

FINANCIAL LEVERAGE AND CASH VALUE ADDED: A STUDY OF NIGERIAN QUOTED INDUSTRIAL GOODS FIRMS

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Abstract

This study ascertains the effect of financial leverage on cash value added of quoted industrial goods firms in Nigeria from 2008-2020. Panel data sets used in this study were obtained from the annual reports and accounts of thirteen (13) quoted industrial goods firms. *Ex-Post Facto* research design was employed. Descriptive statistics and Panel Least Square (PLS) regression analysis were applied to test the hypotheses of the study. The specific findings showed that there is a significant and positive effect between Short Term Debt Ratio and Cash Value Added, also a significant and positive effect between Long Term Debt Ratio and Cash Value Added of quoted industrial goods firms in Nigeria. the study recommended that since short term debt positively affects cash value added, industrial goods firms should use more of short-term debt in their capital structure to avoid paying a high cost of capital.

Keywords: Financial leverage, Short Term Debt, Long Term Debt and Cash value added.

INTRODUCTION

The amount of stock and debt used to finance a company's assets is referred to as financial leverage. As debt grows, so does financial leverage. The use of debt financing and borrowed resources to boost a company's operations and profitability is referred to as financial leverage. When a company is partially financed by both debt and equity, it is said to be leveraged. Most businesses thrive by maintaining a high level of liquidity, which is mostly achieved through the use of debt. Many businesses leverage their income and capital by taking on debt (Dinh & Pham, 2020). When a company's management uses debt to boost profits, this is an evidence of good corporate governance (Guner, 2016). Debt or equity can be used to fund a company's investments. Financial leverage, also known as gearing, occurs when a company uses fixed-charge funds, such as preferred stock and debt, in addition to its shareholders' equity. If available, leverage allows the investor to earn higher returns, but it also increases the risk of loss, especially if the investment loses value and the borrowed money must be repaid with interest (Chakrabarti & Chakrabarti, 2019). As a result, there is a potential for financial risk, which could result in financial loss (Elgattani & Hussainey, 2020).

In a capitalist system, shareholder wealth is the acceptable purpose of a business. Individuals have private ownership of commodities and services in a capitalist society. Those people are the ones who own the means of production in order to make money, and to make money, you must own the means of production. When business executives aim to maximize their company's wealth, they're essentially trying to raise the stock price. The value of the company, as well as the wealth of its owners, rises as the stock price rises.

Every decision a firm makes is aimed at increasing shareholder value over time. The cash flows generated by the firm's assets and operations are the firm's basic financial resources, and when the firm employs only equity capital, the cash flows generated by the firm's assets and operations belong entirely to the equity-holders. When a company has a combination of debt and equity, the cash flows created by its assets and operations are split into two streams: one that is safer for the loan holders and another that is more hazardous for the equity holders. In this sense, regardless of the firm's financing strategy, the risky cash flow

stream that flows to equity holders must be maximized. As a result, the primary goal of this research is to determine the relationship between financial leverage and shareholder wealth generation in Nigerian listed industrial goods corporations.

Prior research has suggested a link between financial leverage and financial performance, but the findings have been mixed. Financial leverage and financial performance have been proven to have a significant positive, major negative, or no significant relationship. Jim, Xiaochen, and Chien, 2021; Tran, 2020; Sumani & Roziq, 2020, for example, discovered a link between financial leverage and shareholder value generation. A negative association between financial leverage and shareholder wealth generation was established in the second strand of research (for example, Rafiuddin and Rafiqul, 2020; Nguyen, Pham, Dao, Nguyen & Tran, 2020). The inconclusive results and lack of agreement among the evaluated literatures created a gap in the literature that this study attempts to fill. In contrast to previous research that primarily examined shareholders' wealth creation using return, this study bridged the measurement gap by assessing shareholders' wealth creation with cash value added. This study therefore ascertains the effect of financial leverage on cash value added of quoted industrial goods firms in Nigeria. The specific objectives would be to:

- i. Ascertain the degree of relationship between short term debt ratio and cash value added of quoted industrial goods firms in Nigeria
- ii. Assess the magnitude of relationship between long term debt ratio and cash value added of quoted industrial goods firms in Nigeria.

