

The Impact of Corporate Governance on Manufacturing Firms' Financial Performance in Nigeria

Comment [OM1]: Corporate Governance and Financial Performance of Manufacturing Firms in Nigeria

Abstract

The corporate governance mechanism was initiated to curb the excesses of managers that are saddled with the running of firm and also protect the shareholders and public interest. However, the collapse of big firms all over the world few years ago has awake a renew interest in firm adherence to corporate governance mechanism. Similarly, in Nigeria some firms also faced similar situation, this study set out to examine the impact of corporate governance on manufacturing firms' financial performance in Nigeria. The data used were collected from 39 listed manufacturing firms in the Nigeria Stock Exchange from 2003 to 2022. The data were subjected to pre and post analysis and panel regression technique was used to determine the impact of corporate governance on performance. The study used three measures of manufacturing firms' financial performance namely; Return on Asset (ROA), Return on Equity (ROE) and Tobin Q. Seven variables were used to measured corporate governance namely; Independence Board (IND), Board Meeting (BM), Audit Committee (AUD), Board Structure/Composition (BOS), Board Size (BOS), Executive Stock Ownership (EXS) and Nomination Committee (NOC), and the control variable was Firm Age. These variables were subjected to several test; Variance Inflation Factor (VIF). The Breusch-Godfrey Serial Correlation Langragian Multiplier Test, Breusch-Pegan-Godfrey Heteroskedasticity and the Hausman Test selected the Random Effect Panel regression. The study found that AUD has positive effect on ROA and Tobin q but negative with ROE, BOS had negative effect on ROA, and ROE but positive with Tobin q, BM had negative effect on ROA, and Tobin q but positive with ROE. BOC had negative effect on ROE and Tobin q but positive ROA. EXS had negative effect on ROA and Tobin q, but positive with ROE. IND had positive effect on ROA and ROE but negative with Tobin q. FAGE has a positive effect on ROA and ROE but negative with Tobin q while NOC had positive effect on all the three measures of manufacturing firms' financial performance. We concluded that corporate governance had significant effect on manufacturing firms' financial performance in Nigeria. However, when different measurements were used to proxy firm financial performance the effect contrasts, this may be attributed to both the market value and operating value of financial performance adopted for this study. Hence, the study cannot draw conclusion on which of the manufacturing firm's financial performance is better.

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Keywords: Manufacturing, corporate governance, performance, random effect

1. Introduction

The unpleasant experiences of Asian financial crisis of the 1990s and the subsequent firm financial fraud of early 2000s emphasize the importance of effective corporate governance procedures to the survival of the macro economy. This crisis established in clear terms that even in powerful firms, absence of transparent control andlack of accountable corporate boards may lead to the collapse of investors' confidence.

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The adoption of various economic reform programmes in Africa and most especially in Nigeria in the 1970s and 1980s in which privatization of Government – owned enterprises form a major plank, has heightened the corporate governance adoption in the continent. The unpleasant experience of massive governance in some countries of Eastern Europe like Czech Republic

and Russia that rushed into large-scale privatization without the necessary corporate governance “infrastructure”, suggests that emerging economies like Nigeria needs to take stock of its corporate governance capacity.

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The importance of the adoption of corporate governance mechanism cannot be overemphasised. This is because research as shown that it improves firm’s performance through judicious allocation of firm’s resources, competent management, high productivity, increased profitability, growth and financial stability, financial market integrity, economic efficiency,among others (OECD, 2004; Black, Kim, Jang & Park,2009; Akpakli, 2010; Duke II, Kankpang& Okonkwo, 2012; Tornyeva&Wereko, 2012; Afolabi, 2015). This importance has also attracted the attention of a variety of groups; scholars, investors, public, clerics, managements and governments to encourage its adoption in every organisation. This has come because of the awareness that corrupt corporate governance can indeed lead to economic destruction when institutions failed.

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In spite of its positive attributes and the propelling intention of firms to adopt corporate governance globally, the corporate governance culture in Nigeria failed to be responsible to stakeholders, accountable to the shareholders and has no deep-rooted mechanism to maintain a balance among the major players (board of directors, shareholders, and management) in corporate governance which have resulted in poor financial reporting quality (Shehu, 2011).

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Lack of clarity between ownership and control of organization has been identified to be a major reason for weak corporate governance in Nigeria. This leads to conflicts between both parties; this is regarded as agency-conflict which has a consequent loss (Olayiwola, 2018) Hence, it is not a coincidence, that in spite of the introduction and adoption of corporate governance in 2001, some firms still witnessed corporate fraud as reported in the case of financial institutions immediately after its policy reforms alongside some manufacturing firms in Nigeria.

