Financial Leverage and Shareholders Wealth Creation of Quoted Industrial Goods Firms in Nigeria

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ABSTRACT

This study ascertain the relationship between financial leverage and shareholders wealth creation of quoted industrial goods firms in Nigeria for a period of thirteen years spanning from 2008-2020. Specifically, this study ascertained the relationship between debt-to-equity ratio and cash value added. *Ex-Post Facto* research design was employed. The Panel data sets used in this study were obtained from the annual reports and accounts of thirteen (13) quoted industrial goods firms. Descriptive statistics of the dataset from the sampled industrial goods firms was employed to describe using the mean, standard deviation, minimum and maximum values of the data for the study variables. Panel Least Square (PLS) regression analysis and Hausman test were applied to test the hypothesis of the study. The specific findings showed that there is a significant and positive relationship between Debt-to-Equity Ratio and Cash Value (p-value = 0.0003<0.05). The study recommended inter alia that bankers and debt providers should help industrial goods firms by charging lower cost of debt. The lower cost of debt financing helps to bring down the required rate of return on the capital project being financed, thus, improving its profit margins.

KEYWORDS: Financial leverage, Debt-to-equity ratio and Cash value added

1. INTRODUCTION

Financial leverage is a measure of how much firm uses equity and debt to finance its assets. As debt increases, financial leverage increases. Financial leverage refers to application of debt financing and borrowed capital in an attempt to increase firm's operations and profitability. A firm is considered leveraged when the firm is partially financed by both debt and equity. Most firms survive with a significant liquidity level which is mainly achievable through use of debt. Many companies use debt to leverage their profits and capital. This means companies are likely to use debt/leverage to increase assets which in turn increase production and profits. Debt bears a fixed cost. This means that when a firm increases debt level, the financial leverage level increases. Leverage is the use of borrowed funds for investment purposes (Dinh & Pham, 2020). When firm's management increases the firms profit by using debt element, it is an indication of quality corporate governance (Guner, 2016). Firm's investments can be finance by use of either debt or equity. When a firm uses fixed-charged funds especially preference capital and debt along with the shareholder's equity this is referred to as financial leverage or gearing. When a company's capital structure is made of only shareholders' equity, only it's said to be unlevered firm whereas when a firm's capital structure is made of both debt and owners' equity it is said to be levered. Financial leverage can be informed of a loan or inform of debt (other borrowing). Financial leverage proceeds are reinvested to earn a greater return more than interest expense and cost incurred due to debt acquisition.. This means that if a company's marginal rate of return on asset is higher than the company's marginal rate of interest expense payable on the debt, then the company should increase the debt level since it will also increases return on investment and cash value added. Contrary, when the company's return on asset is lower than the interest rate payable on debt/loan acquisition, the firm should not borrow since borrowing will reduce the firms' returns and cash value.

Wealth creation refers to changes in the wealth of shareholders on a periodic (annual) basis. Since stock prices reflect investor expectations about future cash flows, creating wealth for shareholders requires that the firm undertake investment decisions that have a positive net present value (NPV). Shareholders expect management to generate value over and above the costs of resources consumed, including the cost of using capital (Amahalu, Egolum, Nweze & Obi, 2018). Shareholder wealth is the appropriate goal of a business firm in a capitalist society. In a capitalist society, there is private ownership of goods and services by individuals. Those individuals own the means of production to make money. The profits from the businesses in the economy accrue to the individuals. When business managers try to maximize the wealth of their firm, they are actually trying to increase the company's stock price. As the stock price increases, the value of the firm increases, as well as the shareholders' wealth.