REVIEW OF RELATED LITERATURE

Financial Leverage

Both investors and businesses employ the idea of leverage. Investors utilize leverage to boost the amount of money they can make on a given investment. They use a variety of products to leverage their investments, including options, futures, and margin accounts. Instead of issuing shares to raise capital, corporations can use debt financing to invest in business operations in order to increase shareholder value (Kenton, 2021).

The existence of debt in a company's capital structure is known as financial leverage. Similarly, the presence of fixed-charge bearing capital, which may include preference shares, debentures, and term loans, can be referred to as fixed-charge bearing capital (Hayes, 2021). Leverage is an investing technique that involves the use of borrowed money, more specifically, the use of various financial instruments or borrowed capital to boost an investment's potential return. The amount of debt a company utilizes to finance assets is often referred to as leverage (Adam, 2021). The use of debt (borrowed capital) to finance a venture or undertaking is known as leverage. As a result, the project's potential returns are multiplied. Simultaneously, leverage increases the potential downside risk if the venture does not pan out. When a firm, property, or investment is referred to as highly leveraged, it suggests it has more debt than equity (Will, 2021).

Short Term Debt Ratio

Liabilities that are scheduled to be paid within a year are referred to as short-term debt. It is possible to determine whether a company will be able to satisfy its short-term debt obligations using an accounting indicator known as the debt ratio. This ratio demonstrates this by comparing a company's current assets to its total assets (Akhilesh, 2021). Short-term debt, also known as current liabilities, is a company's debt that is scheduled to be repaid within a year. It is found in the current liabilities section of a company's financial situation statement, which is part of the total liabilities section (Gant, 2021). Short-term debt is defined as debt obligations that are scheduled to be paid within the next 12 months or during a company's current fiscal year. Short-term debts are also referred to as current liabilities. They can be seen in the liabilities portion of a company's statement of financial position (Estevez, 2021).

$$\text{Short Term Debt Ratio} = \frac{\text{Short Term Debt}}{\text{Total Assets}}$$

Long Term Debt Ratio

Long-term debt refers to debt that a company owes but does not have to pay for at least a year. They are also known as fixed obligations or financed debt. Bonds, debentures, term loans, and mortgages on buildings are all examples of long-term debt (Tuovila, 2021). Long Term Debt (LTD) refers to a company's outstanding debt with a maturity of 12 months or more. On the company's statement of financial status, it is listed as a non-current liability (Khartit, 2021). Long-term debt has a maturity date of more than a year. Entities choose to issue long-term debt for a variety of reasons, the most important of which is the time frame for repayment and the amount of interest to be paid. Investors invest in long-term debt for the benefits of interest payments and consider the time to maturity a liquidity risk. Overall, the lifetime obligations and valuations of long-term debt will be heavily dependent on market rate changes and whether or not a long-term debt issuance has fixed or floating rate interest terms (Berry-Johnson, 2021).

Long Term Debt Ratio = Long Term Debt

Total Assets

Cash Value Added (CVA)

The ability of a corporation to generate cash flow above and beyond the needed return to its investors is measured by cash value added (CVA). A high CVA reflects a company's ability to generate liquid income from one quarter to the next (Andrew, 2021). Cash value added is a metric for evaluating a company's performance that looks at how much money it makes from its operations. In general, a high cash value added figure is good for both firms and investors since it shows a company's ability to generate cash from one financial period to the next, resulting in strong liquid profits (Bloomenthal, 2021).

One technique to assess a company's true profitability is to look at its cash value added (CVA). Cash value added determines how much money is left over after the required. Cash value added is a way to measure the strength of a company's business performance (Chip, 2021).

CVA = gross cash flow - economic depreciation - capital charge

Where:

- Economic depreciation is $[WACC / (1+WACC)^n - 1]$
- Gross cash flow is adjusted profit + interest expense + depreciation
- The capital charge is the cost of capital x gross investment
- Gross investment is net current assets + historical initial cost

A value of more than 1.0 indicates that a company is profitable, while a value below 1.0 suggests it is failing to return a profit (Stapleton, 2021).

