

Complementarity of Equity and Debt Capital on Profitability of Quoted Consumer Goods Firms in Nigeria

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ABSTRACT

This study ascertained the complementarity of equity and debt capital of quoted consumer goods companies in Nigeria from 2011-2021. Specifically, the study determined the effect of shareholders' equity and total liabilities on return on assets, return on equity and earnings per share. Purposive sampling technique was employed to select fourteen (14) consumer goods companies from a population of twenty three (23) quoted consumer goods firms in Nigeria. Panel data were used in this study, which were obtained from the annual reports and accounts of sample firms for the periods 2011-2021. Ex-Post Facto research design was employed. Descriptive statistics of the dataset from the sample firms were described using the mean, standard deviation, minimum and maximum values of the data for the study variables. Inferential statistics using Multicollinearity test, Pearson correlation coefficient and Panel least square regression analysis were applied to test the hypotheses of the study. The results showed that shareholders' equity has a positive and significant effect on ROA, ROE and EPS respectively at 5% level of significance, while total liabilities has a negative and significant effect on ROA, ROE and EPS, however, significant at 5% level of significance. This study recommended amongst others that an appropriate mix of equity and debt capital should be adopted in order to increase the profitability of consumer goods firms.

KEYWORDS: Shareholders' Equity, Total Liabilities, Return on Assets, Return on Equity, Earnings Per Share

INTRODUCTION:

The important role of manufacturing companies in the global economy and their contribution to employment, value added, innovation and economic growth are well recognised. The success OR otherwise of these companies depends largely on the sources and composition of capital available to them. Hence, the successful selection and use of capital is one of the key elements of the firms' financial strategy. Hence, proper care and attention need to be given while determining the capital mix decision. Capital mix is generally described as the combination of debt & equity that make the total capital of firms. The capital structure refers to how a firm is financed through different sources of funds. Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. The proportion of debt to equity is a strategic choice of corporate managers. Capital

structure decision is the vital one since the profitability of an enterprise is directly affected by such decision (Okudo, Ezechukwu & Amahalu, 2022). Capital is a vital part of that statement. A cautious attention has to be paid as far as the optimum capital structure is concerned. With unplanned capital structure, companies may fail to economize the use of their funds. Consequently, it is being increasingly realized that a company should plan its capital structure to maximize the use of funds and to be able to adapt more easily to the changing conditions. (Omabu, Okoye & Amahalu, 2021)

The market for hybrid instruments, which combine debt and equity features into a single financing vehicle, has developed unevenly both in developed and developing economies, but has recently attracted interest of policy makers across the board. These techniques represent an appealing form of finance for

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firms that are approaching a turning point in their life cycle, when the risks and opportunities of the business are increasing, a capital injection is needed, but they have limited or no access to debt financing or equity, or the owners do not want the dilution of control that would accompany equity finance. This can be the case of young high-growth companies, established firms with emerging growth opportunities, companies undergoing transitions or restructuring, as well as companies seeking to strengthen their capital structures (Lahcen, 2019). Profitability is ability of a company to use its resources to generate revenues in excess of its expenses. In other words, this is a company's capability of generating profits from its operations. Profitability has been operationalized as the financial statement ratios such as return on assets (ROA), return on equity (ROE), earnings per share etc. Investors, creditors, and managers use these key concepts to analyze how well a company is doing and the future potential it could have if operations were managed properly. Therefore, it is important to determine the complementarity of equity and debt capital on profitability of quoted consumer goods firms in Nigeria.

Statement of Problem

An important question facing companies in need of new finance is whether to raise debt or equity. In spite of the continuing theoretical debate on capital structure, there is relatively little empirical evidence on how companies actually select between financing instruments at a given point of time in order to attain optimum profitability. Firms going through financial distress also have issues with its operational functions, high labour turnover and the organization objective shifted from key corporate objectives since the main issue is funding debt instruments. However, there is no unanimity among researchers on the nature of the association between profitability variables and debt-equity ratio of corporate firms. Prior findings on the influence of capital structure on the profitability of firms have been mixed, such as the finding of a non-significant effect (Ndulue, Okoye & Amahalu, 2021; Gornall & Strebulaev, 2015), a significant positive effect (Mbonu & Amahalu, 2021; Korajczyk & Levy, 2019) or negative effect (Okudo, Amahalu, Obi & Okafor, 2022; Penman, Richardson & Tuna, 2017) of capital structure on profitability, thereby creating a lacuna which this study tends to bridge.

Objectives of the Study

The broad objective of this study is to provide empirical evidence on the complementarity of the equity and debt capital on profitability of quoted consumer goods firms in Nigeria.