1.1. Statement of the Problem

Prior studies have shown some kind of relation between financial leverage and financial performance, but the results have been inconsistent. There have been evidence that has shown a significant positive, a significant negative and no significant relation between financial leverage and financial performance. For instance, Khan, Qadeer, Mata, Chavaglia Neto, Sabir, Martins and Filipe, 2021; Jim, Xiaochen and Chien, 2021; Oyinloye, Olaniyan & Agbadua, 2020; Tran, 2020) found a positive relationship between financial leverage and shareholders' wealth creation. The second strand of literature documented a negative relationship between financial leverage and shareholders' wealth creation (for example, Senan, Ahmad, Anagreh , Tabash and Al-Homaidi, 2021; Rahman, Saimaand &Jahan, 2020). On the other hand, a non-significant relationship was reported between financial leverage and shareholders' wealth creation (Ahmadu, 2021; Rahman, Abdelrhman, Nurul, Anwarul Islam, Rabbani and Bunagan, 2021). The inconclusive results and lack consensus by the reviewed literatures gave rise to a gap in literature which this study tends to fill. 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. This study therefore determines the extent of relationship between debt-to-equity ratio and cash value added of quoted industrial goods firms in Nigeria.

2. Review of Related Literature

2.1. Financial Leverage

Financial leverage simply means the presence of debt in the capital structure of a firm. Similarly, in other words, we can also call it the existence of fixed-charge bearing capital which may include preference shares along with debentures and term loans (Hayes, 2021). Leverage is an investment strategy of using borrowed money specifically, the use of various financial instruments or borrowed capital to increase the potential return of an investment. Leverage can also refer to the amount of debt a firm uses to finance assets (Adam, 2021). Leverage is the use of debt (borrowed capital) in order to undertake an investment or project. The result is to multiply the potential returns from a project. At the same time, leverage will also multiply the potential downside risk in case the investment does not pan out. When one refers to a company, property, or investment as highly leveraged, it means that item has more debt than equity (Will, 2021).

The concept of leverage is used by both investors and companies. Investors use leverage to significantly increase the returns that can be provided on an investment. They lever their investments by using various instruments, including options, futures, and margin accounts. Companies can use leverage to finance their assets; instead of issuing stock to raise capital, companies can use debt financing to invest in business operations in an attempt to increase shareholder value (Kenton, 2021).

2.2. Debt Equity Ratio

The debt-to-equity ratio shows the proportions of equity and debt a company is using to finance its assets and it signals the extent to which shareholder's equity can fulfill obligations to creditors, in the event a business declines (Andrew, 2021). The debt to equity ratio is a financial, liquidity ratio that compares a company's total debt to total equity. The debt to equity ratio shows the percentage of company financing that comes from creditors and investors. A higher debt to equity ratio indicates that more creditor financing (bank loans) is used than investor financing (shareholders) (Kvilhaug, 2021). A low debt-to-equity ratio indicates a lower amount of financing by debt via lenders, versus funding through equity via shareholders. A higher ratio indicates that the company is getting more of its financing by borrowing money, which subjects the company to potential risk if debt levels are too high. The more a company's operations rely on borrowed money, the greater the risk of bankruptcy, if the business hits hard times. This is because minimum payments on loans must still be paid even if a company has not

profited enough to meet its obligations. For a highly leveraged company, sustained earnings declines could lead to financial distress or bankruptcy (Bloomenthal, 2021).

The debt to equity ratio is calculated by dividing total liabilities by total equity. The debt to equity ratio is considered a balance sheet (statement of financial position) ratio because all of the elements are reported on the balance sheet (statement of financial position) (Kosinski , 2021).

Debt-to-Equity Ratio = $\dfrac{\text{Total Liabilities}}{\text{Total Equity}}$

2.3. Cash Value Added (CVA)
Cash value added (CVA) is a measure of a company's ability to generate cash flow above and beyond the required return to its investors. A high CVA indicates a company's ability to produce liquid profits from one financial period to another (Andrew, 2021). Cash value added also can be the measure of company performance that looks at how much money a company generates through its operations. Generally, a high cash value added figure is beneficial for both companies and investors, as it demonstrates a company's ability to generate cash from one financial period to another, creating solid liquid profits (Bloomenthal, 2021).

Cash value added (CVA) is one way to measure a company's real profitability. It calculates the amount left over once the required return to investors is met. 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).

