUNA, JONES, KANGSIV, KASZNIX, KEY, KOTHARI, LARCKER, MJONES) (1)

Where DECRICTUNA, JONES, KANGSIV, KASZNIX, KEY, KOTHARI, LARCKER, MJONES are different measurements of earnings management as explained in section 3.3.1 to 3.3.8, and as used in the extant literature.

The functional testable model will be derived as:

$$ROA = \beta_o + \beta_1 DECRICTUNA + \beta_2 JONES + \beta_3 KANGSIV + \beta_4 KASZNIX + \beta_5 KEY + \beta_6 KOTHARI + \beta_7 LARCKER + \beta_8 MJONES + \varepsilon \quad (2).$$

Since we are using panel data, the model will be specified in the appropriate form as:

$$ROA_{it} = \beta o + \beta_1 DECRICTUNA_{it} + \beta_2 JONES_{it} + \beta_3 KANGSIV_{it} + \beta_4 KASZNIX_{it} + \beta_5 KEY_{it} + \beta_6 KOTHARI_{it} + \beta_7 LARCKER_{it} + \beta_8 MJONES_{it} + \varepsilon_{it} \quad (3)$$

β1, β2, β3, β4, β5, β6, β7, β8, β9, β10, β11 = Beta coefficient of the lagged dependent variable and the independent variables. From this study, we expect β1 to β11 to be greater than zero.

ε_{it} = Stochastic White Noise or Error term.

3.3 Measurements and Explanations of Earnings Management Models.

3.3.1. Jones' Model (1991)

$$\frac{TACCit}{TAit-1} = \alpha 1 \frac{1}{+\mathrm{TAit}-1} + \alpha 2 \frac{\Delta REVit}{\mathrm{TAit}-1} + \alpha 3 \frac{PPEit}{\mathrm{TAit}-1} + \boldsymbol{\varepsilon}\mathrm{it}$$

Where: $TACC_{it}$ = Total accruals for firm i in year t.
TA_{t-1} = Total assets for firm i in year t-1
ΔRev_{it}= Change in revenues for firm i in year t

PPE_{it} = Gross property plant and equipment for firm i in year t.

Note that $TACC_{it} = (\Delta CA_{it} - \Delta Cash_{it} - \Delta CL_{it} + \Delta DCL_{it} – DEP_{t})$
Where: $TACC_{it}$ = Total accruals for firm i in year t
ΔCA_{it} = Change in current assets for firm i in year t
$\Delta Cash_{it}$ = Change in cash and cash equivalent for firm i in year t
ΔCL_{it} = Change in current liabilities for firm i in year t
ΔDCL_{it} = Change in short term debt included in current liabilities for firm i in year t
DEP_{it} = Depreciation and amortization for firm i in year t
TA_{it-1} = Total assets for firm i in year t-1, that is, lag of one year.

3.3.2. Modified Jones' Model (1995) of Dechow et al (1995)/ Dechow, Sloan, & Sweeney, 1995)

$$\frac{TACCit}{TAit-1} = \alpha 1 + \frac{1}{\mathrm{TAit}-1} + \alpha 2 \frac{\Delta REVit - \Delta RECit}{\mathrm{TAit}-1} + \alpha 3 \frac{PPEit}{\mathrm{TAit}-1} + +\boldsymbol{\varepsilon}\mathrm{it}$$

Where: ΔRec_{it} = Change in receivables for firm i in year t.

Other variables are as defined in Jones model above.

3.3.3. Kothari's et al Model (2005)

$$\frac{TACCit}{TAit-1} = \alpha 1 + \frac{1}{\mathrm{TAit}-1} + \alpha 2 \frac{\Delta SALESit - \Delta RECit}{\mathrm{TAit}-1} + \alpha 3 \frac{PPEit}{\mathrm{TAit}-1} + \alpha 3 \frac{ROAit-1}{\mathrm{TAit}-1} + \boldsymbol{\varepsilon}\mathrm{it}$$

Where: ROA_{it-1} = Return on assets for firm i in year t-1, that is, lag of one year.

ΔRec_{it} = Change in receivables for firm i in year t.