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Quantum of scholarly research has been carried out in the field of corporate governance over the years. Some of the studies found evidence that corporate governance stimulates firm performance (Guest, 2009; Flodberg&Nadjari, 2013; Cheung, Connelly, Estanislao, Limpaphayom, Lu & Utama, 2014; Bansal& Sharma, 2016; Seemali, 2024;Omotola, Oluwatayo and Oluwatayo, 2024), some concluded that there is no relationship between corporate governance and firm performance (Gupta, Kennedy & Weaver, 2009; Fallatah & Dickins, 2012), while, some study concluded that the relationship was ambiguous (Chugh, Meador &Kumar, 2009; Fratini &Tettamanzi, 2015). Musa (2006), Onakoya, Fasanya and Ofoegbu (2014) and Aminu, Mohammed and Mercy (2016), Ugwu, Ebe, Ezuwore-Obodoekwe, Achilike, Obiekwe, Orjiakor, and Oganezi, (2021) found a negative relationship between corporate governance and firm performance, some found a mix result (Lestari, Usman,Syofyan, Esya, and Hartini 2023), while Hamid (2009), Mohammed (2012), and Abdulazeez, Ndibe and Mercy (2016), Sotonye, Lateef, and Ene, (2024)concluded in their separate studies that corporate governance influenced firm’s performance. However, Sanda, Mikailu and Garba (2005), Gadi, Emesuanwu and Shammah (2015) and Sadiq and Gebba (2022)in their studies found an inconclusive and insignificant results in their separate studies while Kajola (2008) opined the findings on the relationship between corporate governance and firm performance is not absolute but relative in nature.

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This current study is a further attempt to examine the relationship between corporate governance and manufacturing firms’ financial performance using three (3) measures of firm

financial performance namely, Return on Asset (ROA), Return of Earnings (ROE) (ROA and ROE are the market value of performance) and Tobin's Q (Operating value of performance), so as to determine which of these measures is more suitable to capture firm's financial performance. The study equally employed seven variables to measured corporate governance

2. Theoretical Literature

Agency Theory

This study is anchored on the Agency theory. The theory was developed by Berle and Means (1932) who describes the agency problem in contemporary firms as one that come up from the separation of ownership and control of a firm. The core theoretical rule behind agency theory is that the firm is made up of a link of agreements. As importance as agency theory is, it is suitable to all contractual relationships in the firm (Gomez-Mejia & Grabke-Rundell, 2002). However, it focuses mainly on top managers because they are at the strategic peak of the firm as they are responsible for resources distribution, decisions, new market entries, acquisitions and divestitures among others (Carpenter& Sanders, 1998).

Shareholders (principals) assigned decision making process of an organisation to management (agents). Certainly, this leads to opportunity costs, also called 'agency costs' which relate the cost to the principals of supervising the behaviour of an agent (CEO) to reduce agent opportunism (Bainbridge, 2005). The theory suggests that the contract between the principal and the agent is the foremost mechanism for lessening agency costs. This contract may involve the development of a monitoring scheme to safeguard those behaviours and outcomes that do not depart from the owners' interests. It also includes the instituting of an incentive scheme rewarding the agent for results that are important to the principal, for example, profitability and share price (Baeten, Balkin, & Berghe, 2011; Tosi, Werner, Katz & Gomez-Mejia, 2000).

Given that the similarity of agency theory with corporate governance, good corporate governance is often interpreted to stimulate firm performance through value maximisation and profit maximisation and checkmate unethical practices (Daily, Dalton & Canella, 2003; Okpolosa, 2022).

3. Empirical Literature Review

In India, Bansal and Sharma (2016) examined the role of audit committee characteristics in addition with other components of corporate governance. Firm performance measured by returns on assets (ROA), returns on equity (ROE), Tobin's Q and Market Capitalization. They found a significant positive association of board size and CEO-Chairman dual role with firm performance. Simpson (2016) in his study investigated whether there is a relationship between corporate governance and firm performance of listed firms on Ghana Stock Exchange. The study used returns on assets (ROA), returns on equity (ROE) and Tobin's Q (TQ) to measured performance on six principles of corporate governance. The study discovered a strong positive correlation between the overall corporate governance index and firm performance measured in terms of ROA, ROE and Tobin's Q which were robust with the results of the regression analyses.

Oguz and Dincer (2016) analysed the effects of corporate governance on corporate financial performance for Turkey. Board size, CEO duality, board committees, board independence, firm

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size and firm age were the independent variables and their effects were measured on financial variables that are returns on assets (ROA), returns on equity (ROE) and Tobin's Q (TQ). The study found that corporate governance variables have significant impact on firm financial performance and market value measurements.

Using a seven-period data, Abdulazeez, Ndibe and Mercy (2016), examined the impact of corporate governance on the financial performance of 15 listed deposit money banks in Nigeria after consolidation begins. The study adopted the following variables for its analysis; Bank Performance (Proxied as Returns on Assets), Corporate Governance (Proxied as Board size, Board Composition, CEO Duality and Audit Committee) while the control variable was Firm size. Regression analysis was used to analyze the data and it was found that only larger board size contributes positively and significantly to the financial performance of deposit money banks in Nigeria.

