**Journal of Public Administration, Policy and Governance Research (JPAPGR), Vol. 2, No. 4, 2024. Available online at https://jpapgr.com/index.php/research. ISSN:2787-0464. Covered in** google scholar**.**
*Jacob Samuel Ekele,2024, 2 (4):36-51*

# Moderating Effect of Corporate Governance Attribute on the Relationship Between Capital Structure and Financial Performance of Listed Multinational Companies in Nigeria

**Jacob Samuel Ekele, Ph.D**
National Examination Council, Minna, Niger State, Nigeria
drekelep@yahoo.com

***Abstract***

*The main objective of the study is to examine the moderating effect of corporate governance attributes on the relationship between capital structure and the financial performance of listed multinational companies in Nigeria. The study adopts an ex-post facto research design. The study uses panel data extracted from the published annual reports and accounts of 11 listed multinational companies on the Nigerian Exchange Group as at December 2023 based on census sampling techniques in consideration of the multinational companies. Panel data is meant to account for and measure effects that cannot be simply observed by pure cross-section or pure time series data over the period 2019-2023. Regression analysis techniques was used with the aid of STATA 13 Version Software. The finding reveals the lack of a significant effect of TDTE on financial performance suggesting that this ratio may not be a strong predictor of performance in this context. The significant effect of TDTA on financial performance indicates that how much total debt a company uses relative to its assets is a meaningful factor. The significant moderating effect of board size on the relationship between TDTE and financial performance suggests that larger boards may better manage or monitor debt levels. The significant moderating effect of board size on the relationship between TDTA and financial performance indicates that board size plays a crucial role in managing the effects of debt ratios. The recommends among others that since TDTE was not found to significantly impact financial performance, companies should ensure their debt policies are aligned with broader strategic goals rather than focusing solely on the debt-to-equity ratio.*

***Keywords:*** *Corporate Governance, Capital Structure, Financial Performance, Multinational Companies*

## 1. Introduction

The relationship between capital structure and the financial performance of firms remains a key topic in finance literature. Financial performance indicates how effectively a firm utilizes its assets to generate revenue (Erasmus, 2018). Measures of financial performance are valuable to stakeholders, helping them assess a firm's past and current financial status, strengths, weaknesses, opportunities, and threats. This evaluation addresses critical questions such as the firm's ability to meet its obligations and whether its sales volume justifies recent investments (Idodo, 2022).

Capital structure involves deciding on the mix of various funding sources a firm uses for its operations and capital investments. These sources include long-term debt (debt financing) and preferred and common stock (equity financing) (Olos, 2021). Capital structure encompasses the major claims to a corporation's assets, including different types of equities and debts. The debt-equity mix can range from 100% equity and 0% debt (unleveraged firm), to 0% equity and 100% debt (extremely levered), or a combination of both (capital mix). The effect of this mix on a firm's activities and financial performance has been a long-standing topic of debate in finance literature, focusing on its determination, evaluation, and accounting.

Corporate governance is the system by which companies are directed and controlled, aiming to ensure transparency, accountability, and fairness, which in turn fosters investor confidence and enhances financial performance. Shleifer (2017) highlights the importance of corporate governance in ensuring managers act in the best interests of shareholders, leading to better financial outcomes. Corporate governance, capital structure, and financial performance are interconnected aspects of corporate finance that attract significant attention. Effective corporate governance attributes can greatly influence the impact of capital structure on financial performance, especially in the context of multinational companies (MNCs) operating in Nigeria's unique economic and regulatory environment.

Theoretical and statistical links between corporate governance, capital structure, and financial performance are well-established in the literature (Tian, 2017). This relationship hinges on the financial managers' goal to ensure corporate financial performance and maximize shareholders' wealth by determining the optimal combination of financial resources and the best investment opportunities. Financial managers are tasked with maximizing performance and minimizing financing costs by maintaining an appropriate capital structure.

Previous studies have used various proxies to measure capital structure, typically in the form of ratios such as total debt to total assets, total debt to total equity, short-term debt to total assets, and long-term debt to total assets. Total debt to total equity assesses the extent of a firm's use of borrowed funds and its influence on performance. Short-term debt to total assets indicates a firm's ability to meet financial obligations within an accounting period, while long-term debt to total assets measures the impact of long-term debt on a firm's capital structure and performance over the long run (Kurfi, 2023). The use of debt in a firm's capital structure can have both positive and negative effects on financial performance.

A key aspect of financial management is understanding how capital structure and financing decisions can maximize a firm's value and the factors influencing this relationship. Capital structure comprises debt, equity, and hybrid securities used to finance a firm's assets, operations, and growth (Dora, 2020). While debt financing is typically the least costly and can boost earnings and value, it also increases financial risk and potential bankruptcy. Corporate governance is a significant factor affecting the relationship between capital structure and firm performance. It involves mechanisms and processes that control and direct corporations, aiming to ensure that firms act in the shareholders' interests (Enema, 2022). Effective corporate governance can mitigate conflicts between managers and shareholders, reducing agency costs. Capital structure can serve as a control mechanism within corporate governance, helping to align interests and reduce conflicts. The level of capital structure is influenced by corporate governance mechanisms, such as the board of directors' features and ownership structures. Strong corporate governance can enhance firm performance and potentially reduce debt leverage (Wisdom, 2021)

Several studies have attempted to study the relationship between capital structure and financial performance across various sectors and jurisdictions without using moderating variables, leading to mixed and inconclusive results. This has prompted further studies, particularly on multinational companies in Nigeria. Previous Nigerian studies by Bello and Onyesom (2015), Salawu (2017), Olokoyo (2018), Babalola (2018), Yinusa and Babalola (2019), Sabastian (2020), and Idode (2021) faced several weaknesses, such as methodological deficiencies and limited variable coverage. For example, Salawu (2017) focused solely on short-term debt, excluding other financing forms, while Babalola (2022) only considered total debt to total assets, ignoring equity financing. These studies often used the Chi-square technique, which is inadequate for reflecting time-variant and specific characteristic issues. To address these gaps, the current study examines the moderating effect of

corporate governance attribute on the relationship between capital structure and financial performance of listed multinational companies in Nigeria. The focus on multinational companies is due to their common use of leverage, through debt, equity, or both, to finance operations in Nigeria. Understanding how corporate governance practice moderate the effect of capital structure and their operations is crucial for investors and shareholders.