Other variables are as defined in Jones model above

3.3.4. Kazsnix's Model (1999)

$$\frac{TACCit}{TAit-1} = \alpha 1 + \frac{1}{\text{TAit}-1} + \alpha 2\frac{\Delta REVit - \Delta RECit}{\text{TAit}-1} + \alpha 3\frac{PPEit}{\text{TAit}-1} + \alpha 4\frac{ROAit}{\text{TAit}-1} + \alpha 5\frac{\Delta CFOit}{\text{TAit}-1} + \boldsymbol{\varepsilon}\text{it}$$

Where: Where: ΔCFO_{it} = Change in cash flow from operations for firm i in year t

Other variables are as defined in Jones, Modified Jones and Kothari models above.

3.3.5. Larcher and Richardson's Model (2004)

$$\frac{TACCit}{TAit-1} = \alpha 1 + \alpha 2\frac{\Delta SALESit - \Delta RECit}{\text{TAit}-1} + \alpha 3\frac{PPEit}{\text{TAit}-1} + \alpha 4\frac{BTMit}{\text{TAit}-1} + \alpha 5\frac{CFOit}{\text{TAit}-1} + \boldsymbol{\varepsilon}\text{it}$$

Where: CFO_{it} = Cash flow from operations for firm i in year t.

BTM_{it} = Book-to-Market value for firm i in year t.

Other variables are as defined in Jones, Modified Jones and Kothari models above

3.3.6. Key's Model (1997)

$$\frac{TACCit}{TAit-1} = \alpha 1\frac{1}{+\text{TAit}-1} + \alpha 2\frac{\Delta REVit}{\text{TAit}-1} + \alpha 3\frac{PPEit}{\text{TAit}-1} + \alpha 4\frac{IAit}{\text{TAit}-1} + \boldsymbol{\varepsilon}\text{it}$$

Where: IA_{it} = Gross intangible assets for firm i in year t.

Other variables are as defined in Jones model above

3.3.7. Dechow-Richardson-Tuna's Model (2003)

$$\frac{TACCit}{TAit-1} = \alpha 1 + \frac{1}{\mathrm{TAit}-1} + \alpha 2\frac{(1+K)\Delta REVit - \Delta RECit}{\mathrm{TAit}-1} + \alpha 3\frac{PPEit}{\mathrm{TAit}-1} + \alpha 4\frac{TACCit-1}{TAit-2} + \alpha 5\frac{\Delta SALESit}{\mathrm{TAit}-1} + \boldsymbol{\varepsilon}\mathrm{it}$$

Where: (1+k) = The slope coefficient from the regression of $\Delta RECit\ on\ \Delta REVit.$

$TACC_{it-1}$ = Total accruals for firm i in year t-1, that is, lag of one year.

TA_{it-2} = Total assets for firm i in year t-2, that is, lag of two years.

Other variables are as defined in Jones, Modified Jones and Kothari models above

3.3.8. Kangsiv's Model (1995)

$$\frac{ABit}{TAit-1} = \alpha 1\frac{1}{+\mathrm{TAit}-1} + \alpha 2\frac{\Delta REVit}{\mathrm{TAit}-1} + \alpha 3\frac{EXPit}{\mathrm{TAit}-1}\alpha 4\frac{PPEit}{\mathrm{TAit}-1} + \boldsymbol{\varepsilon}\mathrm{it}$$

Where: AB_{it} = Accrual balance for firm i in year t.

Note that $AB_{it} = (\Delta AR_{it} + \Delta INV_{it} + \Delta OCA_{it} - \Delta CL_{it} – DEP_{it})$

Where: AR_{it} = Account Receivables for firm i in year t.

INV_{it} = Inventory for firm i in year t.

OCA_{it} = Other current assets for firm i in year t.

CL_{it} = Current liabilities for firm i in year t.

DEP_{it} = Depreciation and amortization for firm i in year t.

EXP_{it} = Operating expenses for firm i in year t.

3.4. Derivation of any of the Earnings Management Models.

The following steps are taken into considerations in order to calculate the discretionary accruals. For examples, to derive the Jones Model (1991):
Step1: Calculate the total accruals as follows:

$TACC_{it}/TA_{t-1} = (\Delta CA_{it} - \Delta Cash_{it} - \Delta CL_{it} + \Delta DCL_{it} – DEP_t)/TA_{t-1}$……….Eq1

where: $TACC_{it}$ = Total accruals for firm i in year t
ΔCA_{it} = Change in current assets for firm i in year t
$\Delta Cash_{it}$ = Change in cash and cash equivalent for firm i in year t
ΔCL_{it} = Change in current liabilities for firm i in year t

ΔDCL_{it} = Change in short term debt included in current liabilities for firm i in year t
DEP_{it} = Depreciation and amortization for firm i in year t
TA_{it-1} = Total assets for firm i in year t-1, that is, lag of one year.

