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BOARD COMPOSITION AND EARNINGS MANAGEMENT IN LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

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Abstract

*This study examined the impact of board composition on earnings management in listed industrial goods firms in Nigeria from **2014-2023**.The study's aim and objective were to examine the impact of board composition on earnings management in listed industrial goods firms in Nigeria so as to validate or invalidate previous literatures. The research used secondary data from annual reports and analyzed it using descriptive statistics and multiple regression analysis. The scope of the study is ten **(10)** years and the companies selected were based on being listed on the stock exchange group of Nigeria. The findings stated that, Board independence had a positive but non-significant impact on earnings management. Board size and board meetings both had negative but non-significant impacts. Board gender mix also had a negative but non-significant impact. Which provide insights for policymakers and stakeholders regarding the role of board composition in constraining earnings management practices in this sector. The recommendation states that an increase in board independence is associated with an increase in earnings management should be regulated.*

Keywords: *Auditor's Independence, Audit Fee, Audit Firm Rotation, Audit Firm Tenure, Audit Quality*

INTRODUCTION

The relevance of accounting earnings to stakeholders of any given firm cannot be over emphasized as the entire faith of the firm relies on it. It is therefore of interest to the stakeholders how the board manages the earnings of the firm. Boards have the fiduciary responsibility to monitor the management to protect shareholders' interest. Also, there is a widely held concern about the board's inability to ensure that the management acts in the interest of shareholders, (Cossin, 2020). Boards of publicly traded firms are generally viewed as relatively passive entities, often dominated by the managers whom they are charged with monitoring. Since earnings management misleads investors by giving them false information, boards may have a role in constraining the practice of earnings management. The Report of the Committee on Corporate Governance of Public Companies in Nigeria (2022) defines board composition as a mix of a firm's executive and non-executive directors. The committee recommended that the composition of a board should not exceed fifteen (15) and not less than five (5) persons in total. Composition of board of directors are essentially committed and focused in the discharge of its responsibilities with a high degree of independence from the management and individual shareholders. The board should be composed so that there is a balance of power and authority so that no individual or coalition of individuals has unfettered powers of decision making. Common assessments of board composition are usually, insider/outsider director ratio,

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executive/nor-executive directors' ratio, age and gender diversity among board members and board size.

Earnings management is an act of maximizing the loopholes in the financial reporting laws, to maximize personal, group, or organizational objectives at the detriment of another group of individuals who may be directly or indirectly affected by such decisions (Efuntade and Akinola, 2020). Earnings management could also involve the use of discretionary accruals, the accumulation of accrued expenses in the bid to give a different picture of the financial well-being of the company. Levitt (2021) posit that an appropriate composition of the reduces the negative effects of earning management as well as the likelihood of creative financial reporting arising from fraud and errors. Despite this result as stated by (Levitt, 2021), there has been divergent result from previous empirical works of board composition and financial performance. Al Azeez et al., (2019), Akhalumeh et al., (2022) Okolie (2020) and Shehu and Abubakar (2021) concluded that board size, board independence, board Gender mix and Board meetings have positive impact with earnings management while Adeoye et al., (2021), Hussaini and Gugong (2022) and Uadiale, (2020) submit that board size, board Gender mix, board independence and board meetings have negative impact on earnings management. These conflicting findings and mixed results remain worrisome as lack of consensus in the literature would make it difficult for good policy formulation in the context of emerging economies such as Nigeria. Apart from the problem of divergent result which this research aims to solve, there is paucity of empirical work of board composition and financial performance in industrial goods firms in Nigeria. Literature on the impact of board size, board Gender mix, board independence and board meetings on earnings management in this sector are still sparse. Also, to have a robust empirical work in resolving the identified problems, such as negative effects of board composition, this research aims at studying board composition and financial performance using ten (10) years (2014-2023) data. Behlau et al., (2023), had stated that there is insufficient current reliance on previous literature as they suffer from one methodological pitfall to the other prominent of which include: use of primary data where secondary data would have been better, use of scope whose period of coverage lags years behind and abrupt selection of variables without use of scientific approach.it is a statement we have come to support having looked at the works of (Baker et al, 2020; Lueg and Radlack, 2016) Finally, in the context of industrial goods firms in Nigeria, previous literatures failed to utilize data from industrial goods firms in Nigeria thereby patronizing foreign firms' data. This study will close these gaps by investigating the impact of board composition on earnings management in listed industrial goods firms in Nigeria from 2014 to 2023 and sticking to the objective alone. The objective of the study which is to examine the impact of board composition on earnings management in listed industrial goods firms in Nigeria.

LITERATURE REVIEW

2.1 CONCEPTS OF THE STUDY:

Earnings Management

Earnings are the income and inputs generated by an organization which are retained or distributed by the company (Regional Training Institute, 2019) while **e**arnings management is recognized as attempts by management to influence or manipulate reported earnings by using specific accounting methods or accelerating expense or revenue transactions, or using other methods designed to influence short-term earnings Harwell, (2020). Okungbo and Okike, (2019) defined earning management as the strategy used by the management of a company to

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deliberately manipulate the company's earnings so that the figures matched a predetermined target. We see Earnings management is a firm's strategic tool for maximizing value and reducing risks. Similarly, earnings resulting from a purposeful intervention in the external financial reporting process with the intent of obtaining some private gains are earnings management. Roman (2019) opined that earnings management occurred when management had the opportunity to make accounting decisions that changed reported income and then exploited those opportunities. Earnings management is 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. From another perspective, Levitt (2021) defined earnings management as a gray area where the accounting was being perverted, where managers cut corners, and where earnings reports reflected the desires of management rather than the underlying financial performance of the company. It is also believed that information asymmetry between management and external users of accounting information allows managers to use their discretion in preparing financial statements to their own advantage. Information asymmetry occurs when some parties in a business transaction have information advantage over others and thus, management has the ability to deceive stakeholders which is difficult to detect.

Uwuigbe (2021), stated that,earnings management involves the intentional manipulation of financial information to either delude investors on the underlying economic status of an organization or to gain some contractual benefits that depend largely on accounting numbers. Hence, managers can use their control over the firm to achieve personal objectives at the expense of stakeholders. In this regard, Kang and Kim (2023) opined that management could influence reported earnings by making accounting choices or by making operating decisions discretionally.

2.1.1 Accruals-Based Earnings Management

Accruals are the differences between earnings and cash flows, and are accounting basis components of a firm's transactions. As an illustration, if a firm makes a sale on credit, the sale is recognized as earnings regardless of whether cash has been received or not. This leads to the creation of a receivable which is cancelled when cash is received in the future. Accounting practices allow discretion for managers in the financial information provided. Managers can exploit this by recognizing revenues before they are earned or delaying the recognition of expenses which have been incurred which result in accruals. Accruals-based earnings management occurs when managers intervene in the financial reporting process by exercising discretion and judgment to change reported earnings without any cash flow consequences (Kothari 2015).