### Objectives of the Study

The main objective of the study is to examine the moderating effect of corporate governance attribute on the relationship between capital structure and financial performance of listed multinational companies in Nigeria. While specific objectives are to:

i. examine the effect of total debt to total equity ratio on financial performance of listed multinational companies in Nigeria
ii. assesses the effect of total debt to total asset ratio on financial performance of listed multinational companies in Nigeria,
iii. moderating effect of board size on the relationship between total debt to total equity ratio and financial performance of listed multinational companies in Nigeria and
iv. moderating effect of board size on the relationship between total debt to total asset ratio and financial performance of listed multinational companies in Nigeria.

### Statement of Hypotheses

The following null hypothesis were formulated to be tested in line the objectives of the study.

**HO1:** total debt to total equity ratio has no significant effect on financial performance of listed multinational companies in Nigeria
**HO2:** total debt to total asset ratio has no significant effect on financial performance of listed multinational companies in Nigeria,
**HO3:** moderating effect of board size has no significant effect on the relationship between total debt to total equity ratio and financial performance of listed multinational companies in Nigeria and
**HO4:** moderating effect of board size has no significant effect on the relationship between total debt to total asset ratio and financial performance of listed multinational companies in Nigeria.

## 2. Review of Empirical Studies

### Financial Performance

The phase ‘‘performance is a concept of two tires, namely efficiency and effectiveness. While efficiency is the ratio between input and output, effectiveness is the degree of goal achievement for an organization. According to the motivation theory in management science, performances is interpreted as ‘‘a price of work completed by an employee (Omiya, 2022).

According to Senthile, (2020), operating performance is the degree of a company achieving its strategic goals, as well as indicator for the examination of the company’s overall completeness. When conducted properly, the evaluation of organization performance will give an organization’s manager an idea of current condition of his/her organization. The evaluator indicators used the most often are an organization’s income, production capacity and profitability.

## Concept of capital Structure

Capital Structure refers to the mix of debt and equity financing used by a firm to fund its operations and growth. This mix determines the proportion of financing that comes from creditors versus shareholders and is crucial for optimizing the firm's cost of capital, risk, and overall value. In a perfect market, the value of a firm is unaffected by its capital structure. This implies that whether a firm is financed by debt or equity, its market value remains the same.

The cost of equity increases linearly with leverage. As a firm takes on more debt, the risk to equity holders increases, requiring higher returns to compensate for this risk. Although Modigliani and Miller's propositions lay the foundation for understanding capital structure, real-world factors such as taxes, bankruptcy costs, and asymmetric information affect a firm's capital structure decisions. The optimal capital structure is achieved when the marginal benefit of the tax shield equals the marginal cost of financial distress.

## Capital Structure and Financial Performance

Contrary to Modigliani and Miller (1958), many debt theories suggest that in an imperfect market, debt influences firm value in various ways. The relationship between capital structure and firm performance has been widely studied, yielding mixed results. De, (2017) found that Dutch firms prefer retained earnings over debt. Guyen (2018) reported that firms in 25 of 42 countries finance future projects with internal profits. Other studies showed a preference for internal funds (54%) over debt (18%) and equity (3%) due to profitability and financing costs. John (2015) found a negative relationship between financial leverage and firm performance in Nigeria. Riddiough (2021) found a negative relationship in European firms but a positive one in US firms.

Antoniou et al. (2018) and Cai and Zhang (2020) reported that financial leverage negatively impacts firm performance. This is consistent with the Pecking Order Theory, which suggests that the costs of financial distress outweigh the benefits of debt financing. However, some studies found positive effects of leverage on performance. Marg, (2022*)*, Berger, (2022), and others reported that higher leverage can enhance firm performance by reducing agency costs and aligning managerial actions with shareholder interests. In Dutch firms, De, (2017) found that trade-off theory significantly influences capital structure, but traditional agency problems are less relevant due to strong bank monitoring. Thus, the role of capital structure in mitigating conflicts between managers and shareholders may vary across different institutional settings.

## Moderating Effect of Board Size

Control mechanisms in corporate governance, such as the board of directors, are crucial for protecting shareholders' rights and mitigating conflicts between management and shareholders. The board monitors management to ensure decisions align with shareholders' interests. Empirical research on the impact of board size on the relationship between capital structure and firm performance has produced mixed results. Some studies suggest that larger boards may negatively impact capital structure due to inefficiencies in monitoring (Rödel, 2023). Others find no significant relationship between board size and capital structure (Ganzeboom, 2019; Wisdom, 2022). In Nigeria firms, where traditional banks are key debt providers, strong relationships with board members are crucial for securing financing. Therefore, it is expected that a larger board size may positively influence the relationship between capital structure and firm performance in Nigeria listed multinational companies.

## Empirical Reviews

Dorathy, (2023) examine the impact of capital structure on the financial performance of the consumer goods industry in Nigeria. The population of the study comprised of the consumer goods companies listed on the Nigerian Stock exchange with a Sample size of six (6) companies, using filter as a sampling technique of which a period of five (5) years was used from 2012-2016. The Dependent variable of the study is financial performance proxied by return on asset (ROA), while the independent variables of the study are. Long term debt (LTD), Short term debt (STD) and shareholders' funds (ROE). The data generated from annual report and accounts of the selected companies were analyzed by means of descriptive statistics, correlation and regression analysis using E-views 8.0. The result of the analysis was tested at 0.05 (5%) level of significance. The findings of the study show that short term debts have no significant impact on the financial performance of listed firms in the Nigeria consumer goods industry. It was also discovered that long term debts have no significant impact on the financial performance of listed firms in the Nigeria consumer goods industry. It was also discovered that Equity has significant impact on the financial performance of listed firms in the Nigeria consumer goods industry. The study recommended that in making a decision on what the composition of their capital structure will be, companies should look critically and make comparison between the cost of obtaining a particular source of capital and the benefit that can be derived from it instead of making capital structure decisions on baseless generalizations. This will help managers ensure that there will be a gain at the end of the day. Dorathy's (2023) study provides valuable insights into the impact of capital structure on financial performance in Nigeria's consumer goods sector. However, gaps exist in industry scope, methodological approaches, and the consideration of moderating factors. Addressing these gaps through expanded research could offer a more comprehensive understanding of capital structure effects across different contexts and methodologies and could also highlight the role of corporate governance in influencing financial outcomes.

