Effect Of Firm Size and Profitability on Earning Management Among Listed Firms on Nigeria Exchange Group

Segun Idowu Adeniyi[1]

Abstract

The main objective of the study is to evaluate the effect of firm size and firm profitability on earning management among listed firms on Nigeria Exchange Group. This study specifically seeks to ascertain the effect of firm size and firm profitability on both accrual-based earnings management and real earnings management activities. The study focused on non-financial listed firms on Nigeria Exchange Group for the period of 2013 to 2023. The study adopted ex post facto research design and purposive sampling was used to select sample population. Secondary source of data was extracted from financial reports and accounts of sample firms from either companies' corporate web site or Nigeria Exchange Group Factbooks. This study found that firm size and firm profitability affects both discretionary accruals management and real earnings management. the study recommends among others that since profitable firms tend to engage in both discretionary accruals management and real earnings management. Though profitability showed management's ability to generate profit, financial regulators should encourage them to improve their financial reporting quality and reduce earning management practice.

Introduction

One of the criteria that investors consider in making investment decision is the quality of earnings. Investors do not only prefer companies with high earnings but those who record smooth and consistently higher level of earnings. This is understandable because the objectives of every investor are to achieve returns. Implicitly, firms that always report high level of earnings in their financial reports stand to attract more investors after their shares.

The collapse of reputable companies like Enron, Arthur Andersen, WorldCom, Xerox, Cadbury Nigeria plc, Intercontinental bank plc, Oceanic bank plc, among others have raised concerns about the financial reporting integrity. According to Altarawneh, Shafie, and Ishak, (2020), financial scandals have eroded investors' trust in the quality of the information disclosed by listed firms. Thus, users of financial reports have become more skeptical in using financial statements, particularly due to concerns about the way companies are managing their earnings.

For the company to secure all the funds needed for running the business, managers always attempt to distort reported earnings through using specific accounting methods or altering them, identifying non-recurring items, deferring or accelerating expenses or revenue, or employing other strategies intended to affect short-term earnings. Lazzem and Jilani, (2018) observed that some

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[1] Corresponding author: Segun Idowu Adeniyi, email: si.adeniyi@unizik.edu.ng

managers tend to manipulate earnings to meet shareholders financial expectations, increase the market value of shares, receive commission linked to financial performance.

The chance of the presence of earnings management can create serious problems as the interpretation of financial reports and the measurement of firm profitability become a mixture between assessing the firm's economic reality and recognizing the probable adjustments that may have been made. Therefore, earnings management has raised serious concerns among financial market regulators, financial operators, investors and academic researchers.

Joosten (2012) distinguishes between two types of earnings management: accrual-based earnings management and real earnings management. Accrual-based earnings management involves various accounting maneuvers to improve the earnings baseline, which should be reverted in future periods and should not affect the firm cash flows (Mellado-Cid, Jory, & Ngo, 2018). Real activities manipulation, however, involves changes made to the normal business operations and consequently should affect the firm cash flows (Zang, 2012).

Fialova and Folvarcna (2020) observed that accounting practices or reporting choices adopted by corporate management are not only directed to meet certain objective but could be strongly influenced by the attributes of their firms such as firm size, firm profitability, leverage, firm age, firm liquidity, and firm's asset turnover among others.

Because firm size and firm profitability plays an astute role in restraining account information preparers (managers) from maneuvering the accounting figures which will eventually enhance the quality of reported accounting earnings, there have been inconclusive findings and divergent views in extant literatures as to the extent firm size and firm profitability have affected earnings management. However, most of prior researchers focused on accrual-based earnings management and firm attributes such as firm size and firm profitability (Alzoubi, 2017; Jelinek, 2007; Lazzem & Jilani, 2018). To fill this knowledge gap, this study tends to ascertain the effect of firm size and firm profitability on both accrual-based earnings management and real earnings management activities.

The study will be guided by the following null hypotheses:

H01: Firm size has no significant effect on discretionary accruals and real earnings management.

H02: firm profitability does not have significant effect on discretionary accruals and real earnings management.

The study focused on firm size, firm profitability, discretionary accruals and real earnings management of non-financial listed firms on Nigeria Exchange Group for the period of 2013 to 2023.