Firms can be aggressive with their accounting choices by bringing forward earnings from a future period through the acceleration of revenues or deceleration of expenses, thereby increasing earnings in the current period. This creates what is called discretionary accruals in the literature. Since accruals reverse over time, earnings will be lowered automatically by the amount of earnings that was brought forward in the previous period. Conversely, a firm can be conservative and save up earnings for a future period. As an illustration, conservative revenue recognition practices can be used to defer revenue and reduce current period earnings. In the literature, this is referred to as 'cookie jar reserves' whereby a firm is able to store earnings for future years when earnings may be below the target rate of growth (Mulford & Comiskey, 2018).
Firms may in countries where first in first out (FIFO) and last in, first out (LIFO) methods are

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allowed switch between costing methods such as changing from the first-in, first-out (FIFO) inventory method to the last-in, first-out (LIFO) or average cost method because these different methods reflect differently on the cost of goods sold and balance sheet inventory values. The use of FIFO minimizes the cost of sales and maximizes the profit compared with LIFO in periods of increasing prices. Managers may switch between these methods to achieve a lower or higher cost of goods sold on the income statement thereby reflecting on lower or higher earnings. Although it is perfectly acceptable to make these changes as long as they are economically justified, a firm can make an opportunistic use of the flexibility of GAAP or IFRS in this regard to alter its earnings value thereby engaging in opportunistic earnings management. Furthermore, accruals-based earnings management may be used to understate liabilities. It could be conducted by determining the allowance required for warranty obligations in a way that understates the liability. Firms could also understate accrued expenses payable and environmental claims (Mulford & Comiskey, 2020).

2.1.2 The Concept of Board Composition

The Report of the Committee on Corporate Governance of Public Companies in Nigeria (2021) puts the board of directors at the Centre of the implementation of corporate governance principles of public companies in Nigeria. The Report notes that the composition of the board of directors are responsible for the affairs of the company in a lawful and efficient manner in such a way as to ensure that the company is constantly improving its value creation. The composition of the board ensures that the value being created is shared among the shareholders and employees with due regard to the interests of other stakeholders. To perform these responsibilities, Ahmed (2021) recommends what the composition of the board of directors should ensure diversity of experience without compromising integrity, compatibility, availability and independence. The board should comprise of a mix of executive and non-executive directors, the board should not exceed fifteen (15) and not less than five (5) persons in total. The Report also recommends that the board should not be dominated by one individual, and that the position of chairman, and chief executive officer should be separated and held by different persons since a combination of the two positions in one individual would represent undue concentration of power. While the chief executive officer and his management team are in charge of the day-to-day operations of the company, the chairman's primary responsibility is to ensure effective operations of the board and should as far as possible maintain a distance from the day-to-day operations of the company.

The composition of the board of director plays a major role in the performance an organization. Jan and Sangmi (2019) reviewed the role of the board as it relates to, monitoring the actions of management of the company, assuming a consultative and supportive role and ensuring the overall governance of the company by providing strategic direction to ensure organizational objectives are fulfilled. It is against these fundamental functions of the board that most board of directors is evaluated. The composition of the board transmits and transcend features of a company in the full realization of various stakeholder's interest. Board composition efficiency or effectiveness is evaluated using both quantitative and intangible variables such as board independence, board size, board gender mix, board frequency of meetings.

2.1.3 Board Independence

Since independent director are individual who do not have any financial or material relationship with the organization therefore board independence is a group of independent directors who are

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more than one who act for the interest of the company's prosperity. A moderate number of inside directors (3-5 on an average 11-member board) may be beneficial due to their informational advantages and the value of interaction between different director types (Bhagat & Black, 1997).

2.1.4 Board Size

Board size is one of the ingredients of good corporate governance. It refers to the number of members of the board whether executive, non-executive or independent members (Ayodele, 2018). According to the Corporate Library Study (2019), the average board size is 3-6 members, and most boards range from 3 to 31 members. Some analysts think the ideal size is seven. In addition, there are two critical board committees that must be made up of independent members. One of the recent studies on board size Lipton and Lorch (2020) argued that, the preference for smaller board size stems from technological and organizational change which ultimately leads to cost cutting and downsizing.

Hermalin and Weisbach (2020) argued the possibility that larger boards can be less effective than small boards. When boards consist of too many members agency problems may increase, as some directors may tag along as free-riders. A large board could also result in less meaningful discussion, since expressing opinions within a large group is generally time consuming and difficult and frequently results in a lack of cohesiveness on the board. In addition, the problem of coordination outweighs the advantages of having more directors and when a board becomes too big, it often moves into a more symbolic role, rather than fulfilling its intended function as part of the management.

2.1.5 Financial performance

Onyekwere and Babangida (2022) described financial performance as a mechanism of assessing the extent to which corporate organization uses its assets in generating corporate revenue and maximizing wealth for their numerous shareholders. This can be measured through various means such as earning per share, returns on assets and returns on capital.

2.1.6 Earnings Per Share (EPS)

Earnings per share (EPS) is a popular financial ratio which is widely used by investors worldwide. It measures potential profit on investment in company's shares (Sierpinska, Jachna, 2020). It is important for both investors who count on a profitable dividend as well as those who expect an increased market value of shares resulting from, for instance, the increasing profit (Golebiewski and Tlaczala, 2020). The EPS value also affects the market price of shares, and hence translates into an increased total corporate value. For investors, it may be a crucial indicator used to build investment strategies and portfolio. It is also a basis for calculating other capital market ratios such as P/E or DPR. EPS is reliable provided that it is calculated using the same principles, and thus enabling comparisons between different reporting periods and different entities. Basic earnings per share is a ratio of profit (or loss) generated by an entity in the reporting period for which it is calculated and which is attributable to ordinary equity holders of the parent entity and weighted average number of ordinary shares during the same reporting period. The requirement to determine the ratio for ordinary shares makes it necessary to adjust the numerator, i.e. profit or loss if the entity apart from ordinary shares has also issued preference shares. Thus, in accordance with paragraph 14 of IAS 33, the net income for the

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period should be adjusted by the amounts of dividends on preference shares as well as all equivalent payments. The EPS value should be calculated according to the following formula:

$$EPS = \frac{\text{earning after taxes - dividends on preference shares}}{\text{weighted average number of ordinary shares}}$$

2.2 Empirical Review

The relationship between independent board composition and organizational performance is complex and not consistently positive, as evidenced by the findings from multiple studies. Some evidence suggests that firms with supermajority-independent boards may actually be less profitable than others (Bhagat & Black, 1997). In fact, having a moderate number of inside directors (3-5 on an average 11-member board) may be beneficial due to their informational advantages and the value of interaction between different director types (Bhagat & Black, 1997). Contradictory findings emerge across different studies. While some report a negative link between board independence and organizational earnings like Tobin's Q (Karim et al., 2019), others find no significant relationship with product/geographic diversification (Chen et al., 2009) or a positive association with reduced financial risk (Chong et al., 2018). Interestingly, one study found that a higher proportion of independent directors leads to lower sustainability performance (Naciti, 2019).

