



Capital structure and financial performance of oil and gas companies in Nigeria (2014–2018)

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Abstract

The study examined the impact of capital structure and financial performance of oil and gas companies in Nigeria (2014 – 2018). The annual financial statements of all the listed oil and gas companies in Nigeria Stock Exchange were used for this study. The multiple regression analysis was used to test the relationship between capital structure and financial performance. To return on equity (ROE) and return on asset (ROA), while debt ratio (DR) as capital variable. The study revealed that there is a significant relationship between capital structure and financial performance. Therefore, the study recommends that oil and gas companies' management should leverage on short term debt management strategy to enhance their financial performance.

Keywords: return on equity, financial performance, capital structure, return on asset and debt ratio

Introduction

Oil and gas sector makes a great contribution to economic and social development of Nigeria economy. Consequently, the growth of the oil and gas sector directly affects the performance of the nation. For businesses to survive, it should be able to operate successfully with environmental forces that are unstable and uncontrollable, which can greatly affect decision making process as it relates to capital structure. Debt ratio has being a growing concern in all sector of human endeavour, debt ratio has being used by business organizations in terms of survival, sustainable growth and competitive advantage in the business environment and beyond. The oil and gas industry is not left out in the uses of capital strategies to enhance their organizational strategy. Different forms of capital structure strategy has being applied by these quoted oil and gas companies (Total Nigeria plc, Mobil Nigeria plc, Conoil Nigeria plc and Oando Nigeria Plc) in Nigeria Stock Exchange, ranging from long term debt ratio, medium term debt ratio and short term debt ratio strategies which has actually not sustain the continuous growth of oil and gas companies financial performance as revealed from the annual financial statement from 2014 to 2018 for the various oil and gas companies under study. This study is envisioned to expand the body of knowledge in respect of the application of short term debt ratio strategy and financial performance to companies in the oil and gas sector in Nigeria.

Statement of the Problem

Proper capital structure determination has long been used as a tool for transforming and revitalizing corporations, government agencies and nonprofit making organizations. The selected oil and gas companies (Total Nigeria Plc, Oando Plc, Conoil Plc and Mobil Nigeria Plc) of this study operate in a complex national and global environment. Despite widespread agreement about its benefits, effects of capital structure strategies on performance of these oil and gas companies, the debt ratio are not properly determined and utilized. Although the significance of capital structure on performance in oil and gas companies is still been

misunderstood for various reasons, either there is little understanding of debt ratios of capital structure influence on return on equity and return on asset by managers. The oil and gas industry in Nigeria is characterized by intense rivalry and competition. In order to compete effectively in oil and gas environment it has become imperative to have an aggressive search and development strategies that provide competitive advantages as competitors step-up both offensive and defensive strategies to protect and enhance their market share. Operations functions often lack continuous improvement efforts targeting all inefficiencies and failure modes in actualization of their strategy.

Objectives of the Study

The overall objective of the study is to examine the extent in which capital structure influence financial performance of oil and gas companies in Nigeria. The specific objectives of the study are;

1. To ascertain the extent to which debt ratio influence return on equity of oil and gas companies.
2. To establish the extent to which debt ratio influence return on asset of oil and gas companies.

Research Question

To achieve the specific objective of this study the following research questions was formulated;

1. To what extent does debt ratio affects return on equity of oil and gas companies.
2. To what extent does debt ratio affects return on asset of oil and gas companies.

Research Hypotheses

To achieve the above objective and provide answers to the research question, the following hypotheses were formulated in the null form.

1. Ho: There is no relationship between debt ratio and return on equity of oil and gas companies.

2. Ho: There is no relationship between debt ratio and return on asset of oil and gas companies.

Review of Related Literature

Capital Structure

Capital structure is an important factor that determines the performance of oil and gas companies in Nigeria. Modigliani and Miller (1958) defined capital structure as the mix between debt and equity that a company uses in its operation to enhance financial performance. Capital structure is a mixture of a variety of long term sources of funds and equity finance which including reserves and surpluses of an organization. Capital structure refers to the ratio of debt and equity financing. There has not been an appropriate capital structure that generates the maximum profit for an organization, as too less equity financing increases the control of the owners to a large extent (Bayaraa, 2017). Arulvel and Ajanthan (2013) claimed that capital structure is crucial on how a firm finances its overall operations and growth by using different sources of funds.