The objective of Osundina, Olayinka and Chukwuma (2016) study was to empirically investigate the relationship between corporate governance (measured by Board Structure index, Ownership Structure index and Audit Committee index) and firm's performance (measured by Returns on Assets) of selected Nigerian manufacturing companies. The study found that Board structure index had a significant positive relationship with performance (ROA) of manufacturing companies. Similarly, Audit committee index was found to have a positive but insignificant relationship with the performance, while, Ownership structure index exhibited an insignificant negative relationship with performance (ROA) of manufacturing companies.

Naimah and Hamidah (2017) investigated the role of corporate governance in increasing firm performance. The following variables; board size, board independence, outside directors, audit committee size, audit committee meeting, audit quality (as corporate governance mechanisms), and Corporate Governance Performance Index (CGPI) were used in the analysis, while profitability (ROA) was used to proxy performance. The results of the study indicated that board independence negatively influenced profitability, audit committee meeting positively influence profitability, audit quality positively influence profitability, CGPI positively influence profitability, leverage negatively influence profitability, and firm size negatively influence profitability. Exploring the effect of excess control, ownership structure and corporate governance on firm performance in Pakistan, Waseem, Shahid and Sajid (2017) adopted the following variables; firm performance was proxied as Returns on Assets (Operation), Returns on Assets (Net) and Tobin's Q (TQ), Excess control proxied as ownership disparity, corporate ownership proxied as inside and institutional ownership and ownership concentration, corporate governance was proxied as board independence, outside block holding while the control variables were size, leverage and sales growth. Their findings suggested that corporate ownership was the most influential factor in affecting firm performance in Pakistan.

Balagobei (2018) examined the impact of corporate governance on firm performance of listed companies in Sri-Lanka. The study considered the corporate governance which was measured by board size, board independence, CEO duality, director's ownership and audit committee while performance was measured by ROA and TQ. The study found that board size and audit committee had significant impact on TQ while board independent, CEO duality and director's ownership had insignificant impact on ROA and TQ. And finally, board size and audit committee had negative impact of the firm performance.

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In China, Guluma (2021), investigated the impact of corporate governance measures on firm performance and the role of managerial behaviour. Managerial overconfidence was measured by corporate earnings forecasts. Firm performance was measured by ROA and TQ. The study found that ownership concentration and product competition have positive effect of firm performance (ROA & TQ). Dual leadership and debt financing has negative effect on TQ, debt financing has positive effect on both ROA and TQ. Managerial overconfidence has positively effect on debt financing on firm performance measured by TQ, and negatively influenced debt financing and operational firm performance. A study by Kiptoo, Kariuki and Ocharo (2021), in Kenya found that, corporate governance significantly affects the firm performance of insurance company. Board composition negatively affect financial performance, board diversity and board independent positive affects financial performance.

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Ugwuet al.,(2021). used explanatory research design to examined the influence of corporate governance on financial performance of eight companies in Nigeria. The study found that the corporate governance variables have effect on financial performance: specifically, there is a positive significant effect of board size on return on asset (ROA) of manufacturing firms in Nigeria.

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Finally, Sadiq and Gebba (2022), investigated the relationship among financial performance, firm value, transparency and corporate governance from family-owned business in United Arab Emirates (UAE). The study found that an insignificant relationship existed between corporate governance and company's financial performance.

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Okpolosa (2022), selected data from 2016 to 2020 in order to study investigate the relationship between corporate governance and financial performance of manufacturing firms in Nigeria and concluded that Board Size should be structured in line with professional requirements of the industry and other. Lestari,et al., (2023), investigated the relationship between corporate governance and financial performance in 31 consumer goods industry companies listed on the Indonesia Stock Exchange. The study found that independentboard, board meetings, and firm size do not affect financial performance. Board size has a positive significant effect on financial performance.

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Sotonye, et al., (2024) examined the effect of corporate governance on the performanceof listed manufacturing companies in Nigeria. Board size and audit committee were used to measure corporate governance and net profit after-tax and return on capital employed were proxied as financial performance. The study revealed that board size and audit committee independence has a significant positive impact on return on capital employed (ROCE) and net profit after-tax (NPAT). Omotola, et al., (2024), used a data from 2008 to 2017 to examined the extent to which corporate governance influences organisational performance in Nigeria. The study revealed that positive and significant relationship between board size, board independence and audit committee with firm financial performance. The study further indicated that ownership structure has negative and insignificant relationship with firm financial performance.

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4. Model Specification

5. This study adoptedLestari, Usman, Syofyan,Esya, andHartini (2023) model with modification. The Lestrai et al., (2023) model is as stated in equation 1

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$$Q \text{ ratio} = \beta_0 + \beta_1 \text{ISit} + \beta_2 \text{BSit} + \beta_3 \text{BTit} + \beta_4 \text{IBit} + \beta_5 \text{BDIVit} + \beta_6 \text{LGit} + \beta_7 \text{FSit} + \epsilon \text{it } 1$$

Where

Q ratio The Company's Financial Performance; IS = Insider Shareholding; BS = Board Size; BM = Board Meeting; IB = Board independence; BDIV = Board Gender Diversity; LG = Leverage; FS = Firm Size; ϵ = Error Term.