The specific objectives are to:

1. Evaluate the effect of shareholders' equity and total liabilities on return on assets of quoted consumer goods firms in Nigeria.
2. Determine the effect of shareholders' equity and total liabilities on return on equity of quoted consumer goods firms in Nigeria.
3. Ascertain the effect of shareholders' equity and total liabilities on earnings per share of quoted consumer goods firms in Nigeria.

Research Hypotheses

In line with the objectives and research questions, the following null hypotheses were tested:

Ho₁: Shareholders' equity and total liabilities have no significant effect on return on assets of quoted consumer goods firms in Nigeria.

Ho₂: Shareholders' equity and total liabilities have no significant effect on return on equity of quoted consumer goods firms in Nigeria.

Ho₃: Shareholders' equity and total liabilities have no significant effect on earnings per share of quoted consumer goods firms in Nigeria.

Conceptual Review

Capital Structure

Capital Structure refers to the amount of debt and/or equity employed by a firm to fund its operations and finance its assets. The structure is typically expressed as a debt-to-equity or debt-to-capital ratio. The term capital structure refers to the percentage of capital (money) at work in a business by type. Broadly speaking, there are two forms of capital: equity capital and debt capital. Each type of capital has its benefits and drawbacks, and a substantial part of wise corporate stewardship and management is attempting to find the perfect capital structure regarding risk/reward payoff for shareholders. Capital structure can be a mixture of a firm's long-term debt, short-term debt, common equity and preferred equity (Modozie & Amahalu, 2022). A company's proportion of short- and long-term debt is considered when analyzing capital structure. When analysts refer to capital structure, they are most likely referring to a firm's debt-to-equity (D/E) ratio, which provides insight into how risky a company is. Usually, a company that is heavily financed by debt has a more aggressive capital structure and therefore poses greater risk to investors. This risk, however, may be the primary source of the firm's growth (Abiahu, Egbunike, Udeh, Egbunike & Amahalu, 2019).

Equity Capital

Equity is more expensive than debt, especially when interest rates are low. However, unlike debt, equity does not need to be paid back if earnings decline. On

the other hand, equity represents a claim on the future earnings of the company as a part owner (Okegbe, Eneh & Amahalu, 2019). Equity capital refers to that portion of the organization's capital, which is raised in exchange for the share of ownership in the company. These shares are called the equity shares. The equity shareholders are the owners of the company who have significant control over its management. They enjoy the rewards and bear the risk of ownership. However, their liability is limited to the amount of their capital contributions. The equity capital is also called as the share capital or equity financing (Okudo, Mbonu, & Amahalu, 2022).

Debt Capital

Debt is one of the two main ways companies can raise capital in the capital markets. Companies like to issue debt because of the tax advantages. Interest payments are tax deductible. Debt also allows a company or business to retain ownership, unlike equity. Additionally, in times of low interest rates, debt is abundant and easy to access (Eneh, Okegbe & Amahalu, 2019). Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure. The debt capital in a company's capital structure refers to borrowed money that is at work in the business (Amahalu, Obi, Okudo & Okafor, 2022).

Shareholders' Equity

Shareholders equity is a measure of how much of a company's net assets belong to the shareholders. Shareholders' equity essentially represents the amount of a business's holdings that were not purchased using debt (loans) (Okoye, Amahalu, Nweze & Obi, 2016). Shareholders' equity represents the interest of a company's shareholders in the net assets of the company. It equals the excess of a company's total assets over its total liabilities.

Liabilities

A liability is an obligation to or something that you *owe* somebody else. Liabilities are defined as a company's legal financial debts or obligations that arise during the course of business operations. Liabilities are settled over time through the transfer of economic benefits including money, goods, or services. Recorded on the right side of the statement of financial position, liabilities include loans, accounts payable, mortgages, deferred revenues, and accrued expenses. In general, a liability is an obligation between one party and another not yet completed or paid for. In the world of accounting, a financial liability is also an obligation but is more

defined by previous business transactions, events, sales, exchange of assets or services, or anything that would provide economic benefit at a later date (Ezechukwu, Amahalu & Okudo, 2022). Liabilities are usually considered short term (expected to be concluded in 12 months or less) or long term (12 months or greater) (Will & Adam, 2019).

Profitability

Profit is an absolute number determined by the amount of income or revenue above and beyond the costs or expenses a company incurs. It is calculated as total revenue minus total expenses and appears on a company's income statement. Profitability is the metric used to determine the scope of a company's profit in relation to the size of the business (Okoye, Okoye, Amahalu & Obi 2014). Profitability is a measurement of efficiency and ultimately its success or failure. Profitability is a business's ability to produce a return on an investment based on its resources in comparison with an alternative investment (Amahalu, Ezenwaka, Obi & Okudo, 2022).