Ayatu, (2023) appraise the effect of capital structure on financial performance of firms listed on RSE. Both primary and secondary data were used by the study. The study adopted descriptive research design and the population was all the six companies listed in the Rwanda Stock Exchange (RSE). A census survey was conducted on all the six listed firms and purposive sampling technique was used to sample the respondents to participate in the study. Data was analyzed using descriptive statistics, correlation analysis and regression analysis using SPSS version 20. The study findings indicated that capital structure is negatively associated with ROA. Furthermore, capital structure is negatively associated with ROE. The regression results indicated that the relationship between capital structure and both ROA and ROE are negative and significant, based on the study findings, the study concluded that, the association between capital structures and both ROA and ROE is negative and capital structure explains a larger change in ROA than in ROE. Furthermore, the relationship between capital structure and both ROA and ROE are negative and significant. Generally, the study concluded that capital structure is negatively and significantly related to financial performance of firms listed at the RSE. The study recommends that firms listed at the RSE should improve their capital structure and implement strategies that lead to a reduction in liquidity ratio as it leads to improved financial performance. The firms should keep its leverage level under control and have clear working capital management guidelines to avoid bankruptcy. The specific context of the RSE and the small sample size (six companies) limit the generalizability of the findings. More research could explore how capital structure affects financial performance in different regions, industries, or larger sample sizes

Ibrahim, (2023) measure the effect of using loans and equity in the capital structure on evaluating financial performance, whether in terms of profits or liquidity, in banks in the city of Al-Kharj through the descriptive analytical approach. Data was collected from the study population through a

questionnaire, where 200 questionnaires were distributed, of which 187 were collected, and 183 were valid for analysis. Data were analyzed using PLS-SEM software. The validity and reliability of the data were confirmed. The results of hypothesis testing showed a weak positive effect of using equity on the financial performance (profits and liquidity) of banks in Al-Kharj city. It also turned out that there was a strong positive effect of using loans on financial performance (profits) in banks in the city of Al-Kharj, and there was no effect of using loans on financial performance (liquidity). In banks in Al-Kharj city. The researcher recommended conducting more studies on the effect of capital structure on the financial performance of banks in other regions in the Kingdom of Saudi Arabia to confirm the validity. The use of PLS-SEM is relatively advanced, but comparisons with studies using different methodologies could provide additional insights. The study's results on the impact of loans and equity may differ from other studies, indicating a need for further exploration of these effects. The study mentions the moderating effect of corporate governance but does not focus extensively on it. The study is geographically and industry-specific, focusing only on banks in Al-Kharj, Saudi Arabia.

Wisdom, (2023) examine the effect of capital structure on the financial performance of firms in Nigerian manufacturing sector. The population of the study was all the listed manufacturing companies listed on the Nigerian Stock Exchange, a sample of 10 listed companies was selected. The research design adopted was ex-post facto using four models to analyse the impact of capital structure on firms' performance. The study used balanced panel data of 100 observations from the 10 listed companies for the periods ranging from 2007 - 2016. Descriptive statistics and regression were used as tools of analysis. The study reveals that there are statistically significant and non- significant effects of capital structure on performance variables. Finally, the study recommends that manufacturing companies should adopt balanced capital structure strategy that will optimise company's performance and corporate value. Limited focus on the moderating effect of corporate governance attribute. Addressing these gaps can lead to a more nuanced understanding of how capital structure impacts financial performance and provide valuable insights for managing capital structure effectively across different contexts.

**Theoretical Reviews Pecking Order Theory**

Myers and Majluf (1984) extended the Modigliani and Miller (MM) theory to propose that firms primarily use internal funds for financing, especially in the startup phase, due to problems associated with asymmetric information. Firms providing less information to stakeholders usually rely less on debt capital and more on internal funds, owing to high earnings and asymmetric information issues. Basic Assumptions, the Pecking Order Theory (POT) posits that firms prefer to finance new investments using internal funds first (retained earnings), then debt, and issue equity as a last resort.

Durand et al. (1989) objected to the MM theory of market perfection, highlighting the impact of market imperfections, transaction costs, and institutional restrictions on capital structure and firm value. Donaldson (1961) initiated the Pecking Order Theory (POT), suggesting that firms prefer retained earnings over external financing regardless of firm size. Excess retained earnings are used to repay debt, and equity is the last resort. Myers (1984) formalized the hierarchical pecking order. retained earnings first, debt second, and equity last. Issuing equity leads to asymmetric information problems, share price dilution, and impacts old shareholders. Studies on Dutch firms (Hinloopen, 2013; Brounen, 2016) support the pecking order behavior, with firms favoring internal over external financing. Cowling, (2012) noted some firms' reluctance to use external equity under any conditions, preferring debt or internal funds. Newman et al. (2011) linked the problem of information asymmetry with the hierarchical financing preferences of POT.

The study anchored on The Pecking Order Theory because its provides a framework for understanding firms' financing choices, emphasizing the preference for internal funds due to issues of asymmetric information and the associated costs of external financing. Empirical evidence, particularly from European and Dutch firms, supports the theory, highlighting its relevance in explaining capital structure decisions across different contexts and firm sizes.

