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Capital Structure: A Determinant of Firm's Value in Nigeria

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Abstract
The study examined capital structure as a determinant of firm's value in Nigeria by proxying the independent variables with equity, long-term debt and current liabilities on firm's value of firms in Nigeria. The study adopted the ex-post facto research design while used granger causality, co-integration and ordinary least squared as tools for data analysis, data were extracted from the annual and audited financial report of 14 firms in 2022. The data extracted were analyzed using E-views 9.0 analytical software. The results indicate that in Nigeria, both equity and long-term debt positively and significantly affects a firm's value, while current liabilities have a negative but significant effect. The analysis further reveals no causal relationship between the independent and dependent variables. Based on these findings, it is recommended that firm management carefully monitor and maintain the use of long-term debt as it can enhance the firm's value. Additionally, they should exercise caution when increasing shareholders' equity through share issuance, as this may not be beneficial for existing businesses. However, new firms can take advantage of this strategy.

Keywords: Capital Structure, Current Liabilities, Equity, Firm Value, Long-Term Debt
JEL Classification Codes: G32, G33, G11, G12, G30

1. Introduction

Formulating a firm's capital structure is vital for business organization, regardless of the sector or economy in which it operates. Identifying the right balance of debt and equity is typically tricky for businesses, and making this decision is critical because it affects how much money the company can make and how well it can deal with its competitive environment. A firm can choose from various capital structures, such as

issuing long-term debt, issuing short-term debt, leasing financing, using warrants, issuing convertible bonds, signing forward contracts, or trading bond swaps. The goal, however, is to develop an optimal combination that increases the entire market value. The study of capital structure is concerned with understanding the use of different financial instruments and financing businesses use to finance their investments (Myers, 2001). Capital structure refers to the manner in which a company obtains the necessary funds to support its regular operations. This can be achieved by utilizing debt, equity, or a combination of both approaches (Brigham, 2007).

Many firms try to improve performance, by increasing the long-term debt or short-term debt they employ as financing in their capital base. The increasing risk suggests a greater chance of a decrease in gain when debt is increasing, but some firms still use more debt than other firms and still achieve increased performance. Since the postulation of the irrelevancy theory of capital structure, the idea of financing a business has evolved. Modigliani and Miller (1958) affirmed capital structure of a firm has no effect on firm's value. Different studies on capital structure have produced conflicting findings; some came to the conclusion that there is a positive link between capital structure and firm's profit, while others say there is a negative link between the variables. Safiuddin, Mohedul and Anisuzzaman. (2015) investigated the relationship and discovered a strong correlation between firm performance and capital structure. Adesina (2015) discovered a positive relationship between the two variables, Narayanasary, Rasiah and Ramezanalivaloujerdi, (2015) found a relationship that is negative between firm profitability and capital structure, and Mwangi, Makau and Kosimbei (2014) discovered a relationship that is negative between the two variables. This study is aimed at addressing the challenge facing firms when setting up finance and determining the effect on their growth, as business performance is vital to the firm's value and survival.

This study examines capital structure as a determinant of a firm's value in Nigeria. Its specific objective concerning variables includes; determining the effect of equity, long-term debt, and current liabilities on the firm's value in Nigeria in 2022. In carrying out the analysis of this study, these hypotheses were considered.

$Ho_{1:}$ Equity has no significant effect on a firm's value in Nigeria

$Ho_{2:}$ Long-term debt has no significant effect on a firm's value Nigeria

$Ho_{3:}$ Current liabilities has no significant effect on the firm's value in Nigeria

This study is significant to give sufficient information for financial guidance to managers, business consultants, and growing businesses. and also, to help shareholders with the techniques of combining equity and liabilities and being capable of maximizing a firm's performance. It will give

prospective investors an edge to analyze a company and its capital structure mix, so weighing it will yield better profitability.

2. Review of Related Literature

2.1 Conceptual Review

2.1.1 Concept of Capital Structure

Explaining Capital structure can be the combination of a firm's financial resources for establishing and running its business operations. It is a core determinant of how businesses carry out their activities. There are two primary forms of financing for a business: equity and debt. Debt holders have comparatively less influence over the business, while equity holders, known as residual claimants, have greater control over decision-making and the overall operation of the business. Equity holders earn returns based on their ownership stake and are subject to contractual obligations (Nwachukwu, Nwoha & Inyiama, 2022).

