

Research article

# BOARD CHARACTERISTICS AND EARNINGS MANAGEMENT OF LISTED FOOD AND BEVEARGES FIRMS IN NIGRIA

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## Abstract

There are different opinions in literature on the relationship between board characteristics and earnings management. The study examines the influence of board characteristics and earnings management of listed food and beverages firms in Nigeria. The study covers the period of six years 2009 to 2014. Data for the study were extracted from the firms' annual reports and accounts. After running the OLS regression, a robustness test was conducted for validity of statistical inferences, the data was empirically tested, first the dependent variable was generated using two steps regression in order to determine the discretionary accrual of listed food and beverages firms in Nigeria through modified Jones model of Dechow et al (1995). A multiple regression was employed to test the model of the study using Random Model. The results from the analysis revealed an inverse relationship between board size, board meetings and board financial expertise, and earnings management of listed food and beverages firms in Nigeria, while and board composition and women directorship are positively significantly related to earnings management of listed food and beverages firms in Nigeria. In line with the above findings, the study recommended among others that listed food and beverages firms in Nigeria should have as much directors as possible in order to reduce earnings manipulation and that the regulators such as SEC should increase the minimum number of members with financial

expertise in the board and also they should have a statutory position on the maximum number of board meetings, as SEC code of corporate governance is silent on this. **Copyright © IJABM, all rights reserved. USA**

**Key Words:** Board size, Board meetings, Board composition Board financial expertise Women directorship and earnings management

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## 1.1 Introduction

The relevance of Accounting Earnings to stakeholders of any given firm cannot be over emphasized as the entire faith of the firm and consequently of its stakeholder relies on it. It will therefore be of interest for accounting scholars to observe that their most important variable continue to maintain its relevance in the decision making of various users for varying applications. It was argued that earning is said to be relevant if only it can be relied upon (Iyire 1966). On the contrary, earnings management reduces the needed reliability and hence its relevance (Bugshan 2005). In that, for earning to maintain its relevance, then there is the need to provide means that can be used to improve the practice of reporting quality earnings. After the global financial crisis in 2008, there is ever increasing need to look up for indicators of earnings reliability.

Earnings management has been described as "the deliberate misrepresentation of the financial condition of an enterprise accomplished through intentional misstatement or omission of amounts or disclosure in the financial statement to deceive financial statement users". Certified Fraud Examiners (1993)

As a result of the foregoing, there are various provisions of codes and statutes that could be used to save and sanitize the financial system and improve financial reporting practices all over the world. In response to that, the regulatory authorities in Nigeria have responded by compelling companies to comply with stringent corporate governance codes. Idornigie (2010) reported that Nigeria has multiplicity of code of corporate governance with distinctive dissimilarities namely; Security and Exchange Commission (SEC) code of corporate governance 2003 to guide the operation of public companies listed in the Nigerian Stock Exchange, which was reviewed in 2011, Central Bank of Nigeria (CBN) code of 2006 and National Insurance Commission (NAICOM) code of 2009. Owing to the above, every public company in Nigeria is required under section 247 and 248 of the CAMA to have directors. The principle objective of the Board is to ensure that the company is properly managed constituted in the manner stipulated and is able to effectively discharge its statutory duties and responsibilities. It is the responsibility of the board to oversee the objective performance of the management in order to protect and enhance shareholder value. The primary responsibility of the board is to ensure good governance, and to ensure that company carries on its business in accordance with its Articles and Memorandum of Association and in conformity with the laws of country, by observing the highest ethical standards and on an environmentally sustainable basis. The board should be of a sufficient size relative to the scale and complexity of the company's operations and be composed in such a way as to ensure diversity of experience without compromising independence, compatibility, integrity and availability of members to attend meeting. The members of the Board should comprise a mix of executive and non executive directors, majority of which should be non executive directors and at least one of whom should be an independent director.

Hence, good governance by the board of directors is essential to improve the quality of financial reporting which in turn has impact on the investors' confidence Levitt (2002). As such good corporate governance reduces the negative effects of earnings management as well as the likelihood of creative financial reporting arising from fraud and errors (Beasley, 1996 Dechow et al, 1996; & MacMullin 1996).