Return on Assets (ROA)

Return on assets is a profitability ratio that provides how much profit a company is able to generate from its assets. In other words, return on assets (ROA) measures how efficient a company's management is in generating earnings from their economic resources or assets on their statement of financial position (Omojolaibi, Okudo & Shojobi, 2019). ROA is shown as a percentage, and the higher the number, the more efficient a company's management is at managing its balance sheet to generate profits.. Return on assets (ROA) is a financial ratio that shows the percentage of profit a company earns in relation to its overall resources. It is commonly defined as net income divided by total assets. Net income is derived from the income statement of the company and is the profit after taxes. Return on assets (ROA) is calculated by dividing a company's net income by total assets (Amahalu, Okoye, Nweze & Okika, 2017).

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Return on Equity (ROE)

The return on equity (ROE) is a measure of the profitability of a business in relation to the equity, also known as net assets or assets minus liabilities (Amahalu & Obi, 2020). ROE is a measure of how well a company uses investments to generate earnings growth. ROE is especially used for comparing the performance of companies in the same industry (Ryan, 2019). ROE is a measure of management's ability to generate income from the equity available to

it. ROEs of 15-20% are generally considered good. Return on Equity (ROE) is a measure of a company's annual return (net income) divided by the value of its total shareholders' equity, expressed as a percentage

$$\text{ROE} = \frac{\text{Net Income}}{\text{Shareholders' Equity}}$$

Earnings per Share (EPS)

Earnings per share (EPS) is an important financial measure, which indicates the profitability of a company. It is calculated by dividing the company's net income with its total number of outstanding shares. It is a tool that market participants use frequently to gauge the profitability of a company before buying its shares (Nzekwe, Okoye & Amahalu, 2021). EPS is the portion of a company's profit that is allocated to every individual share of the stock. It is a term that is of much importance to investors and people who trade in the stock market. The higher the earnings per share of a company, the better is its profitability. Earnings per share (EPS) is the portion of a company's profit that is allocated to each outstanding share of common stock, serving as an indicator of the company's financial health. In other words, earnings per share is the portion of a company's net income that would be earned per share if all the profits were paid out to its shareholders (Okudo, Omojolaibi & Oladele, 2021).

Relationship between Equity Capital, Debt Capital and Return on Assets

There was never a consensus arrived by researchers in the past on the effect of debt and equity financing on ROA. Amahalu, Egolum, Nweze and Obi (2018) found that debt in capital structure has a negative impact on ROA and size have an inverse relationship with ROA. Velanampy and Aloy (2012) did a study on the relationship between capital structure and profitability of Srilankan banks. Their study showed a negative relationship between capital structure and profitability (ROA).

Relationship between Equity Capital, Debt Capital and Return on Equity

The choice of capital structure and its resultant optimal risk exposure is very paramount in economic performance of every company. This is because the choice (Debt or Equity) should ultimately result in the growth in the value of investment made by various categories of investors particularly equity investors. The fall in share price will send a signal to potential investors of the poor performance of the company and thereby deterring potential investors from investing both in equity stock and debt. Number of studies has been conducted on capital structure by examining the relationship between capital structure and firms performance in terms of return on equity. However,

there is no consensus. Ecowas. Amahalu, Okoye & Nnadi (2023); Shivdasani and Zenner (2018) found a significant positive relationship between capital structure and ROE. On the other hand, Ovtchinnikov (2017) reported a negative relationship between capital structure and ROE.

Relationship between Equity Capital, Debt Capital and EPS

The lack of consensus from theoretical and empirical points of view about what qualify as optimal capital structure had rendered it pertinent and expedient to examine the effect of the debt/equity mix on firm's profitability (EPS). Previous studies found contradictory results concerning the relationship between capital structure and firms performance (EPS). For instance, Okudo & Ndubuisi (2021); Sheikh and Wang (2013), found a positive relationship between capital structure and EPS, while, Royal, Salah, Ahmad and Shanaz (2013). obtained a negative relationship between capital structure and EPS.

Theoretical Framework

Pecking Order Theory

Pecking order theory is a theory related to capital structure. It was initially suggested by Donaldson in 1961. In 1984, Stewart Myers and Nicolas Majluf modified the theory and made it popular. According to this theory, managers follow a hierarchy to choose sources of finance. The hierarchy gives first preference to internal financing. If internal financing is not enough, then managers would have to shift to external sources. They will issue debt to generate funds. After a point when it is no longer practical to issue more debt, equity is issued as a last option. The pecking order theory begins from the asymmetry of information in the organization. Asymmetric information is an unequal distribution of information. The managers generally have more information about company's performance, prospects and risks than outside creditors or investors. The higher the asymmetry of information, the higher the risk in the company (Amahalu & Obi, 2020)

Empirical Review

Rahman, Islam and Uddin (2019) explored the impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh. This study applied the fixed effect regression to find out the correlation among independent variables (debt ratio, equity ratio and debt to equity ratio) and dependent variables (return on asset, return on equity and earnings per share). A sample of 50 observations of selected 10 manufacturing companies listed in Dhaka Stock Exchange has been analyzed over the period of 2013 to 2017. The research revealed that the debt

ratio and equity ratio have a significant positive impact but debt to equity ratio has a significant negative impact on ROA. The study also revealed that, equity ratio has a significant positive impact but debt to equity ratio has a significant negative impact on ROE. Finally, debt and equity ratio has a significant negative impact on EPS.