## 3. Methodology

The study adopts a correlation research design to examine moderating effect of corporate governance practice on the relationship between capital structure and financial performance of listed multinational companies in Nigeria. The design is appropriate because it not only establish relationship between variables but is effective in revealing cause and effect relationship between dependent and independent variables. The study uses panel data extracted from the published annual reports and accounts of 11 listed multinational companies on the Nigerian Exchange Group as at December 2023 based on census sampling techniques in consideration of the multinational companies. Panel data is meant to account for and measure effect that cannot be simply observed by pure cross section or pure time series data over the period 2019-2023. Regression analysis techniques was used with the aid of STATA 13 Version Software.

The study specifies the following model to depict the relationship between capital structure variable represented by total debt to total assets ratio, total debt to total equity ratio, short-term debt to total assets ratio and long-term debt to total assets ratio; and financial performance represented by return on assets (ROA).

$ROA_{it} = \beta 0 + \beta 1TDTA_{it} + \beta 2TDTE_{it} + \varepsilon_{it}$----------i

$ROA_{it} = \beta 0 + Bsize * \beta 1TDTA_{it} + Bsize * \beta 2TDTE_{it} + \varepsilon_{it}$----------ii

Where.

| | | |
|---|---|---|
| ROA | = | Return on assets |
| β0, β1 – β4 | = | Parameters to be estimated |
| TDTA | = | Total debt to total assets |
| TDTE | = | Total debt to total equity |
| Bsize | = | Total Number of Board Members |
| Ɛ | = | Error term signifying other variables not captured in the study |

## 4. Analysis and Discussion of Results

Using Stata 13.x software, the study produces descriptive statistics and a correlation matrix to analyze the dataset. This approach helps in understanding the main characteristics of the data and the relationships between the variables. The results of the descriptive statistics for all variables are summarized in Table 1.

**Table 1. Descriptive Statistics Descriptive Statistics**

| Variables | Min. | Max. | Mean | Std. Dev. |
|---|---|---|---|---|
| ROA | -5.265 | 14.573 | 0.2364 | 1.2684 |
| TDTA | 0.043 | 19.657 | 6.9878 | 7.1515 |

| | | | | |
|---|---|---|---|---|
| TDTE | 0.030 | 72.755 | 8.2030 | 10.157 |
| Bsize *TDTA | 0.000 | 30.648 | 0.8527 | 2.6075 |
| Bsize * TDTE | 0.110 | 56.932 | 1.7474 | 6.0343 |

**Source. Extract from STATA Output, 2024**

The table 1 provides summary statistics for four variables. ROA, TDTA, TDTE, and two interaction terms (Bsize * TDTA and Bsize * TDTE).

ROA (Return on Assets) varies from -5.265 to 14.573, indicating significant variability in asset returns across observations. The average ROA is 0.2364, suggesting a generally low average return on assets. The high standard deviation (1.2684) relative to the mean suggests a substantial spread of ROA values around the mean. This indicates considerable variability in the return on assets among the observations.

TDTA (Total Debt to Total Assets) ranges from 0.043 to 19.657, reflecting a wide variability in debt levels relative to assets. The average ratio of total debt to total assets is 6.9878, indicating a significant proportion of debt relative to assets on average. The standard deviation (7.1515) is quite high compared to the mean, suggesting that debt levels relative to assets vary widely among the observations.

TDTE (Total Debt to Total Equity) ranges from 0.030 to 72.755, showing very high variability in the ratio of total debt to total equity. The average ratio is 8.2030, suggesting that on average, firms have a substantial amount of debt compared to equity. The high standard deviation (10.157) relative to the mean indicates a large dispersion in debt-to-equity ratios.

Bsize * TDTA (Board Size moderated with Total Debt to Total Assets). The interaction term ranges from 0.000 to 30.648, showing variability in the product of board size and TDTA. The average value is 0.8527, which is relatively small compared to the maximum value, indicating that board size and TDTA do not vary greatly in their interaction on average. The standard deviation (2.6075) shows that there is some variability in this interaction term, though it is less pronounced than for some of the other variables.

Bsize * TDTE (Board Size Interaction with Total Debt to Total Equity). This interaction term ranges from 0.110 to 56.932, reflecting considerable variability. The average value is 1.7474, indicating a moderate level of interaction between board size and TDTE on average. The high standard deviation (6.0343) suggests substantial variability in this interaction term.

The correlation matrix of the dataset that shows the relationship between the dependent variable and independent variables as well as the direction and extent of association among the independent variables used in the study is presented as table 2.

**Table 2. Correlation Matrix Correlation Matrix**

| Variables | ROA | TDTA | TDTE | Bsize *TDTA | Bsize * TDTE |
|---|---|---|---|---|---|
| ROA | 1 | | | | |
| TDTA | 0.0191 | 1 | | | |
| | (0.7958) | | | | |
| TDTE | 0.2323* | -0.2766* | 1 | | |
| | (0.0014) | (0.0001) | | | |
| Bsize *TDTA | 0.0770 | 0.0350 | 0.4854* | 1 | |
| | (0.2961) | (0.6351) | (0.0000) | | |
| Bsize * TDTE | 0.5110* | 0.2065* | 0.5706* | 0.4732* | 1 |
| | (0.0000) | (0.0047) | (0.0000) | (0.0000) | |

**Source. STATA Output, 2024**

Table 2. Shows the correlation coefficients between different variables and their associated pvalues, which indicate the statistical significance of each correlation.

ROA has a Correlation Coefficient of 0.0191, P-value of 0.7958. The correlation between ROA and TDTA is very weak and not statistically significant ($p > 0.05$). This suggests that there is no meaningful relationship between return on assets and the ratio of total debt to total assets in this dataset.

ROA and TDTE has a Correlation Coefficient of 0.2323 and P-value of 0.0014. There is a moderate positive correlation between ROA and TDTE, which is statistically significant ($p < 0.05$). This indicates that higher total debt to total equity ratios are associated with higher returns on assets. This could imply that firms with higher debt relative to equity might be experiencing higher returns on their assets.

ROA and Bsize * TDTA has a Correlation Coefficient of 0.0770 and P-value of 0. 2961. The correlation is weak and not statistically significant ($p > 0.05$), suggesting no meaningful relationship between the interaction of board size with total debt to total assets and return on assets.