This study incorporates several corporate governance variables in the model so as to obtain a robust result and also to understand the interplay of these variables, and how they relate with performance variables. Equation 2 represent the modification of equation 1.

$$FP_{it} = \beta_0 + \beta_1 BOS_{1it} + \beta_2 IND_{2it} + \beta_3 NOC_{3it} + \beta_4 BM_{4it} + \beta_5 AUD_{5t} + \beta_6 EXS_{6it} + \beta_7 BOC_{7it} + \beta_8 FAG_{8it} + \mu_{it} \quad 2$$

Where

FP= Firm performance measured by ROA (Return on Asset), ROE (Return on Equity) and Tobin Q, , BOS=Board size, IND= Board Independence, NOC = Nomination Committee, BM=Board meeting, AUD= Audit committee, EXS= Executive stock ownership, BOC=Board Composition, FAG=Firm Age

A Priori Expectation

$$\frac{\partial FP}{\partial CG} > 0$$

It is generally expected that there will be a positive relationship between firm performance (FP) and corporate governance (CG) variables in this study. The reason is based on the fact that, compliance to corporate governance mechanism will ensure that board of directors saddled with managing the firm adhered to the principles of the mechanism. When this is done, it will trigger financial performance of the firm.

The study performed Hausman Test to determine the appropriate panel regression to adopt for this study. Panel Unit Root Test was performed to test for stationarity of the data used for the analysis. The Variance Inflation Factor (VIF) test was conducted to identify the possible presence of multicollinearity

Measurement of Variables

Dependent variables:

Tobin Q- is measured by adding market capitalization with total debt divided by total asset

Returns on Equity (ROE): This is the operating measure of performance. It is the ratio of net income to total equity

Returns on Asset (ROA): This is an accounting-based performance measure. It is the ratio of net income to total asset

Independent variables . The study used 7 measures of corporate governance

Board size (BOS):Total number of directors on board in a financial year, both inside and outside directors

Independent of Board (IND): it was measured by the proportion of outside directors on the Board to the total number of Board members multiplied by 100

Nomination Committee (NOC): Total number of directors on the committee. This is variable is a mechanism use to select potential applicants.

Board meeting(BM): Total number of board meetings held within a financial year.

Audit committee(AUD): Total number of board member on audit committee.

Executive Stock Ownership(EXS): These are shares owned by independent and Non-independent directors divided by Total shares of the company multiplied by 100

Board Structure/Composition (BOC): These are the total number of independent directors on the board. This refers to the size and composition of the board of directors' independence, the pressure of representative members and the balance of gender etc. It is a mix of experience, competency etc. of board members

Sources of Data

The data is based on a sample of 4 subsectors that cut across 56 publicly quoted Manufacturing firms in the Nigerian Stock Exchange. The subsectors are; Building materials, Chemical and Paints, Conglomerates and Food/Beverages and Tobacco. The data were sourced from annual reports and statements of accounts of quoted companies in Nigeria. The annual reports and statements of accounts of manufacturing companies from 2013 to 2022 were obtained from the corporate headquarters of the companies, the Corporate Affairs Commission, the Securities and Exchange Commission, and the Nigerian Stock Exchange. The study selected 39 firms based on the availability of up-to-date data.

5 Results and Discussion

Descriptive Analysis of Variables

The study carried out descriptive analysis on the adopted variables for this study. The information on the summary descriptive analysis of the variables used for this research were presented in Table 1

Table 1: **Descriptive Analysis of Variables**

VAR	Mean	Median	Max	Min	Std.	Skewness	Kurtosis	JB	Prob.
AUD	3	3	3	3.0	0.07	-1.57	4.04	152.3	0.1270
EXS	7.7	9	10.2	4.8	1.45	-0.14	2.04	13.48	0.4012
BM	2	7	9	4.0	1.41	-0.16	3.81	11.33	0.9035
IND	3.0	3.0	3.0	3.0	1.74	0.0	1.0	0.33	0.8465
BOC	3.0	3.0	3.0	1.0	0.13	0.10	2.61	2.83	0.2426
BOS	6.3	6.6	7.0	5.0	0.14	-0.08	2.28	8.21	0.4165
NOC	3.0	3.0	3.0	3.0	0.17	-0.01	2.74	0.87	0.6470
FAGE	66.0	69.0	72.0	51.0	0.26	-0.34	3.68	13.64	0.7011

Source: Researchers' Computation, 2024.

Information on Table 1 in terms of board audit committee (AUD) showed that, the mean, median, maximum and minimum numbers were 3 respectively. The descriptive statistic for board executive stock ownership (EXS) showed that, the mean number of board executive stock ownership was over 7 million shares, the median was 8.98million shares, the maximum of share owned was 10 million, the minimum number was 4.8million

For board meetings (BM), the mean number of times board members meet annually was 2 times, the median was 7 times. The maximum of times board meet was 9times annually, the minimum number of times board meets was 4 times annually. Independent of Board (IND) showed that, the mean, median, maximum and minimum board independent was 3 members. Board Composition (BOC) showed that, the mean, median, maximum were 3 while the minimum was 1.