Castro, Tascón, Borja and Area (2019) adopted a dynamic standpoint to contribute to the debate on how and why firms choose their capital structure. The study examined the different behavior of the traditionally found explanatory variables (such as operating, investing and financing cash flows) across the stages. Taking a wide sample of public companies from UK, Germany, France and Spain, it was found that the capital structure explanatory factors evolve across the life cycle stages, changing or rebalancing the prevalence of the static models in play, trade-off, pecking order, and market timing.

Lahcen (2019) used a panel dataset covering 550 non-listed manufacturing firms in Morocco over the period 2008–2017 and investigated both long-term and short-term measures of leverage with the objective of understanding the factors that shape “debt-equity choice” as well as “debt maturity structure”. The analysis revealed the existence of a negative relationship between asset tangibility and both aggregate leverage and short-term debt ratio. However, no clear cut relationship between asset tangibility and long-term debt is uncovered. Small firms tend to increase their debt instead of opening their capital to outside investors and larger firms seem to rely much more on their retained earnings for their long-term financial needs. For short-term debt, size does not appear to matter. The impact of growth is positive on short-term leverage and irrelevant for long-term leverage. Finally, profitability exerted a positive effect on long-term leverage and a negative one on short-term leverage.

Methodology

Research Design

The research design employed in this study is the *ex-post facto* research design, in order to establish a meaningful relationship between equity and debt capital and profitability.

Population of the Study

The population of this study consists of all the twenty-three (23) quoted consumer goods firms in Nigeria as at 31st December, 2021 (see appendix I).

Sample Size and Sampling Technique

Purposive sampling technique was adopted to select a sample of fourteen (14) quoted consumer goods firms with up to date and complete annual reports and accounts for the study period (2011-2021).

Source of Data

This study made use of secondary data precisely.

Model Specification

$$ROA_{it} = \beta_0 + \beta_1SHEQ_{it} + \beta_2TOLB_{it} + \mu_{it} \quad \dots \mathbf{H_01}$$

$$ROE_{it} = \beta_0 + \beta_1SHEQ_{it} + \beta_2TOLB_{it} + \mu_{it} \quad \dots \mathbf{H_02}$$

$$EPS_{it} = \beta_0 + \beta_1SHEQ_{it} + \beta_2TOLB_{it} + \mu_{it} \quad \dots \mathbf{H_03}$$

Where:

- β_0 = Constant term (intercept) of the study model
- β_1 - β_2 = Coefficients of the explanatory variable (Equity and Debt Capital)
- $\mu_{i,t}$ = Component of unobserved error term of firm *i* in period *t*
- $SHEQ_{it}$ = Shareholders’ Equity of firm *i* in period *t*
- $TOLB_{it}$ = Total Liabilities of firm *i* in period *t*
- ROA_{it} = Return on Assets of firm *i* in period *t*
- ROE_{it} = Return on Equity of firm *i* in period *t*
- EPS_{it} = Earnings per Share of firm *i* in period *t*

Table 1: Variables Definition and Measurement Units

Variable Type	Proxy	Measurement Unit	Variable Symbols	Variables Explanation
Independent Variable	Equity Capital	Shareholders’ Equity	SHEQ	Total Assets - Total Liabilities
Independent Variable	Debt Capital	Total Liabilities	TOLB	Short Term Liabilities + Long Term Liabilities / Total Capital
Dependent Variable (Profitability)				
	Return on Assets		ROA	Net Profit / Total Assets
	Return on Equity		ROE	Net Income / Shareholders’ Equity
	Earnings per Share		EPS	(Net Income after Tax - Total Dividends)/Total Number of Outstanding Shares

Data Presentation and Analysis**Table 2 Pearson Correlation Matrix**

In order to test for multicollinearity the researcher conducted a Pearson Coefficient correlation analysis.