2.4. Debt Equity Ratio and Shareholders' Wealth Creation
Affandi, Sunarko and Yunanto (2018) opined that the debt to equity ratio has a positive effect on the company's dividend payout ratio, though not significant. Companies that have a high proportion of long-term debt in their total capital are more likely to pay cash dividends. In addition, companies that have high debt are more able to pay dividends even though they have to pay a fixed interest loan. This is because, in accordance with the signaling theory, the company wants to give a positive signal to investors that even though the company has high debt but management is still able to control their financial performance to pay their loan obligations, they can even pay dividends to their shareholders. Ezejiofor, Nwakoby and Okoye (2019) revealed that debt-to-equity ratio has a significant negative effect on shareholders wealth proxied by EPS and ROA. Similarly, Khan (2017) found a negative relationship between financing decision on the financial performance, while Uremadu and Onuegbu (2018) found that debt-equity ratio negatively and non-significantly impacted on return on equity and return on assets of consumer goods producing companies in Nigeria. Senan, Anagreh, Al-Dalaien, Almugari, Khaled and Al-Homaidi, (2021) reported a significant positive association between debt-to-equity ratio and shareholders wealth measured by return on equity.

2.5. Empirical Review
Mehrnaz (2013) examined the relationship between financial ratios and created shareholders value of 48 sample firms gathered from the Tehran Stock Exchange over the period 2005 to 2011. Pooled least squares model was used. The results showed that although there is meaningful relation between financial ratios and created shareholders value, while, corporate life cycle of affects the relationship between financial ratios and created shareholder value. Nguyen (2014) investigated the relationship between capital structure and firm value. The study employed regression estimation to indicate whether there are positive and negative impacts of capital structure on firm value. The study used data of among 90 unlisted Seafood Processing Enterprises in the South Central region of Vietnam (SEASCRs) during 2005–2011 periods. The study used book value of equity plus long- term debt (BVE) and return on equity (ROE) as surrogate for firm value and book value of total debt to total assets (TD/TA) as surrogate for capital structure and as the threshold variable. The empirical results strongly indicated that triple threshold effect exists between debt ratio and firm value when BVE is selected to proxy firm value. However, when ROE is selected to proxy firm value, the result showed that there exists double thresholds effect between debt ratio and firm value. Arowoshegbe and Emeni (2014) examined the relationship between shareholders' wealth and debt-equity mix of quoted companies in Nigeria. The study was based on a panel data set from 1997 to 2011

comprising sixty non – financial companies. The study specified two panel regression models. Two measures of shareholders' wealth: Return on Equity (ROE) and Earnings per Share (EPS) were taken as the dependent variables respectively. The principal explanatory variable for each of the models was Debt Ratio (DR). The results of the study found that there is a significant negative relationship between shareholders' wealth and debt-equity mix of quoted companies in Nigeria.

Yazdanfar and Öhman (2015) examined the relationship between debt level and performance among small and medium-sized enterprises (SMEs). The study used three-stage least squares (3SLS) and fixed-effects models to analyze a cross-sectorial sample of 15,897 Swedish SMEs operating in five industry sectors during the 2009-2012 period. The study confirmed that debt ratios, in terms of trade credit, short-term debt and long-term debt, negatively affect firm performance in terms of profitability. Adenugba, Ige and Kesinro (2016) assessed the relationship between financial leverage and firms' value. A sample of 5 firms listed on Nigerian Stock Exchange (NSE) for a period of 6 years from 2007-2012 was used. Data were sourced from annual reports of selected firms. The Ordinary Least Square (OLS) statistical technique was used for data analysis and hypothesis testing. The study revealed that there is significant relationship between financial leverage and firms' value and that financial leverage has significant effect on firms' value. Ben (2017) tested the determinants of shareholder's wealth. The study examined three countries: Russia, Sweden and the United Kingdom. The samples contained 69 firms for every country observed over a period of 4 years from 2007 to 2010. Firm value was measured by two ratios: Tobin's Q ratio obtained as the sum of market capitalization, long term debt and short term capital structure divided by total assets, and market to book ratio measured as market value equity over shareholder's equity. The descriptive statistics showed that firms in Sweden and the United Kingdom have higher Tobin's Q and market to book ratios, respectively. The study found that firms with higher values of performance have higher market equity values. The study found a significant relationship between firm value and size. Fali (2019) investigated the effect of leverage on financial performance of Islamic Banking in Nigeria for the period of 2012 to 2017. Ex post research design was adopted. The result of the multivariate regression analysis showed that debt to equity has a positive and insignificant effect on ROE. Abubakar and Garba, (2019) examined the effect of financial leverage on the financial performance of seven companies quoted on the