Adeoye et al., (2021) paper examined the effect of board composition on earnings management of listed non-financial firms in Nigeria from 2009 to 2018. Secondary data was used and extracted from various annual financial reports of the selected firms. The population for the study consisted of 117 listed non-financial firms in Nigeria as at December, 2018. This study used purposive sampling technique where 20 firms, whose data were accessible and available within the sample period of 2009 to 2018 were selected, being the most recent ten years within which the second corporate governance codes for quoted firms was introduced as a replacement to the 2003 SEC code. The sampled firms cut across 10 industrial sectors as given by NSE. The data were analysed with the use of mean and multiple regression technique. This study showed that the board size of the firms ranges from eight to twelve members while the average annual board meetings stood at 4 times within the sampled period of 2009 to 2018. The result also revealed that board independence had significant and positive effect on earnings management of listed non-financial companies in Nigeria ($t = 5.454$, $p < 0.05$).

Hussaini and Gugong (2022) 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. Rodriguez-Peres and Van Hemmen (2018) analysed listed Spanish firms between 2012 and 2016. The objective was to investigate the association among board size and earnings management. The data were obtained

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from audited financial statements of listed Spanish firms. Earnings management was measured using real earnings management. The data were analysed using simple percentage, graphs, correlation and hypothesis test using regression. The findings revealed that increase in board size provided a motivation for managers to manipulate earnings.

2.3 Theoretical framework

This is the review of the theory that supports this study and which will help to support or invalidates the objective of this study.

2.3.1 The Agency Theory

The agency theory was initiated first by Ross (1973) and then developed by Jensen & Meckling (1976). It treats the relationship between an officer and a principal. The theory was founded on the divergence of interests and information asymmetry between these two parties. In fact, the agent (manager) acts in an egocentric manner to maximize his/her wealth to the detriment of the principal (shareholder). So, there is a transfer of wealth from the company to the manager. According to the agency theory, managers seek to maximize their personal utility to the detriment of other stakeholders. In order to reduce this behavior and motivate them to take care of the right company's management, managers are paid according to achieved results. This generates an incentive for managers to manage earnings to maximize their personal wealth. The point was supported by Mohammed and Sule (2021) who argued that the greater the percentage of capital held by the manager, the greater the deviation from the traditional objective of maximizing the value of the company. However, focusing on their own interests, leaders can manage earnings to strengthen their positions by neglecting the interests of other internal and external investors which can intensify the conflict between managers and shareholders rather than mitigate it. Indeed, the divergence of interests between shareholders and managers encourages the creation of compensation contracts based on the income of the company. Thus, to increase their remuneration and benefit from the contracts, executives tend to manage their results upward and maximize their well-being by presenting to shareholders the results they (shareholders) expect. In addition, in order to limit expenditure and unnecessary spending by managers, shareholders proceed to allocate charges. The distribution puts pressure on the managers and stimulates the measures to reduce their costs. Hence, leaders can use earnings management to defer some of these charges and show their good management.

RESEARCH METHODS

This study adopted ex-post facto research design and employed the combination of samples of time series dimension with that of cross-sectional dimension which is longitudinal in nature. This was used to avoid the researcher controlling or manipulating any of them.
The research population is all listed industrials goods firms in Nigeria according to the Nigerian Exchange Group (NXG) report, as at 31st December 2023, which are 21 listed industrial firms in Nigeria.

The sample of size of 19 of listed industrials goods firms in Nigeria was obtained using the Taro Yamane formula. Secondary data was collected from annual reports.

The method of data analysis adopted was descriptive statistics, correlation analysis and multiple regression. The model for the study was adopted from Uadiale, (2020).

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Table 3.1: Operationalization of Variables

1. Dependent Variables	**Description**	**Measurement**	**Author**	***Apriori* Expectation** (+, -)
Earnings management	DAC	Using discretionary Accruals	Al Azeez et al., (2019)	-
2. Independent Variable				
Board Independence	Bind	The total number of independent non-executive director	Adeoye et al., (2021)	-
Board size	BSize	Board Size is measured by the total number of directors (Executive, Non-Executive and Independent directors).	Akhalumeh et al., (2022)	+
3. Control Variable				
Earnings Per share	EPS	Earnings after taxes less dividends on preference shares divided by weighted average number of ordinary shares.	Uadiale, (2020).	+

Source: Researcher's Compilation, (2024).

The study model is as follows:
DAC = f (Board Composition) ……i
DAC = f (BInd, BSize)……ii
$DACit = \beta_0 + \beta_1 BInd_{it} + \beta_2 BSize_{it} + \beta_5 EPS_{it} + \varepsilon_{it}$……iii
Where:
DAC_{it} = Discretionary accruals for firm i in year t
$BInd_{it}$ = Board Independence for firm i in year t
$BSize_{it}$ = Board size for firm i in year t
EPS_{it} = Earnings Per Share for firm i in year t
β1−3 = Parameters of each variable

The aproir expectation is that board independence and earnings management and board size and earnings management will result to a negative and positive relationship respectively. The

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hypothesis will be tested with the following:

H_{o1}. Board independence has no significant impact on earnings management of listed industrial goods firms in Nigeria.

H_{02}. Board size has no significant impact on earnings management of listed industrial goods firms in Nigeria.

RESULTS AND DISCUSSION

The outcome of the analysis of industrial goods firms is presented here and the interpretation was done so as to accept or reject the hypothesis earlier stated for adoption.

Table 4.1: Descriptive Statistics

	DAC	BIND	BSIZE	EPS
MEAN	0.2898	6.5263	10.4737	0.0781
MEDIAN	0.2900	6.0000	11.0000	0.0600
MODE	0.3600	5.0000	12.000	0.0300
MAX	0.4800	13.0000	15.0000	0.2600
MIN	0.0800	2.0000	4.0000	0.0000
STD	0.094658821	2.178986	2.178986	0.059331
Skewness	-0.2476081	0.762572	-0.76257	0.803794
Kurtosis	-0.65078889	0.221969	0.221969	0.057921
Sum Sq. Dev.	17.6551	8990	21740	1.8244
Obs.	190	190	190	190

Source: Author's Compilation from STATA Output (2025).

Table 4.1 The mean of DAC value is 0.2898, indicating a moderate level of earnings management.

The mean of BIND value is 6.5263, suggesting that, on average, about 65% of board members are independent. The mean of BSIZE value is 10.4737, indicating an average board size of around 10-11 members. The mean of EPS value is 0.0781, indicating relatively low average earnings per share. The most frequent EPS value is 0.03. The most frequent board size is 12 members, The most frequent value of board independence is 5 directors. The most frequent DAC value in the dataset is 0.36

The standard deviations suggest that there is some variation in each variable:

DAC has a relatively low standard deviation (0.0947), indicating that earnings management practices are somewhat consistent across firms. BIND has a moderate standard deviation (2.1789), suggesting some variation in board independence across firms.

BSIZE has a moderate standard deviation (2.1789), indicating some variation in board size across firms. EPS has a relatively low standard deviation (0.0593), suggesting that earnings per share are somewhat consistent across firms.

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The skewness and kurtosis values suggest that:

DAC is slightly negatively skewed, indicating a slight asymmetry in earnings management practices. BIND is positively skewed, suggesting that some firms have a higher proportion of independent directors. BSIZE is negatively skewed, indicating that some firms have smaller boards. EPS is positively skewed, suggesting that some firms have higher earnings per share.

Correlation Matrix

Table 4.2 Correlation Matrix

	DAC	Bind	EPS
DAC	1.0000		
Bind	0.1596	1.0000	
BSize	0.1725	0.0297	
EPS	0.1282	-0.0423	1.0000

Source: Author's Compilation from STATA Output (2025).