After several recent financial scandals, such as Enron, Xerox, or Worldcom (2001) in US, Parmalat failed (2003) in Italy, there has been an international trend towards developing and implementing corporate governance mechanisms to fight against the opportunistic behaviors that have undermined investors' credibility in financial information. Corporate governance attributes thus help investors by aligning the interests of managers with the interests of shareholders and by enhancing the reliability of financial information and the integrity of the financial reporting process (Watts & Zimmerman, 1986).

Therefore, effective and sound corporate governance is very important especially in emerging economies, like Nigeria in particular, which is still trying to regain the confidence of investors both domestic and international. All these as a result of the adverse effect of global financial crises that seriously affect our stock exchange market.

Therefore, the main objective of this paper is to find out the impact of board characteristics and earnings management of listed Food and Beverages Firms in Nigeria.

## **2.1 Literature Review and Theoretical Framework**

### **Board Size and Earnings Management**

A reasonable size of the board is expected to be effective in monitoring the activities of firms management (Sanda, Mikailu & Garba 2008). A large size of board of directors can improve monitoring mechanism effectively and prevent managers to engage in earnings restatements (Feng & Shiao 2009). Larger boards with competent directors having diverse educational and technical knowhow, have multiple perspectives to improve the quality of firm's value and more likely to represent the interests of shareholders thereby preventing managers from earnings management. Jian and Ken(2004). On the contrary Jensen (1993) stated that streamlined boards can operate more effectively in maintaining management. Fodio Ibikunle and Oba (2013) investigated corporate governance mechanisms and reported earnings quality in listed Nigerian insurance Firms for the period 2007 to 2010 found negative significant effect between board size and earnings management. Nugroho and Eko (2011) discovered that board size do not affect earnings management of firms listed in the Indonesian stock exchange. In line with the foregoing the study therefore hypothesized that;

Board size has no significant impact on earnings management of listed Food and Beverages Firms in Nigeria.

### **Board Independence and Earnings Management**

This is the proportions of non-executive directors on the board to the total number of board size. Non-executive directors should be the key members of the board. They should bring independent judgment as well as necessary scrutiny to the proposals and actions of the management and executive directors especially on issues of strategy, performance evaluation and key appointments (Nigerian SEC code of corporate governance 2011). Studies conducted on the relationship between board composition and earnings management show mixed results. Moradi, Salehi and Bighi and Najari (2012) studied the relationship between board of directors and earnings management of listed companies in Tehran for the period of 2006 to 2009. Their result showed a negative but non significant relation between board composition and earnings management. Roodposhti and Chashmi (2011) investigated the impact of corporate governance on earnings management for 2004 to 2008 and found negative significant relationship between board composition and earnings management. Fodio et al. (2013) examined corporate governance mechanisms and reported earnings quality in listed Nigerian insurance Firms for the period 2007 to 2010. The study showed that board composition is positively and significantly associated with earnings management. In line with the foregoing the study hypothesized that;

Board independence has no significant effect on earnings management of listed Food and Beverages Firms in Nigeria.

### **Board meetings and earnings management**

The board meeting is essential in order to effectively perform its duties efficiently and effectively. This is supported by the findings of Xie et al. (2003) who found negative significant relationship between frequency of board meetings and earnings management. On the contrary, Adams et al. (2008) found that directors who primarily monitor management perceives that they participate less in boardroom discussion than other directors and that the CEO often asks them for advice. Therefore it was hypothesized as follows

Board meetings have no significant effect on earnings management of listed Food and Beverages Firms in Nigeria.

### **Board financial expertise and earnings management**

For the boards to do their tasks effectively, they must have the ability for asking management tough questions, actively helping them to set corporate strategy, monitoring risk management, contributing to CEO Successions plan and ensuring that companies set and meet their financial and operating targets. (Barton, Coombes & Wong 2004). Xie, Davison and DaDalt, (2003) found that boards of directors with corporate or investment banking Backgrounds are negatively related to the level of earnings management. Park and Shin (2004) also found that the presence of

officers from financial intermediaries in the board can limit abnormal accruals as the unmanaged earnings are below the target. The study also hypothesized that;  
Boar financial expertise has no significant influence on earnings management of listed Food and Beverages Firms in Nigeria.

## **Women director and earnings management**

According (Milliken & Martins, 1996) Gender diversity is part of extensive concept for board diversity as such; a board of director is willing to have a suitable composition for investigating subject from different dimensions. Moradi et al. (2012) examined the relationship between board of directors and earnings management of listed companies in Tehran for the period of 2006 to 2009. The study showed a positive but significant relation between women director and earnings management. At the same vein Buniamin Jauhari Abdul Rahman and Abdul Rauf (2012) studied on board diversity and discretionary accruals of the top 100 Malaysian companies. Their result revealed a positive significant relationship between women directors and earnings management. In line with the above mentioned findings the study therefore hypothesized as follows;

Women directorship has no significant impact on earnings management of listed Food and Beverages Firms in Nigeria.