ROA and Bsize * TDTE has a Correlation Coefficient of 0.5110 and P-value of 0.0000. There is a strong positive correlation between ROA and the interaction term of board size with total debt to total equity, and it is statistically significant ($p < 0.05$). This suggests that a larger board size interacting with a higher total debt to total equity ratio is associated with higher returns on assets.

TDTA and TDTE has a Correlation Coefficient of -0.2766 and P-value of 0.0001. There is a moderate negative correlation between TDTA and TDTE, which is statistically significant ($p < 0.05$). This implies that as the ratio of total debt to total assets increases, the ratio of total debt to total equity tends to decrease, indicating an inverse relationship between these two debt ratios.

TDTA and Bsize * TDTA has a Correlation Coefficient of 0.0350 and P-value of 0.6351. The correlation is very weak and not statistically significant ($p > 0.05$). This suggests that the interaction of board size with total debt to total assets has little to no relationship with the total debt to total assets ratio.

TDTA and Bsize * TDTE has a Correlation Coefficient of 0.2065 and P-value of 0.0047. There is a moderate positive correlation between TDTA and the interaction term of board size with total debt to total equity, and it is statistically significant ($p < 0.05$). This indicates that as board size interacts with higher total debt to total equity, there is a moderate increase in the total debt to total assets ratio.

TDTE and Bsize * TDTA has a Correlation Coefficient of 0.4854 and P-value of 0.0000. There is a strong positive correlation between TDTE and the interaction term of board size with total debt to total assets, which is statistically significant ($p < 0.05$). This suggests that a larger board size interacting with a higher total debt to total assets ratio is strongly associated with higher total debt to total equity ratios.

TDTE and Bsize * TDTE has a Correlation Coefficient of 0.5706 and P-value of 0.0000. There is a strong positive correlation between TDTE and the interaction term of board size with total debt to total equity, and it is statistically significant ($p < 0.05$). This indicates that a larger board size

interacting with a higher total debt to total equity ratio is strongly associated with higher values of total debt to total equity.

Bsize * TDTA and Bsize * TDTE has a Correlation Coefficient of 0.4732 and P-value of 0.0000. There is a strong positive correlation between the interaction terms of board size with total debt to total assets and total debt to total equity, which is statistically significant ($p < 0.05$). This suggests that larger board sizes interacting with higher debt ratios are positively related across both debtto-asset and debt-to-equity ratios.

The summary of the results extracted from the FE model is presented in table 3.

**Table 3. Summary of Multiple Regression Results Regression Results**

| Variables | Coefficient | T-Values | P-Values | Tolerance | VIF |
|---|---|---|---|---|---|
| Constant | 0.5994104 | 2.58 | 0.011 | | |
| TDTA | -0.0550336 | -2.19 | 0.030 | 0.721016 | 1.39 |
| TDTE | -0.0206729 | -0.94 | 0.348 | 0.465383 | 2.15 |
| Bsize *TDTA | -0.1892773 | -5.42 | 0.000 | 0.701805 | 1.42 |
| Bsize *TDTE | 0.2017568 | 7.89 | 0.000 | 0.507822 | 1.97 |
| R2 | 0.5195 | | | | |
| Wald $Chi^2$ | 37.67 | | | | |
| Prob. $Chi^2$ | | | 0.0000 | | |

**Source. STATA Output, 2024**

Table 3. This table summarizes the multiple regression results for the variables of interest.

Constant has a Coefficient of 0.5994104, T-Value of 2.58 and P-Value of 0.011. The constant term is statistically significant ($p < 0.05$) and positive, indicating the baseline value of the dependent variable when all other variables are zero.

TDTA (Total Debt to Total Assets) has a Coefficient of -0.0550336, T-Value of -2.19, P-Value of 0.030 and Tolerance of 0.721016 with a VIF of 1.39. The negative coefficient suggests that as TDTA increases, the dependent variable decreases. This relationship is statistically significant ($p < 0.05$). The tolerance and VIF values suggest that multicollinearity is not a significant issue for TDTA.

TDTE (Total Debt to Total Equity) has a Coefficient of -0.0206729, T-Value of -0.94, P-Value of 0.348, and Tolerance of 0.465383 and a VIF of 2.15. The coefficient for TDTE is negative but not statistically significant ($p > 0.05$), indicating that there is no strong evidence of a relationship between TDTE and the dependent variable in this model. The tolerance and VIF suggest that multicollinearity is present but not severe.

Bsize * TDTA (Board Size Interaction with Total Debt to Total Assets) has a Coefficient of 0.1892773, T-Value of -5.42, P-Value of 0.000, Tolerance of 0.701805 and VIF of 1.42. This term has a strong negative and statistically significant coefficient ($p < 0.05$), indicating that the interaction between board size and TDTA has a significant negative impact on the dependent variable. The tolerance and VIF values suggest no significant multicollinearity.

Bsize * TDTE (Board Size Interaction with Total Debt to Total Equity) has a Coefficient of 0.2017568, T-Value of 7.89, P-Value of 0.000, Tolerance of 0.507822 and VIF of 1.97. This term has a strong positive and statistically significant coefficient ($p < 0.05$), suggesting that the interaction

between board size and TDTE significantly increases the dependent variable. The tolerance and VIF values are acceptable, indicating manageable multicollinearity.

Overall Model Statistics shows approximately 52% of the variance in the dependent variable is explained by the model. This indicates a moderately strong model fit.

Wald Chi² of 37.67 and Prob. Chi² of 0.0000. The Wald Chi² statistic is significant ($p < 0.05$), indicating that the overall model is statistically significant and provides a good fit to the data.

Test of Hypotheses

Hypotheses (HO1 to HO4) were tested with the regression results in Table 3

***HO1: Total debt to total equity ratio has no significant effect on the financial performance of listed multinational companies in Nigeria***.

The p-value for TDTE is 0.348, which is greater than the typical significance level of 0.05.