Performance

The concept of organizational performance or effectiveness holds a central point in the management of private and public organizations as well as in the field of organizational research. A number of definitions of organizational performance have been proposed by organizational and management scholars, all influenced by the particular organizational perspectives held by the authors or proponents to be financial or operational in nature. Over the last decades, concerns for efficiency, productivity, excellence and total quality have become increasingly widespread in Western organizations (Lewin & Minton, 1986). The concerns are often motivated by the perception of threats to the durability of the organization. They also seem to be justified by the ever-greater international competition for market shares and resources (Maltz & al., 2003).

Return on Equity (ROE)

ROE measure the ratio of net income (income available to common stockholders) to stockholders' equity. It is a measure of company performance from the viewpoint of the shareholders (Nasiru, Ibrahim, Yahya and Aliyu, 2011). Return on equity measures earnings (income) that are available to investors of the oil and gas companies (both ordinary shareholders and preferred shareholders) on the capital they invest in the company (Purnamasari, 2015).

It is expressed as:
$$ROE = \frac{\text{Profit after Tax}}{\text{Share Capital} + \text{Reserves}} \times 100\%$$

ROE increases with more financial gearing, as long as the returns earned on the borrowed funds exceed the cost of the borrowings.

Return on Assets (ROA)

ROA measures the overall effectiveness of management in generating profits with available assets. Wilkinson (2013) noted that ROA reveals how much profit a company earned in comparison to its overall asset. Hargrave (2019) viewed ROA as an indicator of the success of the company for the management of wealth (assets) owned by the company, so that by increasing

the ratio of ROA reflect the company's performance in managing assets held, so that it can generate profits or earnings. The total asset turnover is used to evaluate both the business performance and financial position (Zager et al., 2008 cited in Zhang 2017). Furthermore, return on assets (ROA) and net profit margin are always considered together, because the net profit margin has a direct impact on return on asset (Gibson, 2013). Return on assets (ROA) is most commonly calculated by dividing net income by average total assets

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

Theoretical Framework

Static Trade-Off Theory

Modigliani and Miller (1958) developed the static trade-off theory, which states that companies' debt payments are tax-deductible and there is lower risk involved in taking out debt over equity; debt financing is originally cheaper than equity financing. This implies that the oil and gas companies can lower their weighted average cost of capital (WACC) through a capital structure with debt over equity financing. Though, increasing the amount of debt will also increases the risk to the oil and gas companies in Nigeria, rather offsetting the decrease in the WACC. Therefore, the static trade-off theory identifies a mix of debt and equity where the decreasing WACC offsets the increasing financial risk to a company (Tarver, 2018).

Empirical Review

Yinusa, Ismail, Yulia and Olawale (2019) research paper examined the impact of capital structure on firm performance in Nigeria. The study used dynamic panel model on panel data of 115 listed non-financial firms in Nigeria. The paper used two step generalized method of moment estimation that recognizes the persistence of dependent variable by using its lag value as an explanatory variable in the regression model. The main findings indicate statistical significant relationship exist between capital structure and firm performance particularly when debt financing is moderately employed.

Duarte, Brito, Serio and Martins (2011) explored the effect of operational practices on financial performance. They tested the relationship between selected operational practices (just in time, quality management, services outsourcing and ISO certification) on financial performance, using multiple regression analysis. A sample of 1,200 companies, operating in São Paulo, Brazil, was used. A negative relationship of outsourcing, profitability and growth was found, supporting outsourcing practice. A weaker negative relationship between ISO certification and growth was also found. The interactions between practices and industries were also significant, with mixed results, indicating that the effect of operational practices on performance might be situational. Ajibola, Wisdom and Qudus (2018) studied the impact of capital structure on financial performance of quoted manufacturing firms in Nigeria over the period 2005-2014. Panel methodology was applied. The findings of the panel ordinary least square reveled a positive significant relationship existing between long term debt ratio, total debt ratio and return on equity, while an insignificant relationship between return on equity and short term debt ratio. There was also an insignificant relationship between all the

proxies of capital structure (STD, LTD and TD) and ROA which makes ROE a better measure of performance.

Nassar (2016) examined the impact of capital structure on financial performance of firms in Turkey. The study covers 136 industrial companies annual financial statement listed on Istanbul Stock Exchange from 2005 – 2012. A multivariate regression analyses was employed to test the relationship between the variables of debt ratio to ROE, ROA and EPS. The result revealed that there is a negative significant relationship between capital structure and firm performance.