Capital structure refers to the composition of financial resources used by a firm to support its operations and facilitate future expansion. It specifically refers to the allocation of equity and debt within the company to obtain the necessary funds (Mireku, Mensa & Ogoe, 2014). Capital structure refers to the way a company finances its operations and growth by utilizing a combination of debt (borrowed funds) and equity (ownership). It represents the proportions or mix of debt and equity in a company's long-term funding sources. In simpler terms, capital structure refers to how a company chooses to fund itself, whether through loans and borrowing or by issuing shares and attracting investors.

2.1.2 Concept of Debt Financing

Debt provides a company with the financial flexibility to seize investment opportunities, as it can be obtained more readily and rapidly compared to equity financing or the gradual accumulation of earnings (Inyiama & Obesie, 2017). Debt financing generates funds through borrowing from external sources, such as financial institutions, and issuing bonds that attract certain returns. Debt is either short-term or long-term, and requiring repayment of interest and principal despite a firm's performance or profitability. Long-term debt is a financial leverage used to finance the assets of a business that exceed one accounting year (Smith, 2020). Debt financing is a method used by businesses to raise capital by borrowing money from external sources, such as banks, financial institutions, or bondholders. It involves taking on a financial obligation in the form of a loan or issuing bonds that need to be repaid over a specified period of time, typically with interest. In simple terms, debt financing is when a company

borrows money to fund its operations or investments, with an agreement to repay the borrowed amount plus interest within a predetermined timeframe.

2.1.3 Concept of Equity Financing

Equity is the financial contribution made by a business owner to the business for its operations. Equity is also referred to as "shareholders' equity," which represents the amount of money given to its holder if all of the company's assets were sold off and its debt obligations were settled. Equity financing comprises the finance provided by business owners, and it is the finance that bears the risks of the business. Owners of this finance hold a portion of the firm's shares and are entitled to dividends. Equity financing increases shareholders' value by increasing the firm's capital structure to an optimal level (Grunert, 2020).

2.1.4 Concept of Firm Value

A firm's value is the financial measure of the market valuation of the entire firm. Firm value is a constituent of all that belongs to Shareholders, both secure and unsecured creditors, preferred and ordinary equity-holders. Firm value is an essential metric for business valuation, accounting, portfolio analysis, financial modeling, and so on. Sulaiman, Mijinyawa and Isa (2019) explained firm value as a variable that indicates the capacity of the firm to improve shareholders' wealth and shows a firm's tendency for growth that influences potential investors to invest. Firm value, also known as company value or enterprise value, refers to the total worth or overall economic value of a business. It represents the combined value of the company's assets, both tangible (such as buildings, equipment, and inventory) and intangible (such as intellectual property, brand reputation, and customer relationships). Firm's value takes into account factors like profitability, future cash flows, market demand for the company's products or services, and the competitive landscape. In simpler terms, firm's value reflects the estimation of how much a company is worth in terms of its assets, potential earnings, and market position.

2.2 Conceptual Framework

The concept of capital structure is measured through the variables of equity, long-term debt, and current liabilities, while firm value is represented by the market capitalization of the firms. This framework has been proposed to illustrate the relationship between capital structure and the value of firms, considering different authors' view.

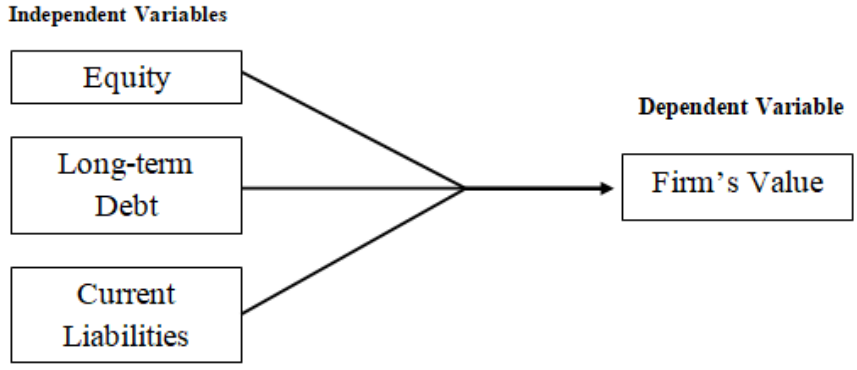

Figure 1: Conceptual Framework of Capital Structure a Determinant of Firm's Value
Source: Authors' Model (2023)

