

EMPIRICAL REVIEW OF IMPLICATIONS OF FINANCIAL LEVERAGE ON PERFORMANCE OF QUOTED OIL AND GAS COMPANIES IN NIGERIA

Etim Osim Etim^{1*}, Peter Samuel Ubi², Nseabasi Imoh Etukafia³ and Raymond Ekwere Enang⁴

¹Department of Accounting, Faculty of Business Administration, University of Uyo, Nigeria.

E-mail: osimacc@gmail.com, etimosimetim@uniuyo.edu.ng

²Department of Economics, Faculty of Social Sciences, University of Calabar, Nigeria.

E-mail: petersamuclubi@gmail.com

³Department of Banking and Finance, Faculty of Business Administration, University of Uyo, Nigeria.

⁴Department of Accounting, Faculty of Business Administration, University of Uyo, Nigeria.

E-mail: raymondenang@yaboo.com

*Corresponding Author

Article History

Received : 28 January 2022

Revised : 20 February 2022

Accepted : 28 February 2022

Published : 19 June 2022

To cite this article

Etim Osim Etim, Peter Samuel Ubi, Nseabasi Imoh Etukafia and Raymond Ekwere Enang (2022). Empirical Review of Implications of Financial Leverage on Performance of Quoted Oil and Gas Companies in Nigeria. *Journal of Applied Financial Econometrics*, Vol. 3, No. 1, pp. 1-28. <https://DOI: 10.47509/JAFE.2022.v03i01.01>

Abstract: This study was conducted to examine the implication of financial leverage on performance of quoted oil and gas companies in Nigeria. This is premeditated on the fact that debt capital is usually acquired by firm to finance assets with the expectation the returns from such investments will exceed the costs of the debt capital used. Often, this is always not the case either because of inappropriate management strategies or other reasons. *Ex-post-facto* research design was adopted involving use of panel secondary data as published by eight(8) oil and gas companies selected from the population of twelve(12) firms quoted on the floor of the Nigerian Stock Exchange (NSE) for the period 2006-2020. Descriptive and multiple linear regression statistics were used to analyze data collected. The dependent variable was return on Assets (ROA), proxy for financial performance and independent variables being financial leverage decomposed into Debt Ratio (DR), Debt-to-Equity Ratio (DER), Long-term Debt Ratio (LTDR) and Cost of Debt (COD). Results Shows DR, LTDR and COD had negative and significant implications on ROA, while DER also had negative but insignificant implications on ROA of quoted oil and gas firms in Nigeria. Hence, it was concluded that during the period of the study, leverage had negative and significant implications on financial performance of oil and gas firm in Nigeria. It was recommended that oil and gas firm should minimize debt capital usage in their financial structure to shore-up returns.

Keywords: Debt, Equity, Debt Equity, ROA.

1. INTRODUCTION

The stakeholders' expectation with vested interests in profit oriented entities are continuity and sustainability. These expectations are expressed in the form of profits and return on capital, desirable and acceptable products and/or services, quality internal and external environment for both employees, and society, compliance with government regulatory and legal frameworks, among others. The key indicator to the expectations is profitability which is expected to continually. Achieving this require prudent management of the financial resources described as the enabling resource of any entity. Provision of funds may be wholly from equity holders or partly from external funds providers and equity holders. This often gives rise to financial leverage – a blend of owners, equity and debt, with implications on the short and long runs Capital structure and profitability of the reporting entity. In the short-term, operational expenses must be made in order not to impair the smooth running of the company, while in the long-run, stability and growth must be ensued. For these purposes, strategies are to be formulated by the top management to meet up with the current fend in the business ecosystem.

Financial leverages and profitability strategies are some of the strategies often formulated by management. Financial leverages strategies are simply the syntheses of owners' and debt funds to finance the assets and operations of entities with the prospect of deriving higher returns. The capital structure decision is of great relevance owing to the fact that it has a resulting effect on the survival and growth in profitability of the entity. The melding of owners' funds with debt funds may give rise to a company being described as 'lowly geared', 'moderately geared' or highly geared' depending on which source is more in the capital structure.

In the accounting and finance literature, financial leverage is defined as the sum of money or debt that a company requires to finance its assets. It is a measure of debt and equity a firm can use (Ogiriki, Andabai, and Bina, 2018).

1.2. Statement of the Problem

The optimality of results obtained by management in capital structure decisions in various sectors of diverse economies in developed and developing countries in respect to financial leverage and performance have shown conflicting outcomes. While some empirical findings had shown financial leverage has negative influence on performance, others observed leverage to have positive influence depending on the sector such investigations were conducted.

In Nigeria, most of the conducted studies do not consider the listed oil and gas companies which are majorly financed by debt capital. From the published financial statements of some of these companies, it appears that as debt capital is raised over the

years, financial performance declines continuously with some of these companies recording losses, yet others as debt increases, financial performance also moves in the same direction. This unending debate in the fields of accounting, economics and finance as to what should constitute optimal capital structure for the oil and gas firms in Nigeria requires empirical analysis.

In another view, most of earlier studies on financial leverage and firms performance, common variables often used are determinants of corporate performance excluding cost of funding (cost of Capital) which is a fundamental financial leverage variable. Hence, in this Study, the researchers included an important variable in the model as well used of Return on Asset (ROA) as a proxy for performance rather than Net Income.

1.3. Objective of the Study

The key objective of the Investigation was to investigate the Implications of financial leverage on performance of quoted Oil and Gas Companies in Nigeria.

1.4. Research Question

The research question formulated for the Study is stated as:

What is the combined implication of debt ratio (DR) Debt to equity ratio (DER), Long-Term Debt Ratio (LTDR) and Cost of debt (COD) on Returns on Assets (ROA) of the quoted Oil and Gas Companies in Nigeria?

1.5. Hypothesis

The development of hypothesis followed the research objective and Question; and Stated in null form as:

H_0 : Debt ratio (DR), debt-to-equity ratio (DER), Long-term debt ratio (LTDR) and Cost of debt (COD) does not have significant and joint implications on Return on Assets (ROA) of the Quoted Oil and Gas Companies in Nigeria.

1.6. Significance of the Study

Research Outcomes are meant to Chart a Course for Policy formulation, and Implementation as well as Contribute to existing literature in any field. The Findings of this Study would be of immense benefits to the Stakeholders in Oil and Gas Sector, the academia, investment analysts and experts, and the likes in carrying out their roles and responsibility.

The remainder of the paper is structured into review of related literature, methodology, results and findings, Conclusion, recommendations, Suggestions for further studies and business Implications of the findings.

2. REVIEW OF RELATED LITERATURE

The review of related literature is carried out under three (3) core headings – conceptual review, theoretical framework and empirical studies review.

2.1. Conceptual Review

This section of the review mainly focused on the key concepts and constructs of the study.

2.1.1. Performance

Performance is a generic concept referring to an indication of an outcome relative to an activity or action. According to Nwaiwu and Oluka (2018), there are many kinds of performance based on the perception of an individual, hence one can talk of productivity performance, employee's performance, and financial performance and among others. In accounting, economic, and finance, financial performance is the key consideration (Karaduman, Akkas, Caliskan and Durers, 2011). Financial performance maybe conceived as improvements in financial indices, such as profitability, liquidity, investment, leverage and among others, over a given time period. (Fadope & Alilore, 2009)

2.1.2. Measurement of Performance

In the theory and practice of accounting, economic and finance, commonly used measures of performance has been computations of relevant ratios, particularly profitability ratios which are concerned with improvement in the wealth generated by the company. These ratios take cognizance of both short and long term accomplishment, stability, and sustainability of firms. These financial ratios include profitability ratios, liquidity ratios, leverage ratios, investment ratios, and efficiency ratios. Among these ratios are gross profit margin net profit margin, return on assets (ROA), Return on Equity (ROE), Return on Capital Employed (ROCE), Current ratio, quick ratio and Cash ratios. The leverage ratios are debt ratio, debt-to-equity ratio, Interest Coverage ratio, and among others. Investment ratios category are price-earning (P/E) ratio, Earnings per share (EPS), Dividend per share (DPS), Dividend field, Dividend Covered ratio, and so on. Efficiency ratios include Inventory turnover period, account receivable and payables period, asset turnovers, and among others (Abubakar, *et. al.* 2018; Ajibola *et. al.* 2018).