Step2: Estimate the Jones model in equation2 below using the Ordinary Least Squares (OLS) regression technique.

$TACC_{it}/TA_{t-1} = \alpha_1 1/ TA_{it-1} + \alpha_2 \Delta Rev_{it} / TA_{it-1} + \alpha_3 PPE_{it}/ TA_{it-1} + \varepsilon_{it}$……….Eq2

where: $TACC_{it}/TA_{t-1}$ = Total accruals for firm i in year t scaled/divided by total assets for firm i in year t-1
ΔRev_{it}= Change in revenues for firm i in year t

α_1, α_2 and α_3 = Parameters or coefficients to be estimated to derive $\hat{a}_1$ $\hat{a}_2$ $\hat{a}_3$, the estimated parameters

ε_{it} = Residuals or error terms for firm i in year t

Step3. Thereafter, we shall calculate the non-discretionary accruals (NDACC) by replacing α_1, α_2 and α_3 with $\hat{a}_1$ $\hat{a}_2$ $\hat{a}_3$ in equations 2 above without, ε_{it}, the error terms as:

$NDACC_{it}/TA_{t-1} = \hat{a}_1 1/ TA_{it-1} + \hat{a}_2 \Delta Rev_{it} / TA_{it-1} + \hat{a}_3 PPE_{it}/ TA_{it-1}$
where: $NDACC_{it}/TA_{t-1}$ = Non-discretionary accruals for firm i in year t scaled/divided by total assets for firm i in year t-1

Step4: Finally, we shall calculate the discretionary accruals as total accruals less non-discretionary accruals. The non-discretionary accruals is also known as the "normal" accruals.
$DACC_{it}/TA_{t-1} = TACC_{it}/TA_{t-1} - NDACC_{it}/TA_{t-1}$ ……….Eq3

This discretionary accrual (DACC), also known as "abnormal" accruals, is used as the proxy for Earnings Management.

4.0 Method of Data Analysis

Data collected are to be analyzed using EViews 13 in the following order: bivariate correlation analysis for the detection of multicollinearity, unit root test, endogeneity test, estimation of the models and then performance of some diagnostics tests.

4.1 Bivariate Data Analysis (Correlation Analysis)

The correlation analyses among the variables are meant to first determine the association between each pair of the dependent and independent variables as well as among the explanatory variables. The degree of association may be weak (0.00 to 0.5), moderate (0.51 to 0.8) or high (0.81 and above). A very high association among the regressors poses a problem of multicollinearity

Correlation Statistics

Table 1. Covariance Analysis: Ordinary
Date: 09/19/23 Time: 17:43
Sample (adjusted):
Included observations: 1191 after adjustments
Balanced sample (listwise missing value deletion)

Covariance

Correlation	ROA	DECRICTUNA	JONES	KANGSIV	KASZNIX	KEY	KOTHARI	LARCKER	MJONES
ROA	8.102992								
	1.000000								
DECRICTUNA	1.170125	5.072594							
	0.182513	1.000000							
JONES	3.052803	5.094291	10.16060						
	0.336447	0.709593	1.000000						
KANGSIV	34167876	-17135341	-18708825	4.09E+16					
	0.059338	-0.037611	-0.029015	1.000000					

KASZNIX	-0.038260	4.230069	6.096125	-1.13E+08	32.26407				
	-0.002366	0.330653	0.336693	-0.098374	1.000000				
KEY	-3.45E+11	-2.76E+10	-8.04E+10	-1.79E+20	-7.28E+10	8.87E+25			
	-0.012851	-0.001302	-0.002677	-0.094048	-0.001360	1.000000			
KOTHARI	1.02E+11	8.30E+09	2.39E+10	5.24E+19	2.16E+10	-2.61E+25	7.67E+24		
	0.012955	0.001330	0.002710	0.093476	0.001372	-0.999504	1.000000		
LARCKER	0.385393	4.514137	10.10434	-57868032	17.05736	1.04E+11	-3.08E+10	17.62374	
	0.032250	0.477431	0.755091	-0.068144	0.715325	0.002634	-0.002645	1.000000	
MJONES	2.102942	4.938864	9.609829	-25933714	9.914606	2.15E+10	-6.19E+09	11.98742	11.29485
	0.219819	0.652487	0.897048	-0.038147	0.519369	0.000680	-0.000664	0.849643	1.000000