## **Theoretical Framework**

Managers may have different motives to shareholders. Brennan, (1995) view that managers can be influenced by some factors such as financial rewards, labour market opportunities and relationship with other parties that are not directly relevant to the interest of the shareholders. This can result to a tendency for managers to be more optimistic about economic performance of an entity than the reality. As a result of these different interests, managers may have incentives to bias information flows (Agrawal & Knoeber, 1996). Shareholders may also express concerns about information asymmetries where managers are in possession of information to which shareholders do not have access to it.

Different motivation and information asymmetries lead to concern about the quality and reliability of information, which impact on the level of trust that shareholders will have in their managers (Fama, 1980). There are various mechanisms that can be used to align the interest of managers with shareholders and to allow shareholders to measure and control the behavior of their managers and reinforce trust in them. Board of directors provides and independent check on the activities of managers and of the information provided by the managers, which helps to maintain confidence and trust on them.

Therefore the theoretical framework underpinning this study is agency theory. This is because Jensen and Meckling (1976) argue that where ownership and management are separated, the accounting function is affected by the agency problem. Hence, an agency relationship exists when one or more principal (shareholders) engage another person as their agent (managers) to perform a service on their behalf (Fama & Jensen, 1983). Performance of this service results in delegation of some decision-making authority to the managers. This delegation of responsibility by the owners and the resulting division of labour are helpful in promoting an efficient and productive economy.

### **3.1 Methodology and Model Specification**

The research design used for this study is correlation, because it describes the statistical relationship between two or more variables. Board characteristics and earnings quality are the variables of the study. The board characteristic is the independent variable which is proxied by board size, board meetings, board composition, board financial expertise and women directorship, while the dependent variable is earnings management represented by the residuals from the modified Jones Model by Dechow et al. (1995). The population of this study consists of all the listed Food and Beverages Firms in Nigeria as at 31<sup>st</sup> December, 2014. Filter is used to eliminate some of the firms that do not have complete records of all the data needed for measuring the variables of the study within the period of 2009 to 2014. The sample of the study consists of eight firms that have complete records to be used for the study. The data was extracted from secondary source which was obtained from the annual reports accounts of the firms for the period under study. Multiple regression is used to examine the model of the study. Two steps regression is used in determining the earnings management of listed building materials firms in Nigeria, by adopting the modified Dechow et al. (1995). The residuals of the model are given below:

## Variables Measurement and Model Specification

The variables of the study consist of Dependent Variable which is Earnings Management measured by discretionary accruals using modified Jones model by Dechow et al. (1995). This was done by conducting the analysis in two stages- extracting the residuals from the modified Jones model first and then run the regression with the model of the study.

The independent variables Board characteristics were proxied by board size, board meetings, board composition, board financial expertise and women directorship. This is shown in Table 3.1, which contains each variable with their respective definitions

**Table 3.1 Variable Measurement and Definition**

Variables	Definition and Measurement
Earnings Management (DAC)	Measured by absolute values of the residuals (discretionary accruals) using Modified Jones model by Dechow et al. (1995). This will be explain bellow
Board Size(BS)	Measured as the total number of Board members
Board Meetings(BM)	The number of meetings held by the Board during the year
Board Independence (BI)	Proportion of Non executive directors to the total number of board members
Board Financial Expertise (BF)	Proportion of Board members with financial expertise (financial knowledge) to the total number of board members
Women Director	Total number women in the board
Firm Size(FS)	A control variable measured as natural logarithm of the Firms total assets

As shown in Table 3.1, this study employs the modified Jones model, which estimates abnormal accruals (Discretionary accruals) as prediction error from ordinary least square regression as follows.

$$\frac{\text{TOTAL ACCRUALS}_{it}}{\text{TA}_{it-1}} = Q_{it} + \beta_{it} \left( \frac{\Delta \text{REV}_{it}}{\text{TA}_{it-1}} - \frac{\Delta \text{REC}_{it}}{\text{TA}_{it-1}} \right) + \beta_2 \frac{\text{PPE}_{it}}{\text{TA}_{it-1}} + \varepsilon_{it} \quad (1)$$