These various dimensions have been used over time to assess organizational performance across countries. For this study, we adapt return on assets (ROA) as the measure/proxy for performance since it Computation is based on total assets and profits of oil and gas firms in Nigeria.

2.1.3. Financial Leverage and Its Measurement

Rehman (2013) explains financial leverage as how entities use debt and equity as techniques of financing their assets. It is a term used to describe loan borrowed by a firm with a vibrant intention of engaging the funds in a more useful manner such as investment so that, the earning from that investment exceeds the cost of interest charged on the funds borrowed (Aljamaan, 2018; Yinusa, Adalopo, Rodionova & Samuel, 2020). It is a trade-off between financing firm with either more of debt or equity and is tightly linked with the Capital Structure.

For the purpose of this Study, we adapt the following measures of financial leverage:-

- (i) Debt-ratio determined by dividing total debts by total assets of a Company.
- (ii) Debt-to-Equity Ratio; which measures the proportion of debt to total equity in financing of an entity. It is calculated as total debt divided by total equity.
- (iii) Interest Coverage Ratio Calculated as operating profit divided by interest charges, a more inclusive ratio considering that many firms lease assets and incur long-term Obligations under lease contracts.
- (iv) Long-term Debt ratio: viewed as the total debts of a firm less current liabilities relative to total equity of the Company. It is an indicator of firm's Commitment of borrowed funds to profitable long-run investments.
- (v) Cost of debt: This refers to the amount of funds that is used to service the total debt Capital of a firm (Kenn-Ndubisi & Nweke, 2019). Cost of debt is the value that cause a firms to enjoy tax advantages because finance cost are allowable tax deductions. It is computed as total finance cost divided by total debts of an entity for a period.

2.2. Theoretical Framework

We adopt the Modigliani and Miller theory of leverage. According to Modigliani and Miller (1958), the impact of leverage on a firm is divided into two; leverage without Corporate taxation and leverage with Corporate taxation.

Modigliani and Miller explained leverage without corporate taxation from the perspective of real world influences on leverage. Their objective was to construct models that would help financial managers of Companies in making decisions in respect to leverage levels that add to the wealth of the shareholders in the long-run. Their Starting point was to construct a model based on simple world. However, the assumptions include the following;

- (i) Capital markets are perfect;

- (ii) All investors value securities in the same way;
- (iii) There are no dealing costs;
- (iv) There are perfect flow of information;
- (v) No taxation and
- (vi) Investors are indifferent between borrowing themselves and investing in Companies that borrow from them.

Modigliani and Miller's arguments, disregarding taxation, are Summarizes in these two propositions:

Proposition I: The Weighted Average Cost of Capital (WACC) is constant at all levels of gearing. For Companies with identical annual profits and identical business risk characteristics, their total market value (equity plus debt) will be the same regardless of differences in gearing between the Companies.

Preposition II: The cost of equity rises as the gearing increases. The cost of equity will rise to a level such that, given no change in the cost of debt, the WACC remain unchanged.

Leverage with Corporate Taxation: Modigliani and Miller (1963) modified their 1958 model by incorporating corporate taxation. Their 1963 model predicated that if corporate taxation is taken into account, an increase in leverage will have the following effects:

- (i) As the level of leverage increase, there is a greater proportion of cheaper debt capital in the capital structure of the firm. However, the cost of equity rises as leverage increases;
- (ii) As leverage increases, the net effect of the greater proportion of cheaper debt and the higher cost of equity is that the WACC becomes lower;
- (iii) Increases in leverage result in a reduction in the WACC;
- (iv) The WACC is therefore at its lowest at the highest practicable level of leverage;
- (v) The total values of the company is therefore higher for a levered company than for an identical all-equity company;
- (vi) The value of a company will rise, for a given level of annual cash profits before interest, as its leverage increases, and
- (vii) Modigliani and Miller therefore reached the conclusion that because of tax reliefs on interest, there is an optimum level of leverage that a company should be trying to achieve. A company should be trying to make its leverage as high as possible to the maximum practicable level in order maximize its value.

Modigliani and Miller's argument, with taxation, can be summarized in two propositions. Proposition I: The WACC falls continually as the level of gearing increase.

In theory, the lowest cost of capital is where gearing is 100% and the company is financed entirely by debt. Modigliani and Miller recognized, however, that “financial distress” factors have an effect at level of leverage, increasing the cost of debt and the WACC. For companies with identical annual profits and identical business risk characteristics, their total market value (equity plus debt) will be higher for a company with higher leverage.

Proposition II: The cost of equity rises as the leverage increases. There is a positive correlation between the cost of equity and gearing (as measured by the debt/equity ratio).

This theory is used in this present study because it’s focused mostly on how debt capital in the capital structure of a firm could be used to raise the financial performance of company. In this case, the Modigliani and Miller’s views regarding corporate taxation was adopted in this study.

2.3. Empirical Review

The empirical review was carried out based on previous studies by researchers. Leverage and financial performance are very crucial to firms because of the role financing of asset play in companies.

There are many studies that have been conducted in the world with different economic environment in the area of interest. Some of the selected empirical review are presented in a tabular format as follows:

2.4. Gap in the Literature

The above empirical review shows that none of the previous studies in the area of Interest were in the oil and gas sector of the Nigeria economy. Also, the Variables for leverage used did not include Cost of funds, which is a novel development included in the model of this Study and a fundamental component of financial leverage. More so, we employ panel data as against pooled dataset for the analysis. In these view, it is the believe of the researchers that the findings would add to existing knowledge and bowl of empirical literature in this area of Interest.

3. RESEARCH METHOD

In this section. The various techniques and procedures adapted in the study are explained.

3.1. Research Design

The researchers adapted the *ex-post facto* research design given the quantitative nature of the study and the fact that we relied on historical (time series) data prepared and published by the management of the entries studied.

Table I: Summary of Empirical Literature

S/N	Author(s)	Topic/ main objective	Research method	Finding(s)
i.	Onyenwe and Glory (2017)	Effect of financial leverage on firm's performance: A Study of Nigeria Banks (2006-2015).	<i>Ex-post facto</i> research involving thirteen deposit money bank.	The finding revealed that financial leverage had positive effect on profitability and efficiency. No Significant effect were found on liquidity, size and market capitalization value.
ii.	Paul (2017)	The impact of leverage financing on financial performance of some manufacturing industries in Nigerian Stock Exchange (NSE).	Use of Secondary data from twenty four (24) manufacturing companies listed on NSE using OLS regression.	Findings revealed that leverage had a Significant influence on ROA.
iii.	Rachael <i>et. al.</i> (2017)	Leverage and financial performance: Evidence from Nigeria food production firms.	Secondary Data obtained for the period 2009 to 2014 were used and analyzed using paired simplet-test analysis.	Findings showed financial leverage had no Significant effect on EPS of studies / firms.
iv.	Rajkumar (2017)	Impact of financial leverage on financial performance: special Reference to John Keells Holdings PLC, Sri-Lanka.	<i>Ex-post facto</i> research design involving regression analysis.	The findings of the Study indicated a negative relationship between the financial leverage and financial performance of the Company.
v.	Abubakar <i>et. al.</i> (2018)	Financial leverage and financial performance of quoted Conglomerate firms in Nigeria.	Secondary data obtained from the annual reports of five (5) Conglomerate Companies for the period 2015 to 2016 were analyzed using OLS regression.	The regression results showed that STDTR had a positive and Significant effect on the financial performance measure by ROE while LTDR and TDER had negative and Significant effect on the financial performance.
vi.	Ahmed <i>et. al.</i> (2018)	Financial leverage firms' performance: Empirical evidence from Karachi Stock Exchange (KSE)-100 index.	Data for the period Spanning from 2005 to 2014 of Karachi Stock Exchange (KSE)-100 index listed Securities were collected and analyzed using regression technique.	The results of the analysis showed that Capital Structure, Leverage, Interest Cover and Sales growth significantly impacted on firms' profit ability.