Source: Researcher's Computations (2023) Using EViews13 Software

From Table 1 above, KOTHARI has a positive high association with KEY at 0.999504. MJONES also has a positive high association with JONES 0.897048 and with LARCKER at 0.849643. MJONES has a positive moderate association with DECRICTUNA at 0.652487 while LARCKER has a positive moderate association with KASZNIX at 0.715325. All other associations are weak and this attest to the fact that there is no problem of multicollinearity among the variables.

4.2 Unit Root Test.

Once the EViews workfile has been structured in panel data form, we can go ahead and perform a panel data unit root test.

Table 2

Variables	Levin, Lin & Chu t*	Breitung t-stat	Im, Pesaran and Shin W-stat	ADF - Fisher Chi-square	PP - Fisher Chi-square	Decision
ROA	4.49 (1.0000)	0.42 (0.6637)	-2.17 (0.0147)	174.3 (0.0850)	278.4 (0.0000)	I(0) stationary
DECRICTUNA	-505.3 (0.0000)	-2.96 (0.0000)	-66.12 (0.0000)	247.3 (0.0000)	523.1 (0.0000)	I(0) stationary
JONES	-2291.4(0.0000)	-3.57 (0.0002)	-237.8 (0.0000)	193.3 (0.0098)	407.5 (0.0000)	I(0) stationary
KANGSIV	50.0 (1.0000)	-0.093(0.4627)	-1.89 (0.0293)	199.7 (0.0041)	257.7 (0.0000)	I(0) stationary
KASZNIX	-1947.7 (0.0000)	-2.11 (0.0171)	-204.0 (0.0000)	188.5 (0.0180)	347.5 (0.0000)	I(0) stationary
KEY	760.3 (1.0000)	1.18 (0.8817)	1.39 (0.9181)	129.5 (0.8855)	401.8 (0.0000)	I(0) stationary
KOTHARI	747.2 (1.0000)	1.43 (0.9243)	1.13 (0.8714)	137.8 (0.7535)	402.4 (0.0000)	I(0) stationary
LARCKER	25.2 (1.0000)	-3.41 (0.0000)	-12.5 (0.0000)	244.4(0.0000)	405.4 (0.0000)	I(0) stationary
MJONES	-2638.(0.0000)	-3.31 (0.0005)	-276.0 (0.0000)	197.8 (0.0054)	383.5 (0.0000)	I(0) stationary

*Unit Roots Test Statistic (P-values in parentheses)

The results of the five unit roots test Statistics and their respective p-values are as shown in Table 2 above. Apart from the variables-KEY and KOTHARI- which are not stationery for four out of the five t-Stat, all the other variables of interest are I(0), that is, stationary at levels. When variables are not stationary, it means that they can drift apart on the long run and the regression results obtained can be spurious or nonsensical (Maeso-Fernandez et al. 2004). We never computed a unit root test for the dummy variables (IDUM, YDUM) because the data were arbitrarily generated. Thus we can use the ordinary least squares (OLS) method of estimation as shown in Table 3 below. However, we cannot report this result because all the variables (DECRICTUNA, JONES, KANGSIV, KASZNIX, KEY, KOTHARI, LARCKER, MJONES) have the problem of endogeneity even though the results appear very good.

Table 3. Dependent Variable: ROA
Method: Panel EGLS (Period SUR)
Date: 09/19/23 Time: 17:35
Sample: 2005 2020
Periods included: 16
Cross-sections included: 76
Total panel (unbalanced) observations: 1216