2.3 Theoretical Review

2.3.1 Modigliani Miller Theory of Irrelevance

The theory is recognized as an optimal capital structure theory, suggesting that financial decisions made by firms are not relevant to their value. According to this theory, the value of a company remains constant regardless of its financing composition, which includes debt and equity, and the average cost of capital maintains a steady weight. Additionally, the theory suggests that the return on equity increases with debt, indicating that a higher debt-to-equity ratio leads to a higher expected return for the owners' equity. Furthermore, the distribution of dividends does not impact the market value of a firm. These factors collectively influence the combination of equity and debt as sources of funds for the company (Modiglina & Miller, 1958). The theory assumptions, that capital structure of a firm does not affect its overall value. The following are criticism stipulated by Myers (2001).

i. Information Asymmetry: Critics argue that M&M theory assumes perfect information, where all investors have equal access to information about the firm. In reality, information asymmetry exists, which means that investors may have different levels of information and knowledge about a company. This can affect the way they perceive and value the firm, making capital structure decisions potentially relevant.
ii. Taxes and Financial Distress Costs: M&M theory assumes no taxes and no costs associated with financial distress. However, in practice, taxes and costs related to financial distress, such as bankruptcy costs and agency costs, can significantly impact a firm's value and its capital structure decisions.

iii. Market Imperfections: Critics argue that M&M theory overlooks market imperfections, such as transaction costs, regulatory constraints, and limitations on borrowing capacity. These imperfections can affect a firm's ability to raise capital and impact the value of different capital structures.
iv. Signaling and Pecking Order Theory: The M&M theory assumes that all financing decisions are costless and that investors view them neutrally. However, in reality, firms often use their capital structure choices to signal information to the market. Additionally, the pecking order theory suggests that firms prefer internal financing over external financing due to informational asymmetries. These theories indicate that capital structure decisions can have implications for a firm's value.
v. Market Dynamics and Timing: M&M theory assumes static capital markets, where all firms have equal access to capital and can adjust their capital structure instantly. However, market conditions and timing can significantly impact a firm's ability to raise capital and the cost of that capital, making capital structure decisions relevant.

These criticisms highlight that real-world factors and market imperfections can challenge the assumptions made by the M&M theory of irrelevance, suggesting that capital structure decisions can indeed affect a firm's overall value.

2.3.2 Pecking Order Theory

The theory reveals that business has a hierarchy of financing decisions. There is a tendency for a business to borrow funds instead of issuing equity when there is an insufficiency in internal cash flow to take care of capital expenditures in the business. Firms finance their activities with internal funds (retain earnings), and if internal funds become inadequate, the issuing of debt is considered. Pecking order theory suggests that the issuance of common stock (equity) should be the last resort of financing for firms (Myers, 1984). Michael (2006) pointed out the limitation of the pecking order theory. He challenged the assumptions and implications of the pecking order theory. He argues that the theory oversimplifies the decision-making process of firms regarding their capital structure choices and fails to consider important factors such as managerial preferences and external market conditions. Michael also suggests that the pecking order theory does not adequately explain why firms tend to rely more on internal financing and may overlook the role of asymmetric information in shaping capital structure decisions.

This study is anchored on the theory of pecking order as managers' decisions of capital structure in financing a business. They leverage the

financing option that will cost the firm less and hide its financial capacity from competitors.

2.4 Empirical Review

Nwachukwu, Nwoha and Inyiama (2022) evaluated the capital structure and performance of conglomerate firms in Nigeria. The study uses descriptive statistics and adopted ordinary least square (OLS) of the form of multiple regressions was used for the study. The study reveals a significant positive effect of debt ratio on earnings per share and a significant effect of debt-to-equity ratio on earnings per share of conglomerate firms in Nigeria when studying the capital structure and performance of conglomerate firms in Nigeria using descriptive statistics as the statistical tool and obtaining a 5% level of significance. *The study recommended that firms I Nigeria at 5% level of significance. Based on the findings, the study recommended that firms should lever on the amount of debt they undertake of finance their undertakings, as it enhances firms should operate with a capital structure mix that would minimize the cost of capital and maximize shareholders' wealth.*

Sulaiman, Mijinyawa and Isa (2019) they reveal long-term debt, return on assets, and short-term debt has a significant and positive effect on firm value using ex-post facto analyzed with OLS (ordinary least square) and in a study of the effect of capital structure, firm size, financial performance, on firms' value of quoted consumer goods firms in Nigeria. The study recommends that the management of the firms should maintain the use of debt in their capital structure as it enhances firm's value; the management should sustain and improve on the level of total assets as it enhances firms' value.