EMPIRICAL REVIEW

Ben (2017) investigated the factors that influence shareholder wealth. Three countries were studied: Russia, Sweden, and the United Kingdom. Each country was represented by 69 enterprises in the samples, which were collected over a four-year period from 2007 to 2010. According to the descriptive statistics, Swedish and British companies have greater Tobin's Q and market-to-book ratios, respectively. According to the study, organizations with better performance values have greater market equity values. The study discovered a link between the worth of a company and its size. Nyeadi, Banyen, and Mbawuni (2017) looked into the factors that influence listed companies' capital structure decisions in Ghana. For the purpose of evaluating the determinants of capital structure, 28 companies listed on the Ghana Stock Exchange were studied for a period of 8 years. The study also discovered a strong link between firm tangibility, liquidity, managerial ownership, firm size, and long-term debt ratio. Profitability, development potential, company age, and business risk are also negatively related to the long-term debt ratio for Ghana's publicly traded companies. Over the years 2005-2014, Ajibola, Wisdom, and Qudus (2018) investigated the impact of capital structure on the financial performance of listed manufacturing firms in Nigeria. The impact of capital structure on financial performance of listed manufacturing firms in Nigeria was studied using panel technique. The findings of the panel ordinary least square showed that a positive statistically significant relationship exist between long term debt ratio (LTD) (0.0001), total debt ratio (TD) (0.0065) and return on equity (ROE) while a positive statistically non-significant relationship between ROE (return on equity) and STD (Short term debt ratio). There was also a negative insignificant relationship between all the proxies

of capital structure (LTD, STD and TD) and ROA. Ezejiofor, Nwakoby, and Okoye (2019) looked at the shareholders fund of publicly traded food and beverage companies in Nigeria during a ten-year period (2009-2018). At a 5% level of significance, descriptive statistics and inferential statistics regression analysis were utilized to test the hypotheses. The empirical findings showed that the debt-to-equity ratio had a negative but substantial impact on earnings per share and return on equity of listed foods and beverage firms in Nigeria at a 5% level of significance. Rafiuddin and Rafiqul (2020) investigated the characteristics of service sector organizations registered on the Australian Stock Exchange, as well as their performance (or profitability) (ASX). The examination of data found a strong relationship between return on equity and leverage levels using a panel regression approach on data collected over an eleven-year period (2009–2019). The relationship between financing decisions and shareholders' wealth maximization was investigated by Akintomide, Nwaobia, and Ogundajo(2021). The study used an ex-post facto research design. For a period of ten (10) years (2008 to 2017), data were taken from a sample of thirty-five (35) non-financial firms registered on the Nigeria Stock Exchange, yielding 350 firm-year observations. The data revealed that the choice of funding had a considerable impact on market value added; self-financing had positive and significant effect on market value added, equity-financing negatively and significantly affected market value added while debt-financing (DFD) had a non-significant negative effect on market value added. The drivers of financial performance, company liquidity, and leverage ratio of Indian listed firms on the Bombay Stock Exchange were researched by Senan, Ahmad, Anagreh, Tabash, and Al-Homaidi (2021). From 2007 to 2018, balanced panel data for 1,333 Indian enterprises was collected during a 12-year period. Both static models (pooled, fixed, and random effects) and the Generalized Moment Method were employed in this study (GMM). The current ratio and the quick ratio are found to have a substantial impact on the financial leverage of Indian listed companies. From 2003 to 2015, Jim, Xiaochen, and Chien (2021) looked into the relationship between long-term debt financing and financing deficit of Chinese-listed companies. The regression analysis documented a positive relationship between financing deficit and changes in the long-term debt ratio. In an attempt to filling the gap in literature, this present study filled the

measurement gap by measuring shareholders' wealth creation with cash value added, quite unlike prior studies that majorly measured shareholders' wealth creation using return on equity, return on assets and earnings per share.

METHODOLOGY

Research Design

Ex-Post Facto research design was employed in this study, since the study sought to establish cause-effect relationship and the researcher has no control over the variables under study.