Linear estimation after one-step weighting matrix
Period SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DECRICTUNA	-0.345513	0.020787	-16.62149	0.0000
JONES	0.972405	0.021977	44.24689	0.0000
KANGSIV	4.56E-10	4.22E-11	10.81351	0.0000
KASZNIX	0.185483	0.008466	21.90935	0.0000
KEY	-4.74E-14	1.91E-14	-2.473627	0.0135
KOTHARI	-1.66E-13	6.51E-14	-2.550563	0.0109
LARCKER	-0.657515	0.012117	-54.26280	0.0000
MJONES	0.030450	0.016148	1.885683	0.0596
IDUM	-0.010410	0.012956	-0.803521	0.4218
YDUM	-0.010432	0.003063	-3.405823	0.0007
C	0.037003	0.066912	0.553006	0.5804
	Weighted Statistics			
R-squared	0.876467	Mean dependent var		-0.126451
Adjusted R-squared	0.875417	S.D. dependent var		2.660361
S.E. of regression	0.938727	Sum squared resid		1037.182
F-statistic	835.0781	Durbin-Watson stat		1.917554
Prob(F-statistic)	0.000000			
	Unweighted Statistics			
R-squared	0.308924	Mean dependent var		-0.239105
Sum squared resid	6669.089	Durbin-Watson stat		1.335988

Source: Researcher's Computations (2023) Using EViews13 Software

4.3 Testing for Endogeneity Problem in Our Regression Model

A collection of fundamental assumptions serve as the foundation for every linear regression model. When any of these axioms is broken, major econometric problems result, rendering the OLS regression results biased, misleading, or nonsensical. One of the primary problems that these assumptions violations might cause is endogeneity bias. Simultaneity biases, omitted variables, and measurement errors can all result in endogeneity. Endogeneity is a problem that is frequently encountered in corporate finance studies that aim to explain causal-effect relationships. This can lead to inconsistent and biased parameter estimates (Wintoki et al., 2012) or even the wrong coefficient sign (Ketokivi & McIntosh, 2017), which can result in erroneous inferences, conclusions, and interpretations (Li et al., 2021) just as we have in the OLS regression results in table 3 above . According to Li et al., (2021), only three of the about twelve (12) research where endogeneity bias was ever acknowledged used the dynamic model methodology, and just one of those did so rigorously by releasing the test results. The endogeneity test results show that endogeneity problems are present in all our variables of interest (see Table 4. below).

Table 4 Endogeneity Test Results

S/N	Estimated Residuals of Variables	P-Values	S/N	Estimated Residuals of Variables	P-Values
1	RESDECRI	0.0000	5	RESKEY	0.0208
2	RESJON	0.0000	6	RESKOT	0.0155
3	RESKAN	0.0000	7	RESLAR	0.0000
4	RESKAS	0.0000	8	RESMJON	0.0511

Source: Researcher's Computations (2023) Using EViews13 Software.

The only solution to the problem of endogeneity is to use dynamic models instead of static models. For as much as static models do not consider endogeneity problem, they produce estimation results that are biased and misleading whereas dynamic models results of the generalized method of moments recognizes the various sources of endogeneity such as: unobserved heterogeneity in panel data, omitted variables, measurement error, and simultaneity (Man, 2019). GMM is designed to handle the problems of multicollinearity, heteroscedasticity and autocorrelation but especially second order correlation. The Generalized Method of Moments (GMM) regression estimation technique is one of the dynamic modeling techniques apart from Two-Stage Least Squares, Three-Stage Least Squares, Instrumental Variables, Dynamic OLS, etc

In this study, we used the Generalized Method of Moments (GMM) regression estimation technique. GMM is a dynamic panel or longitudinal data estimator that can effectively handle the dynamism in corporate finance in a globalized economic environment with firms and countries individual or specific effects. GMM make use of lagged dependent variable ((Arellano & Bond, 1991). The use of lagged dependent variable is, first, to eliminate autocorrelation in the residuals and, secondly, to capture the dynamism in panel data by controlling for endogeneity bias. By including the lagged value of the dependent variable, that is, ROAit-1, due to unobserved heterogeneity transforms the static model to a dynamic one ((Arellano & Bover, 1995).

Including the lagged dependent variable to equation 3 above, we have:

$ROA_{it} = \beta o + \beta_1 ROA_{it-1} + \beta_2 DECRICTUNA_{it} + \beta_3 JONES_{it} + \beta_4 KANGSIV_{it} + \beta_5 KASZNIX_{it} + \beta_6 KEY_{it} + \beta_7 KOTHARI_{it} + \beta_8 LARCKER_{it} + \beta_9 MJONES_{it} + \varepsilon_{it}$ (4)

Finally, the study included year dummy and industry sector dummy variables to control for specific fixed effect to arrive in equation 5 below.