	ROA	ROE	EPS	SHEQ	TOLB
ROA	1.0000				
ROE	0.4851	1.0000			
EPS	0.1587	0.6920	1.0000		
SHEQ	0.6038	0.6363	0.6380	1.0000	
TOLB	-0.6982	-0.6633	-0.3415	0.6225	1.0000

Source: E-Views 9.0 Correlation Output, 2023

Interpretation on Correlation Matrix

From the findings on the correlation analysis, the study found that there was a negative positive correlation coefficient between ROA, ROE, EPS and TOLB by correlation factors of -0.6982, -0.6633, -0.3415 and SHEQ respectively, however, ROA, ROE, EPS were found to have positive correlation with correlation coefficients of 0.6038, 0.6363, 0.6380 and SHEQ..

Table 3 Multicollinearity Test

Variance Inflation Factors			
Date: 03/13/23 Time: 16:47			
Sample: 2011 2021			
Included observations: 10			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.036692	222.7151	NA
SHEQ	0.002240	1391.201	6.709891
TOLB	0.002084	1469.459	6.709891

Source: E-Views 9.0 Output, 2023

Table 3 shows that the Variance Inflation Factor (VIF) for all the models estimated ranged within 6.71 showing that the VIF results are between the acceptable ranges of 1 to 10. This shows that the variables did not exhibit multicollinearity, hence, regression analysis could then be carried out.

Test of Hypotheses**Test of Hypothesis 1**

H₀: Shareholders' equity and total liabilities have no significant effect on return on assets of quoted consumer goods firms in Nigeria.

H₁: Shareholders' equity and total liabilities have significant effect on return on assets of quoted consumer goods firms in Nigeria.

Table 4 Panel Least Square Regression Analysis between Shareholders' Equity, Total Liabilities and ROA

Dependent Variable: ROA				
Method: Panel Least Squares				
Date: 03/13/23 Time: 16:30				
Sample: 2011 2021				
Periods included: 11				
Cross-sections included: 14				
Total panel (balanced) observations: 154				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.212360	0.105408	2.014643	0.0459
SHEQ	0.057530	0.015382	3.739963	0.0003
TOLB	-0.059991	0.016868	-3.556474	0.0005
R-squared	0.496960	Mean dependent var		0.145794
Adjusted R-squared	0.483777	S.D. dependent var		0.141063
S.E. of regression	0.135025	Akaike info criterion		-1.145523
Sum squared resid	2.497737	Schwarz criterion		-1.082488

Log likelihood	83.18662	Hannan-Quinn criter.	-1.119908
F-statistic	7.354867	Durbin-Watson stat	1.513040
Prob(F-statistic)	0.000925		

Source: E-Views 9.0, Regression Output 2023

Interpretation of Regression Result

In table 4, a panel least square regression analysis was conducted to test the effect of shareholders' equity and total liabilities on return on assets of quoted consumer goods firms in Nigeria. Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the table 4, the value of adjusted R squared was 0.484, an indication that there was variation of 48.4% on ROA due to changes in SHEQ and TOLB. This implies that only 48.4% changes in ROA of consumer goods companies could be accounted for by SHEQ and TOLB, while 51.6% was explained by unknown variables that were not included in the model. The probability of the slope coefficients indicate that; $P(x_1=0.0003 < 0.05; x_2=0.0005 < 0.05)$. The co-efficient value of; $\beta_1=0.057530$ for SHEQ implies that ROA is statistically significant and positively related to SHEQ at 5% level of significance, while $\beta_2=-0.059991$ implies that TOLB has a significant negative relationship with ROA

The linear regression model becomes;

$$ROA = 0.212360 + 0.057530SHEQ - 0.059991TOLB + \mu$$

The coefficient of SHEQ implies that if shareholders' equity increases by 1%, then return on asset would increase by 0.058%, while 1% increase in TOLB will cause ROA to reduce by 0.06%. The Durbin-Watson Statistic of 1.513040 suggests that the model does not contain serial correlation. The F-statistic of the ROA regression is equal to 7.354867 and the associated F-statistic probability is equal to 0.000925, so the null hypothesis was rejected and the alternative hypothesis was accepted.

Test of Hypotheses II

H₀₂: Shareholders' equity and total liabilities have no significant effect on return on equity of quoted consumer goods firms in Nigeria.

H₂: Shareholders' equity and total liabilities have significant effect on return on equity of quoted consumer goods firms in Nigeria.