The study of Rasika *et al*., (2018) the study indicates that a positive but insignificant effect of return on equity on firm value. The 32 quoted companies were examined on the Indonesia Stock Exchange (BEI) for 2006-2007. The study recommends that the management of Insurance firms in Nigeria should only use short debt in their capital structure as it enhances firms' value and desist using long term debt deceases the firm's value, the management should sustain or improve on the level of total assets as it enhances firms' value and firms' size. Finally, the management should reduce the volume of shareholders' equity of the firms.

Oyakhilome, Ibhaguia and Felicia (2018) examined a sample of 101 publicly listed companies in Nigeria over a five-year period (2003-2007). The findings of their study indicate that both long-term and short-term debt, as well as total debt, has a positive and significant effect on the value of the firms. The study recommends that the management of Insurance firms in

Nigeria should only use short debt in their capital structure as it enhances firms' value and desist using long term debt deceases the firm's value, the management should sustain or improve on the level of total assets as it enhances firms' value and firms' size. The management should reduce the volume of shareholders' equity of the firms.

According to the empirical findings of Githaiga and Kabiru (2015), long-term debt had a negative impact on the financial performance of SMEs, which contradicted the results obtained by Masiega (2013). Masiega's study examined the effect of capital structure on the financial performance of publicly quoted companies on the NSE and found that long-term debt had a positive and significant relationship with the total assets of the firms. The study recommends that SME should utilize loans, diversify for sustainability of revenue, keep proper books of accounts, offer clients sales contracts and lay down payment modes for trade credits, clearly stipulate the payment schedules, in order to deter poor credit and loan control policies and train their staff regularly while employing experienced internal and external auditors to improve on the internal control systems and book keeping.

Maina and Ishmail (2014) conducted a study on the capital structure and financial performance of companies listed on the Nigerian Stock Exchange (NSE) during the period of 2002 to 2011. The researchers collected secondary data from the financial statements of the listed firms. The study utilized a causal research design and employed Gretl statistical software to conduct panel regression analysis. Based on their analysis, the study found that both debt and equity significantly influenced the financial performance of firms listed on the NSE. Specifically, there was a negative and significant relationship observed between capital structure (measured by debt-equity ratio) and various performance metrics. This indicates that firms that relied more on debt financing tended to experience lower levels of performance. Furthermore, the study concluded that the companies listed on the NSE utilized more short-term debt compared to long-term debt as a source of finance. The study recommended that firms should reduce the use of more debt as a source of finance to abate the experience lower performance.

3. Methodology

The research design for the study was ex-post facto (after the event). The study was carried out at 14 firms quoted on the NSE. The data for firms' value and capital structure was gotten from the annual reports of the firms (MTN Nigeria, Dangote Cement Plc, Zenith Bank, Access Bank, Guaranty Trust Holding Company, Ecobank Transactional, United Bank for Africa, First Bank Holdings, BUA Cement, BUA Food, Guinness Nigeria Plc, Lafarge Plc, Nigeria Breweries, Nestle Nigeria, and Airtel Nigeria) in 2022.

The regression model for is written as,

$$FV = f(EQ, LTD, CL) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$\text{FVti} = \beta o + \beta 1\text{EQt} + \beta 2\text{LTDt} + \beta 3\text{CLt} + \text{et} \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Were,

F.V. = Firm Value
E.Q. = Equity
LTD = Long-Term Debt
CL = Current Liabilities

In accordance with Koutsoyiannis (2003), the process of model specification entails selecting the dependent and explanatory variables to be included in the model, along with establishing theoretical expectations regarding the magnitude and direction of the function's parameters. The model specification for this study adhered to the approach employed by Chikwute, Nwoha and Inyiama (2022), which utilized Ordinary Least Squares (OLS) regression analysis. Descriptive statistics, normality tests, and ordinary least square regression were conducted to determine the result of the data, using E-views as statistical software.