Review of empirical studies

Bahaaeddi (2020) examined effect of firm characteristics on earnings management among listed companies in Gulf Cooperation Council countries. The study sample consists of 332 listed companies during the period 2010–2015. The study found that the company size and leverage have an insignificant impact on earnings management practices in Gulf Cooperation Council countries.

Erna, and Olivia, (2022) examined the impact of ownership structure on earnings management using the control variables of leverage, company size, profitability, and company growth. The study used purposive sampling method for the selection of the research samples. The study focused on non-financial companies listed on the Indonesia Stock Exchange from 2016 to 2019. Earnings management is measured using discretionary accruals which is a Modified Jones Model. The study found that leverage, company size, and company growth have a significant positive effect on earnings management, while profitability does not have positive effect on earnings management.

Sara (2016) assesses the impact of firm characteristics on earnings management of the listed firms in Egypt. It selects the 50 most active firms in the Egyptian stock exchange for the period 2007-2011. The study found that firm size, firm age and firms' audit quality have an insignificant relationship with earnings management.

Pranesh, and Chinmoy (2017) found that firm size and firm's leverage have a significant negative impact on earnings management on the one hand; firm's age and profitability were found to have significant positive effect on the discretionary accruals among listed manufacturing firms in India.

Uwuigbe and Okorie (2015) assessed the effects of firms' characteristics on earnings management of listed companies in Nigeria. The study adopted judgmental sampling technique to select a total of 20 listed firms in the Nigerian stock exchange market. The data gathered from the corporate annual reports between the periods of 2006-2010 were used for the study. The study found

that firm size and firms' corporate strategy had a positive and significant impact on earnings management measured by discretionary accruals.

Bassiouny, Soliman and Ragab (2016) assessed the impact of firm characteristics on earnings management of the listed firms in Egypt. The study found that there is a significant positive relationship between firms' financial leverage and earnings management while firm size, firm age and firms' audit quality have an insignificant relationship with earnings management.

Abbadi (2021) determined the impact of family control, firm size and firm age on the accrual earnings management among the Jordanian firms. Data was collected from 42 manufacturing companies listed in Amman stock market for the period 2013-2018. The study found that accruals earnings management has a statistically significant negative association with firm size.

Design and methodology

The study adopted *ex post facto* research design to ascertain the effect of firm size and firm profitability on earning management of listed non-financial firms listed on Nigeria Exchange Group. As at 31st December 2023, ninety - five (95) non-financial firms were listed on the Nigerian Exchange Group floor.

Judgmental sampling technique was used to select sample population. This sampling technique enable researcher to select firms that he can conveniently assess their data. Non-financial firms that have not operated on the floor of Nigeria Exchange Group for the period of eleven years (2013 to 2023) were excluded from the sample population. To reduce judgmental sampling technique bias, the study focused on non – financial listed firms that consist of Industrial Goods, Consumer goods, Health care, Agriculture, Services, and conglomerate on Nigeria Exchange Group. The total number of non-financial firms that have their financial statements available either on their website or in the office of the Nigerian Exchange Group as at 31st December, 2023 was seventy four (74). Secondary source of data was extracted from financial reports and accounts of sample firms from either companies' corporate web site or Nigeria Exchange Group Factbooks.

Model Specification

- **Real earning management**

Following Zang (2012); Cohen and Zarowin (2010), this study examines the following real activities manipulation: increasing incomes by reducing the overproduction costs for inventory (abnormal production costs) and decreasing discretionary expenditures including R&D, sales, advertising, and total and administrative expenditures (abnormal discretionary expenses).

Following Roychowdhury (2006), this study will estimate the normal level of production costs as follows:

$$PROD_{it}/Assets_{it-1} = a0 + a1\ [1/Assets_{it-1}] + \beta 1\ [Sales_{it}/Assets_{it-1}] + \beta 2\ [\Delta\ sales_{it}/Assets_{it-1}]$$
$$+ \beta 3\ [\Delta sales_{it-1}/Asset_{it-1}] + \varepsilon_{it} \qquad equ\ 1$$

where:

PROD is the sum of the cost of goods sold in year t and the change in inventory from year $t-1$ to year t;

Assets$_{it-1}$ is the total assets in year $t-1$;

Sales$_{it}$ is the net sales in year t; and

Δ sales$_{it}$ is the change in net sales from year $t-1$ to year t.