Abor (2005) carried out a study on the influence of capital structure on profitability of listed companies on the Ghana Stock Exchange during a five years period. The study established that there is significant positively between short-term debt and ROE and reveals that firms will earn more from using short-term debt to finance their business.

Ebaid (2009) examined the relationship between debt level and financial performance of 64 listed non-financial Egyptian companies. The study revealed a negative significant relationship existing between short term debt, total debt and financial performance measured by ROA, but the relationship between financial leverage and ROA was insignificant when long-term debt was used as measure of financial leverage. The study also found out that short-term debt, long-term debt and total debt have no significant influence on financial performance when measured by ROE and Gross Margin. Generally, the results revealed that weak relationship between capital structure choice and firm's performance in Egypt.

Akinyomi (2013) examined the effect of capital structure on firm performance in Nigeria. Data were obtained from financial reports of companies from 2007-2011. Correlation analysis was used in data analysis. The findings revealed that there was a significant relationship between capital structure and financial performance using ROA and ROE.

Magara (2012) did a study on capital structure and its determinants at the Nairobi Securities Exchange. The study sought to find out the major determinants of capital structure. It was established that from the period 2007 to 2011, there was a positive significant relationship between the firm size, tangibility and growth rate and the degree of leverage of the firm. The study did not take into consideration macro- economic factors like inflation and interest rates.

Mwangi (2010) did a study on capital structure on firms listed at the Nairobi Stock Exchange also tried to look on the relationship between capital structure and financial performance. Data was collected using structured questionnaires. The study identified that a strong positive relationship between leverage and return on equity, liquidity, and return on investment existed.

Oyedokun, Job-Olatunji and Sanyaolu (2018) examined the impact of capital structure on financial performance of quoted manufacturing firms in Nigeria over the period 2005-2014. Panel methodology was applied to analyse the impact of capital structure on financial performance of manufacturing firms quoted in Nigeria stock exchange. Ex-post facto Descriptive statistics and regression were used for data analysis. The study reveals that there are statistically significant and non-significant impacts of capital structure on performance variables.

Knowledge Gap

Various studies have been conducted on capital structure and

performance both locally and internationally. There are empirical evidences on capital structure and firm performance to have mixed and inconclusive results from different studies. The measure and techniques of capital structure and firm performance estimation varies from one study to another. The researcher observed that the independent variables (debt ratio) and the dependent variables (return on equity and return on asset) have not been tested on the quoted oil and gas companies in the Nigeria.

Methodology

The research design adopted by this study was expo factor design. The population of the study consists of the only four quoted oil and gas companies in the Nigerian Stock Exchange as December 2018. The sample size of the study was a complete enumeration. The researcher used secondary data of five years annual financial statement from 2014 – 2018 of the oil and gas companies.

List of the oil and gas companies

S/N.	Name of Companies
1	Oando Plc
2	Conoil Plc
3	Mobil Oil Nigeria Plc
4	Total Nigeria Plc

Source: Nigeria Stock Exchange 2019

Method of Data Analysis

The study employed a parametric statistical technique using multiple regression analysis for hypothesis testing.

Model Specification

The model below was formulated so as to test the hypothesis

$$DR = f(\text{ROE} + \text{ROA})$$

Where;

DR = Short term debt

ROE = Return on Equity

ROA = Return on Asset

The econometric form of the model is stated below;

$$DR = \beta_0 + \beta_1\text{ROE} + \beta_2\text{ROA} + \varepsilon$$

Data Presentation and Analysis

Table 1: Descriptive Statistics of variables for the various the listed oil and gas companies

Year	Debt Ratio	ROE	ROA
2014	60.69	-186.54	-15.15
2015	42.84	-38.38	-03.33
2016	46.58	11.45	02.32
2017	42.72	10.95	02.87
2018	45.22	13.30	03.58

Source: Manual computation from annual financial reports (2014 – 2018)

Hypotheses Testing

1. Ho: There is no relationship between debt ratio and return on equity of oil and gas companies.
2. Ho: There is no relationship between debt ratio and return on asset of oil and gas companies.