4. Results and discussion

Table 1: Descriptive Statistics

	LOGFV	LOGEQ	LOGLTD	LOGCL
Mean	27.34325	22.79226	19.42903	23.74970
Median	27.10105	21.27130	20.21070	22.89440
Maximum	29.32651	26.73294	25.32920	26.64406
Minimum	25.65048	19.27284	0.000000	20.76657
Std. Dev.	1.234450	2.680319	5.785971	2.147118
Skewness	0.459628	0.401449	-2.659500	0.039152
Kurtosis	1.836271	1.467541	9.868603	1.529438
Jarque-Bera	1.374560	1.870673	47.16841	1.355427
Probability	0.502942	0.392454	0.000000	0.507777
Sum	410.1488	341.8838	291.4354	356.2455
Sum Sq. Dev.	21.33412	100.5775	468.6844	64.54163
Observations	15	15	15	15

Source: Author's E-views 9.0 Output

Firms' value has a mean of 27.34325 and a median of 27.10105 with a minimum and maximum values of 25.65048 and 29.32651. The distribution of the firm's value is skewed positively, with a skewness value of 0.459628. The firm's value exhibits a flat curve, as indicated by a kurtosis

value of 1.836271, which is lower than the sample mean of 27.34325. In 2022, equity, long-term debt, and current liabilities all display positive skewness, except for long-term debt, which exhibits negative skewness with a value of 0.401449, -2.659500, and 0.039152, respectively. The descriptive statistics shows that all the variables have skewness value that is less than one and the kurtosis of all the variables are higher than two. This suggests that there is a normality in the distribution of the time series data hance the final residual diagnostic test for reliability of result. The P-value for long term debt is significant for Jarque-Bera statistics and the other variables indicated an insignificant P-value of Jarque-Bera statistics.

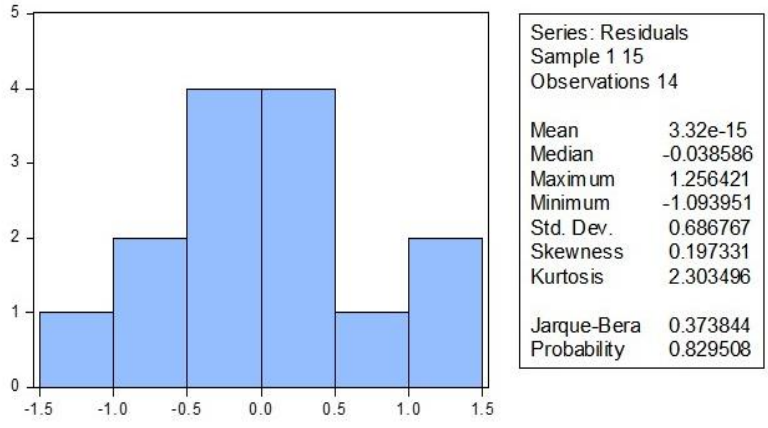

Figure 2: Normality Test
Source: Author's E-views 9.0 Output

Figure 2 shows the normality test of the dependent and independent variables. The jarque-Bera shows a probability value of 0.829508, revealing a normal distribution in the time series data for Firm's value, Equity, Long-term debt, and current liabilities. The normal distribution indicates that the data series are well situated for the variables under study.

Table 2: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LOGFV does not Granger Cause LOGEQ	14	0.00209	0.9644
LOGFV does not Granger Cause LOG LTD	14	0.31166	0.5878
LOGFV does not Granger Cause LOGCL	14	0.00049	0.9828

Source: Author's Eviews 9.0 Output

Table 2, there is no evidence of causality between the firm's value (dependent variable) and the independent variables of equity, long-term debt, and current liabilities at lag 1. Similarly, there is no causality observed in the opposite direction. It was derived from the obvious fact that none of the probability -value is < or = 0.05. This suggests that, for some firms, the increase in the equity, long-term debt and current liabilities may not significantly lead to an increase in the firm's value. The result support or agreed with the finding of Rasika *et el*., (2018).

Table 3: Johansen Co-integration Result

Trend assumption: Linear deterministic trend				
Series: LOGFV LOGEQ LOGLTD LOGCL				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.981053	94.97358	47.85613	0.0000
At most, 1 *	0.918703	43.41425	29.79707	0.0008
At most 2	0.419618	10.78891	15.49471	0.2248
At most 3	0.248622	3.716010	3.841466	0.0539
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.981053	51.55934	27.58434	0.0000
At most 1 *	0.918703	32.62533	21.13162	0.0008
At most 2	0.419618	7.072903	14.26460	0.4806
At most 3	0.248622	3.716010	3.841466	0.0539
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's E-views 9.0 Output

Table 3 presents the co-integrating equation results obtained from both the trace test and the maximum eigenvalue test. The test outcomes indicate the rejection of the null hypotheses at a significance level of 0.05. This suggests the presence of cointegration, indicating a long-run relationship among the variables. It implies that the independent variables (equity, long-term debt, and current liabilities) have a sustainable impact on the dependent variable (firm value) both in the short run and the long run.