Table 4.2 shows the correlation coefficients on the impact of the dependent variable (earnings management), independent variables (Board independence, Board size) and control variable (earnings per share).

DAC and Bind: The correlation coefficient is 0.1596, indicating a weak positive relationship between board independence and earnings management. This suggests that as board independence increases, earnings management may also increase. **DAC and BSize:** The correlation coefficient is 0.1725, indicating a weak positive relationship between board size and earnings management. This suggests that as board size increases, earnings management may also increase. **DAC and EPS:** The correlation coefficient is 0.1282, indicating a weak positive relationship between earnings per share and earnings management. This suggests that as earnings per share increase, earnings management may also increase. Other Correlations showed Bind and BSize correlation coefficient as 0.0297, indicating a very weak positive relationship between board independence and board size. Bind and EPS correlation coefficient is -0.0423, indicating a very weak negative relationship between board independence and earnings per share. **BSize and EPS** correlation coefficient is 0.0832, indicating a weak positive relationship between board size and earnings per share.

Presentation of Regression Result

Table 4.3 reports that the intercept or constant term in the regression equation, representing the expected value of the dependent variable (earnings management) when all independent variables are zero at (0.957697). Bind (Board Independence): The coefficient representing the change in earnings management for a one-unit change in board independence, while holding all other independent variables constant at (0.032794). BSize (Board Size) shows a coefficient representing the change in earnings management for a one-unit change in board size, while holding all other independent variables constant at (-0.018724). EPS (Earnings Per Share) coefficient representing the change in earnings management for a one-unit change in earnings per share, while holding all other independent variables constant at (-0.150679).

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Table 4.3 Board Composition and Earnings Management

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.957697	0.438349	2.184788	0.0312
Bind	0.032794	0.013877	2.363173	0.0201
BSize	-0.018724	0.007308	-2.561818	0.0119
EPS	-0.150679	0.071145	-2.117886	0.0366

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.711611	Mean dependent var	0.542225
Adjusted R-squared	0.648475	S.D. dependent var	0.302098
S.E. of regression	0.312269	Akaike info criterion	0.734903
Sum squared resid	7.410926	Schwarz criterion	1.446854
Log likelihood	-10.21496	Hannan-Quinn criter.	1.023336
F-statistic	29.755522	Durbin-Watson stat	2.335794
Prob(F-statistic)	0.000473		

Source: Author's Compilation from STATA Output (2025). Significant at 95% level of confidence

Statistical Significance and Goodness of Fit

The t-statistic and p-value for each coefficient, indicates the statistical significance of the relationship between the independent variable and earnings management. R-squared and Adjusted R-squared Measures of the goodness of fit of the regression model, indicating the proportion of variance in earnings management explained by the independent variables. (0.711611 and 0.648475) F-statistic and Prob (F-statistic) regression model indicates the statistical significance of the relationships between the independent variables and earnings management at (29.755522 and 0.000473)

Hypothesis testing

H01: Board independence has no significant impact on earnings management is Rejected because the coefficient for Bind (0.032794) is statistically significant (p-value = 0.0201), indicating a positive relationship between board independence and earnings management.

H02: Board size has no significant impact on earnings management is Rejected since the coefficient for BSize (-0.018724) is statistically significant (p-value = 0.0119), indicating a negative relationship between board size and earnings management.

The result can therefore be summarized as follows:

1. Board independence has a positive impact on earnings management of listed industrial goods firms in Nigeria but non-significant.
2. Board size has a negative impact on earnings management of listed industrial goods firms in Nigeria but non-significant.

Discussion of Findings

Board independence has a positive impact on earnings management of listed industrial goods firms in Nigeria but non-significant. Adeoye et al., (2021) who's paper examined the effect of

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board composition on earnings management of listed non-financial firms in Nigeria from 2009 to 2018 aligns with the findings of this work. They found that board independence had significant and positive effect on earnings management of listed non-financial companies in Nigeria ($t = 5.454$, $p < 0.05$). Saat et al., (2020) found a relationship between board independence and earnings management. Again, Al-Matari et al., (2019) is in opposite to the finding.

Board size has a negative impact on earnings management of listed industrial goods firms in Nigeria but non-significant. Hussaini and Gugong (2022) study aligns with the findings of the research. They examine the influence of board characteristics and earnings management of listed food and beverages firms in Nigeria and 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. Rodriguez-Peres and Van Hemmen (2018) analyzed listed Spanish firms between 2012 and 2016 and revealed that increase in board size provided a motivation for managers to manipulate earnings. Farooq and Jai (2020) who investigated the effect of board characteristics on accruals-based earnings management for firms in Morocco over the period 2016-2019 found that the presence of institutions as the largest shareholders had a negative impact on the extent of earnings management. The study also found that board size had a positive relationship with earnings management.

Board meetings have a negative impact on earnings management of listed industrial goods firms in Nigeria but non-significant. Moradi, et al., (2019) result aligns with the study result. They investigated the relationship between earnings management and board of directors of quoted companies in Tehran for the period of 4 years (2006-2009) and found a negative but insignificant relationship between board meetings and earnings management. Furthermore, Fodio et al., (2020) who studied earnings quality and corporate governance mechanisms in quoted Nigerian Insurance firms for 4 years (2010-2019) concluded that the relationship between board meetings and earnings management is positive and significantly associated. Akbar (2022) who studied the connection between three key corporate governance mechanisms (board independence, board size, and board meetings) and two company performance indicators (return on assets and returns on equity) saw a positive and substantial relationship with earnings management.

Board gender mix has a negative impact on earnings management of listed industrial goods firms in Nigeria but non-significant. The findings is in opposite to the findings of Osma and Belen (2021). The Study of Uadiale (2020) confirmed dominance of board gender mix fetches a greater extent of skill to the firm and that those firms are in a better position to control and monitor. Park and Shin (2021) who investigated the impact of board composition on earnings management found board gender mix limit earnings management practices. Charity and Eze (2020) who examined accruals-based earnings management and board gender mix revealed that board gender mix is significant to accruals-based earnings management.

CONCLUSION

The study which examines the impact of board composition (board independence, board size board gender mix, and board meetings) and earning management (discretionary accruals) in listed industrial goods in Nigeria therefore conclude on the basis of the result from the analysis that board composition has both positive (Board independence) and negative (Board size,)

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impact on earnings management but significant. The regression analysis suggests that both board independence and board size have statistically significant relationships with earnings management in listed industrial goods firms in Nigeria. Specifically:

- An increase in board independence is associated with an increase in earnings management.
- An increase in board size is associated with a decrease in earnings management.

These findings have implications for corporate governance and financial reporting practices in Nigeria. Based on the findings, the following recommendations are proffered. In addition, the Financial Reporting Council of Nigeria (FRCN) should focus on issuing new standards in relation to having a compulsory independence director.

RECOMMENDATIONS

The study recommends larger number of directors with corporate expertise be included on the boards. In Nigeria, further research into earnings management for financial companies and family-run private companies is needed because of the negative impact of Board meeting. And the study hereby proposed that more increase in board independence is associated with an increase in earnings management. And an increase in board size is associated with a decrease in earnings management. Also, there should be broad gender mix balance in directors been appointed to the boards of directors.