Where:

TOTAL ACCRUALS<sub>it</sub> = NI-CFO

NI = Net operating income

CFO= Cash flow from operating activities

Q= Constant

B= Beta

$\Delta \text{REV}_{it}$  = Revenues in year t less revenues of firm i in year t -1

$\Delta \text{REC}_{it}$  = Receivables in year t less receivables of firm i in year t -1

$\text{PPE}_{it}$  = Gross property plant and equipment of firm i in year t

$\text{TA}_{it}$  = Total Asset

$\text{TAC}_{it}$  = Total Accruals

$\varepsilon_{it}$  = prediction error

After applying the modified Jones models, the abnormal accruals is the prediction error:

$$\text{Abnormal accruals}_{it} = \frac{\text{TAC}_{it}}{\text{TA}_{it}} - \left( \alpha + \beta_{it} \left[ \frac{\Delta \text{REV}_{it}}{\text{TA}_{it}} - \frac{\Delta \text{REC}_{it}}{\text{TA}_{it}} \right] + \frac{\text{PPE}_{it}}{\text{TA}_{it}} \right) \quad (2)$$

### 3.2 Model specification

The following is the model used to empirically test the hypotheses formulated.

$$\text{DACC}_{it} = \beta_0 + \beta_1 \text{BS}_{it} + \beta_2 \text{BM}_{it} + \beta_3 \text{BC}_{it} + \beta_4 \text{BE}_{it} + \beta_5 \text{WD}_{it} + \beta_6 \text{FS}_{it} + \varepsilon_{it}$$

Where:

$\beta_0$  = Constant

- BS = Board size of firm i in time t  
 BM = Board Meetings of firm i in time t  
 BC = Board Composition of firm i in time t  
 BE = Board Financial Expertise of firm i in time t  
 WD = Women Directorship of firm i in time t  
 FSIZ = Firm Size of firm i in time t  
 $\epsilon$  = other factors that were not captured by the model

### 3.2.1 Robustness test

The following robustness tests were conducted in order to improve the validity of statistical inferences. Multicollinearity test. Since the study employs multiple regression model, the association between the predictor variables is unavoidable. Where the association is highly correlated, multi Colinearity exists. This is tested to see the possibility of its existence or otherwise. This is done using variance inflation factor (VIF) and tolerance value

Heteroscedasticity test. The study deals with observations that constitute different sizes, some are in ratios while others in units, and that heteroscedasticity often occurs when there is a large difference among the sizes of the observations. For that, we have to run for Heteroscedasticity test, and thus the hausman test suggested random model as appropriate. For that random model was used in the interpretation of the results.

## 4.1 Result and Discussion

**Table4.1: Correlation Matrix**

VARIABLES	DAC	BS	BM	BI	BE	WD	FS
DAC	1						
BS	-0.2260	1					
BM	0.1519	0.0616	1				
BI	0.1563	-0.1313	-0.1676	1			
BE	-0.2597	0.4358	-0.1433	-0.0223	1		
WD	0.2095	0.3634	0.6577	-0.077	0.1707	1	
FS	-0.2854	-0.4053	0.0056	0.2310	-0.2753		1

Source: STATA Output, 2015

The table above shows that board meetings, board independence and women director weak positively correlated with earnings management listed Food and Beverages Firms in Nigeria, while board size, board financial expertise and the control variable firm size are negatively related with earnings management listed Food and Beverages Firms in Nigeria. The tolerance values and the variance inflation factor are good measures of evaluating multicollinearity between the independent variables of the study. The results shows that tolerance values were less than 1.00 and the variance inflation factor were less than 10 showing that serial correlation may not cause problem to the study.

**Table 4.2: Regression Result**

Variables	Coefficient	Z-Score	P-Values
<b>Constant</b>	0.746	3.760	0.000
<b>BS</b>	-0.137	-2.620	0.009
<b>BM</b>	-0.003	-0.200	0.840
<b>BI</b>	0.284	1.830	0.068
<b>BE</b>	-0.162	-2.020	0.044
<b>WD</b>	0.035	1.75	0.080
<b>FS</b>	-0.034	-1.610	0.000
<b>R2 overall</b>	0.403		
<b>Wald Chi2</b>	27.67		
<b>Prob. Chi2</b>			0.0001