This study developed the following regression model and employed the model to fulfill the research objectives:

$$REM = \beta 0 + \beta 1\ FSIZE_{it} + \beta 2 FPRF_{it} + e_{it} \qquad equ\ 2$$

- **Accruals earnings management**

This study used cash flow statement approach to calculate the total accruals, so based on that approach the total accruals can be calculated as follows:

$$TA_t = NI_t - CFO_t$$

where:

TA$_t$: total accruals in year t,

NI$_t$: net income in year t,

CFO$_t$: cash flows from operating activities in year t.

Total accruals are not the proxy for earnings management; on the contrary, earnings management is the part of the accruals that managers can have control on and are able to practice manipulations. According to this, the total accruals are divided into two parts which are the discretionary accruals and the non-discretionary accruals. So to calculate the discretionary accruals, non-discretionary accruals are subtracted from total accruals (Shah & Butt, 2009)

$$TA = DA + NDA$$

where:
TA: total accruals,
DA: discretionary accruals,
NDA: non-discretionary accruals

Many models and methods exist to calculate the discretionary accruals, the Healy 1985 model, the De Angelo 1986 model, Jones 1991 model and finally the modified cross sectional Jones 1995 model. Consequently, based on the modified Jones model 1995, that this study uses, the equation to be used in calculating the NDA is as follows: (Uwuigbe & Okorie, 2015; Shah & Butt, 2009).

$$NDA_t = \beta 1j \ [1/A_{t-1}] + \beta 2j \ [\Delta REV_t - \Delta AR_t / A_{t-1}] + \beta 3j \ [PPE_t / A_{t-1}]$$

where:
NDA_t : Non-discretionary accruals for firm j in year t,
A_{t-1}: Total assets for firm j in year t-1,
ΔREV_t: Change in the revenues (sales) for firm j in year t less revenue in year t-1 ,
ΔAR_t : Change in accounts receivables for firm j in year t less receivable in year t-1 ,
PPE_t: Gross properties, plants and equipment's for firm j in year t ,
$\beta 1j$, $\beta 2j$, $\beta 3j$ are firm specific parameters

In order to find the firm specific parameters to be used in the NDA equation, a regression equation is used to find those parameters and this equation is as follows (Ahmad *et al* 2014, Salleh and Haat 2014 and Uwuigbe *et al.* 2015):

$$TAC_t/A_{t-1} = \beta 1j \ [1/A_{t-1}] + \beta 2j \ [(\Delta REV_t - \Delta AR_t)]/ A_{t-1} + \beta 3j \ [PPE_t/ A_{t-1}] + \varepsilon_t$$

After calculating the total accruals using the cash flow statement approach and calculating the non-discretionary accruals through the equation of the modified Jones model 1995, the discretionary accruals can then be calculated using the following equation (Salleh & Haat 2014; Uwuigbe & Okorie, 2015):

$$DAC_{jt} = TAC_{jt}/A_{jt-1} - NDA_{jt}$$

This study developed the following regression model and will use the model to fulfill the research objectives:

$$DAC = \beta 0 + \beta 1 \ FSIZE_{it} + \beta 2 FPRF_{it} + \varepsilon_{it}$$

In this study, the effect of firm size and firm profitability on earnings management by using multiple regression models to empirically test the hypotheses formulated is as follows:

$$DAC = f \ (FSIZE, FPRF) \qquad 1a$$
$$REM = f \ (FSIZE, FPRF) \qquad 1b$$

Below is the regression model guiding this study which is adopted from Roychowdhury (2006); Zang (2012); Salleh and Haat (2014); Uwuigbe and Okorie (2015) is modified by inserting the variables of this study:

$$REM = \beta 0 + \beta 1 FSIZE_{it} + \beta \ \beta 2 FPRF_{it} + \varepsilon_{it} \qquad 2a$$
$$DAC = \beta 0 + \beta 1 FSIZE_{it} + \beta 2 FPRF_{it} + \varepsilon_{it} \qquad 2b$$

where:
REM = real earnings management (Abnormal Production Costs)

DAC**:** is the discretionary accrual**,**
i = firm;
t = year;
 $β0$ = the intercept;
e = the error term;
$β1, β2, …$ = the coefficients;
FSIZE = Firm Size;
FPRF = Firm Profitability

Data analysis and discussion
Firm size does not have significant effect on discretionary accruals and real earnings management. Firm profitability does not have significant effect on discretionary accruals and real earnings management.
Model A: DAC = a + FSZE + FPROF
Model B: REM = a + FSZE + FPROF

Hypothesis Testing:
Analysis of Model A: Discretionary Accruals
The below table shows regression analysis of model A of the hypotheses of this study that states that firm size and firm profitability does not have significant effect on discretionary accruals management.