- vii. Aijbola *et. al.* (2018) Capital Structure and financial performance of listed manufacturing firms in Nigeria. Secondary Data were collected from published reports of the listed Manufacturing Companies for the periods 2005-2014 and analyzed using regression analyses. The findings showed that a positive statistically significant relationship existed between LTD, TD and ROE, while a Positive Statistically Insignificant relationship between STD and ROE.
- viii. Gadzo and Asiamah (2018) Assessment of the relationship between leverage and performance: An empirical study of unlisted banks in Ghana. Data from fifteen unlisted universal bank in Ghana from 2006 to 2016 were Collected by the researchers and analyzed using correlation and inferential statistics. gearing for unlisted banks had a positive relationship with the banks performance variables which are ROA, ROE and rate of profit.
- ix. Hashini and Madumali Effect of firms' size on financial leverage. Secondary data from 2011 to 2016 obtained from listed manufacturing firms of Colombo Stock Exchange (CSE) in Sri-Lanka. Findings indicated that sales volume was positively Correlated and Significantly affected the debt ratio. Also, Total Assets had negative but insignificant relationship with Debt ratio.
- X. Igbal and Usman (2018) The impact of financial leverage on firm / performance: textile composite companies of Pakistan. *Ex-post facto* research design was adapted using five years data (2011-2005) for sixteen (16) companies. Results indicated that financial leverage has negative and significant effect on firm ROE.
- xi. Kristina and Kumar (2018) Financial leverage and firm performance: an empirical study of selected public-sector undertaking listed at Bombay Stock Exchange (BSE), India. The *Ex-Post Facto* research design was adopted using Pearson coefficient correlation and multiple regression for data treatment. Result revealed positive relationship between debt ratio and ROE.
- xii. Nasution *et. al.* (2018) An analysis on the influence profitability, firm size, liquidity and leverage on the expression of firm's social responsibility in banking companies listed in BEI (Indonesia Stock Exchange). The study population size was twenty eight (28) banking companies listed in BEI in the period 2012-2016. Data were analyzed using descriptive and inferential statistical techniques. The result of the analysis shows that concurrently, financial factors (profitability ratio, firm size, liquidity and leverage) had significant influence on the expression of firms social responsibility.

xiii	Abubakar and Garba (2019)	Financial leverage and financial performance of quoted service firms in Nigeria.	Descriptive statistic and multiple linear regression technique were employed to analysis data which covers 2005-2016.	Study findings revealed that short-term debt ratio, long-term debt ratio and total equity ratio individually had a significant negative effect on ROE.
xiv	Chang <i>et.al.</i> (2019)	Relationship between Capital structure and profitability: evidence from four Asians tigers.	Secondary data were obtained for 2003 to 2016 and analyzed using correlational and regression analyses.	Findings indicated that significant and negative relationship existed between leverage and profitability in Taiwan, Korea and Hong Kong.
xv	Hirdinis (2019)	Capital structure and firm size on firm value moderated by profitability.	Data were gathered from the mining sector companies listed on IDX and were analysed using regression technique.	Findings revealed that capital structure had a significant and positive effect on firm value while firm size had a significant but negative effect on firm value.
xvi	Keen-Ndubuisi and Nweke (2019)	Financial leverage and firm financial performance in Nigeria: a panel data analysis approach	<i>Ex-post facto</i> research design was adopted using multiple linear regression analysis for data treatment	The findings showed that earnings per share was significant and negatively related to the debt to equity ratio and the total debt to total asset ratio.
xvii	Kothari and Sodha (2019)	The impact of liquidity and leverage on profitability: evidence from selected pharmaceutical companies of India	The <i>ex-post facto</i> research design was adopted by the researchers and multiple linear regression models.	The result of the study shows that the liquidity of the companies affected the firm's capital structure increase in liquidity led to decrease in the leverage.
xviii	Onyinyechi (2020)	Debt financing and corporate finance performance: a dynamic investigation from Nigeria quoted firms	The <i>ex-post facto</i> research design was adopted in the study using time series data from 2000-2017	Findings showed that financial leverage measured by debt equity ratio, debt ratio had negative impact on return assets (ROA).
xix	Yinusa <i>et. al.</i> (2020)	capital structure and firm performance in Nigeria	The researchers used dynamic panel model on panel data of 115 listed non-financial firms in Nigeria	The findings indicated statistically a significant relationship between capital structure and firm's performance particularly when debt financing was moderately employed.

Source: Researchers' Compilation (2022)

3.2. Population and Sample Size of the Study

As at 31st December, 2021 there were twelve (12) listed oil and gas companies listed on the floor of the Nigeria Stock Exchange (NSE). The listed companies were: II PLC, Anino Int'l PLC. Capital oil PLC, Conoil PLC, Eterna Oil PLC, Forte Oil PLC, Japaul oil PLC, Mes oil Nig. PLC, Oando oil PLC, Rak Utility Pet .Co.PLC, Seplat Petroleum Dev. Co. PLC, and Total Nig. PLC.

In this study, Eight (8) listed oil and gas companies were purposively selected for investigation out of the twelve. The selected firms are those with up to date published financial statements for the period of the research. The companies are: II PLC, Conoil PLC, Eterna PLC, Forte oil PLC, Japaul oil PLC, MRS oil Nig PLC, Oando PLC, and Total Nig PLC.

3.3. Method of Data Collection

The researchers relied on already prepared data as presented on financial statements of those companies chosen as sample size for the study. Thus, secondary (time series) data were extracted from existing published reports.

3.4. Theoretical Specification of Models

Theoretical model connecting the variable of study are shown on figure I

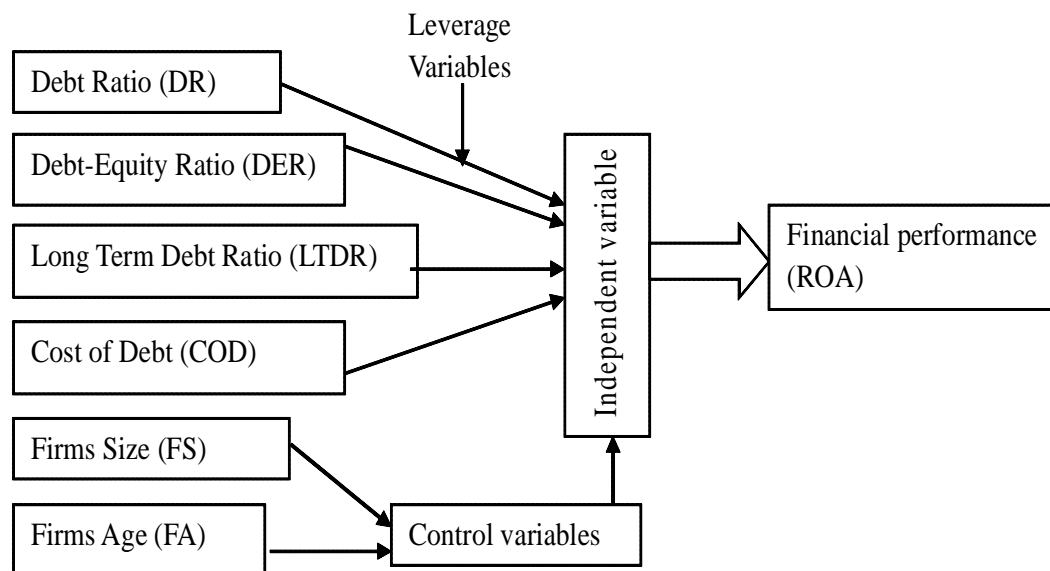


Figure 1: Theoretical model for the study:

Source: Researcher's conceptualization (2022)