**Source: STATA Output,**

Table 3 above, shows the summary of the estimated regression model

$$DAC = 0.746 - 0.137BS - 0.003BM + 0.284BI - 0.162BE + 0.034WD - 0.034FS$$

The model shows that board size has negative significant impact on earnings management of listed Food and Beverages Firms in Nigeria at %1 level of significant. This means that for every 1% increase in the board members, earnings management will reduce by 13%. The implication of this result is that, larger boards are better at reducing earnings management of listed Food and Beverages Firms in Nigeria. Consequently, the result produces a basis for rejecting the first null hypothesis formulated which was presumed that board size has no significant effect on earnings management of listed food and beverages in Nigeria. This is in line with work of Xie et al. (2003) who found a negative association between board size and earnings quality. On the contrary, Abdul Rahman and Ali (2006) and Kao and Chen (2004) found significant positive association between board size and earnings management.

The table also reveals that board meetings have negative but not significant relationship with earnings management of listed food and beverages Firms in Nigeria. This implies that meetings up to four times can guarantee better monitoring of earnings management of listed food and beverages Firms in Nigeria. This may be due to the fact that the more often the directors meet; the more they divert their attentions in doing other things distinct and different from the overall objectives of firm. That provides basis for the study to fail to reject the second null hypothesis which stated that board meetings have no significant relationship with earnings management of listed food and beverages Firms. This is in line with the works of Adams et al. (2008) but contradicts that of Xie et al. (2003)

Additionally, the board independence is positively and significantly associated with earnings management of listed food beverages Firms in Nigeria at 10% level of significant. This implies that board independence may not serve as a means of reducing earnings manipulation by managers. This serves a yardstick for rejecting the third null hypothesis that was formulated as board independence has no significant effect on earnings management of listed food beverages Firms in Nigeria. This supports the findings of Fodio et al. (2013) but contradicts that of Roodposhti and Chashmi (2011) and Salehi et al. (2012)

The model also provides evidence of a significant negative relationship between board financial expertise and earnings management of listed food and beverages Firms in Nigeria at 10%. This implies that financial expertise as one of the proxies of board characteristics is negatively related to earnings management, which means that board financial expertise, reduces the negative effect of earnings management of listed food and beverages Firms in Nigeria. This may not be surprise as directors with sound accounting and financial knowledge must have the ability of detecting fraud and manipulation of accounting numbers. The results therefore serve as a basis for rejecting the forth null hypothesis formulated as board financial expertise has no significant effect on earnings management of listed Food and Beverages Firms in Nigeria. This is consistent with the work of Xie et al. (2003) and Park and Shin (2004) who found negative significant impact between board financial expertise and earnings management.

It can also be observed from the table that women directorship has positive significant effect at 10%. This means that for every 1% increase in women director in the board of the Listed Food and beverages Firms in Nigeria earnings management will increase by 3%. This may be as a result of the general belief that women are more sympathetic than their men counterparts which makes them to be weak in questioning and checkmating the activities of managers. This serves as a basis for rejecting the last null hypothesis of the study that presumed that women director has no significant effect on earnings management Listed Food and Beverages Firms in Nigeria. This is in line with the findings of Buniamin et al. (2011) and contradicts the work of Moradi et al. (2012)

Finally, the model again shows that the control variable- firm size is negatively and significantly related to earnings management of listed food and beverages Firms in Nigeria. This implies that, larger Firms are better at monitoring management which will result in reducing earnings management. This justifies the assertion of Hassan and Bello (2013) that large Firms usually have strong internal control systems and governance mechanisms, and therefore can access high quality services from large audit Firms, and care for its reputations. This is in line with Bedard et al. (2004) who found that larger Firms are likely to have more effective internal control systems and face more scrutiny in the market.

Overall, the combined and the overall impact of the repressors- board characteristics (board size, board meetings, board composition, and board financial expertise and women directorship) on earnings management of listed food and beverages Firms in Nigeria, is shown on the model summary of the regression results. The Wald Chi<sup>2</sup> of 27.67 which is significant at 1% (0.001) reveals that the model is well fitted, while the coefficient of determination R<sup>2</sup> of 40. %, explains the individual variation of the dependent variable (discretionary accruals) as a result of the changes in the independent variable. It can be said that, board characteristics (board size, board meetings, board composition board financial expertise, and womendirectorship) and firm size have combined predictive power of 40% in impacting on earnings management of listed Food and Beverages Firms in Nigeria, while the remaining 60% is accounted for by other factors which are not captured in the model.