Services Sector in Nigerian during the period 2005- 2016. Fixed Effects Model was used to present the findings of the study and revealed that total-debt equity ratio has a significant negative effect on the financial performance measured by return on equity. The study concluded that decrease in the total-debt equity ratio will improve financial performance. Ezejiofor, Nwakoby and Okoye (2019) investigated the shareholders fund of quoted foods and beverage firms on the average over the ten (10) years periods (2009-2018) in Nigeria. The study employed ex-post facto research design. Descriptive statistics and inferential statistics regression analysis were used to test the formulated hypotheses at 5% level of significance. Findings based on the empirical analysis indicated that debt-to-equity ratio negatively but significantly influence earnings per share and return on equity of quoted foods and beverage firms in Nigeria at 5% level of significance respectively. Musah and Kong (2019) examined the relationship between leverage and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE) for the period 2008 to 2017. From the result of Pearson Product-Moment Correlation Coefficient output, leverage had a non-significant positive association with the firms' ROE. The effect of operating cash flow on earnings management of Nigerian banks was studied by Osisioma, Okoye, Ezejiofor, and Okoye (2020). Ex post Facto research was used in this study. From 2010 to 2019, a sample of fifteen (15) Nigerian banks was used. The study's data was gathered from the banks' annual reports and accounts. With the help of E-view 9.0, regression analysis was utilized to evaluate the hypothesis. The study concluded that operating activities are not statistically significant and have a negative impact on Nigerian banks' total accruals earnings. The study finds that risk management measures are critical for lowering future cash flow. Rafiuddin and Rafiqul (2020) examined firm level characteristics and firm performance (or profitability) of service sector firms listed in the Australian Stock Exchange (ASX). Using a panel regression approach on data collected over an eleven-year period (2009–2019), the effect of capital structure and leverage was examined. Four measures of firm performance were used: return on assets, return on equity, operating margin ratio and return on capital employed. The analysis of data revealed a significant association between return on equity and leverage levels. The effect of leverage on the cash ratio of Nigerian conglomerates was investigated by Okeke, Ezejiofor, and Okoye (2021). The study used an Ex-Post facto research design, with data taken from the sampled firms' annual reports and accounts

and evaluated with Pearson correlation and Ordinary Least Square (OLS) regression analysis using E-Views 9.0 statistical software. At a 5% level of significance, the study discovered that leverage has a considerable negative influence on the cash ratio of Nigerian corporations. Senan, Ahmad, Anagreh , Tabash and Al-Homaidi, (2021) investigated the determinants of financial performance, firm liquidity and leverage ratio of Indian listed firms of Indian listed firms on the Bombay Stock Exchange. The study focused on balanced panel data for 1,333 Indian companies collected over a 12-year period from 2007 to 2018. The study used both static models (pooled, fixed and random effects) and the Generalized Moment Method (GMM). It is revealed that the current ratio and the quick ratio have a significant impact on the financial leverage of Indian listed firms. In Nigeria, Ndum and Ezejiofor (2021) investigated the impact of average payment period on operating cash flow in consumer goods manufacturing enterprises. The study used an ex-post facto research design. The study's sample size was twenty quoted consumer products companies chosen at random from all manufacturing companies. Panel data regression was used to test the data, which was gathered from annual financial reports and accounts. The average payment time had a negative substantial effect on investing cash flow, according to the study's findings. Jim, Xiaochen and Chien (2021) investigated the relationship between long-term debt financing and financing deficit of Chinese-listed firms from 2003 to 2015. The study also assessed how ownership concentration, market timing, and state ownership affect the adoption of long-term debt financing when there is a financing deficit. The regression analysis documented a positive relationship between financing deficit and changes in the long-term debt ratio