The mean number of Board Size (BOS) was 6, the maximum was 7, while the minimum was 5. In terms of Nomination committee (NOC), the mean, median, maximum and minimum number was 3. For Firm Age (FAGE), the mean age of manufacturing firm was 66years, the median was 69years, the maximum age was 72, the minimum firm age was 51. Except for IND and BOC all other variables were skewed to the left. Also, the Kurtosis indicated that the data were data were Platykurtic (<3) in nature, aside AUD, BM and FAGE. The P-value of JB (Jarque Bera) indicated that all the variable's P-values was above 10%. Hence, the variables were normally distributed.

Panel Unit Root Test (Stationarity Test)

The result of the panel unit root test is presented in the Table 2

Table 2: Unit Root Test Results

	AT LEVEL				AT FIRST DIFFERENCE				
VARIABLE	Levin, Lin Chu t*	Im, Perasan & Shin W stat.	ADF Fisher Chi- Square	PP-Fisher Chi Square	Levin, Lin Chu t*	Im, Perasan & Shin W stat.	ADF Fisher Chi- Square	PP-Fisher Chi Square	REMARK
	FIRM PERFORMANCE								
ROE	-74.427***	- 22.363***	2037.52***	2934.75***	-	-	-	-	I(O)
ROA	-11.529***	8.65419	226.652	334.156	-76.151***	-23.221***	2092.56***	3026.29***	I(I)
TOBIN Q	-74.427***	- 22.363***	2037.52***	2934.75***	-	-	-	-	I(O)
	CORPORATE GOVERNANCE								
BOS	-94.014***	-39.65***	3117.19***	5933.42***					I(O)
IND	-0.28730	5.65096	311.461	331.722	-15.605***	1.30226	509.437	2432.40***	I(1)
AUD	-7.9866***	4.40651	355.184	215.948	-12.204***	0.60957	545.619	2015.55***	I(1)
NOC	-12.409***	8.20850	235.768	306.932	-74.221***	-22.301***	2026.26***	2918.54***	I(1)
BM	-35.030***	-6.775***	956.094***	640.436***					I(O)
EXS	-87.518***	-2303.***	4596.94***	3616.45***					I(O)
BOC	- 11.4968***	8.63025	225.399	332.310	- 75.9415***	- 23.1567***	2081.00***	3009.57***	I(1)

Sources: Researchers' Computation, 2024.

Corporate governance variables - Board Size (BOS), Board Meeting (BM) and Executive stock ownership (EXS) were significant at level, while, independent board (IND), Audit committee (AUD), Nomination (NOC) and Board Composition (BOS) were significant at first difference. Finally, in all the independent and dependent variables only five (5) were stationary at first difference 1(I). Hence, we cannot perform panel cointegration test. According to Westerlund (2007), all series must be largely non-stationary series 1(I) before a panel cointegration could be carried out.

Diagnostic Test

The study performed diagnostic test for the model and the information is presented in the Table 3, Table 4 and Table 5.

Variance Inflation Factor (VIF) Test

The study carried out Variance Inflation Factor (VIF) test to determine the existence of multicollinearity in the variables used for this study. These results are on Table 3, 4 and 5

Table 3: Variance Inflation Factor (VIF) Test for ROA

SN	Var	ROA		
		Coeff	Un. VIF	Cent VIF
1	AUD	4.781	120.601	2.078
2	BOS	0.370	130.968	9.068
3	BM	0.658	48.531	2.338
4	BOC	3.306	8.249	1.306
5	EXS	1.36E-19	1.743	1.571
6	FAGE	21.464	176.446	2.267
7	NORC	0.220	20.356	5.404
8	IND	110.3	1090.108	5.242

Source: Researchers' Computation, 2024.

Table 4: Variance Inflation Factor (VIF) Test for ROE

SN	Var.	ROE		
		Coeff.	Un. VIF	Cent VIF
1	AUD	15.615	119.853	2.065
2	BOS	1.220	131.313	9.097
3	BM	2.162	48.347	2.317

4	BOC	10.874	8.256	1.307
5	EXS	4.48E-19	1.745	1.571
6	FAGE	70.885	177.081	2.317
7	NORC	0.729	20.593	5.443
8	IND	362.343	1091.133	5.037

Source: Researchers' Computation, 2024.

Table 5: Variance Inflation Factor (VIF) Test for TOBIN Q

SN	Var	TOBIN Q		
		Coeff	Un. VIF	Cent VIF
1	AUD	6.21E+21	120.601	2.078
2	BOS	4.81E+20	130.968	9.068
3	BM	8.54E+20	48.531	2.338
4	BOC	4.29E+21	8.249	1.306
5	EXS	176.9481	1.745	1.571
6	FAGE	2.79E+22	176.446	2.267
7	NORC	2.85E+20	20.356	5.404
8	IND	1.43E+23	1090.108	5.242

Source: Researcher's Computation, 2024.