Table 4: Regression. Analysis

Dependent Variable: LOGFV				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGEQ	0.606359	0.189239	3.204203	0.0084
LOGGLTD	0.092086	0.038272	2.406088	0.0349
LOGCL	-0.915367	0.236399	-3.872123	0.0026
C	33.47351	2.633372	12.71127	0.0000
R-squared	0.647250	Mean dependent var		27.34325
Adjusted R-squared	0.551046	S.D. dependent var		1.234450
S.E. of regression	0.827131	Akaike info criterion		2.681472
Sum squared resid	7.525608	Schwarz criterion		2.870285
Log-likelihood	-16.11104	Hannan-Quinn criter.		2.679461
F-statistic	6.727857	Durbin-Watson stat		1.193595
Prob(F-statistic)	0.007663			

Source: Author's E-views 9.0 Output

Table 4 indicates that equity and long-term debt has a significant and positive effect on firm value, while current liabilities have a negative but significant effect on firm value. This implies that a continuous rise in current liabilities will reduce the firm value. The result is in agreement with the outcome of the studies of Sulaiman, Mijinyawa and Isa (2019); Rasika *et al*., (2018), Oyakhilome, Ibhaguia, and Felicia (2018); Githaiga and Kabiru (2015) which revealed that equity and long-term debt has a significant effect on firm's value. The outcome is agreement Therefore, the firms should consider using the internal source of funds to finance capital expenditures such as retained earnings or plow back profit. The Adjusted R-Squared reveals that 55% of firm value will be explained by equity, long-term debt, and current liabilities. The Durbin-Watson statistics of 1.19 is within the acceptable region, and indicate no problem of serial correlation. This is expected in a panel data set.

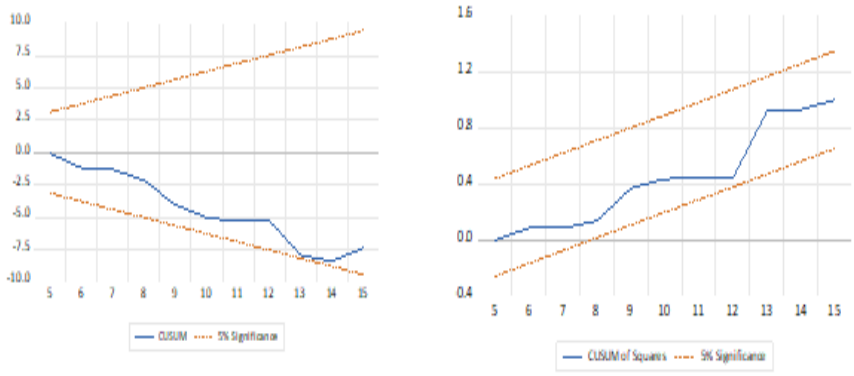

Figure 3: CUSUM and CUSUM Squares
Source: Author's E-views 9.0 Output

Figure 3 demonstrates the stability of the estimated coefficients through the application of a cumulative sum of recursive residuals (CUSUM). The findings indicate that the coefficients remain stable throughout the study period, as the series falls within the critical boundary at a significance level of 5%. This implies that the coefficients are reliable, consistent, and provide a dependable explanation of firms' value in Nigeria.

5. Conclusion and Recommendations

This study is aimed at assess the effect of capital structure on firm value in Nigerian firms. The capital structure was measured using proxies such as equity, long-term debt, and current liabilities, while firm valuation serves as an indicator of the firm's value in the market. Based on the study's findings, it is concluded that all of the explanatory variables, except for current liabilities, have a statistically significant effect on the firm's value. Current liabilities, however, exhibit a negative yet significant effect on the firm's value.

Following the findings, the study recommends that management of firms should monitor and maintain the use of long-term debt to finance as it will enhance the firm's value, they should also moderate the financing of the firm by increasing shareholders' equity by issuing more shares which is not too healthy for existing businesses, but new firms can leverage on that. Finally, the firms should control the growth of their current liabilities as this negatively influences the firm's value, instead resorting to using internal funds to finance capital and recurrent expenditure. Firms should also undertake methods for cost reduction and explore lease methods for assets that are useful for the firm's production.

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