Prior studies have shown some kind of relation between financial leverage and financial performance, but the results have been inconsistent. There have been evidence that has shown a significant positive, a significant negative and no significant relation between financial leverage and financial performance. Some studies found a positive relationship between financial leverage and shareholders' wealth creation, while others documented a negative relationship between financial leverage and shareholders' wealth On the other hand, a non-significant relationship was reported between financial leverage and shareholders' wealth creation (Ahmadu, 2021; Rahman, Abdelrhman,Nurul, Anwarul Islam, Rabbani and Bunagan,2021; Rahman,Meero, Zayed., Anwarul Islam, Rabbani & Bunagan, 2021; Akhtar, 2020). The inconclusive results and lack consensus by the reviewed literatures gave rise to a gap in literature which this study tends to fill.

3. Methodology
3.1. 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. This design is very appropriate where it is not possible for the researcher to directly manipulate the independent variable (Farrar, 2017).

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.

3.2. Population of the Study
The population for this study consists of all the sixteen (16) industrial goods firms quoted on the floor of Nigeria Stock Exchange as at 31st December, 2020. They include: Dangote Cement Plc; Beta Glass Plc; CAP Plc; Ashaka Cement Plc; Cement Company Northern Nigeria; Berger Paints; Cutix Plc; First Aluminum Nigeria Plc; DN Meyer Plc; Premium Paints Plc; African Paints Nigeria Plc; Austin Laz & Company Plc; Avon Crowncaps & Containers Nigeria Plc; Portland Paints Plc; Greif Nigeria Plc and Wapco Nigeria Plc.

3.3. Sample Size and Sampling Technique
Purposive sampling technique was adopted to select the sample size of this study. The sample size of this study consist of thirteen (13) quoted industrial goods firm that were continuously listed by Nigeria stock exchange during the period 1st January 2008 to 31 December 2020 and whose financial statements and reports are available and have been consistently submitted to Nigeria stock exchange for the period of study. They include: 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 Crowncaps & Containers Nigeria Plc; Portland Paints Plc; Greif Nigeria Plc and Wapco Nigeria Plc.

3.4. Method of Data Analysis
The analysis of data for this research was done based on the data collected from publications of the Nigerian Stock exchange and the annual reports of the quoted firms. Both the dependent and independent variables were computed from the data gotten from the Nigerian Stock Exchange from 2008 to 31st December 2020.

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:

1. 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.
2. Hausman Test: was used to select the appropriate model between random effects model (REM) and fixed effects model (FEM) of the study..

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

$$ROE = \beta_0 + \beta_I TD + \beta_2 LTD_{it} + \beta_3 STD_{it} + E_{it} - - \text{ equ (i)}$$

Where:
ROE = Return on Assets
TD = Total Debt

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

$$CVA_{it} = \beta_0 + \beta_I DER_{it} + \beta_2 ICR_{it} + \beta_3 LQD_{it} + \mu_{it} - - \textbf{H}_{o1}$$

Where:
β_0 = Intercept coefficient
β_1 = Coefficients of independent variables
$CVA_{i,t}$ = Cash value added of firm i at time t
$DER_{i,t}$ = Debt-to-Equity ratio of firm i at time t
$ICR_{t,t}$ = 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 ith 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.

4. Data Presentation And Analysis
4.1. Analysis of Data
The data set used in the analysis of data is shown in appendix I; table 4.1 and figure 4.1. Table 4.1 depicted the descriptive statistics, while table 4.2 showed the Pearson correlation matrix.

Table 4.1 Descriptive Statistics

	CVA	DER	ICR	LQD
Mean	0.496923	1.593077	0.146923	0.553846
Median	0.470000	1.280000	0.140000	0.570000
Maximum	0.730000	4.320000	0.290000	0.740000
Minimum	0.220000	0.490000	0.040000	0.320000
Std. Dev.	0.141797	0.953261	0.077716	0.141747
Skewness	-0.317870	1.809228	0.236047	-0.423740
Kurtosis	2.659304	6.309621	1.986548	2.020050
Jarque-Bera	0.281796	13.02536	0.677060	0.909200
Probability	0.868578	0.001484	0.712817	0.634702
Sum	6.460000	20.71000	1.910000	7.200000
Sum Sq. Dev.	0.241277	10.90448	0.072477	0.241108
Observations	169	169	169	169

Source: E-Views 10.0 Output, 2021

Interpretation of Descriptive Statistics
The descriptive statistics in table 4.1 has 169 observations (i.e 13 years x 13 firms). Table 4.1 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 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:

4.2. Test of Hypothesis 1
Ho₁: There is no significant relationship between debt-to-equity ratio and cash value added of quoted industrial goods firms in Nigeria.