3.5. Empirical Specification of Models

The study is conducted to examine the implication of financial leverage on performance of listed oil and gas companies in Nigeria. The independent variables incorporating control variables and the dependent variables are the basis for developing the econometric models as follows:

$$ROA_{ij} = \beta_o + \beta_1 DR_{ij} + \beta_2 FS_{ij} + \beta_3 FA_{ij} + e_t \quad \text{Equation 3.1}$$

$$ROA_{ij} = \beta_o + \beta_1 DER_{ij} + \beta_2 FS_{ij} + \beta_3 FA_{ij} + e_t \quad \text{Equation 3.2}$$

$$ROA_{ij} = \beta_o + \beta_1 LTDR_{ij} + \beta_2 FS_{ij} + \beta_3 FA_{ij} + e_t \quad \text{Equation 3.3}$$

$$ROA_{ij} = \beta_o + \beta_1 COD_{ij} + \beta_2 FS_{ij} + \beta_3 FA_{ij} + e_t \quad \text{Equation 3.4}$$

Converting the simple regression models into multiple regression models by factorization we have:

$$ROA_{ij} = \beta_o + \beta_1 DR_{ij} + \beta_2 DER_{ij} + \beta_3 LTDR_{ij} + \beta_4 COD_{ij} + \beta_5 FS_{ij} + \beta_6 FA_{ij} + e_t \quad \text{Equation 3.5}$$

Where; i = number of companies; j = number of years; β_o = intercept of ROA; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = coefficient of independent and control variables, and e_t = random error term.

3.6. Measurement and Description of Variables and *Apriori* Expectation

The measurement and description of variables, and the measurement reference as well as *apriori* expectation is shown in Table 2.

3.7. Technique of Data Analysis

Techniques of data analysis were descriptive statistics-mean, median, minimum, maximum, standard deviation, Skewness and Kurtosis, Inferential statistics from multiple linear regression (Panel regression technique) involving parameters as R^2 , adjusted R^2 , t-statistic, p-value, F-ratio, Variance Inflation Factors (VIF) and Durbin-Watson (D-W) statistics. These parameters are to ascertain the implications of variables of leverage on performance.

4. RESULT AND DISCUSSION OF FINDINGS

Results of Data analysis and discussions are the focus of this section.

4.1. Descriptive Statistics

The result of descriptive Statistical analysis is presented on Table 3 as follows.

Table 2: Variables measurement and Description

<i>S/N</i>	<i>Variable</i>	<i>Abbreviation</i>	<i>Measurement</i>	<i>Apriori</i>
I.	Performance	ROA	Performance was measured as the profits for the year (profits after tax) divided by the total assets of the quoted oil and gas companies in Nigeria. (Abubakar <i>et al.</i> , 2018).	
ii	Debt Ratio	DR	Debt ratio was measured as total liabilities (including both short-term and long-term), divided by the total assets of the listed oil and gas companies in Nigeria (Enekwe <i>et al.</i> , 2014)	Negative
iii.	Debt- to Equity Ratio	DER	Debt-to-Equity Ratio was measured as total liabilities (including both short-term and long-term liabilities), divided by the total equity of the listed oil and gas companies in Nigeria (Ali, 2014)	Negative
iv.	Long-term Debt Ratio	LTDR	The long-term Debt Ratio was measured as non-current liabilities divided by total assets of the listed oil and gas companies in Nigeria (Enekwe <i>et.al</i> 2014; and Moghadam and Jafari, 2015).	Negative
v.	Cost of Debt	COD	The cost of Debt was measured as total interests (Finance costs) incurred on borrowed funds divided by total debt of the oil and gas companies in Nigeria (Kenn. Ndubisi and Nweke, 2019).	Negative
vi.	Firm size	FS	Firm size was measured as the logarithm of total assets of the listed oil and gas companies in Nigeria (Karami and Akhgar, 2014 and Hashini and Madumali, 2018).	Negative
vii	Firm Age	FA	Firm Age was measured as the year of incorporation in each of the quoted oil and gas firms in Nigeria Sampled for the study to 2006 and 2020 (Grace <i>et-al.</i> 2016 and Abubakar <i>et.al.</i> , 2018).	Negative
				Positive

Source: Researcher's Compilation (2020)

Table 3: Descriptive Statistics

<i>Statistics</i>	<i>ROA</i>	<i>DR</i>	<i>DER</i>	<i>LTDR</i>	<i>COD</i>	<i>FS</i>	<i>FA</i>
Means	0.03024	0.7563	3.3187	0.16209	0.050175	7.6345	41.1140
Median	0.0370	0.7625	2.7315	0.07000	0.033000	7.7050	43.0000
Maximum	1.5100	2.2220	42.029	1.80100	0.524000	8.7100	68.0000
Minimum	-0.5580	0.0580	-21.350	0.0000	0.0000	5.8300	11.0000
Std. Dev.	0.1845	0.2626	5.27696	0.25929	0.064602	0.4776	14.5138
Skwenwss	3.9065	1.8288	2.7926	3.94377	3.970487	-1.1644	-0.31354
Kurtosis	38.737	13.683	30.913	22.2870	26.95632	6.1015	2.25621
Jarqw-Bera	6356.3	605.62	3848.96	2062.46	3025.581	71.453	4.49360
Probability	0.0000	0.0000	0.00000	0.00000	0.00000	0.0000	0.10563
Sum	3.4470	86.222	378.34	18.4780	5.720000	870.33	4487.00
Sum Sq.Dev	3.8482	7.7915	3146.6	7.59728	0.471596	25.775	23803.5
Observations	114	114	114	114	114	114	114

Source: Researcher's computation (2022)

From Table 3, Return on Assets (ROA), the proxy for performance, mean value (average) stood at 3.024%, medium 3.70%, maximum value 151%, minimum value -55.8% and standard deviation value of 18.45%. This indicated a wide variation from the means value. Skewness value of 3.9065 showed that ROA data were positively skewed. The Kurtosis value 38.7369 showed leptokurtic shape highly above the normal curve. Jarque-Bera value of 6356.29 compared to probability value of 0.0000 suggested that the null hypothesis is be rejected and alternative accepted.

Debt Ratio (DR) had a mean value of 75.63%, median 76.25%, maximum value 222.2%, minimum value 5.80% and standard deviation 26.259% indicating a wide variation from the mean. Skewness of 1.8284 showed that the obtained data for DR were positively skewed. Kurtosis value of 13.6827 compared with the 3.0 value for assessing the peakness of a distribution, showed that data for DR were leptokurtic, above normal curve. The Jarque-Bera statistical value of 605.616 compared with its probability value of 0.0000 suggested that the null hypothesis be rejected and the alternative upheld.

Debt to equity Ratio (DER) recorded a mean value of 331.87%, median value 273.15%, maximum value 4202.9%, minimum value of -2135.0% and standard deviation value of 527.696% which indicated a high fluctuation from mean value. Skewness of 2.79262 indicated a positively skewed data set. Kurtosis value of 30.913 indicated values highly above normal curve. Jarque-Bera value of 3848.956 compared with the probability value of 0.00 resulted to rejection of the null hypothesis, and upholding of the alternative.

For Long-term debt Ratio (LTDR), the mean value was 16.209%, Media value 7.0%, maximum value 180.10%, minimum value 0%, and standard deviation of 25.93%, indicating a wide variation from mean value. Skewness value of 3.9438 showed a positively skewed data. Kurtosis value of 22.287 indicated leptokurtic shape which is highly above the normal curve. The Jarque-Bera value of 2062.457 compared with its probability value of 0.000 means rejection of the null hypothesis and acceptance of the alternative.

Cost of Debt (COD) had a mean value of 5.018%, Median Value 3.30%, maximum value 52.40%, minimum value 0%, and standard deviation 6.4602%, indicated a high variation from mean values. Skewness of 3.9705 indicated that data were positively skewed. Kurtosis value of 26.956 shows leptokurtic shape which is higher than the normal curve. The Jarque-Bera value of 3025.581 compared with its probability value of 0.000 gave rise to rejection of null hypothesis and acceptance of the alternative.