Population and Sample Size

The sample size for this investigation was determined using a purposeful sampling strategy. This study's sample size is made up of thirteen (13) quoted industrial goods firms that were continuously listed on the Nigerian stock exchange from January 1, 2008 to December 31, 2020, and whose financial statements and reports are available and have been consistently submitted to the Nigerian stock exchange during the study period. Dangote Cement Plc, CAP Plc, Ashaka Cement Plc, Berger Paints, Cutix Plc, First Aluminum Nigeria Plc, DN Meyer Plc, Premium Paints Plc, Austin Laz & Company Plc, Avon Crown caps & Containers Nigeria Plc, Portland Paints Plc, Greif Nigeria Plc, and Wapco Nigeria Plc.

Source of Data

This study employed the use of secondary data. Information was sourced from Nigeria Stock Exchange fact books, annual reports and accounts, and other relevant publications and bulletins.

Table 1 Operationalisation of Variables

Variables (code)	Operational Definitions
Dependent Variable (Shareholders Wealth Creation)	
Driver:	
Cash Value Added (CVA)	Gross Cash Flow - Economic Depreciation - Capital Charge

Independent Variable (Financial Leverage)	
Proxies:	
Short Term Debt Ratio (STDR)	$\frac{\text{Short Term Debt}}{\text{Total Assets}}$
Long Term Debt Ratio (LTDR)	$\frac{\text{Long Term Debt}}{\text{Total Assets}}$
Control Variables	
Interest Coverage Ratio (ICR)	$\frac{\text{Earnings Before Interest and Taxes (EBIT)}}{\text{Interest Expense}}$
Liquidity (LQD)	$\frac{\text{Currents Assets}}{\text{Current Liabilities}}$

METHOD OF DATA ANALYSIS

Descriptive statistics were employed to summarily describe the mean, median, standard deviation, kurtosis and skewness of the study variables. Inferential statistics was also utilized with the aid of E-Views 10 using Panel Least Square (PLS) regression analysis: Regression analysis predicts the value the dependent variable based on the value of the independent variable and explains the impact or effect of changes in the values of the variables.

Model Specification

This study adapted the model of Akintomide, Nwaobia and Ogundajo (2021);

$$ROE = \beta_0 + \beta_1TD + \beta_2LTD_{it} + \beta_3STD_{it} + E_{it} \quad \text{--- equ (i)}$$

Where:

ROE = Return on Assets

TD = Total Debt

LTD = Long Term Debt

STD = Short Term Debt

Thus, the following models were used to test the hypotheses of the study:

$$CVA_{it} = \beta_0 + \beta_1STDR_{it} + \beta_2ICR_{it} + \beta_3LQD_{it} + \mu_{it} \quad \text{--- i CVA}_{it} =$$

$$\beta_0 + \beta_1LTDR_{it} + \beta_2ICR_{it} + \beta_3LQD_{it} + \mu_{it} \quad \text{--- ii}$$

Where:

β_0 = Intercept coefficient

$\beta_1 - \beta_3$ = Coefficients of independent variables

$CVA_{i,t}$ = Cash value added of firm i at time t

$STD_{i,t}$ = Short term debt of firm i at time t

$LTD_{i,t}$ = Long term debt of firm i at time t

$ICR_{i,t}$ = Interest coverage ratio of firm i at time t

$\mu_{i,t}$ = The error term which account for other possible factors that could influence Y_{it} that are not captured in the model.

i stands for the i th firm ((13 banks)

t stands for year t (2008-2020) (Thirteen Years)

Decision Rule

Accept the alternative hypothesis, if the Probability value (P-value) of the test is less than 0.05 (5%). Otherwise reject.

DATA ANALYSIS

Analysis of Data

Table 2 Descriptive Statistics

	CVA	STDR	LTDR	ICR	LQD
Mean	0.496923	0.934615	0.996923	0.146923	0.553846
Median	0.470000	0.920000	0.990000	0.140000	0.570000
Maximum	0.730000	0.970000	1.010000	0.290000	0.740000
Minimum	0.220000	0.880000	0.970000	0.040000	0.320000
Std. Dev.	0.141797	0.026962	0.013775	0.077716	0.141747
Skewness	-0.317870	-0.354306	-0.418256	0.236047	-0.423740
Kurtosis	2.659304	2.182932	1.991919	1.986548	2.020050
Jarque-Bera	0.281796	0.633604	0.929488	0.677060	0.909200
Probability	0.868578	0.728475	0.628296	0.712817	0.634702