From the result of VIF on the tables above, using a benchmark of 10, the study accept the null hypothesis that there is no multicollinearity in these variables in the tables above.

Serial Correlation Test

The study performed a Breusch-Godfrey Serial Correlation Lagrangian Multiplier Test to determine the existence of correlation. Information on the test is presented in the table below

Table 6: Serial Correlation Test (Breusch-Godfrey Serial Correlation Lagrangian Multiplier Test)

	ROA	ROE	Tobin Q
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F-Statistic	6.703676	4.072406	29.76557
Obs*R-squared	15.43675	9.919095	46.36149
Prob	0.5420	0.5606	0.4219
Prob. Chi Squared	0.5404	0.5470	0.3424

Source: Researcher's Computation, 2024.

From the result, the Prob. Chi Squared was not significant meaning that the null hypothesis that there exists a serial correlation was rejected, hence, the study accepted the alternative hypothesis that there was no serial correlation.

Heteroskedasticity Test

The Heteroskedasticity Test using Breusch-Pagan-Godfrey Heteroskedasticity Test for the dependent variables was also performed. Information on the test is presented in table below

Table 7: Breusch-Pagan-Godfrey Heteroskedasticity Test

	ROA	ROE	Tobin Q
F-Statistic	2.802362	3.053407	3.058141
Obs*R-squared	50.15222	52.51927	52.56213
Scaled explained SS	39.13737	30.17960	298.7640
Prob F	0.3502	0.3501	0.4359
Prob. Chi Square	0.5420	0.5410	0.3010
Prob. Chi Square	0.6357	0.2176	0.4351

Source: Researcher's Computation, 2024.

From the result on the table, the Breusch-Pagan-Godfrey test indicated that the test statistic has a p-value above an appropriate threshold (e.g., $P < 0.05$) then the null hypothesis of homoskedasticity is accepted and heteroskedasticity rejected for all the three models adopted for this study.

HAUSMAN TEST RESULT

To determine the right Panel Regression analysis between Fixed effect and Random effect panel regression analysis, the study carried out Hausman Test on the Three (3) measurement of financial performance (ROA, ROE and Tobin Q).

Table 8: Hausman Test

Test summary	(ROA)			(ROE)			(Tobin Q)		
	Chi-Sq.Stat	Chi-Sq.df	Prob	Chi-Sq.Stat	Chi-Sq.d.f	Prob	Chi-Sq.Stat	Chi-Sq.d.f	Prob

Cross Section Random	0.000	4	1.00	0.000	4	1.00	0.000	4	1.00
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Source: Researcher's Computation, 2024. Note: Chi-sq. Stat means Chi-Square Statistics, Chi-Sq. d.f means Chi-Square Degree of freedom and Prob. means Probability value

The information on Table 8 suggested that there is no cross-sectional fixed effect in all the three measurement of manufacturing firms' financial performance in Nigeria. This was because the Prob. Value is not statistically significant at 5% level. Hence, the random effect was preferred for the estimation.

Regression Analysis

The Random Effect Panel Regression for this study was performed for the 3 measurements of manufacturing firms' financial performance namely; Return on Asset (ROA), Return on Equity (ROE) and Tobin Q. The result of the Random Effect Panel Regression was presented in Table 9

Table 9: Random Effect Regression Result for Manufacturing Firms' Financial Performance in Nigeria.

	ROA	ROE	TOBIN Q
Variable	Coeff	Coeff	Coeff
AUD	0.35988***	-0.01102***	2.05E+08***
BOS	-0.01084***	-0.05254***	7.86E+08***
BM	-0.05477***	0.04018***	-5.60E+08***
BOC	0.03833***	-1.20E-12***	-0.00939*
EXS	-1.20E-13***	0.000608***	-1.00E+08***
FAGE	0.0018***	1.99E-12***	-0.00368*
IND	2.77E-13***	5.21E-14***	-0.00027**
NOC	8.88E-15***	0.22668***	2.71E+09***
R Sq.	0.789363	0.805174	0.702893

Sources: Researcher's Computation, 2024. NOTE: (*) denotes 1% level of significant, (**) denotes 5% level of significant, (*) denotes 10% significant**

In Table 9, result showed that (AUD) audit committee membership has positive effect on manufacturing firms' financial performance in Nigeria in Model 1 and Model 3 and they were statistically significant at 1 per cent level. However, in Model 2, audit committee member has negative effect on manufacturing firms' financial performance in Nigeria and it was statistically significant at 1 per cent level.

The result reviewed that BOS (Board size) has negative effect on manufacturing firms' financial performance in Model 1 and Model 2 and they were statistically significant at 1 per cent levels. However, in Model 3 board size has positive effect on manufacturing firms' financial performance in Nigeria and it was statistically significant at 1 per cent level.

The result showed that BM (Board meeting) has negative effect on manufacturing firms' financial performance in Nigeria in Model 1 and Model 3 and they were statistically significant at 1 per cent level. However, in Model 2, board meetings had positive effect on manufacturing firms' financial performance in Nigeria and it was statistically significant at 1 per cent level.