For Firm Size (Fs) measured by taking the logarithm of total assets, mean value (average) stood at 7.63447, median 7.7050, maximum value 8.710, minimum value 5.830 and standard deviation was 0.4776. This indicated that the variation from the mean value was not high for the sourced data obtained for the study. Skewness of -1.1644

indicated that the collected data for Fs were negatively skewed. Kurtosis value of 6.101 assessing the peak of a distribution, showed that the data obtained for Fs were above the normal curve (leptokurtic). The Jarque-Bera value of 71.453 compared with its probability value of 0.0000 indicated that the null hypothesis should be rejected, and the alternative hypothesis accepted.

For Firm Age (FA) measured by the date of incorporation of individual entities, mean value (average) stood at 41 years, median was 34 years, maximum value of 68 years, minimum value 11 years and standard deviation was 15 years. This suggested that the variation from the mean value was somewhat high. Skewness of -0.3135 showed that the collected data for FA were slightly negatively skewed (moving towards left-hand side). Kurtosis value 2.256 compared with the value of 3.0, which is the basis for assessing the peak of a distribution, showed that the data obtained for FA were below the normal curve (platykurtic). The Jarque-Bera value 4.496 compared with its probability value of 0.10563 indicated that the null hypothesis should be accepted, and the alternative hypothesis rejected.

4.2. Tests for Multi-co Linearity

In order to test for the test the existence of multi-co linearity in the independent variables, the correlation coefficient between two pairs of independent variables were computed and presented as shown on the Table 4.

Table 4: Correlation Matrix

Covariance Analysis: Ordinary			
Date: 01/07/22 Time: 00:34			
Included observations: 114			
<i>Variable</i>	<i>Variable</i>	<i>Correlation</i>	<i>Probability</i>
COD	COD	1.000000	————
DER	COD	-0.30163	0.7500
DER	DER	1.000000	————
DR	COD	0.177347	0.0441
DR	DER	0.068901	0.4664
DR	DR	1.000000	————
FA	COD	-0.270174	0.0036
FA	DER	0.112930	0.2316
FA	DR	0.109102	0.2479
FA	FA	1.000000	————
FS	COD	-0.239089	0.0104
FS	DER	-0.036972	0.6961

contd. table 4

<i>Variable</i>	<i>Variable</i>	<i>Correlation</i>	<i>Probability</i>
FS	DR	0.065156	0.4910
FS	FA	0.603593	0.0000
FS	FS	1.000000	—
LTDR	COD	0.036782	0.6976
LTDR	DER	-0.176382	0.0605
LTDR	DR	0.624458	0.0000
LTDR	FA	0.106913	0.2576
LTDR	FS	-0.029637	0.7551
LTDR	LTDR	1.000000	—
ROA	COD	-0.244507	0.0087
ROA	DER	-0.020503	0.8286
ROA	DR	-0.323261	0.0005
ROA	FA	0.583715	0.0059
ROA	FS	-0.059177	0.5317
ROA	LTDR	-0.264773	0.0044
ROA	ROA	1.000000	—

Source: Researcher's Computation (2022)

Multi-collinearity usually exists in a data set of independent variables when the correlation coefficient between pairs of independent variables is from 80% and above (Kothari and Garg, 2014). From the correlation matrix on the Table 4. It was observed that there was no multi-collinearity in all the independent variables because the correlation coefficient between one independent variables and the other were less than 0.8 (80%) .The significance of the coefficient of the correlation between variables was ascertained with the help of the probability value (p-value) computed. The relationship between DER and ROA was -0.3233 (-32.33%) and significant (p-value<0.05); the relationship between DER and ROA was -0.0205 (-2.05%)and insignificant (p-value>0.05); the relationship between LTDR and ROA was -0.0205 (-26.45%) and significant (p;value<0.05); the relationship between COD and ROA was -0.2445 (-24.45%) and significant (p-value<0.05); the relationship between FS and ROA was -0.0592 (-5.92%) and insignificant (p-value>0.05); the relationship between FA and ROA was 0.58372 (58.372%) and significant (p-value<0.05).

4.3. Variance Inflation Factor (VIF)

In order to test further for the existence of multi-collinearity between the two independent variable in the multiple linear regression model used in the study, the Variance Inflation Factor (VIF) statistical tool was also used to determine the value of

effectiveness of relationship among individual independent variables in the model. For the fact that in the model stated, constant was included, thus, the centered VIF was used to test for the existence of multi-collinearity. The computation was presented on the Table 5.

Table 5: variance Inflation Factor (VIF)

Variance Inflation Factors			
Date: 01/07/22 Time: 01:05			
Sample:1 114			
Included observations: 114			
<i>Variable</i>	<i>coefficient Variance</i>	<i>uncentered VIF</i>	<i>centered VIF</i>
DR	0.007473	18.46711	1.970943
DER	1.05E-05	1.561654	1.116243
LTDR	0.007483	2.682989	1.924355
COD	0.074170	1.904540	1.183989
FS	0.001856	418.9567	1.618889
FA	2.18E-06	16.00719	1.759901
C	0.092150	355.5900	NA

Source: Researcher's Computation (2022)

The value of VIF that is equal or greater than ten (10) for an independent variable is often regarded as a variable with high level of association with other independent variable when compared together (Gujarati, 2013). From the Table 5, the centered VIF indicated values for all the independent variables of less than ten (10), which explained that there was no multi-collinearity in the variables of interest.

4.4. Tests for Heteroscedasticity

The Breusch-Pagan-Godfrey statistical tool was used to test for the existence of heteroscedasticity in the panel data collected. The results of the computation were presented on the Table 6:

Table 6: Heteroscedasticity Test

<i>Heteroskedasticity Test:</i>	<i>Breusch-pagan-Godfrey</i>		
F-statistic	0.282124	prob.F(6,107)	0.9443
Obs*R; squared	0.177498	prob.Chi-square(6)	0.9392
Scaled explained SS	44.30278	prob.Chi-square(6)	0.0700

Test Equation;
 Dependent Variable: RESID2
 Method: Least Squares
 Date: 01/07/22 Time: 03:04
 Sample: 1 114
 Included observation: 114

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	-0.014831	0.377494	-0.039287	0.9687
DR	-0.035950	0.107501	-0.334416	0.7387
DER	5.83E-05	0.004026	0.014484	0.9885
LTDR	0.042795	0.107572	0.397821	0.6916
COD	0.003636	0.338670	0.246953	0.8054
FS	0.016903	0.053567	0.315547	0.7530
FA	-0.001718	0.001838	-0.934631	0.3521
R-squared	0.001557	Means dependent var		0.027729
Adjusted R-squared	-0.039628	S.D. dependent var		0.209628
S.E. of regression	0.213741	Akaike info criterion		-0.188667
Sum squared resid	4.888312	Schwarz criterion		-0.020655
Log likelihood	17.75403	Hannan-Quinn criter.		-0.120480
F-statistic	0.282124	Durbin-Watson stat		1.051121
Prob (F-statistic)	0.944296			

Source: Researchers Computation (2022)

From the Table 6, it was deduced that there was no heteroscedasticity in the data collected for the study since the probability value for chi-square (p -value > 0.05) was greater than the level of significant of 5% and the multiplication of observation of 114 and the computed R^2 was less than its chi-square p -value.