Table 1 Panel Least Square Regression Result for Model A
Dependent Variable: DAC
Method: Panel Least Squares
Date: 08/16/24   Time: 10:52
Sample: 2013 2023
Periods included: 11
Cross-sections included: 77
Total panel (unbalanced) observations: 837

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FSZE	-3551314.	994206.2	-3.572010	0.0004
FPROF	102057.2	49631.43	2.056301	0.0401
C	24117649	7176441.	3.360670	0.0008

R-squared	0.031300	Mean dependent var	-2762296.
Adjusted R-squared	0.025471	S.D. dependent var	24014133
S.E. of regression	23706323	Akaike info criterion	36.80752
Sum squared resid	4.67E+17	Schwarz criterion	36.84143
Log likelihood	-15397.95	Hannan-Quinn criter.	36.82052
F-statistic	5.370130	Durbin-Watson stat	2.150142
Prob(F-statistic)	0.000072		

Source: Researcher, 2024

The R-squared value of 0.031300 indicates that the model explains only a small proportion of the variation in discretionary accruals. The F-statistic of 5.370130 and its associated p-value of 0.000072 suggest that the model is statistically significant. The Durbin-Watson statistic of 2.150142 indicates that there may be some autocorrelation in the residuals of the model.

Hypotheses 1a:
H0: Firm size does not have significant effect on discretionary accruals management
H1: Firm size has significant effect on discretionary accruals management
        From the table above, the analysis shows that firm size has a statistically significant negative effect on discretionary accruals, as the coefficient has a p-value of 0.0004, which is lower than the conventional significance level of 0.05. This suggests that larger companies tend to have lower levels of discretionary accruals management. Therefore, alternate hypothesis is accepted that state that firm size has significant effect on discretionary accruals management on sample population.

Hypotheses 2a

H0: Firm profitability does not have significant effect on discretionary accruals management

H1: Firm profitability has significant effect on discretionary accruals management

From the table above, the analysis shows that firm profitability has a statistically significant positive effect on discretionary accruals, as the coefficient has a p-value of 0.0401, which is lower than the conventional significance level of 0.05. This suggests that more profitable firms tend to engage in more discretionary accruals management.

Analysis of Model B: Real Earnings Management

The below table shows regression analysis of model B of the hypotheses of this study that states that firm size and firm profitability does not have significant effect on real earnings management.

Table 2 Panel Least Square Regression Result for Model B

Dependent Variable: REM
Method: Panel Least Squares
Date: 08/16/24   Time: 10:52
Sample: 2013 2023
Periods included: 11
Cross-sections included: 77
Total panel (unbalanced) observations: 837

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FSZE	-0.087539	0.027562	-3.176135	0.0015
FPROF	0.005648	0.001376	4.105122	0.0000
C	-0.123431	0.198947	-0.620420	0.5352
R-squared	0.050856	Mean dependent var		-0.524965
Adjusted R-squared	0.045146	S.D. dependent var		0.672549
S.E. of regression	0.657193	Akaike info criterion		2.005463
Sum squared resid	358.9106	Schwarz criterion		2.039369
Log likelihood	-833.2863	Hannan-Quinn criter.		2.018460
F-statistic	8.905217	Durbin-Watson stat		1.808059
Prob(F-statistic)	0.000000			

Source: Researcher, 2024

The R-squared value of 0.050856 indicates that the model explains only a small proportion of the variation in real earnings management. The F-statistic of 8.905217 and its associated p-value of 0.000000 suggest that the model as a whole is statistically significant. The Durbin-Watson statistic of 1.808059 suggests that there may be some positive autocorrelation in the residuals of the model.

Hypotheses 1b:

H0: Firm size does not have significant effect on real earnings management

H1: Firm size has significant effect on real earnings management

From the table above, the analysis shows that firm size has a statistically significant negative effect on real earnings management, as the coefficient has a p-value of 0.0015, which is lower than the conventional significance level of 0.05. This suggests that larger firms tend to engage in less real earnings management. Therefore, the analysis revealed that alternate hypothesis is accepted that state that firm size have significant effect on real earnings management on sample population of the study.