Sum	6.460000	12.15000	12.96000	1.910000	7.200000
Sum Sq. Dev.	0.241277	0.008723	0.002277	0.072477	0.241108
Observations	169	169	169	169	169

Source: E-Views 10.0 Output, 2021

The descriptive statistics in table 2 has 169 observations (i.e 13 years x 13 firms). Table 2 reveals that the average cash value added of the sampled firms is 50% approximately; the maximum CVA of the sampled firms is 73% with a minimum CVA of 22% with a standard deviation of 0.14. The average DER from the sampled observations is 1.59; standard deviation of 0.95; a maximum DER observation of 4.32 with a minimum value of 0.49. The mean value of STDR stood at 93.46%; a standard deviation of 0.027; maximum STDR observation of 97% with a minimum value of 88%. The mean of LTDR is at the average of 99.69%; standard deviation of 0.0138; a maximum observation of 101% with a minimum LTDR value of 97%. The observed mean value for ICR is at 14.69%, maximum ICR of 29%, a minimum ICR of 4% with a standard deviation of 0.078. For LQD, the mean value stood at 55.38% with a minimum value of 32%, a maximum of 74% at a standard deviation of 0.142. The interpretation of the descriptive statistics is also graphically represented in figure 4.1:

TEST OF HYPOTHESES

Hypothesis One

H₀₁: There is no significant relationship between short term debt ratio and cash value added of quoted industrial goods firms in Nigeria.

H₁₁: There is significant relationship between short term debt ratio and cash value added of quoted industrial goods firms in Nigeria.

Table 3 Panel Least Square Regression analysis testing the relationship between STDR and CVA

Dependent Variable: CVA

Method: Panel Least Squares

Date: 09/18/21 Time: 13:36

Sample: 2008 2020

Periods included: 13

Cross-sections included: 13

Total panel (balanced) observations: 169

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	t			
C	-1.942954	0.595850	-3.260811	0.0013
STDR	2.514098	0.638374	3.938282	0.0001
ICR	-0.317047	0.170827	-1.855953	0.0652
LQD	0.089924	0.110535	0.813537	0.4171
R-squared	0.312892	Mean dependent var	0.356469	
Adjusted R-squared	0.306762	S.D. dependent var	0.262984	
S.E. of regression	0.249937	Akaike info criterion	0.088167	
Sum squared resid	10.30729	Schwarz criterion	0.162247	
Log likelihood	-3.450109	Hannan-Quinn criter.	0.118230	
F-statistic	6.999187	Durbin-Watson stat	1.749765	
Prob(F-statistic)	0.000185			

Source: E-Views 10.0 Regression Output, 2021

The modified R² value is 0.306762 in Table 3. The modified R², which is the coefficient of multiple determinations, indicates that the explanatory factors jointly explain 30.68 percent

of the total variation in the dependent variable (CVA) of quoted industrial products firms in Nigeria (STDR, ICR and LQD). Because the F- statistics value of 6.999187 with an associated Prob.>F = 0.000185 indicates that the model is fit to explain the relationship expressed in the study model and further suggests that the explanatory variables are properly selected, combined, and used, the adjusted R² of 30.68 percent did not pose a problem for the study. The adjusted R² value of 30.68 percent also indicates that other factors account for 69.32 percent of the variation in the dependent variable. This suggests that apart from STDR, ICR and LQD there are other factors that mitigate cash value added of quoted industrial goods firms in Nigeria.

Decision

Based on the empirical evidence that suggests that short term debt ratio has a significant positive relationship with cash value added of quoted industrial goods firms in Nigeria at 5% level of significance, hence, the alternative hypothesis of the study is accepted (t statistic = 3.938282; p-value = 0.0001<0.05).

Test of Hypothesis Two

H₀₂: There is no significant relationship between long term debt ratio and cash value added quoted industrial goods firms in Nigeria.

H₀₂: There is significant relationship between long term debt ratio and cash value added quoted industrial goods firms in Nigeria.