Unit Root Test

Stationary test is very crucial in time series data or panel data. This is because it helps to show how stable data are. The Computation was done and presented on the Table 7:

Table 7: Unit Root Test

Group unit root test: summary
 Series: COD, DER, DR, FA, FS, LTDR, ROA
 Date: 01/07/22 Time: 03:25
 Sample: 1 114
 Exogenous variable: Individual effects
 Automatic selection of maximum lags
 Automatic lag length selection based on SIC: 0 to 2
 Newey-West automatic bandwidth selection and Bartlett Kernel

<i>Method</i>	<i>Statistic</i>	<i>Prob**</i>	<i>Sections</i>	<i>Obs</i>
Null: Unit root (assumes common unit root process)				
Levin, Lin and Chut*	-08.35719	0.0000	7	788
Null: Unit root (assumes individual unitroot process)				

Im, Persaran and Shin W-stat	-13.3742	0.0000	7	788
ADF-Fisher Chi-square	198.053	0.0000	7	788
PP – Fisher Chi-square	175.585	0.0000	7	791

** Probabilities for Fisher tests are computed using an asymptotic Chi-square Distribution. All other tests assume asymptotic normality
 Source: Researchers’ Computation (2022)

From Table 7 above, it was observed that there was no unit root in all the variables of the study used. So the data were said to be stationary for the fact that both the probability value for ADF-Fisher Chi-square and PP-Fisher Chi-square were less than error level of 5% (p-value < 0.05).

4.6. Co-integration Analysis

Assessing the long – run relationship is very important in data set like the time series data or panel data. This is because the correlation coefficient often calculated by Karl Pearson is always for short-run relationship. To determine the long-run relationship among the data set collected for this study, the Engle Granger Co-Integration Test was conducted on the data set, collected and the results were presented on the Table 8:

Table 8: Engle Granger Co-Integration Test

Date: 01/07/22 Time: 03:42
 Series: COD DER DR FA FS LTDR ROA
 Sample: 1 114
 Included Observations: 114
 Null hypothesis: Series are not co-integrated
 Co-integrating equation deterministic: C
 Automatic lags specification based on Schwarz criterion (maxlag=12)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
COD	-9.231637	0.0000	-99.65394	0.0000
DER	-10.41036	0.0000	-111.2233	0.0000
DR	-5.362228	0.0304	-46.56087	0.0248
FA	-2.605103	0.9418	-13.51630	0.9412
FS	-4.008921	0.3882	-28.80439	0.3604
LTDR	-2.471891	0.9598	-14.89171	0.9116
ROA	-5.340741	0.0323	291.699.	1.0000

*Mackinnon(1996) p-values
 Intermediate Results:

	COD	DER	DR
Rho-1	-0.881893	-0.984277	-0.412043
Rho S.E.	0.095529	0.094548	0.076842
Residual variance	0.003356	25.02727	0.022543
Long-run residual variance	0.003356	25.02727	0.022543
Number of lags	0	0	0
Number of observations	113	113	113
Number of stochastic trends**	7	7	7

** Number of stochastic trends in asymptotic distribution
 Source: Researchers’ Computation (2022)

From the Table 8, the Engle Co-integration Test indicated that DR, DER and COD exhibited long-run relationship with other variable in the model. This is because the probability value for these variables for both tau-statistics and z-statistics were less than the error level of 5% ($p\text{-value} < 0.05$).

4.5. Causality Analysis

To determine the causal influence between one variable and the other, the Granger Causality Test was adopted for the analysis. The outcomes of the computation were presented on the Table 9.

Table 9: Causality Test

Pairwise Granger Causality Test				
Date: 01/17/22 Time: 04:01				
Sample: 1 114				
Lags: 2				
<i>Null Hypothesis:</i>	<i>Obs.</i>	<i>F-Statistic</i>	<i>Prob.</i>	<i>Decision</i>
DER does not Granger Cause COD	112	4.41205	0.0144	Rejected
COD does not Granger Cause DER	112	1.61865	0.2030	Accepted
DR does not Granger cause COD	112	2.66711	0.0741	Accepted
COD does not Granger Cause DR	112	1.74271	0.1800	Accepted
FA does not Granger Cause COD	112	0.85954	0.4263	Accepted
COD does not Granger Cause FA	112	0.33289	0.7176	Accepted
FS does not Granger Cause COD	112	4.20485	0.0175	Rejected
COD does not Granger Cause FS	112	0.07588	0.9270	Accepted
LTDR does not Granger Cause COD	112	0.19260	0.8251	Accepted
COD does not Granger Cause LTDR	112	0.68652	0.5055	Accepted
ROA does not Granger Cause COD	112	1.83977	0.1638	Accepted
COD does not Granger Cause ROA	112	1.56266	0.2143	Accepted
DR does not Granger Cause DER	112	0.63771	0.5305	Accepted
DER does nor Granger Cause DR	112	1.93173	0.1499	Accepted
FA does not Granger Cause DER	112	2.05773	0.1328	Accepted
DER does not Granger Cause FA	112	6.69875	0.0018	Rejected
FS does not Granger cause DER	112	0.55314	0.5768	Accepted
DER does not Granger cause FS	112	10.0880	0.0001	Rejected
LTDR does not Granger cause DER	112	5.64885	0.0047	Rejected
DER does not Granger cause LTDR	112	0.25763	0.7734	Accepted
ROA does not Granger cause DER	112	0.99270	0.3740	Accepted
DER does not Granger cause ROA	112	0.12456	0.7959	Accepted

contd. table 9

<i>Null Hypothesis:</i>	<i>Obs.</i>	<i>F-Statistic</i>	<i>Prob.</i>	<i>Decision</i>
FA does not Granger cause DR	112	1.82766	0.8830	Accepted
DR does not Granger cause FA	112	0.91381	0.1658	Accepted
FS does not Granger cause DR	112	0.97506	0.4041	Accepted
DR does not Granger cause FS	112	3.90769	0.0230	Rejected
ROA does not Granger cause DR	112	6.22867	0.0028	Rejected
DR does not Granger cause ROA	112	12.9024	0.105	Rejected
FS does not Granger cause FA	112	0.09917	0.9057	Accepted
FA does not Granger cause FS	112	0.02263	0.9776	Accepted
LTDR does not Granger cause FA	112	0.18921	0.8279	Accepted
FA does not Granger cause LTDR	112	0.33493	0.7161	Accepted
ROA does not Granger cause FA	112	0.45158	0.6378	Accepted
FA does not Granger cause ROA	112	0.55696	0.5746	Accepted
LTDR does not Granger cause FS	112	0.33271	0.7177	Accepted
FS does not Granger cause LTDR	112	0.18644	0.8302	Accepted
ROA does not Granger cause FS	112	0.45435	0.6361	Accepted
FS does not Granger cause ROA	112	1.86800	0.1594	Accepted
ROA does not Granger cause LTDR	112	8.61719	0.0003	Rejected
LTDR does not Granger cause ROA	112	12.9205	0.906	Rejected

Source: Researchers' Computation (2022)

From the Table 9, it was observed that DER caused COD, FS cause COD, DER caused FA, DER caused FS, LTDR caused DER, DR caused LTDR, ROA caused DR, DR caused ROA, ROA caused LTDR and LTDR caused ROA. This was because the probability value (p -value <0.05) was less than the level of significance of 5%. Other hypotheses on the Table 9 indicated that there was no causal effect in each. This is why they were accepted as shown on the Table.

4.8. Regression Analysis for Test of Hypotheses

For the purpose of evaluating the multiple linear regression model and to test the hypothesis of the study, the regression analysis was conducted and the outputs were presented on the Table.

Test of Hypothesis

The regression analysis was conducted to test the model and the results were presented on the Table 10

Table 10: Linear Regression Output

Variable	Coefficient	Std. Error	t-Stat.	Prob.	Remark
DR	-0.146413	0.054355	-2.69366	0.0232	Significant
DER	-0.002122	0.003237	-0.65563	0.5135	Insignificant
LTDR	-0.089702	0.044037	-2.03696	0.0021	Significant
COD	-0.594883	0.272342	-2.18432	0.0311	Significant
FS	-0.077594	0.043076	-1.80131	0.0745	Insignificant
FA	0.620950	0.114780	5.40992	0.0000	Significant
C	0.698661	0.303563	2.30153	0.0233	Significant
R-squared	0.178558	Mean dependent var			0.030237
Adjusted R-squared	0.132496	S.D. dependent var			0.184540
S.E. of regression	0.171880	Akaike info criterion			-0.624598
Sum squared resid	3.161090	Schwarz criterion			-0.456585
Log likelihood	42.60206	Hannan-Quinn criter			-0.556411
F-statistic	3.876459	Durbin-Watson stat.			1.014486
Prob (F-statistic)	0.001535				

Source: Researchers' Computation (2022)

4.9. Discussion of the Findings

From the Table 10, DR indicated negative and significant influence on ROA (p -value <0.05); DER showed negative and insignificant influence on ROA (p -value >0.05); LTDR indicated negative and significance influence on ROA (p -value <0.05); COD showed negative and significant influence on ROA (p -value <0.05); FS indicated negative and insignificant influence on ROA (p -value >0.05) and FA showed positive and significant influence on ROA (p -value <0.05). R^2 of 17.86% indicated that the variations in the Performance (ROA) that were caused by the influence of the independent variables was 17.86% and F-ratio of 3.8765 compared with the probability value of 0.00154 showed that the influence of the independent variable (DR, DER, LTDR, COD, FS and FA) on the dependent variable (ROA) was significant.