Table 2: Descriptive Statistics

	DR	ROE	ROA
Mean	4.761000E1	-3.784400E1	-1.936000E0
Median	4.522000E1	1.095000E1	2.320000E0
Maximum	60.6900	13.3000	3.5800
Minimum	42.7200	-1.8654E2	-15.1500
Std. Dev.	7.4920691E0	8.5932022E1	7.8757177E0
Skewness	1.979	-1.916	-1.667
Kurtosis	4.058	3.629	2.488
Probability	0	0	0

Source: SPSS

Table 3: Correlation result between debt ratio and performance (ROE and ROA)

Variable	Performance Variables	
	ROE	ROA
Capital Structure (DR)	.917	.879
R ²	.836	.772

Source: SPSS test results

Table 4: Regression result between debt ratio and performance (ROE and ROA)

Variables	Financial Performance			
	ROE		ROA	
Constant	461.317	0.037	42.043	.057
DR	-10.484	0.030	-.924	.050
t	-3.904		-3.189	
R ²	.836		.772	
F Change	15.244		10.168	

Source: SPSS test results

Interpretation and Discussion of Results

Table 2 above represents the result for the normality test conducted to determine the normality distribution of the error term of the variables under review. It was observed that DR has a mean value of 4.76×10 and a standard deviation of 7.49. The maximum and minimum values stood at 60.69 and 42.72 respectively. ROE was observed to have a mean of 3.78×10 and a standard deviation of 8.59×10 . The maximum and minimum values were 13.3 and -1.87 respectively. The mean value for ROA was 1.93×10 with a standard deviation of 7.88×10 . The maximum and minimum value stood at 3.58 and -15.15 respectively. The table variables indicate that all the variables appear not normally distributed with a probability value of less than 0.05 in the model.

In table 3 above, the R value is 0.917, while the R-square is 0.836 for ROE respectively. The value of R is 0.879 and R-square is 0.772 for ROA. The R value result for ROE and ROA both reveal significant relationship of 0.917 and 0.879, and the R-square results for ROE (83.6%) and ROA (77.2%) reveal the impact of DR on both variables.

Form table 4 above, the multiple regression results revealed a significant relationship between DR and ROE -10.48, and a significant relationship between DR and ROA at -0.924 of the variables examined. The co-efficient of determination are 83.36% and 77.2% of variance in the capital structure is accounted for by ROE and ROA. This indicates that an increase in DR by one naira will increase ROE and ROA by 10.48 and 0.924 naira respectively. R-square average is 80.4%, which means 80.4% of variance of performance variables is accurate by

these factors, while the remaining 19.6% of variance with performance variables is attributed to other factors. F-change of ROE (15.244) and ROA (10.168) was used to test the hypotheses that the variation in the independent variable explained a significant portion of the variation in the dependent variables. The F-change as shown in the table indicates that the model was significant in explaining the companies' financial performance. The result is summarized as;

$$DR = 461.317 - \beta_1ROE + \beta_2ROA + \varepsilon$$

Discussion of findings

This result from hypothesis one and hypothesis two, which both revealed a significant relationship between capital structure and financial performance of the oil and gas companies in Nigeria, is consistent with the finding of Abor (2005), Akinyomi (2013), Oyedokun, Job-Olatunji and Sanyaolu (2018) and Yinusa, Ismail, Yulia, & Olawale (2019), who found a statistically significant relationship between capital structure and financial performance, while the results of this study is inconsistent with the findings of Ebaid (2009), Nassar (2016) and Ajibola, Wisdom and Qudus (2018), who found a weak or no relationship between capital structure and financial performance of firms.

Conclusion

It was observed from this study that there is a positive relationship between capital structure and financial performance of listed oil and gas companies in Nigeria stock exchange, related literature was reviewed to identify the relevance of capital structure and financial performance in the oil and gas companies in Nigeria. Subsequently, return on equity (ROE) and return on asset (ROA) were used as the measures of financial performance. The result from multiple regression analysis revealed that oil and gas companies' capital structure has a significant relationship with financial performance. The findings of the study were consistent with some existing study.

Recommendations

The oil and gas companies' management should leverage on short term debt management strategy to enhance their financial performance.

Suggestions for further studies

Future researchers should incorporate other sector in order to determine the extent of capital structure across other industries performance. Future researcher should also expand the scope of the study by increasing the sample size and the number of financial performance indicators, instead of limiting the study to quoted oil and gas companies in Nigeria.

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