Since the p-value is not less than 0.05, the study fails to reject the null hypothesis since there insufficient evidence to reject HO1. The study concludes that total debt to total equity ratio does not have a statistically significant effect on the financial performance of listed multinational companies in Nigeria based on this model.

***HO2: Total debt to total asset ratio has no significant effect on the financial performance of listed multinational companies in Nigeria.***

The p-value for TDTA is 0.030, which is less than the significance level of 0.05. Since the p-value is less than 0.05, the study fails to reject the null hypothesis because there is sufficient evidence to reject HO2. The study concludes that total debt to total asset ratio does have a statistically significant effect on the financial performance of listed multinational companies in Nigeria.

***HO3: Moderating effect of board size has no significant effect on the relationship between total debt to total equity ratio and financial performance of listed multinational companies in Nigeria.***

The p-value for moderating effect of Bsize * TDTE is 0.000, which is less than the significance level of 0.05. Since the p-value is less than 0.05, the study rejects the null hypothesis because there is sufficient evidence to reject HO3. The conclude that moderating effect of board size has a statistically significant effect on the relationship between the total debt to total equity ratio and financial performance.

***HO4: Moderating effect of board size has no significant effect on the relationship between total debt to total asset ratio and financial performance of listed multinational companies in Nigeria.***

The p-value for the interaction term Bsize * TDTA is 0.000, which is less than the significance level of 0.05. Since the p-value is less than 0.05, the study rejects the null hypothesis and concludes that moderating effect of board size has a statistically significant effect on the relationship between the total debt to total asset ratio and financial performance.

Discussion of Findings Based on Tested Hypotheses

The total debt to total equity ratio has no significant effect on the financial performance of listed companies in Nigeria. The p-value for TDTE is 0.348, which is not significant at the 0.05 level. Thus,

HO1 is not rejected. The result indicates that the total debt to total equity ratio does not have a statistically significant effect on financial performance in the Nigerian context. This finding contrasts with some studies which suggest that debt levels can impact financial performance through various mechanisms. Abor (2015). Found a significant relationship between debt ratios and financial performance in Ghanaian firms, suggesting that debt ratios do affect firm performance. Also, Rajan (2021). Observed that financial leverage could impact firm performance depending on the firm's industry and country context. However, Erdogan (2016). Found mixed results in Turkish firms, where the effect of total debt to equity on performance was not consistently significant across different sectors more so, Cheng & Shiu (2017). Reported that the impact of leverage ratios, including TDTE, on performance was insignificant in some contexts, possibly due to differences in market conditions or firm-specific factors.

The total debt to total asset ratio has no significant effect on the financial performance of listed multinational companies in Nigeria. The p-value for TDTA is 0.030, which is significant at the 0.05 level. Thus, HO2 is rejected. The result shows that the total debt to total asset ratio has a significant effect on financial performance. This finding aligns with the idea that how much debt a company uses relative to its assets can influence its performance. Modigliani & Miller (1958). Their theory suggests that capital structure (debt vs. equity) affects firm value and performance, which is supported by the significant effect of TDTA. Graham & Harvey (2001). Found that debt ratios influence firm performance and valuation, which supports the significance of TDTA in our findings. Contrasting view of Harris & Raviv (2021). Their research suggests that the effect of debt on performance can vary widely, with some firms not showing significant impacts due to varying financial conditions and industry characteristics.

The moderating effect of board size has a significant effect on the relationship between total debt to total equity ratio and financial performance. The p-value for Bsize * TDTE is 0.000, which is significant at the 0.05 level. The significant moderating effect of board size indicates that board composition influences how the total debt to total equity ratio affects financial performance. Larger boards might be better at managing or monitoring debt levels, impacting firm performance. The finding is supported by (2022) who suggest that larger boards can improve oversight and decision making, which could affect how debt ratios impact performance. However, Yermack (2022). Argued that larger boards may suffer from coordination problems and reduced efficiency, which could negate the moderating effects on financial performance.

The moderating effect of board size has a significant effect on the relationship between total debt to total asset ratio and financial performance. The p-value for Bsize * TDTA is 0.000, which is significant at the 0.05 level. Thus, HO4 is rejected. The significant moderating effect of board size on the relationship between TDTA and financial performance suggests that board size plays a crucial role in how debt ratios impact performance. Larger boards might influence the effectiveness of debt management strategies. Beiner et al. (2016). Found that board characteristics, including size, significantly affect how financial metrics like debt ratios influence firm performance but Mak & Li (2011). Indicated that the impact of board size on performance varies, with some studies finding minimal or no effect depending on the corporate governance environment.

Vafeas (1999). Suggested that while board characteristics can influence performance, the specific effects of board size on the relationship between debt ratios and performance can be context dependent and not always significant. The findings highlight the significant role of the total debt to total asset ratio and the moderating effects of board size on the relationship between both total debt ratios and financial performance. The contrasting results in the literature underscore the importance of context and governance structures in shaping these relationships.

## 5. Conclusion and Recommendations

### Conclusion

The analysis of the fixed effects (FE) regression results for listed multinational companies in Nigeria reveals the lack of a significant effect of TDTE on financial performance suggests that this ratio may not be a strong predictor of performance in this context. This could be due to the specific financial environment or industry characteristics in Nigeria, which may attenuate the impact of debt-to-equity ratios on firm performance. The significant effect of TDTA on financial performance indicates that how much total debt a company uses relative to its assets is a meaningful factor. This suggests that debt levels can influence financial performance, aligning with theories suggesting that capital structure impacts firm value. The significant moderating effect of board size on the relationship between TDTE and financial performance suggests that larger boards may better manage or monitor debt levels. This finding underscores the importance of board composition in influencing how debt ratios impact performance. The significant moderating effect of board size on the relationship between TDTA and financial performance indicates that board size plays a crucial role in managing the effects of debt ratios. Larger boards might be more effective in influencing how total debt relative to assets affects firm performance.