$ROA_{it} = \beta o + \beta_1 ROA_{it-1} + \beta_2 DECRICTUNA_{it} + \beta_3 JONES_{it} + \beta_4 KANGSIV_{it} + \beta_5 KASZNIX_{it} + \beta_6 KEY_{it} + \beta_7 KOTHARI_{it} + \beta_8 LARCKER_{it} + \beta_9 MJONES_{it} + \beta_{10} YDUM_{it} + \beta_{11} IDUM_{it} + \varepsilon_{it}$ (5)

This study adapted the model previously used by: Kasmaei and Kari (2023); Gajdosikova et al. (2022) and Ardaniel and Alfiandri (2021) but while they all used OLS regression method, this study uses the dynamic generalized method of moments (GMM).

4.4 Regression Models Estimation Results and Hypotheses Testing.

Table 5. Dependent Variable: ROA
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 09/19/23 Time: 17:38
Sample (adjusted): 2007 2020
Periods included: 14
Cross-sections included: 75
Total panel (unbalanced) observations: 1030
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(ROA,-2)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	0.123242	0.000491	251.0658	0.0000
DECRICTUNA	-0.851689	0.005730	-148.6392	0.0000
JONES	1.094330	0.010648	102.7767	0.0000
KANGSIV	-5.21E-09	3.43E-11	-152.1216	0.0000
KASZNIX	0.035363	0.006459	5.475075	0.0000
KEY	-1.34E-13	2.19E-15	-61.32484	0.0000
KOTHARI	-3.44E-13	8.24E-15	-41.75118	0.0000
LARCKER	-0.371380	0.003045	-121.9621	0.0000
MJONES	-0.107271	0.008315	-12.90063	0.0000
IDUM	-25.77436	6.409085	-4.021536	0.0001
YDUM	-0.143502	0.000716	-200.3397	0.0000

	Effects Specification
Cross-section fixed (first differences)	

Mean dependent var	-0.016964	S.D. dependent var	2.219153
S.E. of regression	3.235197	Sum squared resid	10665.37
J-statistic	64.85520	Instrument rank	75
Prob(J-statistic)	0.446638		

Source: Researcher's Computations (2023) Using EViews13 Software.

4.5 Discussion of the Regression Results.

Table 5 above shows the regression estimation results of the relationship between accounting conservatism measurements (DECRICTUNA, JONES, KANGSIV, KASZNIX, KEY, KOTHARI, LARCKER, MJONES) and financial performance (ROA) of the 76 sampled firms.
A look at the coefficient (0.123242) of ROA (-1) shows that it is positively significant (t-Statistics=251.0658 and p= 0.0000) at the 1% levels of significance. This result is in line with the extant literature that the dependent variable and its lag move in the same direction and must be significant (Egbadju & Jacob, 2022). This means that the current year performance can be directly affected by previous period performance in the light of new information we were not aware of. Again, since the p-value of Sargon statistic or J-Statistic (0.446638) is higher than the threshold of 5% and 10% or even the 25% or more suggested by Roodman (2009), our model is free from the problem of instruments proliferation.

DECRICTUNA relationship with ROA is negatively significant with a coefficient of -0.851689, a t-Statistic of -148.6392 and a p-value of 0.0000 at the 1% levels of significance. This means that management employed an income-decreasing technique of discretionary accruals. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between DECRICTUNA and ROA. No previous study used this measurement.

JONES relationship with ROA is positively significant with a coefficient of 1.094330, a t-Statistic of 102.7767 and a p-value of 0.0000 at the 1% levels of significance.. This means that the technique of income-increasing discretionary accruals was employed by management for the period under review. The sign or direction as well as the size or magnitudes are in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between JONES and ROA. This result is in line with that of Ibobo and Ogbodo (2023) which had a positively significant relationship.

KANGSIV relationship with ROA is negatively significant with a coefficient of -5.21E-09, a t-Statistic of -152.1216 and a p-value of 0.0000 at the 1% levels of significance. This means that management employed an income-decreasing technique of discretionary accruals. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between DECRICTUNA and ROA. No previous study used this measurement.

KASZNIX relationship with ROA is positively significant with a coefficient of 0.035363, a t-Statistic of 5.475075 and a p-value of 0.0000 at the 1% levels of significance.. This means that the technique of income-increasing discretionary accruals was employed by management for the period under study. The sign or direction as well as the size or magnitudes are in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between JONES and ROA. This result is in line with that of Gajdosikova et al. (2022) which had a positively significant relationship.