For BOC (Board composition), the result showed that Board composition has negative effect on manufacturing firms' financial performance in Nigeria in Model 2 and Model 3 and they were statistically significant at 1 and 10 per cent level. However, in Model 1, Board composition has positive effect on manufacturing firms' financial performance in Nigeria and it was statistically significant at 1 per cent level. Considering the common signs of the parameters based on the

three measures of manufacturing firms' financial performance, we concluded that board composition decreases manufacturing firms' financial performance in Nigeria.

The result of EXS (Executive Stock Ownership) showed that, Executive Stock Ownership has negative effect on manufacturing firms' financial performance in Nigeria in Model 1 and Model 3 and they were statistically significant at 1 per cent level. However, in Model 2, the relationship was positive and it was statistically significant at 1 per cent. Considering the common signs of the parameters based on the three measures of manufacturing firms' financial performance, we concluded that increase in executive stock ownership decreases manufacturing firms' financial performance in Nigeria.

The result of IND (Independent Board) indicated that, independent board members has positive effect on manufacturing firms' financial performance in Nigeria in Model 1 and Model 2 and they were statistically significant at 1 per cent level. However, in Model 3, the relationship was negative and it was statistically significant at 5 per cent level.

The result showed that NOC (Nomination Committee) has positive effect on manufacturing firm's financial performance in Nigeria in all the three models and they were statistically significant at 1 per cent level.

Lastly, the Panel regression result showed that FAGE (Firm Age) has positive effect on manufacturing firms' financial performance in Nigeria in Model 1 and Model 2 and they were statistically significant at 1 per cent level. However, in Model 3, Firm Age has a negative effect on manufacturing firms' financial performance in Nigeria and it was statistically significant at 10 per cent level.

Discussion of the Panel Regression Analysis Findings

The panel regression result indicated that audit committee (AUD) stimulates firms' financial performance. Thus, majority of the financial performance measures indicated that audit committee stimulate firms' financial performance in this study. This implies that an increase in audit committee members and frequency of their meetings increased financial performance of manufacturing firms in Nigeria. The reason for this finding may be that presence of audit committee or increase in number of audit committee members reduced auditing task and larger the number of audit committee the higher the level of efficiency because of many hands to assist in the process of auditing. Hence, it will be very difficult it is in hide facts about firms' financial activities. This finding is in conformity with the studies of Fallatah and Dickins (2012) in Saudi Arabia, Naimah and Hamidah (2017), and Omotola *et al.*, (2024). They used ROA and ROE to measure performance and found that audit committee exacted positive effect on profitability of firms.

The panel regression results indicates that board size (BOS) is a significant factor stimulating manufacturing firms' financial performance in Nigeria. For instance, increase in board size decreased manufacturing firms' financial performance when ROA and ROE were used as proxies for firms' financial performance, except when Tobin Q was used. For Tobin Q, the relationship exacts a positive one. The findings do not fully accommodate the study's *a priori* expectation. However, the relationship between board size and firms' financial performance in this study does not find a supporting footing in the previous study by Cheema and Muhammad (2013). They carried out a study on Pakistani Cement industry, their study used ROA and ROE

as proxies for firm performance, and concluded that a positive relationship existed between board size and firms' financial performance, while, in another study by Vo and Phan (2013) in Vietnam's listed firms failed to provide empirical evidence to support the statistically significant relationship between board size and firms' financial performance when Tobin Q was used as a proxy for financial performance while the study of Omotola *et al.*, (2024) reported a positive relationship. In these studies, majority of the financial performance proxies indicated negative relationship with board sizes. This indicates that increase in board size may trigger reduction in firms' financial performance. This conclusion is possible because increase in number of board members without a specific threshold may lead to diminishing returns of the board members' effectiveness because too many board members may have less work to do, hence, this may affect financial performance as well.

The analysis shows that board meetings (BM) decreases firms' financial performance. This is because increase in board meeting, reduces firms' financial performance when ROA and Tobin Q were used as a proxy for financial performance. However, increase board meeting exact positive effect on manufacturing firms' financial performance when ROE was used to measure manufacturing firms' financial performance. One reason for these findings may be that meeting financial allowances and various miscellaneous expenses seems to be affecting the firm financial performance in Nigeria. This finding supports the study of Elvin and Hamid (2015) and Lestari *et al.*, (2024). In their studies, they concluded that a statistically significant relationship exists between board meeting and firm performance in Malaysia and Indonesia.

The analysis indicated that board composition (BOC) stimulates firms' financial performance in Nigeria. This is because increase in board composition increases financial performance of manufacturing firms in Nigeria when ROA was use as a proxy for financial performance, however, negative result is obtained when ROE and Tobin Q were used. The board composition captured the ratio of non-executive board members to the total board of directors. The reason for these findings may be that the percentage of non-executive board members were low in some firms than expected, hence, this may serve as a reason for lower manufacturing firms' financial performance or otherwise in Nigeria. The result of ROA was in conformity with the study of Abor and Biekpe (2007). They found a clarity that corporate governance structure variables in which board composition was part influenced performance of SMEs in Ghana.