#### **4.2 Test of Validity and Reliability**

In order to make better the validity of all statistical inferences to be drawn for the study, this section presents the result of robustness test conducted. The robustness test includes multicollinearity test, Heteroscedasticity Test and Breusch and Pagan Lagrangia Multiplier Test for Random Effects.

##### **Multicollinearity test:**

This was conducted to check whether there was a correlation between the independent variables which will mislead the result of the study. Table 4.1 above presents the matrix of the linear relationships among the independent variables of the study. From the observation, none of variables has correlation above 50%. Therefore, the low magnitude of the correlations amongst the explanatory variables implies that multicollinearity was not a problem in the sample of the study. In a bid to prove and substantiate the absence of serious multicollinearity between the exogenous variables, colinearity diagnostics tests are observed as the tolerance values and the variance inflation factors (VIF) values portrays no multicollinearity in the data.

The tolerance value and the variance inflation factor (VIF) are two advanced measures of assessing multicollinearity between the explanatory variables. The variance inflation factor and tolerance are computed using STATA and were found to be consistently smaller than ten and one respectively, indicating absence of multicollinearity (Neter, Kutner, Nachtsheim, & Wasserman, 1996; Cassey & Anderson, 1999). This shows the appropriateness and fitness of the model with four independent variables. In addition, the absence of multicollinearity between the explanatory variables were further substantiated by the tolerance values which were consistently smaller than 1.00. (Tobachnick & Fidell, 1996).

##### **Heteroscedasticity Test:**

Breusch-Pagan / Cook-Weisberg is used to test the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables. The alternative hypothesis states that the error variances increase (or decrease) as the predicted values of Y increase, that is, the bigger the predicted value of Y, the bigger the error variance is. A large chi-square would indicate that heteroscedasticity was present. In the result obtained from the heteroscedasticity test conducted in this work, the chi-square value (7.44) which was not small and the p-value (0.0064) which is small, indicating presence of heteroscedasticity. This shows a violation of assumption number four of classical linear regression model which states that there must be constant variance, that is, the disturbances  $u_i$  appearing in the population regression function are homoscedastic. To control for this, the researcher decided to run for Fixed and Random effect model. This will enable whatever conclusions drawn or inferences made to be free of mislead. After conducting the fixed and random model, the hausman specification test for fixed and random effect suggested random model to be appropriate, to further substantiate for this, Lagrangia Multiplier Test for Random Effects was conducted.



## Breusch and Pagan Lagrangia Multiplier Test for Random Effects

The Random effects can be tested by using the Breusch-Pagan Lagrangia Multiplier Test. The null hypothesis assumes that there are no random effects. If the null hypothesis is rejected then the random group effect model is more applicable than the pooled OLS model. The large  $X^2$  values show that the null hypothesis is rejected in favour of the random group effect model. This study shows  $X^2$  of DAC is 1.28 as against p-value of 0.2575. This indicates that OLS is more appropriate.

### 5.1 Conclusion and Recommendation

This study investigates the relationship between board characteristics and earnings management of listed Food and Beverages Firms in Nigeria. Board size, board meetings, board independence and board financial expertise and women director were used to proxy for board characteristics, while the residuals from the modified Jones Model by Dechow et al. (1995) was used to represent earnings management as the dependent variable of the study. It was therefore found that there is an inverse relationship between board size, board financial expertise, board meetings and earnings management of listed food and beverages firms in Nigeria, while board composition and women directorship are positively significantly related to earnings management of listed food and beverages firms in Nigeria. For that the study concluded that larger board sizes are better at improving the quality of earnings, it was also concluded that board members with financial expertise are better in detecting earnings management thereby reducing the likelihood of earnings management provided by managers. The study also established that meetings more than four times will not result in more effective monitoring. It was concluded that board independence might not guarantee that managers would not manipulate earnings. The study finally concluded that the presence of women in the board of the listed Food and Beverages Firms in Nigeria will not constrain earnings manipulation.

In line with the above findings, the study recommended that the shareholders of listed Food and Beverages Firms in Nigeria should have as much directors as positive because more directors signifies less earnings management and also the regulators such as SEC should increase the minimum number of members with financial expertise in the board and also they should have a statutory position on the maximum number of board meetings, as SEC code of corporate governance is silent on this. And finally women directorship should be limited as the study found that more women in the board of the listed Food and Beverages Firms increments earnings manipulation.