KEY relationship with ROA is negatively significant with a coefficient of -1.34E-13, a t-Statistic of -61.32484 and a p-value of 0.0000 at the 1% levels of significance.. This means that management employed an income-decreasing technique of discretionary accruals. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between KEY and ROA.
No previous study used this measurement.

KOTHARI relationship with ROA is negatively significant with a coefficient of -3.44E-13, a t-Statistic of -41.75118 and a p-value of 0.0000 at the 1% levels of significance.. This means that management employed an income-decreasing technique of discretionary accruals. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between KOTHARI and ROA.
No previous study used this measurement.

LARCKER relationship with ROA is negatively significant with a coefficient of -0.371380, a t-Statistic of -121.9621 and a p-value of 0.0000 at the 1% levels of significance.. This means that management employed an income-decreasing technique of discretionary accruals. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between LARCKER and ROA.
No previous study used this measurement.

MJONES relationship with ROA is negatively significant with a coefficient of -0.107271, a t-Statistic of -12.90063 and a p-value of 0.0000 at the 1% levels of significance.. This means that management employed an income-decreasing technique of discretionary accruals. The sign or direction is contrary to our expectations but the size or magnitude is in line with our expectations. We, therefore, reject the null hypothesis of no significant relationship and accept the alternative hypothesis that there is a significant relationship between MJONES and ROA.
This result is not in line with any previous study but contradicts those of Ardaniel and Alfiandri (2021); Ayisi et al (2021); Hernawati et al.(2021) ; Firdausya et al. (2020); Wenfang and Ayisi

(2020) as well as Altintaş et al. (2017) which had a positively significant relationship.

4.6 Diagnostics Checks

Arellano and Bond Serial Correlation Diagnostic Tests of AR (1) and AR (2).
When an estimator uses lags as instruments with the assumption that the disturbance or error term is white noise, such an estimator would produce inconsistent results if the disturbance terms are indeed serially correlated (Arellano & Bond, 1991). Thus, it is very necessary to be sure of no autocorrelation by carrying out test statistics of no serial correlation by validating the instrumental variables through a second-order residual serial correlation test (Arellano & Bond, 1991). The AR (1) may be or may not be significant but AR (2) must never be insignificant at all. AR (2) is more important in evaluating our results as it shows whether there is second-order serial correlation. If AR (2) is significant, it indicates that some of the lagged dependent variables which might be used as instrumental variables are bad instrument and thus endogenous. Since the p-values of AR (1) = 0.1977 and AR (2) = 0.4974 in Table 6 below are greater than 0.05, we then accept the null hypothesis that there is no serial correlation.

Table 6. Arellano-Bond Serial Correlation Test
Equation: Untitled
Date: 09/19/23 Time: 17:39
Sample: 2005 2020
Included observations: 1216

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-1.288143	-2953.230783	2292.625959	0.1977
AR(2)	0.678632	319.574026	470.909073	0.4974

Source: Researcher's Computations (2023) Using EViews13 Software.

4.7 Additional Tests of Robustness.

Where both the industry fixed effect and year fixed effect dummy variables are removed as modeled in Equation 5, the regression results did not significantly depart from that of Equation 4 with the dummy variables as shown in Table 7 below. This attest to the robustness of the fact that earnings management has indeed helped in improving the financial performance of firms for the period under consideration.

Table 7. Dependent Variable: ROA

Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 09/19/23 Time: 17:41
Sample (adjusted): 2007 2020
Periods included: 14
Cross-sections included: 75
Total panel (unbalanced) observations: 1032
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(ROA,-2)
Constant added to instrument list