Table 5 Panel Least Square Regression Analysis between Shareholders' Equity, Total Liabilities and ROE

Dependent Variable: ROE				
Method: Panel Least Squares				
Date: 03/13/23 Time: 16:36				
Sample: 2011 2021				
Periods included: 11				
Cross-sections included: 14				
Total panel (balanced) observations: 154				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.836451	0.713784	2.572838	0.0112
SHEQ	0.414410	0.104164	3.978434	0.0001
TOLB	-0.334377	0.114224	-2.927373	0.0040
R-squared	0.405646	Mean dependent var		1.253194
Adjusted R-squared	0.392590	S.D. dependent var		0.959850
S.E. of regression	0.914335	Akaike info criterion		2.679956
Sum squared resid	114.5331	Schwarz criterion		2.742991
Log likelihood	-184.5969	Hannan-Quinn criter.		2.705571
F-statistic	8.091579	Durbin-Watson stat		1.272835
Prob(F-statistic)	0.000477			

Source: E-Views 9.0, Regression Output 2023

Interpretation of Regression Analysis

The value of Adjusted R-squared in table 5 showed that 40.6% of the total variation in dependent variable (ROE) is explained by independent variables (SHEQ and TOLB) to the determination of ROE while the remaining

59.4% is caused by other explanatory factors outside this model and this is captured by the error term. The coefficient result shows that SHEQ ($\beta_1=0.414410$) is positively related with ROE while TOLB ($\beta_2=-0.334377$) is negatively related with ROE. The probability value of the slope coefficients indicate that $P(x_1=0.0001 < 0.05$; $x_2=0.0040 < 0.05$). This implies that ROE has a significant positive relationship with SHEQ; a significant negative relationship with TOLB. The Durbin-Watson figure of 1.272835 indicates the absence of autocorrelation in the regression model. The overall performance of the model is satisfactory as shown by $\text{Prob}(F\text{-statistics}) = 0.000477$

The regression equation is:

$$\text{ROE} = 1.836451 + 0.414410\text{SHEQ} - 0.334377\text{TOLB} + \mu$$

The implication is that, for there to be a unit/one naira increase in ROE there will be 0.414410 increase in SHEQ, while TOLB will reduce by 0.334377.

Decision

Since the result of the Prob (F-statistic) of 0.000477 is less than the critical value of 5% significance level, leading to the conclusion that SHEQ and TOLB has a significant effect on return on equity of quoted consumer goods companies in Nigeria at 5% significant level, hence, H_1 is accepted.

Hypothesis III

H₀₃: Shareholders' equity and total liabilities have no significant effect on earnings per share of quoted consumer goods firms in Nigeria.

H₃: Shareholders' equity and total liabilities have significant effect on earnings per share of quoted consumer goods firms in Nigeria.

Table 6 Panel Least Square Regression Analysis between Shareholders' Equity, Total Liabilities and EPS

Dependent Variable: EPS				
Method: Panel Least Squares				
Date: 03/13/23 Time: 16:39				
Sample: 2011 2021				
Periods included: 11				
Cross-sections included: 14				
Total panel (balanced) observations: 154				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.472752	0.492576	2.989895	0.0033
SHEQ	0.029052	0.071883	5.404162	0.0000
TOLB	-0.013029	0.078825	-3.965285	0.0001
R-squared	0.366691	Mean dependent var		1.035398
Adjusted R-squared	0.337810	S.D. dependent var		0.628525
S.E. of regression	0.630975	Akaike info criterion		1.938093
Sum squared resid	54.54367	Schwarz criterion		2.001129
Log likelihood	-132.6665	Hannan-Quinn criter.		1.963709
F-statistic	6.461434	Durbin-Watson stat		1.083653
Prob(F-statistic)	0.001355			

Source: E-Views 9.0, Regression Output 2023

Interpretation of Regression Result

$$\text{EPS} = 1.472752 + 0.029052\text{SHEQ} - 0.013029\text{TOLB} + \mu$$

The above model tested the effect of SHEQ and TOLB earnings per share. The result showed that SHEQ has a significant positive effect on EPS, while a significant negative relationship exists between TOLB and EPS. This can be seen from the coefficients and probability of t-stat in table 6; $\beta_1 = 0.029052$, $\text{Prob} = 0.0000$; $\beta_2 = -0.013029$, $\text{Prob} = 0.0001$. Furthermore, the Adjusted R-squared which is the coefficient of determination shows the magnitude of variations caused on EPS by the explanatory variables (SHEQ and TOLB) to be 0338. This indicates that about 33.8% variation in EPS is attributed to the influence of the explanatory variables (SHEQ and TOLB) while the remaining 66.2% is caused by other explanatory factors outside this model and this is captured by the error term.

Decision:

From Table 6, at the adopted level of significance at 0.05, the overall significance of the model with the Prob(F-statistic) = 0.001355, which is less than 0.05. Therefore, we reject the null hypothesis and accept the alternative, which upholds that shareholders' equity and total liabilities have significant effect on earnings per share of quoted consumer goods firms in Nigeria at 5% significant level.

Findings, Conclusion and Recommendations**Findings**

Based on the analysis of data, the following findings emerged:

1. Shareholders' Equity has a significant positive effect on ROA, while Total Liabilities has a significant negative effect on ROA at 5% level of significance respectively.
2. Shareholders' Equity has a significant positive effect on ROE, while Total Liabilities has a significant negative effect on ROE at 5% level of significance respectively.
3. Shareholders' Equity has a significant positive effect on EPS, while Total Liabilities has a significant negative effect on EPS at 5% level of significance respectively.