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. su dac bs bm bi be wd fs, detail

dac

Percentiles		Smallest		
1%	.00454	.00454		
5%	.00762	.00592		
10%	.00967	.00762	Obs	48
25%	.01596	.00821	Sum of Wgt.	48
50%	.058595		Mean	.0715294
			Std. Dev.	.0643458
75%	.106915	Largest	Variance	.0041404
90%	.1748	.17829	Skewness	1.26374
95%	.1918	.1918	Kurtosis	4.277061
99%	.27207	.2501		
		.27207		

bs

Percentiles		Smallest		
1%	9	9		
5%	10	10		
10%	11	10	Obs	48
25%	11.5	10	Sum of Wgt.	48
50%	13		Mean	12.875
			Std. Dev.	1.829138
75%	14	Largest	Variance	3.345745
90%	15	15	Skewness	.1021098
95%	16	16	Kurtosis	2.309541
99%	17	17		

bm

Percentiles		Smallest		
1%	3	3		
5%	3	3		
10%	3	3	Obs	48
25%	4	3	Sum of Wgt.	48
50%	4		Mean	4.4375
			Std. Dev.	.8729078
75%	5	Largest	Variance	.7619681
90%	6	6	Skewness	.1932058
95%	6	6	Kurtosis	2.382309
99%	6	6		

bi

Percentiles		Smallest		
1%	.25	.25		
5%	.25	.25		
10%	.25	.25	Obs	48
25%	.33	.25	Sum of Wgt.	48
50%	.35		Mean	.3491667
			Std. Dev.	.0527069
75%	.4	Largest	Variance	.002778
90%	.4	.42	Skewness	-.57206
95%	.42	.42	Kurtosis	2.524981
99%	.44	.44		

be

Percentiles		Smallest		
1%	.17	.17		
5%	.17	.17		
10%	.17	.17	Obs	48
25%	.17	.17	Sum of Wgt.	48
50%	.27		Mean	.2852083
			Std. Dev.	.1121357
75%	.33	Largest	Variance	.0125744
90%	.5	.5	Skewness	.8184125
95%	.5	.5	Kurtosis	2.988441
99%	.6	.6		

bm

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Percentiles		Smallest		
1%	1	1		
5%	1	1		
10%	1	1	Obs	48
25%	2	1	Sum of Wgt.	48
50%	2		Mean	2.104167
		Largest	Std. Dev.	.6600962
75%	3	3		
90%	3	3	Variance	.435727
95%	3	3	Skewness	-.1086962
99%	3	3	Kurtosis	2.319551

var1

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Percentiles		Smallest		
1%	15.8	15.8		
5%	15.9	15.9		
10%	16.2	15.9	Obs	48
25%	16.9	16	Sum of Wgt.	48
50%	17.805		Mean	17.555
		Largest	Std. Dev.	.9317702
75%	18.225	18.6		
90%	18.6	18.97	Variance	.8681957
95%	18.97	19.1	Skewness	-.2860754
99%	19.4	19.4	Kurtosis	2.154681

. pcorr dac bs bm bi be wd fs, star (0.05) sig

	dac	bs	bm	bi	be	wd	fs
dac	1.0000						
bs	-0.2262 0.1221	1.0000					
bm	0.1519 0.3026	0.0616 0.6773	1.0000				
bi	0.1563 0.2888	-0.1313 0.3737	-0.1676 0.2547	1.0000			
be	-0.2597 0.0746	0.4358* 0.0020	-0.1433 0.3311	-0.0223 0.8805	1.0000		
wd	0.2095 0.1531	0.3634* 0.0111	0.6577* 0.0000	-0.0770 0.6032	0.1707 0.2460	1.0000	
fs	-0.2854* 0.0493	-0.4053* 0.0043	0.0056 0.9697	0.2310 0.1141	-0.2753 0.0583	-0.2340 0.1094	1.0000