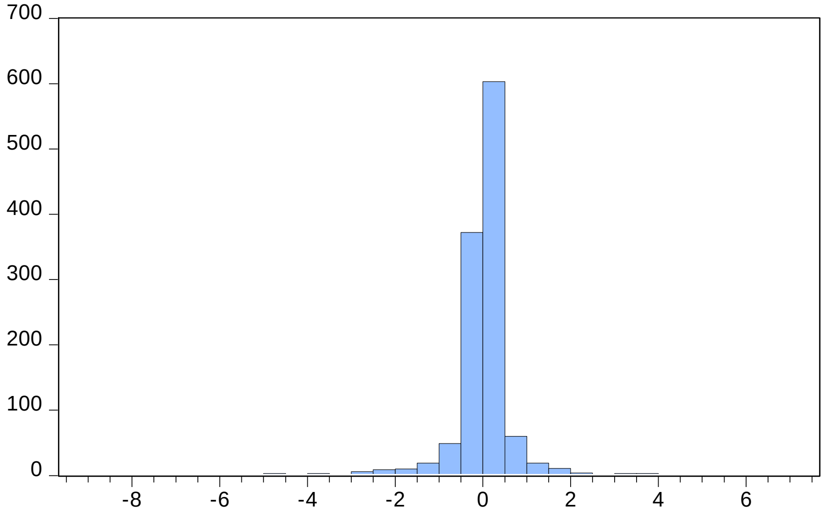
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	0.139271	0.000134	1041.699	0.0000
DECRICTUNA	-0.892056	0.001326	-672.5835	0.0000
JONES	1.207684	0.006255	193.0695	0.0000
KANGSIV	-2.80E-09	1.07E-11	-261.4262	0.0000
KASZNIX	0.121213	0.002174	55.74333	0.0000
KEY	-1.46E-15	4.53E-16	-3.212925	0.0014
KOTHARI	2.84E-15	1.71E-15	1.659494	0.0973
LARCKER	-0.439894	0.000812	-541.9446	0.0000
MJONES	-0.183284	0.005328	-34.40258	0.0000
	Effects Specification			
Cross-section fixed (first differences)				
Mean dependent var	-0.017126	S.D. dependent var		2.217004
S.E. of regression	2.492928	Sum squared resid		6357.630
J-statistic	66.31487	Instrument rank		75
Prob(J-statistic)	0.465969			

Source: Researcher's Computations (2023) Using EViews13 Software.

4.8 Normality Test

The normality test's goal is to establish whether or not the distribution of data within a group of data or variables is normally distributed. The normality test can be used to determine if data was obtained from a normal population or was distributed normally. Descriptive statistics, correlation, regression, ANOVA, t tests, and other data analysis techniques require normality assumptions. Because picking the inappropriate data set representation can lead to an inaccurate interpretation, this normalcy assumption should be upheld notwithstanding the sample size (Mishra et al., 2019). Since the assumption of normality is essential for the conceptual and methodological validity of inference processes, forecasting, and model specification tests, regression models must be examined for non-normal errors (Alejo et al., 2015). However, Ghasemi and Zahediasl (2012) noted that the central limit theorem (CLT) suggests that breaching the normality assumption shouldn't be a huge concern once the number of observations approaches 100 and more. The Jarque-Bera statistic value and its probability value in Table 6 below demonstrate that the data used to analyze the regression model are not normally distributed because the p-value is less/lower than 0.05, or 5%. There is no problem because there were 1,216 observations.

Table 8: Normality Test



Series: Standardized Residuals	
Sample 2005 2020	
Observations 1188	
Mean	-0.026922
Median	0.036486
Maximum	7.483255
Minimum	-9.163895
Std. Dev.	0.934376
Skewness	-3.009757
Kurtosis	35.74643
Jarque-Bera	54873.89
Probability	0.000000

Source: Researcher's Computations (2023) Using EViews13 Software.

Conclusion and Recommendations

This study investigates the relationship between earnings management and the financial performance of listed firms in Nigeria. Using secondary data over the period from 2005 to 2020 of 76 firms listed on the floor of the Nigerian Exchange Group (NXG), the generalized method of moments (GMM) results reveal that while two of the measures of earnings management (Jones' Model and Kazsnix's Model are positively significant with firm performance (ROA); the remaining six measures (Modified Jones' Model of Dechow et al; Kothari's et al Model; Larcher and Richardson's Model; Key's Model; Dechow-Richardson-Tuna's Model and Kangsiv's Model) are negatively significant with firm performance (ROA). This shows that for the period under review, the firms used more of income-decreasing techniques than income-increasing techniques of earnings management.

Based on the results above, the study recommends that:

- businesses operating in Nigeria need to know that it is more profitable to be conservative in reporting financial transactions as eight out of the no one conservatism measurements in this study have shown.

- since conservatism is regarded as a feature of financial reporting that may influence the choices of potential users of financial statements policymakers, and regulators should take into consideration the adoption of several conservative accounting practices as a corporate governance mechanism.

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