Conclusion

This study examined the complementarity of equity and debt capital on profitability of quoted consumer goods firms in Nigeria from 2011-2021 periods. Panel data were sourced from the annual reports and accounts of the sampled firms. Inferential statistics using correlation analysis, panel least square regression and hausman test were employed via E-Views 9.0 statistical software. As disaggregated components, shareholders' equity exerted a significant positive effect on ROA, ROE and EPS, while, total liabilities exerted a significant negative effect on ROA, ROE, and EPS at 5% level of significance respectively.

Recommendations

The following recommendations were made in line with the findings and conclusion of this study:

1. Since the findings revealed that total liabilities negatively correlate with profitability, an appropriate mix of equity and debt capital of the ratio 70:30 should be adopted in order to increase the profitability of consumer goods firms.
2. Based on the positive relationship between equity capital and profitability, this study suggests that firms should concern much on internal sources of financing in order to increase their profitability.

3. Top management of consumer goods firms should make prudent financing decision in order to remain profitable and competitive, such as considering low interest bearing securities engaged in the total debt.

References

- [1] Abiahu, M.C., Egbunike, P.A., Udeh, F.N., Egbunike, F.C., & Amahalu, N.N. (2019). Corporate life cycle and classification shifting in financial statements: Evidence from quoted manufacturing firms in Nigeria. *Amity Business Review*, 20(2), 75-91.
- [2] Amahalu, N.N., & Obi, J.C. (2020). Effect of audit quality on financial performance of quoted conglomerates in Nigeria. *International Journal of Management Studies and Social Science Research*, 2(4), 87-98.
- [3] Amahalu, N.N., & Obi, J.C. (2020). Effect of financial statement quality on investment decisions of quoted deposit money banks in Nigeria. *International Journal of Management Studies and Social Science Research*, 2(4), 99-109.
- [4] Amahalu, N.N., Egolum, U.P., Nweze, C.L., & Obi, J.C. (2018). Capital structure determinants: Empirical evidence from quoted deposit money banks in Nigeria. *International Journal of Research in Business, Economics and Management* 2(4), 70-85.
- [5] Amahalu, N.N., Ezechukwu, B.O., & Okudo, C.L. (2022). Intellectual capital and market value added of listed insurance companies in Nigeria. *International Journal of Science Academic Research*, 03(10), 4528-4533.
- [6] Amahalu, N.N., Ezenwaka, F.A., Obi, J.C., & Okudo, C.L. (2022). Effect of treasury single account on accountability in Nigeria public sector. *International Journal of Management Studies and Social Science Research*, 4(5), 66-76.
- [7] Amahalu, N.N., Obi, J.C., Okudo, C.L., & Okafor, O.O. (2022). Effect of 2011 personal income tax (amendment) on revenue generation in Anambra state. *International Journal of Business Marketing and Management (IJBMM)*, 7(5), 138 -147.
- [8] Amahalu, N.N., Okoye, P.V.C., & Nnadi, C.P. (2023). Effect of board diversity on financial performance of quoted hospitality firms in Nigeria. *International Journal of Research in Commerce and Management Studies (IJRCMS)* 5(1), 28-38.