H₁: There is significant relationship between debt-to-equity ratio and cash value added of quoted industrial goods firms in Nigeria.

Table 4.2 Panel Least Square Regression analysis testing the relationship between DER and CVA

Dependent Variable: CVA				
Method: Panel Least Squares				
Date: 09/18/21 Time: 13:22				
Sample: 2008 2020				
Periods included: 13				
Cross-sections included: 13				
Total panel (balanced) observations: 169				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.318654	0.050889	6.261781	0.0000
DER	0.068376	0.018369	3.722374	0.0003
ICR	-0.305341	0.172036	-1.774869	0.0778
LQD	0.040877	0.111321	0.367198	0.7139
R-squared	0.314688	Mean dependent var		0.356469
Adjusted R-squared	0.288410	S.D. dependent var		0.262984
S.E. of regression	0.251090	Akaike info criterion		0.097372
Sum squared resid	10.40261	Schwarz criterion		0.171453
Log likelihood	-4.227942	Hannan-Quinn criter.		0.127435
F-statistic	6.431095	Durbin-Watson stat		1.830693
Prob(F-statistic)	0.000381			

Source: E-Views 10.0 Regression Output, 2021

Interpretation of Regression Analysis

Table 4.2 shows that there is a significant positive relationship between DER and CVA of quoted industrial goods listed on Nigeria Stock Exchange. This can be observed from the beta coefficient (β_1) of 0.068376 with p value of 0.0003 which is significant at 5%. Similarly, ICR negatively and non-significantly relates with CVA considering the beta coefficient (β_2) of -0.305341 and a p-value of 0.0778. In the same vein, LQD has a positive and non-significant relationship between CVA as demonstrated by the beta coefficient (β_3) of 0.040877 and p-value of 0.7139.

$$CVA = 0.318654 + 0.068376DER - 0.305341ICR + 0.040877LQD$$

The drawn inference from this model shows that holding every other factors constant, one naira increase in DER will exert 6.83% increase in CVA; one naira increase in ICR will cause CVA to reduce by 30.53% and a unit increase in LQD will make CVA to increase by 4%. Overall, the combined and the overall effect of the regressors- DER, ICR and LQD on CVA of quoted industrial goods in Nigeria, is shown on the model probability summary of the regression results. The F-statistic of 6.431095 with an associated Prob(F-statistic) of 0.000381 is statistically significant at 5%, which reveals that the model is well fitted, while the coefficient of determination R^2 of 0.288410, explains the individual variation of the dependent variable (CVA) as a result of the changes in the independent variables (DER, ICR and LQD). It can be said that DER, ICR and LQD have combined predictive power of 28.84% in affecting CVA of quoted industrial goods in Nigeria, while the remaining 71.16% is accounted for by other factors which are not captured in the model.

Decision

Since the P-value of the test = 0.000381 is less than 0.05 (5%)., this study upholds that Debt-to-Equity Ratio has a significant relationship with Cash Value Added of quoted industrial goods in Nigeria at 5% level of significance. Thus, Ho$_1$ is Rejected and H$_1$ Accepted.