### Recommendations

Based on the findings from the discussion, the following recommendations are provided

i. Since TDTE was not found to significantly impact financial performance, companies should ensure their debt policies are aligned with broader strategic goals rather than focusing solely on the debt-to-equity ratio. Explore other financial ratios and metrics that may better capture the relationship between debt and performance, such as interest coverage ratios or cash flow measures and Investigate industry-specific or company specific factors that might influence why TDTE does not

ii. Actively manage and optimize the total debt to total asset ratio to improve financial performance. This could involve strategies to reduce debt levels or improve asset utilization. a robust system for monitoring debt ratios and their impact on performance, ensuring that any adjustments in debt levels align with the company's strategic objectives and Integrate debt management strategies into long-term financial planning to ensure sustainability and alignment with performance goals.

iii. Increase the size of the board if it is currently small, ensuring that it includes members with diverse expertise and experience relevant to debt management. Strengthen governance attribute to make the board more effective in overseeing debt management. This could include better training for board members and clearer delineation of roles and responsibilities also regularly assess whether the current board size is optimal for managing debt-related decisions and performance. Adjust as needed based on performance and governance needs.

iv. Utilize the size of the board to effectively monitor and manage the total debt to total asset ratio. Larger boards can bring more diverse perspectives and enhance oversight. Ensure that the larger board is functioning effectively by promoting active participation and engagement in financial decision-making processes and conduct periodic reviews of board effectiveness, particularly in how well it manages and influences debt ratios and overall financial performance.

## References

Abdul, G. K. (2010). Capital Structure Decisions with Firms Performance. A Study of Engineering Firms. *International Journal of Accounting and Financial Reporting*, 2(1), 245-262.

Abdullah, E. M. (2014). The Impact of Capital Structure on Firms Performance. Evidence from Saudi Arabia. *Journal of Applied Finance and Banking*, 4(2), 183-193.

Abolfazl, M., Ali, R. Y., Hamid, R. R., & Kambiz, B. (2013). Relationship between Capital Structure and Firm Performance. *Journal of Business Research*, 5(8), 421-432.

Abor, J. (2008). Determinants of the Capital Structure of Ghanaian Firms. *Research Paper African Economic Research Consortium*, 179.

Akinyomi, O. J. (2013). Effect of Capital Structure on Firm Performance. Evidence from Nigeria Manufacturing Industry. *International Journal of Innovation research and studies,* 2(9), 1-13.

Amara, U. & Bilal, A. (2014). Impact of Capital Structure on Firm Performance. Analysis of Food Sector Listed on Karachi Stock Exchange. *International Journal of Multidisciplinary Consortium*, 1 (1).

An Empirical Analysis of Nigeria Listed Companies. *Journal of Economics and Finance,* 4(4), 175-181.

Andersen, T. J. (2005). Risk Management, Capital Structure, and Performance. *Global Business and Economics Anthology*, 187-199.

Aransiola, S. Y. & Oluwadetan, A. (2015). Capital structure and profitability. A critical analysis of quoted manufacturing companies in Nigeria. *American Journal of Economics, Finance and Management*, 1(5), 369-376.

Babalola, Y. S. (2014). Triangulation Analysis of Capital Structure and Firms Performance in Nigeria. *International Proceedings of Economics Development and Research (*IPEDR*)*, 69(12), 75-82.

Bello, F. O. & Onyesom, N. E. (2005). Leverage and Corporate Performance in Nigeria. *Nigerian Journal of Banking and Financial Issues*, 6, 127 – 139.

Cengiz, T., Yunus, K. & Sukriye, G. R. (2013). The Effects of Capital Structure Decisions on Firm Performance. Evidence from Turkey. *International Conference on Economics and Social Sciences,* 13, 137-142.

Ebaid, I. (2009). The Impact of Capital Structure Choice of Firm Performance. Empirical Evidence from Egypt. *The Journal of Risk Finance*, 10 (5), 477-487.

Evidence from Turkish Lodging Companies. *International Journal of Contemporary Hospitality Management*, 21 (5) 594-609

Fosberg, R. H., & Ghosh, A. (2006). Profitability and Capital Structure of Amex and Nyse Firms.

Gholamreza, E., Alireza, D. & Alireza, J. (2013). Investigating the Association between Capital Structure and Financial of Listed in Tehran Stock Exchange, *Nature and Science Journal*, 11(11), 149-153.

Have Information That Investors Do Not Have. *Journal of Financial Economics*, 13, 187-221.

Heydar, M. S., Elham, G., Vahid, T. K. & Mohsen, A. K. (2012). Capital Structure and Firm Performance. Evidence from Tehran Stock Exchange. *International Proceedings of Economics Development & Research*, 43, 225-228.

Huang, G. & Song, F. M. (2006). The Determinants of Capital Structure. Evidence from China. China. *Economic Review*, 17, 14 -36.

Idode, P. E, Adeleke, T. M., Ogunlowore, A. J, & Ashogbon, O. S. (2014). Influence of Capital Structure on Profitability. Empirical Evidence from Listed Nigerian Banks. *IOSR Journal of Business and Management*, 16 (11), 22-28.

Innocent, E. C., Ikechukwu, A. C. & Nnagbogu, E. K. (2014). The Effect of Financial Leverage on Financial Performance. Evidence of Quoted Pharmaceutical Companies in Nigeria. *IOSR Journal of Economics and Finance*, 5 (3), 17- 25.

Iorpev, L. & Kwanum, I. (2012). Capital Structure and Firm Performance. Evidence from

Jensen, M. C. & Meckling, W. H. (1976). Theory of the Firm. Managerial Behavior, Agency Cost and Ownership Structure. *Journal of Financial Economics*, 3, 305-60.
*Journal of Business & Economics Research*, 11, 57-64.

Jude, S. A. (2013). The Impact of Capital Structure on Financial Performance of the Listed

Karadeniz, E., Kandir, S. Y, Balcilar, M. & Onal, Y. B. (2009). Determinants of Capital Structure.

Khalaf, A. (2013). The Relationship between Capital Structure and Firm Performance. Evidence from Jordan. *Journal of Finance and Accounting*, 1(3), 41-45.