A percentage increase in DR brought about 14.64% decrease in ROA; a percentage increase in DER brought about 0.21% decrease in ROA; a percentage increase in LTDR brought about 8.95% decrease in ROA; a percentage increase in COD brought about 59.49% decrease in ROA; a percentage increase in FS brought about 7.76% decrease in

ROA and a year increase in FA brought about 62.1% increase in ROA. The constant value in the model showed that ROA was 69.87% as all the independent variables (DR, DER, LTDR, COD, FS and FA) were zero and significant (p -value <0.05). The independent variable of DR, DER, LTDR, COD and FA were in compliance with the *a priori* expectation of the model while CS deviated from the *a priori* expectation in the multiple linear regression model. The null hypothesis, which states that Debt ratio (DR), debt-to-equity ratio (DER), long-term debt ratio (LTDR) and cost of debt (COD) does not significantly and jointly influence return on assets (ROA) of the listed oil and gas companies in Nigeria, was rejected and the alternative hypothesis, which states that Debt ratio (DR), debt-to-equity ratio (DER), long-term debt ratio (LTDR) and cost of debt (COD) significantly and jointly influence return on assets (ROA) of the listed oil and gas companies in Nigeria, was accepted on the basis of R^2 of 17.86% and F-ratio of 3.8765 ($p<0.05$).

From the table 11, the model indicated that leverage had a significant influence on return on assets (ROA) of the quoted oil and gas companies in Nigeria. The influence of financial leverage on performance of the entities was shown with R^2 statistical tool in the model justified by F-ratio to be significant. Based on the *a priori* expectation of the research, it was asserted that increase in leverage during the period of the study could bring about decline in profitability of the companies under study. In consideration the influence of financial leverage on performance of those companies studied, different variable were used to proxy-leverage in the firms in order to ascertain how individual variables of financial leverage caused the changes on the dependent variable (ROA).

This study was not in line with Ali (2014) who carried out a study on the relationship between financial leverage and financial performance: Evidence of listed chemical companies of Pakistan and the results of the study indicated a positive relationship between financial leverage and ROA; the study was not in line with Gadzo and Asiamah (2018) who conducted a study of assess the relationship between financial leverage and performance: An empirical study to unlisted banks in Ghana and the result indicated that the level of gearing for unlisted banks had a positive relationship with the bank performance and the study was not in line with Iqbal and Usman (2018) who conducted a study on the impact of financial leverage on firm performance: Textile composite companies of Pakistan and the results indicated that financial leverage had positive and significant effect on the ROA.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

In this section of the study, the findings derived from analysis were summarized, conclusion were made and as well as recommendations.

5.1. Summary of the Findings

The main objective of the study was to examine the implications of financial leverage on performance of the listed oil and gas firms in Nigeria. The fundamental variable for financial leverage utilized in this present study were Debt Ratio (DR), Debt-to-Equity Ratio (DER), long term Debt Ratio (LTDR) and cost of Debt (COD). All these were the focus of the researchers and the variable that made up the objective of the study. The FS and FA were the control variable chosen by the researchers in the study. Relevant data in relation to the variable in this study were collected from the published and audited financial statement of the listed oil and gas entities drawn as the sample size for the study.

However, the results of the analysis were appropriately summarized by the researchers below:

- i) DR indicated negative and significant influence on ROA (P-value<0.05).
- ii) DER showed negative and insignificant influence on ROA (P-value>0.05).
- iii) LTDR indicated negative and significant influence on ROA (P-value<0.05).
- iv) COD indicated negative and significant influence on ROA (P-value<0.05).
- v) FS showed negative and insignificant influence on ROA (P-value>0.05).
- vi) FA showed positive and significant influence on ROA (P-<0.05).

5.2. Conclusion

From the findings, the researchers concluded that financial leverage had negative and significant influence on performance of quoted of the listed oil and gas companies in Nigeria, while debt-to-equity ratio exerted a negative and insignificant influence on performance of the listed oil and gas companies in Nigeria.

5.3. Recommendations

In line with the results of the analysis conducted on the variable, the following recommendations were proposed by the researcher of the present study stated below:

- i) The debt capital of the quoted oil and gas companies in Nigeria should be minimized by paying off the short-term matured obligations and as well as refunding the principal amount of long-term debt to the holders.
- ii) The proportion of equity capital in the firms' capital structure should be raised or improved by retaining earnings of the listed gas and oil entities in Nigeria in accordance with pecking order theory.
- iii) The companies' managers should ensure that the available debt capital is invested in highly yield investments in order to drive adequate returns to cover the costs of debt capital of the firms.

- iv) Long-term debt of the quoted oil and gas entities should be reduced by either converting some of the debt to equity (debt-to-equity swap) or refunding the principal amount to the holders.
- v) The benefits or returns received from utilization of debt capital in the listed companies should be compared with the costs of the funds by the managers to ensure that the benefits exceed the costs of the debt with higher rate to enable them decide the ones to convert to equity.
- vi) The managers of the firms should check appropriately the composition of their assets to ensure that the proportion of current assets is not higher than non-current assets and non-current assets that do not yield adequate revenue are removed and disposed.

5.4. Business Implications of the Finding

The finding of the study had the following business implications stated below:

- i) Any further increase in the debt capital of the listed oil and gas entities in Nigeria will reduce the profitability of the companies meaningfully.
- ii) Improvement in the equity capital of the quoted entities will raise the performance of the companies materially.
- iii) The performance of the listed oil and gas firms in Nigeria is negatively affected by the long-term debt capital accumulated that any additional long-term debt capital will reduce the profitability of these companies significantly.
- iv) Amelioration of the negative effect of the accumulated debt capital is necessitated by the conversion of some long-term debt to equity capital.
- v) Any further increase in the costs of debt capital beyond the average costs of debt computed in this study will affect the performance of the entities drastically.

5.5. Contribution to Knowledge

The researchers of the present study had been able to ascertain empirically that DR, BER, LTDR and COD had negative influence on the performance (profitability) of the quoted oil and gas companies in Nigeria. Particularly, most of the previous studies in the area of financial leverage and performance of companies did not take in to consideration the cost of accumulating debt capital as a measure of leverage. Thus, this study had been able to establish that when companies' capital structure is highly geared, the cost of the debt capital will negatively influence performance of the firms. The contribution of the present study to knowledge was drawn from the empirical results of the individual variables of financial leverage on performance.

5.6. Suggestion for Further Researches

This study is on the implications of financial leverage on performance of quoted oil and gas companies in Nigeria. The same study can be replicated for the manufacturing sector as well as the cement manufacturing companies to get the clearer picture of this all important Accounting, Economic and Financial management area of interest.

5.7. Limitations of the Study

The study heavily depended on published financial statements of oil and gas companies listed on the Nigerian stock Exchange (NSE), using Return on Asset (ROA) as the proxy for performance, while other performance measures exist. Also, many oil and gas companies in Nigeria are not quoted on the Stock Exchange, consequently, generalizing funding might not be all-inclusive.

However, the highlighted limitations are not too severe to nullify the result and applicability of the findings in policy formulation and implementation.