Table 4.3: Fixed Effect Model (FEM) testing the relationship between DER and CVA

Dependent Variable: CVA
Method: Panel Least Squares
Date: 09/18/21 Time: 13:25
Sample: 2008 2020
Periods included: 13
Cross-sections included: 13
Total panel (balanced) observations: 169

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.288996	0.058164	4.968654	0.0000
DER	0.074950	0.020123	3.724638	0.0003
ICR	-0.372023	0.188959	-1.968808	0.0508
LQD	0.117844	0.134347	0.877160	0.3818
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.253765	Mean dependent var		0.356469
Adjusted R-squared	0.170800	S.D. dependent var		0.262984
S.E. of regression	0.253503	Akaike info criterion		0.183009
Sum squared resid	9.832387	Schwarz criterion		0.479331
Log likelihood	0.535722	Hannan-Quinn criter.		0.303262
F-statistic	1.853384	Durbin-Watson stat		1.900853
Prob(F-statistic)	0.032124			

Source: E-Views 10.0 Regression Output, 2021

Table 4.4 Random Effect Model (REM) testing the relationship between DER and CVA

Dependent Variable: CVA				
Method: Panel EGLS (Cross-section random effects)				
Date: 09/18/21 Time: 13:31				
Sample: 2008 2020				
Periods included: 13				
Cross-sections included: 13				
Total panel (balanced) observations: 169				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.318654	0.051378	6.202164	0.0000
DER	0.068376	0.018545	3.686934	0.0003
ICR	-0.305341	0.173689	-1.757971	0.0806
LQD	0.040877	0.112391	0.363702	0.7165
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.253503	1.0000
Weighted Statistics				
R-squared	0.194688	Mean dependent var		0.356469
Adjusted R-squared	0.138410	S.D. dependent var		0.262984
S.E. of regression	0.251090	Sum squared resid		10.40261
F-statistic	6.431095	Durbin-Watson stat		1.830693
Prob(F-statistic)	0.000381			
Unweighted Statistics				
R-squared	0.194688	Mean dependent var		0.356469
Sum squared resid	10.40261	Durbin-Watson stat		1.830693

Source: E-Views 10.0 Regression Output, 2021

Table 4.5 Hausman Test Comparing FEM and REM Regression Result on DER and CVA

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.467895	3	0.0007

Source: E-Views 10.0 Hausman Output, 2021

The Fixed Effect Model (FEM) is preferred over the Random Effect Model (REM) since the t-statistic value of the test = 0.0007 is less than the conventional 5% level of significance, hence H_1 is accepted and Ho rejected, thereby, buttressing the fact that debt to equity ratio significantly relates with cash value added of quoted industrial goods firms in Nigeria.

4.3. Discussion of Findings
The panel regression result for hypothesis I shows that there is a significant positive relationship between DER and CVA of quoted industrial goods listed on Nigeria Stock Exchange. This can be observed from the beta coefficient (β_1) of 0.068376 with p value of 0.0003 which is significant at 5%. Similarly, ICR negatively and non-significantly relates with CVA considering the beta coefficient (β_2) of -0.305341 and a p-value of 0.0778. In the same vein, LQD has a positive and non-significant relationship between CVA as demonstrated by the beta coefficient (β_3) of 0.040877 and p-value of 0.7139. The drawn inference from the regression model shows that holding every other factors constant, one naira increase in DER will exert 6.83% increase in CVA; one naira increase in ICR will cause CVA to reduce by 30.53% and a unit increase in LQD will make CVA to increase by 4%. The findings of this study is in line with the findings of Khan, Qadeer,Mata, Chavaglia Neto,

5. Conclusion and Recommendation
This study examined the the relationship between financial leverage and shareholders wealth creation of quoted industrial goods firms in Nigeria for a period of thirteen (13) years spanning from 2008 to 2020. Panel data were sourced from the annual reports and accounts of the sampled firms. Inferential statistics using Pearson correlation analysis, panel least square regression estimate and Hausman test were employed via E-Views 10.0 statistical software. Data analysis revealed that a significant relationship exists between financial leverage and shareholders wealth creation of quoted industrial goods firms in Nigeria. As disaggregated components, debt-to-equity ratio, short term debt ratio and long term debt ratio has a significant positive relationship with cash value added of industrial goods firms in Nigeria at 5% significant level respectively. Consequently, this analysis supports growing evidence that financial leverage has a significant positive relationship and exerts significant effect on shareholders wealth creation of quoted industrial goods in Nigeria at 5% significant level.

The study recommended that bankers and debt providers should help industrial goods firms by charging lower cost of debt. The lower cost of debt financing helps to bring down the required rate of return on the capital project being financed, thus, improving its profit margins.

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