Kraus, A. & Litzenberger, R. (1973). A state preference model of optimal financial leverage. *The Journal of Finance*, 28, 911-921.

Kurfi, A. K. (2003). Principles of Financial Management. Benchmark Publishers Ltd, Kano.

Lawal, B. A., Edwin, T. K., Monica, W. K. & Adisa, M. K. (2014). Effects of capital structure on firms' performance. Empirical study of manufacturing companies in Nigeria. *Journal of Finance and Investment analysis*, 3(4), 39-57.

Maina, L. & Ishmail, M. (2014). Capital Structure and Financial Performance in Kenya. Evidence from Firms Listed at the Nairobi Securities Exchange. *International Journal of Social Sciences and Entrepreneurship*, 1(11) 1-14.

Maina, L. & Kondongo, O. (2013). Capital Structure and Financial Performance in Kenya. Evidence from Firms Listed at the Nairobi Securities Exchange. Paper Presented at the Jomo Kenyatta University of Science & Technology Research Conference. Kenya.

Maniagi, G. M., Mwalati, S. C., Ondiek, B. A., Mesiega, D. & Ruto, R. (2013). Capital Structure and Performance. Evidence from Listed Non-Financial Firms on Nairobi Securities Exchange (NSE) Kenya. *International Journal for Management Science and Technology*, 1(1), 2320-2325.
Manufacturing Companies in Nigeria. *International Journal of Business and Management,* 2(5)
Manufacturing Firms in Sri Lanka. *Global Journal of Commerce and Management Perspective*. 2 (5), 56-62.

Mathanika, T., Virgina, A. G. & Paviththira, R. (2015). Impact of capital structure on firm value. Evidence from listed manufacturing companies on Colombo Stock Exchange in Sri Lanka. *International Conference on Contemporary Management*, 24-35.

Modigliani, F. & Miller, M. (1958). The Cost of Capital, Corporate Finance and the Theory of Investment. *American Economic Review, 48, 261-97.*

Modigliani, F. & Miller, M. (1963). Corporate Income Taxes and the Cost of Capital. A Correction. *American Economic Review*, 53, 53-443.

Mramor, D., & Crnigoj, M. (2009). Determinants of Capital Structure in Emerging European Economies. Evidence from Slovenian Firms. *Emerging Markets Finance and Trade,* 47(1), 72- 89.

Muhammad, U., Zaighum T., Saeed, A. & Muhammad, S. (2012). Impact of Capital Structure on Firms Financial Performance. Evidence from Pakistan. *Journal of Finance and Accounting*, 3(9).

Mustafa, M. S. & Osama, S. (2013). Capital Structure and Corporate Performance. Empirical Study on the Public Jordanian Shareholdings Firms Listed in the Amma Stock Market. *Journal of European Scientific*, 8, (22).

Mwangi, L. W., Makau, M. S. & Kosimbei, G. (2014). Relationship between Capital Structures and Performance of Non-Financial Companies Listed in Nairobi Security Exchange, Kenya. *Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics*, 1 (2), 72- 90.

Myers, S. C. & Majluf, N. S. (1984). Corporate Financing and Investment Decisions When Firms

Ngoc, P. D. & Jeremy, D. K. (2011). Firm Characteristics, Capital Structure and Operational Performance. A Vietnamese Study. APEA Conference.

Olokoyo, F. O. (2012). Capital Structure and Corporate Performance Nigerian Quoted Firms. A Panel Data Approach. Onaolapo, A. A. & Kajola, S. O. (2010). Capital Structure and Firm Performance. Evidence from Nigeria. *European Journal of Economics, Finance and Administrative Sciences*, 25, 70-82.

Osuji, C. C. & Odita, A. (2012). Impact of Capital Structure on the Financial Performance of Nigerian Firms. *Arabian Journal of Business and Management Review*, 1 (12), 43-51.

Rafiu, O. S., Taiwo, O. A. & Dauda, O. Y. (2012). Financial Policy and Corporate Performance.

Rajan, R. G. & Zingales, L. (1995). What Do We Know About Capital Structure? Some Evidence from International Data. *The Journal of Finance*, 50(5) 1421-1460.

Rasa, N., & Jurgita, S. (2012). The Relationship of Corporate Governance Decision on Capital Structure and Company's Performance. Evidence from Lithuanian Food and Beverages Industry Companies. *Journal of Economics and Management*, 17(2), 480-486.

Riahi-Belkaonui, A. (1999). Capital Structure. Determination, Evaluation and Accounting, Westport, Quorum Books Publisher.

Sabastian, O. U. & Rapulchukwu, U. E. (2012). The Impact of Capital Structure and Liquidity on Corporate Returns in Nigeria. Evidence from Manufacturing Firms. *International Journal of Accounting, Finance and Management*, 2(3), 1-16.

Salawu, R. O. (2007). An Empirical Analysis of the Capital Structure of Selected Quoted Companies in Nigeria. *The International Journal of Applied Economics and Finance,* 1 (I), 16 – 28.

Suleiman, A. (2013). Capital Structure Effect on Firms Performance. Evidence from Saudi Listed Companies. A research project submitted in partial fulfilment of the requirements for the degree of Master of Finance, Saint Mary's University.

Suleiman, M. A. & Nour, A. (2012). The Effect of Capital Structure on the Performance of Palestinian Financial Institutions. *British Journal of Economics, Finance and Management Sciences*, 3(2).

Waqas, T., Imran, A., Hafiz, M. U., Jawad, A. & Zaid, B. (2013). Empirical identification of determinant of firms' financial performance. A comparative study of textile and food sector of Pakistan. *Journal of Business*, 3(1), 487-497.

Yinusa, O. G. & Babalola, Y. A. (2012). The impact of corporate governance on capital structure decisions of Nigerian firms. *Research Journal in Organizational Psychology and Educational Studies*, 1(2), 121.

Zeitun, R., & Tian, G. G. (2007). Capital structure and corporate. Evidence from Jordan. *The Australian Accounting Business & Finance Journal*, 1(4), 40-61.