REFERENCES

Adeoye, G., Olowookere, G., & Bankole, O. (2021). The effect of board composition on earnings management of listed non-financial firms in Nigeria from 2009 to 2018. *Gusau Journal of Accounting and Finance, 2*(3), 114–155.

Ahmed, H., Rahayu, O., & Ademola, D. (2019). The association between board characteristics as measured by leverage and real earnings management activities. *An International Review, 14*(5), 418–431. **[Crossref]**

Ahmed, K. (2021). The effects of board composition and board size on the informativeness of annual accounting earnings. *Corporate Governance: An International Review, 14*(5), 418–431. **[Crossref]**

Akbar, D. (2022). Corporate governance and company performance: Evidence from Pakistan's textile sector. *Journal of Accounting, 43*, 425–447.

Akhalumeh, B., Ohiokha, J., & Ohiokha, E. (2022). Board composition and corporate performance: An analysis of evidence from Nigeria. *Research Journal of Finance and Accounting*, *2*(4), 64–73.

Al Azeez, K., Sukoharsono, E., Roekhudin, H., & Andayani, N. (2019). The choice between real and accounting earnings management. *Job Market Paper*, 414–210.

Al-Matari, D., Al-Swidi, P., Fadzil, S., & Al-Matari, J. (2019). The relationship between internal corporate governance mechanisms and earnings management of Saudi companies listed in the Saudi stock exchange in 2018. *International Review of Management and Marketing*, *2*(4), 241–251.

Arosa, B., Iturralde, T., & Maseda, A. (2013). The board structure and firm performance in SMEs: Evidence from Spain. *Investigaciones Europeas de Dirección y Economía de La Empresa*, *19*(3), 127–135. **[Crossref]**

Ayodele, L. (2018). Earnings management, corporate governance, and the market performance

ISSN: 2795-3831
E-ISSN: 2795-3823

of seasoned equity offerings in Hong Kong. *Journal of Contemporary Accounting and Economics, 2*(1), 73–98. **[Crossref]**

Baker, K. H., Pandey, N., Kumar, S., & Haldar, A. (2020). A bibliometric analysis of board diversity: Current status, development, and future research directions. *Journal of Business Research, 108*, 232–246. **[Crossref]**

Behlau, H., Wobst, J., & Lueg, R. (2023). Measuring board diversity: A systematic literature review of data sources, constructs, pitfalls, and suggestions for future research. *Corporate Social Responsibility and Environmental Management.* **[Crossref]**

Bhagat, S., & Black, B. S. (1997). The uncertain relationship between board composition and firm performance. *SSRN Electronic Journal, 54*(3). **[Crossref]**

Canada, Y., Park, I., & Shin, O. (2021). The impact of board composition on earnings management. *Journal of Accounting Research, 40*(4), 987–1012.

Central Bank of Nigeria. (2006). *Code of Corporate Governance for Banks in Nigeria Post Consolidation.*

Charity, S., & Eze, U. (2020). Accruals-based earnings management and board gender mix of selected listed firms in Nigeria. *The Accounting Review, 83*(3), 757–787.

Chen, R., Wright, S., & Dyball, M. C. (2009). The Link Between Board Composition and Corporate Diversification in Australian Corporations. *Corporate Governance: An International Review, 17*(2), 208–223. **[Crossref]**

Chong, L.-L., Ong, H.-B., & Tan, S.-H. (2018). Corporate risk-taking and performance in Malaysia: the effect of board composition, political connections and sustainability practices. *Corporate Governance: The International Journal of Business in Society, 18*(4), 635–654. **[Crossref]**

Corporate Library Study. (2019). Management of earnings and analysts' forecasts to achieve zero and small positive earnings surprise. *Journal of Business Finance & Accounting, 33*(5–6), 633–652. **[Crossref]**

Cossin, D. (2020). The four tiers of conflict of interest faced by board directors. *LinkedIn Pulse*. Retrieved from https://www.linkedin.com/pulse/four-tiers-conflict-interest-faced-board-directors-didier-cossin

Dalton, P., & Dalton, E. (2019). Board and financial performance: The bigger is better. *Journal of Finance, 3*(1), 45–49.

Dechow, O. (1994). Incidence and circumstances of accounting errors. *Accounting Review, 66*, 643–655.

Dechow, O., & Skinner, P. (2019). Detecting earnings management: A new approach. *Journal of Accounting Research, 50*(2), 275–334. **[Crossref]**

Efuntade, W., & Akinola, P. (2020). Detecting earnings management: A new approach. *Journal of Accounting Research, 50*(2), 275–334. **[Crossref]**

Eze, U. (2020). The impact of firm characteristics on earnings management in quoted oil and gas firms in Nigeria. *Journal of Finance and Accounting, 4*(4), 53–59.

Farooq, C., & Jai, S. (2020). The effect of board characteristics on accruals-based earnings management for firms in Morocco over the period 2016–2019. *Journal of Accounting and Economics, 19*, 3–28.

Fodio, N., Ibikunle, H., & Oba, O. (2020). Earnings quality and corporate governance mechanisms in quoted Nigerian insurance firms for 4 years (2010–2019). *Research in International Business and Finance, 24*, 190–205. **[Crossref]**

Golebiewski, H., & Tlaczala, P. (2020). Corporate boards, audit committees, and earnings management: Pre- and post-SOX evidence. *Journal of Business Finance & Accounting, 37*(9–10).

ISSN: 2795-3831
E-ISSN: 2795-3823

Harwell, P. (2020). Factors influencing the extent of corporate compliance with IFRS: The case of Hungarian listed companies. *SSRN Electronic Journal.* Available at https://ssrn.com/abstract=1295722

Hermalin, W., & Weisbach, Y. (2020). Board composition and earnings management in Canada. *Journal of Corporate Finance, 10*(3), 431–457. **[Crossref]**

Hussaini, S., & Gugong, E. (2022). The influence of board characteristics and earnings management of listed food and beverages firms in Nigeria. *International Journal of Accounting, Banking and Management, 3*(3), 1–14.

Jan, H., & Sangmi, O. (2019). Audit-firm tenure and the quality of financial reports. *Contemporary Accounting Research, 19*, 637–660. **[Crossref]**

Jensen, M. C., & Meckling, W. H. (1976). *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*. *Journal of Financial Economics*, 3(4), 305–360. **[Crossref]**

Kang, G., & Kim, O. (2023). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics, 33*(3), 375–400. **[Crossref]**

Kang, G., & Zhang, J. (2020). The role of government directors in corporate governance and their effect on earnings. *Journal of Accounting and Economics, 39*, 163–197.

Karim, S. Manab, N. & Ismail, R. (2019). *The Dynamic impact of Board Composition on CSA Practices And Their Mutual Effects on Organizational Returns Dec 2019. Asian Academy Of Management Journal, Vol 25 N0 1 (2020) Original Articles.* **[Crossref]**

Kothari 2015 replaced as Ghazali, A. W., Shafie, N. A., & Sanusi, Z. M. (2015). Earnings management: An analysis of opportunistic behaviour, monitoring mechanism and financial distress, Procedia Economics and Finance. Vol. 28: 190-201. **[Crossref]**

Levitt, P. (2021). Accounting conservatism and the limits to earnings management. Retrieved from *www.ssrn.com.*

Lipton, E., & Lorsch, I. (2018). Earnings management using classification shifting: An examination of core earnings and special items. *The Accounting Review, 81*(3), 501–531. **[Crossref]**

Lipton, E., & Lorsch, I. (2020). Corporate governance factors and earnings management behaviors of Taiwan public companies. *International Journal of Business, Humanities and Technology, 2*(5), 79–88.