. reg dac bs bm bi be wd fs

Source	SS	df	MS	Number of obs =	48
Model	.07841974	6	.013069957	F( 6, 41) =	4.61
Residual	.116178343	41	.002833618	Prob > F =	0.0012
Total	.194598083	47	.004140385	R-squared =	0.4030
				Adj R-squared =	0.3156
				Root MSE =	.05323

dac	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
bs	-.0137412	.0052468	-2.62	0.012	-.0243373 - .0031452
bm	-.0026496	.0130829	-0.20	0.841	-.0290711 .023772
bi	.2844009	.1555669	1.83	0.075	-.0297728 .5985745
be	-.1619461	.0802726	-2.02	0.050	-.3240599 .0001678
wd	.0316197	.0180523	1.75	0.087	-.0048376 .068077
fs	-.0344675	.00954	-3.61	0.001	-.053734 -.015201
_cons	.7456335	.1981716	3.76	0.001	.3454178 1.145849

. hettest

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

chi2(1) = 7.44  
 Prob > chi2 = 0.0064

. vif

Variable	VIF	1/VIF
wd	2.36	0.424586
bm	2.16	0.462270
bs	1.53	0.654588
be	1.34	0.744082
fs	1.31	0.763002
bi	1.12	0.896757
Mean VIF	1.64	

. xtset id year, yealy  
**option yealy not allowed**  
 r(198);

. xtset id year, yearly  
 panel variable: **id (strongly balanced)**  
 time variable: **year, 2007 to 2012**  
 delta: **1 year**

. xtreg dac bs bm bi be wd fs, fe

Fixed-effects (within) regression  
 Group variable: **id**

Number of obs = 48  
 Number of groups = 8  
 Obs per group: min = 6  
 avg = 6.0  
 max = 6

R-sq: within = 0.4189  
 between = 0.2056  
 overall = 0.1911

F(6, 34) = 4.08  
 Prob > F = 0.0034

corr(u\_i, Xb) = -0.4113

dac	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bs	-.0203482	.0065128	-3.12	0.004	-.0335838	-.0071126
bm	-.0078413	.0160688	-0.49	0.629	-.0404971	.0248145
bi	.0920766	.1964814	0.47	0.642	-.3072216	.4913748
be	-.1874214	.0899665	-2.08	0.045	-.3702554	-.0045874
wd	.0270848	.0218069	1.24	0.223	-.0172321	.0714017
fs	-.0076346	.0172553	-0.44	0.661	-.0427017	.0274325
_cons	.4666472	.2693265	1.73	0.092	-.0806902	1.013985
sigma_u	.04162055					
sigma_e	.05340264					
rho	.37788563	(fraction of variance due to u_i)				

F test that all u\_i=0: F(7, 34) = 0.96 Prob > F = 0.4735

. est store fixed

. xtreg dac bs bm bi be wd fs, re

```

Random-effects GLS regression           Number of obs   =       48
Group variable: id                     Number of groups =        8

R-sq:  within = 0.3598                  Obs per group:  min =        6
        between = 0.6635                  avg =       6.0
        overall = 0.4030                  max =        6

Random effects u_i ~ Gaussian          Wald chi2(6)    =       27.67
corr(u_i, X) = 0 (assumed)            Prob > chi2     =       0.0001
    
```

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
dac						
bs	-.0137412	.0052468	-2.62	0.009	-.0240247	-.0034578
bm	-.0026496	.0130829	-0.20	0.840	-.0282917	.0229925
bi	.2844009	.1555669	1.83	0.068	-.0205046	.5893063
be	-.1619461	.0802726	-2.02	0.044	-.3192775	-.0046146
wd	.0316197	.0180523	1.75	0.080	-.0037621	.0670015
fs	-.0344675	.00954	-3.61	0.000	-.0531656	-.0157693
_cons	.7456335	.1981716	3.76	0.000	.3572243	1.134043
sigma_u	0					
sigma_e	.05340264					
rho	0	(fraction of variance due to u_i)				

. est store random

. hausman fixed random

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
bs	-.0203482	-.0137412	-.006607	.0038585
bm	-.0078413	-.0026496	-.0051917	.0093297
bi	.0920766	.2844009	-.1923242	.1200162
be	-.1874214	-.1619461	-.0254754	.0406237
wd	.0270848	.0316197	-.0045349	.0122334
fs	-.0076346	-.0344675	.0268328	.0143783

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)' [(V\_b-V\_B)^(-1)] (b-B)  
 = 5.96  
 Prob>chi2 = 0.4273

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

dac[id, t] = Xb + u[id] + e[id, t]

Estimated results:

	Var	sd = sqrt(Var)
dac	.0041404	.0643458
e	.0028518	.0534026
u	0	0

Test: Var(u) = 0

chi2(1) = 1.28  
 Prob > chi2 = 0.2575