The results indicates that Executive Stock Ownership (EXS) stimulates firms' financial performance in Nigeria. The result implied that an increase in Executive Stock Ownership decreased financial performance of manufacturing firms in Nigeria when ROA and Tobin Q are used as proxy for firms' financial performance. However, increase in Executive Stock Ownership decreases firms' financial performance when ROE was used as measure of firms' financial performance. Considering the majority results, Executive Stock Ownership decreased financial performance of manufacturing firms in Nigeria. One of the reasons for this finding may be due to the fact when that the executive stock ownership which is the shares owned by independent and non-independent directors to overall shares of the firm, is on the higher side, it may also affect the quality of decision making by the board and this may affect the financial performance of the firms in one way or the other. Also, if the Executives hold higher shares than the majority of the shareholders, it may affect the quality of decision of such an organization. This finding is not conformity with the study of Abor and Biekpe (2007). They found a clarity that corporate governance structure variable in which board composition was part influence performance of SMEs in Ghana. This finding does not support a study of Ali

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(2016). Ali (2006) in a comparative study between USA and Pakistan concluded that Board Ownership has a positive relationship with firm's performance using Tobin Q as a measure of external performance.

The result indicated that **that** independent board (IND) stimulates firms' financial performance in Nigeria. The result showed that increase in board independence increase firms' financial performance. The reason for this finding may be that the independent board (IND) which is measure as the percentage of outside directors to the total number of directors on board membership, is high when compared to other directors. The high number of outside directors may also be responsible for encouraging adherence to the corporate governance mechanism which discouraged corporate financial fraud but encourages financial performance in this study. For the fact that they are directors with no shares in the company or have material / pecuniary relationship with company or related persons except the sitting fees, it is possible that they do perceive that they own the organisation a sense of responsibility to do the needful when the need arises, hence, they participated in making policies that may not be detrimental to the growth of the firms. However, this finding does not support the study of Al-Matari, Fadzil and Al-Swidi (2014), and Lestari *et al.*, (2023). They concluded that independence of board does not have a moderating effect on firm performance in Oman and Indonesia.

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The result indicated that nomination committee (NOC) stimulates firms' financial performance in Nigeria. The result showed that increase/presence of nomination committee increase firms' financial performance in Nigeria. One reason for this finding may be that presence of nomination committee in an organisation encourages a coordinated process of board members' appointment. The committee is also responsible for recommending potential candidates to the board for board of directorship position. It is also possible that increase in nomination committee members give them the impetus to do a thorough job when it comes to appointment and recommendation of board members. This finding is also supported by a study of Narwal and Jindal (2015).

The results indicated that firm (FAGE) stimulates firms' financial performance in Nigeria. The result showed that increase firm age increases firms' financial performance in Nigeria. This implied that as firm ages (grows), manufacturing firms' financial performance increased when ROE and ROA were used to proxy manufacturing firms' financial performance, while it was otherwise when Tobin Q was used in Model 3. One reason for this finding may be that as firms grew, they acquired more experience both in management of personnel and organizational financial capabilities, and this may have a long run positive effect on firms' financial performance in Nigeria. Some aspect of this finding also supported a study by Elvin and Hamid (2015). In their study, they used firm age as controlled variable and concluded that corporate governance practices are truly influenced by firm performance in Malaysian firms.

6 Conclusion and Recommendation

Based on the results and findings of this study, the following conclusions were made: Audit Committee, Board Composition, Independence of Board, Nomination committee and Firm Age increased manufacturing firms' financial performance, however, Board size, Board meeting and Stock ownership decreased manufacturing firms' financial performance in Nigeria. The study concludes that corporate governance had significant effect on manufacturing firms' financial performance in Nigeria. However, when different measurements were used to proxy firm financial performance the effect contrasts, this may be attributed to both the market value and

operating value of financial performance adopted for this study. Hence, the study cannot draw conclusion on which of the manufacturing firm's financial performance is better.

In line with the result of the study, it seems that Audit Committee, Board Composition, Independence of Board and Nomination and Remuneration committee played a positive and significant role in stimulating firm performance in Nigeria. The implication of this is that, when these committees are given the enable assistance, they tend to do the needful. The study therefore recommended that management should allow these committees; Audit Committee, Board Composition, Independence of Board and Nomination and Remuneration to be independent because of their positive influence on performance in this study. While due to the negative relationship between board meeting on performance, and stock ownership with manufacturing firm performance in this study, the study recommended that there should be reduction in board meetings so as to reduce the sitting expenses, that is, the budget allocated for board meeting should be review downward. This is because budget allocated for board meeting may be on the high side and it also possible it affects the finance of the firm negatively. Better still, they should be reduction in number of times board meet annually. Increase in stock ownership in the hands of few holders should also be discouraged, hence, the need for spread to encourage equal right by all potential shareholders. It is important for the management of manufacturing organisation to ensure that board members are of the right and necessary mix as enshrined in the corporation governance code.

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