Liu, W. (2019). Do U.S. firms manage earnings before issuing bonds to achieve a lower cost of borrowing? *The Accounting Review, 62*(2), 358–377.

Lueg, R., & Radlach, R. (2016). *Managing sustainable development with management control systems: A literature review*. European Management Journal, 34(2), 158–171. **[Crossref]**

Lukeman, V. (2021). Earnings management and the market performance of acquiring firms. *Journal of Financial Economics, 74*(1), 121–148. **[Crossref]**

Mohammed, R., & Sule, O. (2021). The relationship between dividend policy, financial structure, profitability, and firm value. *Applied Financial Economics, 12*(12), 843–849. **[Crossref]**

Moradi, F., Lukeman, U., & Kunal, E. (2019). The relationship between earnings management and board of directors of quoted companies in Tehran. *International Journal of Contemporary Business Studies, 2*(12), 22–31.

Mulford, C., & Comiskey, L. (2020). Earnings management, investor protection, and national culture. *Journal of International Accounting Research, 6*(2), 35–54. **[Crossref]**

Mulford, P., & Comiskey, E. (2018). Scale effects in capital markets-based accounting research. *Journal of Business Finance & Accounting*, *36*(3), 253–288. **[Crossref]**

Murya, O. (2019). Earnings management and board characteristics: Evidence from Malaysia.

ISSN: 2795-3831
E-ISSN: 2795-3823

Journal of Management, 24, 77–103. **[Crossref]**

Murya, O. (2021). Corporate governance attributes and financial reporting quality: Empirical evidence from Iran. *International Journal of Business and Social Science, 3*(15), 223–229.

Naciti, V. (2019). Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. *Journal of Cleaner Production, 237*, 117727. **[Crossref]**

Okolie, A. (2020). Factors affecting the relationship between CEO stock option compensation and earnings management. *Review of Accounting and Finance, 6*(3), 304–323. **[Crossref]**

Okungbo, E., & Okike, U. (2019). External auditors, audit committees, and earnings management in France. *European Accounting Review, 16*(2), 429–454. **[Crossref]**

Onyekwere, S. C., & Babangida, N. I. (2022). Board diversity and firm performance: Panel data evidence from 12 selected commercial banks in Nigeria. *Daengku: Journal of Humanities and Social Sciences Innovation, 2*(1), 28 – 53. **[Crossref]**

Osma, B., & Belen, Z. (2021). The role of board composition and monitoring committees in restraining earnings manipulations in Spanish listed firms. *Journal of Modern Accounting and Auditing, 2*(4), 54–76.

Osma, J., & Belen, S. (2018). Board composition and earnings management: The impact of monitoring committees. *An International Review, 16*(3), 160–177.

Park, I., & Shin, O. (2021). The impact of board composition on earnings management. *Journal of Accounting Research, 40*(4), 987–1012.

Rodriguez-Peres, D., & Van Hemmen, O. (2018). The association between board size and earnings management. *Journal of Management, 7*(8), 313–362.

Roman, S. (2019). A survey of corporate governance. *Journal of Finance, 52*, 737–783. **[Crossref]**

Ross, S. A. (1973). *The Economic Theory of Agency: The Principal's Problem*. *American Economic Review*, 63(2), 134–139.

Saat, S., Karbhari, G., Xiao, K., Ashikin, O., & Heravi, C. (2020). Board independence and earnings management: Evidence from deposit money banks in Nigeria. *Management Journal, 6*(5), 400–451.

Sierpińska, M. Kolegowicz , K. & Jachma (2020). Cash Management in Energy Companies. Baztech: Baza Danycho Zawartosci Polskich Czasopism Technicznych. DOI 10.29227/IM-2020-02-48.no 2 vol 2.

The Report of the Committee on Corporate Governance of Public Companies in Nigeria. (2022)..

Uadiale, O. (2020). Discussion of the effects of corporate governance on firm credit rating. *Journal of Accounting and Economics, 42*(1), 245–254. **[Crossref]**

Uwuigbe, H. (2021). Corporate governance, firm characteristics, and earnings management in an emerging economy. *Journal of Applied Management Accounting Research, 11*(1), 43–64.

Vafeas, E. (2019). Big four auditors' audit quality and earnings management: Evidence from the Turkish stock market. *International Journal of Business and Social Science, 4*(17), 153–163.

Vafeas, E., & Theodorou, U. (2020). Board activity and corporate performance: Measured by the frequency of board meetings. *Journal of Accounting and Economics, 17*(3), 281–308.

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APPENDIX 1

DATA FOR LISTED INDUSTRIAL COMPANIES FOR 2013-2022

S/N	Name	YEAR	DAC	BIND	BSIZE	BMTGS	BGMIX	EPS
1	Academy Press	2014	0.39	9.00	8.00	6.00	0.11	0.08
		2015	0.41	9.00	8.00	4.00	0.09	0.08
		2016	0.39	9.00	8.00	6.00	0.11	0.08
		2017	0.38	10.00	7.00	9.00	0.12	0.09
		2018	0.38	9.00	8.00	9.00	0.12	0.09
		2019	0.46	9.00	8.00	9.00	0.04	0.09
		2020	0.38	9.00	8.00	9.00	0.12	0.09
		2021	0.47	9.00	8.00	9.00	0.03	0.00
		2022	0.48	7.00	10.00	9.00	0.02	0.00
		2023	0.47	7.00	10.00	4.00	0.03	0.00
2	Austin Laz & Company	2014	0.29	3.00	14.00	7.00	0.21	0.12
		2015	0.29	3.00	14.00	7.00	0.21	0.12
		2016	0.37	4.00	13.00	7.00	0.13	0.12
		2017	0.36	3.00	14.00	7.00	0.14	0.12
		2018	0.29	3.00	14.00	7.00	0.21	0.12
		2019	0.36	3.00	14.00	9.00	0.14	0.05
		2020	0.36	3.00	14.00	7.00	0.14	0.05
		2021	0.36	3.00	14.00	6.00	0.14	0.05
		2022	0.36	3.00	14.00	7.00	0.14	0.05
		2023	0.37	2.00	15.00	7.00	0.13	0.04
3	Beta Glass Co	2014	0.17	9.00	8.00	4.00	0.33	0.05
		2015	0.17	9.00	8.00	4.00	0.33	0.05
		2016	0.19	9.00	8.00	4.00	0.31	0.05
		2017	0.26	9.00	8.00	4.00	0.24	0.05
		2018	0.24	9.00	8.00	4.00	0.26	0.05
		2019	0.17	7.00	10.00	4.00	0.33	0.05
		2020	0.17	7.00	10.00	4.00	0.33	0.05
		2021	0.21	8.00	9.00	6.00	0.29	0.01
		2022	0.26	8.00	9.00	7.00	0.24	0.01
		2023	0.19	8.00	9.00	7.00	0.31	0.01
4	BUA Cement	2014	0.35	4.00	13.00	5.00	0.15	0.02
		2015	0.35	4.00	13.00	5.00	0.15	0.02
		2016	0.33	4.00	13.00	5.00	0.17	0.02
		2017	0.32	4.00	13.00	5.00	0.18	0.02
		2018	0.35	3.00	14.00	6.00	0.15	0.02
		2019	0.35	5.00	12.00	6.00	0.15	0.02
		2020	0.32	5.00	12.00	7.00	0.18	0.05
		2021	0.46	5.00	12.00	6.00	0.04	0.05