Table 4 Panel Least Square Regression analysis testing the relationship between LTDR and CVA

Dependent Variable: CVA

Method: Panel Least Squares

Date: 09/18/21 Time: 13:40

Sample: 2008 2020

Periods included: 13

Cross-sections included: 13

Total panel (balanced) observations: 169

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	t			
C	-4.509859	0.680328	-6.628944	0.0000
LTDR	5.128259	0.709719	7.225761	0.0000
ICR	0.002809	0.163847	0.017146	0.9863
LQD	-0.137740	0.104866	-1.313490	0.1908
R-squared	0.262783	Mean dependent var	0.356469	
Adjusted R-squared	0.249380	S.D. dependent var	0.262984	
S.E. of regression	0.227845	Akaike info criterion	-	0.096919
Sum squared resid	8.565699	Schwarz criterion	-	0.022838
Log likelihood	12.18962	Hannan-Quinn criter.	-	0.066855
F-statistic	19.60495	Durbin-Watson stat	1.773259	
Prob(F-statistic)	0.000000			

Source: E-Views 10.0 Regression Output, 2021

LTDR, ICR, and CVA have a positive link, while LQD and CVA have a negative relationship, according to the regression model. The value of 1 (LTDR) is 5.128259, indicating that a 1%

increase in LTDR would result in a 513 percent rise in CVA; a 1% increase in ICR (2) will result in a 0.2 percent increase in CVA. In addition, a 1% increase in the liquidity ratio reduces CVA by 13.77 percent. The t-statistic and p-value for 1 = 7.225761, 0.00000.05; 2 = 0.017146, 0.9863>0.05; and 3= -1.313490, 0.1908>0.05, respectively, imply a positive and significant relationship between LTDR and CVA; a positive but non-significant relationship between ICR and CVA; and a negative and non-significant relationship between LQD and CVA at the 5% level of significance. The adjusted R^2 is 0.249380 which shows that 24.94% variation in cash value added is explained by the explanatory variables (LTDR, ICR and LQD). The value of Durbin Watson is 1.773259 which shows that problem of auto-correlation does not exist. Value of F-statistic equals 19.60495 with an associated P-value of 0.000000 shows that overall model is good fit.

Decision

In consideration of the empirical evidence that reveals the value of the F-statistic as 19.60495 with an associated probability value of 0.00000, which is less than the conventional P-value of 5%, then H_0 is rejected and H_1 is accepted, which submits that long term debt ratio has a significant and positive relationship with industrial goods firms in Nigeria at 5% level of significance.

Discussion of Findings

The result for hypothesis one reveals that short term debt has a positive and significant relationship with CVA measured with a beta coefficient = 2.514098; t- value of 3.938282 and p- value of 0.0001 which is statistically significant at 5%. The result of this study supports the works of Jim, Xiaochen and Chien (2021) ; Rafiuddin and Rafiqul (2020); Abubakar and Garba, (2019); but negates the findings of Senan, Ahmad, Anagreh , Tabash and Al-Homaidi, (2021).

The regression model for hypothesis two shows that that there is a positive and significant relationship between LTDR and CVA; a positive but non-significant relationship between ICR and CVA; a negative and non-significant relationship between LQD and CVA at 5% level of

significance respectively. This study is consistent with the findings of Senan, Ahmad, Anagreh , Tabash and Al-Homaidi, (2021); Akintomide, Nwaobia and Ogundajo (2021); Yinusa, Adelopo, Rodionova, Olawale(2019) but opposes the results of Ahmadu (2021); Fali (2019).

CONCLUSION AND RECOMMENDATIONS

Short term debt ratio and long-term debt ratio had a significant positive link with cash value added of industrial products firms in Nigeria at a 5% significant level, respectively, as disaggregated components. As a result, this study adds to the expanding body of evidence indicating financial leverage has a strong positive link with and has a significant effect on shareholder wealth creation in Nigeria at a 5% significant level. In light of the study's results and conclusions, the following suggestions were made: Because short-term debt boosts cash value added, industrial products companies should employ it more in their capital structure to avoid incurring a high cost of capital. Banks should reduce interest rates on corporate financing, which can be done by eliminating or cutting transfer costs, to allow industrial goods firms to invest in capital equipment and machinery, resulting in desired high corporate profitability and cash value added growth.

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