- [9] Amahalu, N.N., Okoye, E.I, Nweze, C.C & Okika, E.O. (2017). Effect of capital adequacy on financial performance of quoted deposit money banks in Nigeria. Proceedings of the 2017 Faculty of Management Sciences, International Conference on African Entrepreneurship and innovation for sustainable development, Nnamdi Azikiwe University, Awka, 26th-29th July, 2017, 841-862.
- [10] Castro, P.C., Tascón, M.T., Borja, A.T., & Area, T. (2019). The role of life cycle on capital structure. 1-28
- [11] Eneh, O.M., Okegbe, T.O., & Amahalu, N.N. (2019). Determinants of cash holdings: Evidence from agricultural firms listed on Nigeria stock exchange. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 9(2), 211–223.
- [12] Ezechukwu, B.O., Amahalu, N.N., & Okudo, C.L. (2022). National information technology development levy and financial performance of telecommunication companies in Nigeria. *International Journal of Business Marketing and Management (IJBMM)*, 7(5), 77-84.
- [13] Gornall, W., & Strebulaev, I.A. (2015). Financing as a supply chain: The capital structure of banks and borrowers, *National Bureau of Economic Research Working Paper No. w19633*.
- [14] Korajczyk, R.A., & Levy, A. (2019). Capital structure choice: macroeconomic conditions and financial constraints. *Journal of Financial Economics*, 68(1), 75-109.
- [15] Lahcen, A. (2019). Corporate capital structure choices in Mena: Empirical evidence from non-listed firms in Morocco. *Middle East Development Journal*, 1(2), 255–273.
- [16] Lahcen, A. (2019). Corporate capital structure choices in Mena: Empirical evidence from non-listed firms in Morocco. *Middle East Development Journal*, 1(2), 255–273.
- [17] Mbonu, C.M., & Amahalu, N.N. (2021). Effect of firm characteristics on capital structure of insurance companies listed on Nigeria stock exchange *International Journal of Management Studies and Social Science Research*, 3(5), 217-228
- [18] Modozie, E.C., & Amahalu, N.N. (2022). Effect of board structure on sustainability reporting of listed industrial goods firms in Nigeria. *International Journal of Management Studies and Social Science Research*, 4(1), 204-215
- [19] Ndulue, G.C., Okoye, P.V.C., & Amahalu, N.N. (2021). Earnings management and shareholders wealth creation of quoted conglomerates in Nigeria. *International Journal of Research in Education and Sustainable Development* 1(9), 47-65.
- [20] Nzekwe, O.G., Okoye, P.V.C., & Amahalu, N.N. (2021). Effect of sustainability reporting on financial performance of quoted industrial goods companies in Nigeria. *International Journal of Management Studies and Social Science Research*, 3(5), 265-280.
- [21] Okegbe, T.O., Eneh, O.M., & Amahalu, N.N. (2019). Effect of firm characteristics on capital structure of deposit money banks listed on Nigeria stock. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 9(2), 198–210.
- [22] Okoye, E.I, Okoye, P.V.C, Amahalu, N.N & Obi C.J (2014). Effect of Human Resource Accounting on Corporate Valuation Decisions: A study of quoted banks in Nigeria. Sub-Sahara Africa and the Transformation Question, Faculty of Management Sciences, 2014 Conference Proceedings, 950-977.
- [23] Okoye, P.V.C., Amahalu, N.N., Nweze, C.L., & Obi J.C. (2016). Cash flow statement and liquidity: Empirical evidence from quoted banks in Nigeria. *Managing diversification for sustainable development in sub-saharan Africa, Faculty of Management Sciences, 2016 International Conference, 8-10, November, 2016*.
- [24] Okudo, C.L., Ezechukwu, B.O., & Amahalu, N.N. (2022). Dividend policy and financial performance of quoted brewery firms in Nigeria. *International Journal of Science Academic Research*, 03(10), 4494-4498.
- [25] Okudo, C.L., Mbonu, C.M., & Amahalu, N.N. (2022). Capital structure and firm value of quoted pharmaceutical firms in Nigeria. *International Journal of Education, Business and Economics Research (IJEER)* 2(5), 56-65.
- [26] Okudo, CL., Amahalu, N.N., Obi, J.C., & Okafor, O.O. (2022). Relevance of accounting ethics in preparing a reliable accounting report of manufacturing firms in Anambra State, Nigeria. *International Journal of Education, Business and Economics Research (IJEER)* 2(5), 136-149.

- [27] Omabu, S.E., Okoye, Pius V.C., & Amahalu, N.N. (2021). Financial leverage and shareholders wealth creation of quoted industrial goods firms in Nigeria. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, 5(6), 673-681
- [28] Ovtchinnikov, A.V. (2017). Capital structure decisions: evidence from deregulated industries. *Journal of financial economics*. 95, 249-274.
- [29] Penman S., Richardson, S., & Tuna, I. (2017). The book-to-price effect in stock returns: Accounting for leverage. *Journal of Accounting Research*, 45, 427-467.
- [30] Rahman, M.A., Islam, M.S., & Uddin, M.J. (2019). The impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh, *Applied Economics and Finance*, 6(2), 1-5.
- [31] Royal, D., Salah, M., Ahmad, G., & Shanaz, F. (2013). The relationship between financial flexibility and capital structure decisions. *Journal of Applied Sciences, Engineering and Technology*, 5(14), 3843-3850.
- [32] Ryan, F. (2019). *How to calculate return on equity (ROE)*. <https://www.investopedia.com/ask/answers/070914/how-do-you-calculate-return-equity-roe.asp>. retrieved 29/03/2019.
- [33] Sheikh, N.A & Wang, Z. (2013). The impact of capital structure on performance: An empirical study of non-financial listed firms in Pakistan. *International Journal of Commerce and Management*, 23 (4), 354-368.
- [34] Shivdasani, A. & Zenner, M. (2018). How to choose a capital structure: Navigating the debt-equity decision. *Journal of Applied Corporate Finance*. 17(1), 26-35.
- [35] Velanampy, T., & Aloy, J.N. (2012). The relationship between capital structure and profitability. *Global Journal of Management and Business Research*, 12(13), 86-97.