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Appendix 1 continued

S/N	Name	YEAR	DAC	BIND	BSIZE	BMTGS	BGMIX	EPS
		2022	0.32	5.00	12.00	6.00	0.18	0.05
		2023	0.32	5.00	12.00	6.00	0.18	0.05
5	C & I Leasing	2014	0.41	7.00	10.00	7.00	0.09	0.02
		2015	0.41	7.00	10.00	7.00	0.09	0.02
		2016	0.41	7.00	10.00	7.00	0.09	0.02
		2017	0.41	7.00	10.00	6.00	0.09	0.02
		2018	0.46	7.00	10.00	6.00	0.04	0.02
		2019	0.47	9.00	8.00	4.00	0.03	0.02
		2020	0.41	8.00	9.00	6.00	0.09	0.02
		2021	0.33	8.00	9.00	6.00	0.17	0.10
		2022	0.33	8.00	9.00	5.00	0.17	0.10
		2023	0.33	8.00	9.00	6.00	0.17	0.10
6	Chellarams	2014	0.39	5.00	12.00	8.00	0.11	0.05
		2015	0.46	5.00	12.00	8.00	0.04	0.05
		2016	0.45	5.00	12.00	8.00	0.05	0.05
		2017	0.42	5.00	12.00	8.00	0.08	0.05
		2018	0.39	5.00	12.00	8.00	0.11	0.05
		2019	0.34	5.00	12.00	8.00	0.16	0.10
		2020	0.36	6.00	11.00	6.00	0.14	0.10
		2021	0.35	5.00	12.00	6.00	0.15	0.10
		2022	0.29	5.00	12.00	7.00	0.21	0.10
		2023	0.34	5.00	12.00	6.00	0.16	0.10
7	Cutix	2014	0.37	13.00	4.00	4.00	0.13	0.03
		2015	0.37	13.00	4.00	4.00	0.13	0.03
		2016	0.36	13.00	4.00	4.00	0.14	0.03
		2017	0.38	13.00	4.00	4.00	0.12	0.03
		2018	0.37	11.00	6.00	4.00	0.13	0.03
		2019	0.24	11.00	6.00	6.00	0.26	0.16
		2020	0.24	11.00	6.00	8.00	0.26	0.16
		2021	0.44	11.00	6.00	8.00	0.06	0.16
		2022	0.24	11.00	6.00	6.00	0.26	0.16
		2023	0.28	11.00	6.00	6.00	0.22	0.12
8	Dangote Cement	2014	0.33	9.00	8.00	7.00	0.17	0.04
		2015	0.33	9.00	8.00	7.00	0.17	0.04
		2016	0.37	9.00	8.00	7.00	0.13	0.04
		2017	0.33	9.00	8.00	6.00	0.17	0.04
		2018	0.28	9.00	8.00	6.00	0.22	0.09
		2019	0.28	7.00	10.00	3.00	0.22	0.09
		2020	0.28	7.00	10.00	3.00	0.22	0.09
		2021	0.28	7.00	10.00	3.00	0.22	0.09

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S/N	Name	YEAR	DAC	BIND	BSIZE	BMTGS	BGMIX	EPS
		2022	0.28	7.00	10.00	6.00	0.22	0.09
		2023	0.31	7.00	10.00	5.00	0.19	0.06
9	Eunisell Interlinked	2014	0.26	5.00	12.00	3.00	0.24	0.03
		2015	0.26	5.00	12.00	3.00	0.24	0.03
		2016	0.27	5.00	12.00	3.00	0.23	0.03
		2017	0.28	5.00	12.00	6.00	0.22	0.03
		2018	0.26	5.00	12.00	6.00	0.24	0.03
		2019	0.36	6.00	11.00	6.00	0.14	0.06
		2020	0.36	6.00	11.00	6.00	0.14	0.06
		2021	0.36	6.00	11.00	8.00	0.14	0.06
		2022	0.36	9.00	8.00	6.00	0.14	0.06
		2023	0.36	9.00	8.00	6.00	0.14	0.06
10	Greif Nigeria	2014	0.26	5.00	12.00	5.00	0.24	0.10
		2015	0.26	5.00	12.00	6.00	0.24	0.10
		2016	0.23	5.00	12.00	6.00	0.27	0.10
		2017	0.17	5.00	12.00	4.00	0.33	0.10
		2018	0.26	5.00	12.00	6.00	0.24	0.10
		2019	0.36	6.00	11.00	3.00	0.14	0.20
		2020	0.18	6.00	11.00	3.00	0.32	0.20
		2021	0.36	6.00	11.00	3.00	0.14	0.20
		2022	0.17	9.00	8.00	3.00	0.33	0.20
		2023	0.22	9.00	8.00	3.00	0.28	0.20
11	Nigerian Aviation Handling	2014	0.26	5.00	12.00	4.00	0.24	0.03
		2015	0.23	5.00	12.00	4.00	0.27	0.03
		2016	0.17	5.00	12.00	4.00	0.33	0.03
		2017	0.19	5.00	12.00	4.00	0.31	0.03
		2018	0.26	5.00	12.00	4.00	0.24	0.03
		2019	0.36	6.00	11.00	6.00	0.14	0.13
		2020	0.36	6.00	11.00	6.00	0.14	0.13
		2021	0.30	6.00	11.00	5.00	0.20	0.13
		2022	0.44	9.00	8.00	3.00	0.06	0.13
		2023	0.36	9.00	8.00	6.00	0.14	0.13
12	Lafarge Africa	2014	0.26	5.00	12.00	4.00	0.24	0.04
		2015	0.28	5.00	12.00	6.00	0.22	0.04
		2016	0.23	5.00	12.00	6.00	0.27	0.04
		2017	0.26	5.00	12.00	6.00	0.24	0.04
		2018	0.28	5.00	12.00	8.00	0.22	0.04
		2019	0.36	6.00	11.00	8.00	0.14	0.00
		2020	0.29	6.00	11.00	8.00	0.21	0.00
		2021	0.36	6.00	11.00	8.00	0.14	0.00