5.8. Declaration of Conflict of Interest

We declare that no conflict of interest exist as to the investigations, financial sponsorship or authorship.

References

- Abubakar, A., and Garba, A. (2019). Financial leverage and financial performance of quoted service firms in Nigeria. *Nigerian Journal of Management Technology and Development*, 8(2):273-282.
- Abubakar, A., Maishanu, M. M., Abubakar, M Y., and Aliero, H. M. (2018). Financial performance of quoted conglomerate firms in Nigeria. *Sokoto Journal of Management Studies*, 14(1):85-100.
- Abubakar, A., Sulaiman, I., and Haruna, U. (2018). Effect of firms' characteristics on financial performance of listed insurance companies in Nigeria. *African Journal of History and Archaeology*, 3(1): 1-9.
- Ahmed, F., Awals, I., and Kashif, M (2018). Financial leverage and firms' performance: Empirical evidence from Karachi Stock Exchange (KSE)-100 Index. *Etikonomi: Jurnal Ekonomi*, 17(1): 45-56.
- Ajibola, A., Wisdom, O., and Qudus, O. L. (2018). Capital structure and financial performance of listed manufacturing firms in Nigeria. *Journal of Research in International Business and management*, 5(1): 81-89.
- Akhtar, S., Javed, B, Maryam, A., and Sadia, H. (2012). Relationship between financial leverage and financial performance: Evidence from fuel and energy sector of Pakistan. *European Journal of Business and management*, 4(11): 7-17.
- Ali, M. (2014). Relationship between financial leverage and financial performance: evidence of listed chemical companies of Pakistan. *Research Journal of Finance and Accounting*, 5(23): 46-56.
- Aljamaan, B. E. (2018). Capital structure: Definitions, determinants, theories and link with performance literature review in Saudi Arabia. *European Journal of Accounting, Auditing and Finance Research*, 6(2): 49-72.

- Amalendu, B. (2012). Leverage impact on firms investment decision: A case study of Indian Pharmaceutical Companies. *International Journal of Contemporary Business Studies*, 3(1): 35-45.
- Chang, C. C., Batmunkh, M. U., Wong, W. K., and Jargalsaikhan, M. (2019). Relationship between capital structure and profitability: Evidence from four Asian tigers. *Journal of Management Information and Decision Science*, 22(2): 54-65.
- Enekwe, C. I., Agu, C. I. and Eziedo, K. N. (2014). The effect of financial leverage on financial performance: Evidence of quoted pharmaceutical companies in Nigeria. *Journal of Economics and Finance*, 35: 17-25.
- Falope, O. and Ajilore, O.T. (2009). Working capital management and corporate profitability: Evidence from panel data analysis of selected quoted firms in Nigeria. *Research Journal of Business management*, 3(3): 73-84.
- Gadzo, S. G. and Asiamah, S. K. (2018). Assessment of the relationship between leverage and performance: An empirical study of unlisted banks in Ghana. *Journal of Economics and International Finance*, 10(10). 123-133.
- Grace, O. N., Ann, D. N., and Onodugo, V. (2016). Liquidity management and profit performance of pharmaceutical manufacturing firms listed in Nigeria Stock Exchange. *International Journal of Management Science and Business Research*, 5(7): 1-13
- Hashini, A. M. C., and Madumali, P. A. (2018). Effect of firms' size on financial leverage. I Global Scientific Journal, 6(7): 70-76.
- Hassan, S. U., and Farouk, M. A. (2014). Firm attribute and earnings quality of listed oil and gas companies in Nigeria. *Research Journal of Finance and Accounting*, 5(17): 10-17.
- Hirdinis, M. (2019). Capital structure and firm size on firm value moderated by profitability. *International Journal of Economics and Business Administration*, 7(1): 174-191.
- Hussain, M., Shahid, H., and Akmal, M. (2016). Effect of profitability and financial leverage on capital structure in Pakistan Textile Firms. *Arabian Journal of Business and Management Review*, 6(4)1-4
- Iqbal, U. and Usman, M. (2018). Impact of financial leverage on firm performance: Textile composite companies of Pakistan. *SEISENSE Journal of Management*, 1(2): 70-78.
- Karaduman, H. A., Akbas, H. E., Caliskan, A.O., and Dururs, T (2011). The relationship between working capital management and profitability: Evidence from an emerging market. *International Research Journal of Finance and Economics*, 6(5):71-81.
- Karami A., and Akhgar, M. (2014). Effect of company's size and leverage features on the quality of financial reporting of compact companies listed in Tehran Stock Exchange. *Interdisciplinary Journal of Management and Business*, 6(5):71-81.
- Kenn-Ndubuisi, J.I., and Nweke, C. J. (2019). Financial performance in Nigeria: A panel data analysis approach. *Global Journal of Management and Business Research: C Finance*, 19(4):1-8.
- Kothari, C. H., and Sodha, S. (2019). The impact of liquidity and leverage on profitability evidence from selected pharmaceutical companies of India. *An International Peer-Review and Open Access Journal of Social Sciences*, 1(1): 65-71.
- Krishna, K. H., and Kumar, P. (2018). Financial leverage and firm performance an empirical study of selected public-sector undertakings listed at Bombay Stock Exchange (BSE), India *International Journal of Business and Management Invention*, 7(12): 30:34

- Modigliani, F. and Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 53 (3): 433-443.
- Modigliani, F. and Miller, M. H. (1963). Corporation income taxes and the cost of capital; a correction. *The American Economic Review*, 53(3): 433-433.
- Moghadam, M. D., and Jafari, M. (2015). The role of financial leverage in the performance of companies listed in the Stock Exchange in Iran, *Indian Journal of Natural Sciences* 5(30): 7402-7411
- Nasution, A. H., Erlina and Tamizi, H. B. (2018). An analysis on the influence of profitability, firm size, liquidity, and leverage on the expression of firm's social responsibility in banking companies listed in BEI (Indonesian Stock Exchange) *International Journal Research and Review*, 5(9): 92-105
- Nwaiwu, N. J., and Oluka, N. O (2018). Environmental cost disclosure and financial performance of oil and gas in Nigeria. *International Journal of Advanced Academic Research/Financial Management*, 4(2): 1-23
- Ogiriki, T., Andabai, P. W., and Bina, P. A. (2018). Financial leverage and its effects on corporate performance of firms in Nigeria (1999-2016). *Research Journal of Finance and Accounting*, 9(4): 172-178.
- Onyenwe, N. I., and Glory, I. (2017). Effect of financial leverage on firm's performance: A study of Nigerian banks 92006-2015). *International Journal of Recent Scientific Research*, 8(7): 18554-18564.
- Onyinyechi, U. G. (2019). Debt financing and corporate finance performance: a dynamic investigation from Nigeria quoted firms. *American International Journal of Business and Management Studies* 1(1): 48-59.
- Pandey, I. M. (2010). *Financial Management. 10th Edition*; New Delhi: Vikas Publishing House PVT Ltd, p. 1108.
- Paul, O. U., (2017). The impact of leverage financing on financial performance of some manufacturing industries in Nigerian Stock Exchanges. *Saudi Journal of Business and Management Studies*, 2(7): 716-726
- Racheal, J. C., Chelichi, I. F., and Raymond, E. A. (2017). Leverage and Financial performance: Evidence from Nigerian Food Production Firms. *European Journal of Research and Reflection in Management Science*, 5(4): 1-11.
- Rajkumar, P. (2017). Impact of financial leverage on financial performance: Special reference to John Keells Holdings Plc in Sri Lanka. *Scientific Research Journal*, 2(2):15-20
- Rehman, S. S. (2013). Relationship between financial leverage and financial performance: Empirical evidence of listed sugar companies of Pakistan. *Global Journal of Management and Business Research Finance*, 13(8): 33-40.
- Yinusa, O. G., Adelopo, I., Rodionova, Y., and Samuel, O. L. (2019). Capital structure and firm performance in Nigeria. *African Journal of Economic Review*, 7(1): 31-56.