Hypotheses 2b

H0: Firm profitability does not have significant effect on real earnings management

H1: Firm profitability has significant effect on real earnings management

From the table above, the analysis shows that firm profitability has a statistically significant positive effect on real earnings management, as the coefficient has a p-value of 0.0000, which is lower than the conventional significance level of 0.05. This suggests that more profitable firms tend to engage in more real earnings management. Therefore, the analysis revealed that alternate hypothesis

is accepted that state that company profitability have significant effect on real earnings management on sample population of the study.

Discussion

The regression analysis of part A of the hypotheses of this study as shown in table 1 indicates that firm size has significant effect on discretionary accruals management of non-financial firms listed on the Nigerian Exchange Group. This study is consistent with Erna, and Olivia, (2022); Bahaaeddi (2020); Usman, Muhammad, Muhammad and Akhtar (2015); who discovered that firm size has significant effect on discretionary accruals management. In the same manner, the regression analysis of part B of the hypotheses of this study as shown in table 2 indicates that firm size have significant effect on real earnings management of non-financial firms listed on the Nigerian Exchange Group. This finding is consistent with Erna, and Olivia, (2022); Abbadi (2021); Usman, Muhammad, Muhammad and Akhtar (2015); who discovered that firm size affects real earnings management significantly.

The implication of this finding is that large or big firms engage less in earning management help to improved financial reporting quality because it produced financial reports that are more reliable, providing stakeholders with a clearer picture of their performance. This help stakeholders like potential investors, stockholders, creditors and other stakeholders to make more informed decisions based on accurate financial information. Moreover, big firms engaged less in earnings management reduced incidence of accounting scandals and financial misstatement and also reduced regulatory penalties and fines associated with earning management. Accurate financial reporting will increase investor confidence that can leads to increased investment and economic growth.

However, small firms that engage in earnings management will damage firms' reputations and credibility with stakeholders. It can leads to financial instability, making it difficult for small firms to manage cash flow and make informed business decision.

The regression analysis of part A of the hypotheses of this study as shown in table 1 indicates that profitable firms tend to engage in more discretionary accruals management among non-financial firms listed on the Nigerian Exchange Group. This study is consistent with Erna, and Olivia, (2022); Aysha (2019); Pranesh, and Chinmoy (2017) who discover that firm profitability has positive significant effect on discretionary accruals management. In the same manner, the regression analysis of part B of the hypotheses of this study as shown in table 2 indicates that firm profitability has significant effect on real earnings management of non-financial firms listed on the Nigerian Exchange Group. This study is consistent with Bahaaeddi (2020); Aysha (2019); Pranesh, and Chinmoy (2017) who observed that companies engaged in real earnings management to sustain their profitability.

The implication of this finding is that profitability is able to influence management's decision to practice earnings management because profitability showed management's ability to generate profit.

Limitation of the study

These findings cannot be generalized to all listed firms on Nigeria Exchange Group because the study focused specifically on Industrial Goods, Consumer goods, Health care, Agriculture, Services, and conglomerate on Nigeria Exchange Group.

Conclusion and recommendation

Earnings management can create serious problems as the interpretation of financial reports and the measurement of firm profitability become a mixture between assessing the firm's economic reality and recognizing the probable adjustments that may have been made. This study found that firm size and firm profitability affects both discretionary accruals management and real earnings management.

Recommendations

Based on findings of this study, the following recommendations beneficial to stakeholders are put forward:

- Companies should be required by regulatory agencies such as the Nigeria Exchange Group, the Financial Reporting Council (FRC), and others to reveal more specific information regarding their earnings management procedures, including the use of accruals and other accounting estimates.

- To stop companies from using aggressive earnings management techniques, regulatory entities such as the Nigeria Exchange Group, the Financial Reporting Council (FRC), and others should bolster their enforcement of accounting rules.
- To deter earnings management strategies, companies should match the compensation incentives for management staff with long-term financial performance standards.
- To help investors make sound decisions, financial analysts ought to be urged to offer more thorough evaluations of companies' financial reports.

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Segun Idowu Adeniyi
Nnamdi Azikiwe University, Nigeria
si.adeniyi@unizik.edu.ng
ORCID: https://orcid.org/0000-0001-6795-7577