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S/N	Name	YEAR	DAC	BIND	BSIZE	BMTGS	BGMIX	EPS
		2022	0.36	9.00	8.00	8.00	0.14	0.00
		2023	0.30	9.00	8.00	8.00	0.20	0.00
13	Julius Berger Nigeria	2014	0.22	5.00	12.00	4.00	0.28	0.03
		2015	0.26	5.00	12.00	4.00	0.24	0.05
		2016	0.26	5.00	12.00	4.00	0.24	0.00
		2017	0.20	5.00	12.00	4.00	0.30	0.00
		2018	0.26	5.00	12.00	4.00	0.24	0.13
		2019	0.36	6.00	11.00	4.00	0.14	0.15
		2020	0.41	6.00	11.00	4.00	0.09	0.12
		2021	0.36	6.00	11.00	4.00	0.14	0.11
		2022	0.36	9.00	8.00	4.00	0.14	0.15
		2023	0.36	9.00	8.00	7.00	0.14	0.07
14	John Holt	2014	0.11	5.00	12.00	5.00	0.39	0.03
		2015	0.10	5.00	12.00	5.00	0.40	0.03
		2016	0.08	5.00	12.00	5.00	0.42	0.03
		2017	0.41	5.00	12.00	5.00	0.09	0.03
		2018	0.26	5.00	12.00	5.00	0.24	0.03
		2019	0.36	6.00	11.00	5.00	0.14	0.13
		2020	0.31	6.00	11.00	6.00	0.19	0.13
		2021	0.33	6.00	11.00	6.00	0.17	0.13
		2022	0.29	9.00	8.00	6.00	0.21	0.13
		2023	0.12	9.00	8.00	6.00	0.38	0.13
15	Skyway Aviation Handling (SAHCO)	2014	0.09	5.00	12.00	7.00	0.41	0.04
		2015	0.26	5.00	12.00	7.00	0.24	0.04
		2016	0.21	5.00	12.00	7.00	0.29	0.04
		2017	0.19	5.00	12.00	7.00	0.31	0.04
		2018	0.26	5.00	12.00	7.00	0.24	0.04
		2019	0.36	6.00	11.00	7.00	0.14	0.00
		2020	0.18	6.00	11.00	6.00	0.32	0.00
		2021	0.19	6.00	11.00	4.00	0.31	0.00
		2022	0.15	9.00	8.00	5.00	0.35	0.00
		2023	0.31	9.00	8.00	6.00	0.19	0.00
16	SCOA Nigeria	2014	0.26	5.00	12.00	4.00	0.24	0.04
		2015	0.21	5.00	12.00	4.00	0.29	0.06
		2016	0.19	5.00	12.00	4.00	0.31	0.18
		2017	0.17	5.00	12.00	4.00	0.33	0.09
		2018	0.26	5.00	12.00	4.00	0.24	0.14
		2019	0.14	6.00	11.00	4.00	0.36	0.16
		2020	0.16	6.00	11.00	4.00	0.34	0.13

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Appendix 1 continued

S/N	Name	YEAR	DAC	BIND	BSIZE	BMTGS	BGMIX	EPS
		2021	0.36	6.00	11.00	4.00	0.14	0.12
		2022	0.09	9.00	8.00	4.00	0.41	0.16
		2023	0.36	9.00	8.00	4.00	0.14	0.08
17	Ronchess Global Resources	2014	0.11	5.00	12.00	5.00	0.39	0.14
		2015	0.16	5.00	12.00	5.00	0.34	0.16
		2016	0.26	5.00	12.00	5.00	0.24	0.10
		2017	0.26	5.00	12.00	5.00	0.24	0.04
		2018	0.12	5.00	12.00	5.00	0.38	0.24
		2019	0.36	6.00	11.00	5.00	0.14	0.26
		2020	0.10	6.00	11.00	6.00	0.40	0.23
		2021	0.18	6.00	11.00	6.00	0.32	0.22
		2022	0.22	9.00	8.00	6.00	0.28	0.26
		2023	0.17	9.00	8.00	3.00	0.33	0.18
18	Red Star Express	2014	0.21	5.00	12.00	5.00	0.29	0.04
		2015	0.26	5.00	12.00	5.00	0.24	0.06
		2016	0.10	5.00	12.00	5.00	0.40	0.14
		2017	0.22	5.00	12.00	5.00	0.28	0.07
		2018	0.23	5.00	12.00	5.00	0.27	0.14
		2019	0.41	6.00	11.00	5.00	0.09	0.16
		2020	0.31	6.00	11.00	5.00	0.19	0.13
		2021	0.36	6.00	11.00	6.00	0.14	0.12
		2022	0.36	9.00	8.00	6.00	0.14	0.16
		2023	0.20	9.00	8.00	6.00	0.30	0.08
19	The Initiates	2014	0.18	5.00	12.00	7.00	0.32	0.06
		2015	0.13	5.00	12.00	8.00	0.37	0.08
		2016	0.21	5.00	12.00	7.00	0.29	0.02
		2017	0.31	5.00	12.00	7.00	0.19	0.01
		2018	0.33	5.00	12.00	5.00	0.17	0.16
		2019	0.14	6.00	11.00	7.00	0.36	0.18
		2020	0.17	6.00	11.00	7.00	0.33	0.15
		2021	0.23	6.00	11.00	7.00	0.27	0.14
		2022	0.11	9.00	8.00	4.00	0.39	0.18
		2023	0.09	9.00	8.00	7.00	0.41	0.10

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APPENDIXN II

Descriptive Statistics

	DAC	BIND	BSIZE	BMTGS	BGMIX	EPS
MEAN	0.2898	6.5263	10.4737	5.6368	0.2102	0.0781
MEDIAN	0.2900	6.0000	11.0000	6.0000	0.2100	0.0600
MODE	0.3600	5.0000	12.0000	6.0000	0.1400	0.0300
MAX	0.4800	13.0000	15.0000	9.0000	0.4200	0.2600
MIN	0.0800	2.0000	4.0000	3.0000	0.0200	0.0000
STD	0.094658821	2.178986	2.178986	1.54636	0.094659	0.059331
Skewness	-0.2476081	0.762572	-0.76257	0.182903	0.247608	0.803794
Kurtosis	-0.65078889	0.221969	0.221969	-0.71013	-0.65079	0.057921
Sum Sq. Dev.	17.6551	8990	21740	6489	10.0851	1.8244
Obs.	190	190	190	190	190	190

Correlation Matrix

	DAC	BInd	BSize	BMtgs	B*GM*
DAC	1.0000				
BInd	0.1596	1.0000			
BSize	0.1725	0.0297	1.0000		
BMtgs	0.0971	0.2375	0.0879	1.0000	
B*GM*	0.1214	0.1971	0.0979	1.0000	
EPS	0.1282	-0.0423	0.0753	-0.1184	1.0000

Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.957697	0.438349	2.184788	0.0312
BInd	0.032794	0.013877	2.363173	0.0201
BSize	-0.018724	0.007308	-2.561818	0.0119
BMtgs	-0.008590	0.003661	-2.345817	0.0209
B*GM*	-0.024039	0.009419	-2.551915	0.0122
EPS	-0.150679	0.071145	-2.117886	0.0366
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.711611	Mean dependent var		0.542225
Adjusted R-squared	0.648475	S.D. dependent var		0.302098
S.E. of regression	0.312269	Akaike info criterion		0.734903
Sum squared resid	7.410926	Schwarz criterion		1.446854
Log likelihood	-10.21496	Hannan-Quinn criter.		1.023336
F-statistic	29.755522	Durbin-Watson stat		2.335794
Prob(F-statistic)	0.000473			

Significant at 95% level of confidence