Innovations

Firms' indebtedness and financial performance of the listed oil and gas firms in Nigeria

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Abstract
This study examined the effects of Indebtedness on Financial Performance (FP) of listed Oil and Gas (O&G) firms in Nigeria; for the period of 2011-2020 (10years). This was done in respect of the measures of Indebtedness [Long Term Debt Ratio (LTDR), Total Debt Ratio (TDR) and Debt to Equity (DTER)] in relation to FP proxied with Return on Assets (ROA). Secondary data were collected from annual report of selected O&G quoted companies and analyzed with descriptive statistics, correlation matrix and regression analytical technique using the E-VIEW (version 9.0) statistical tool. The findings revealed that LTDR, TDR and DTER does not have significant effect on ROA. The study concluded that Indebtedness does not exert significance effect on FP of listed O&G firms in Nigeria. The study suggested that in order to optimise the earning potential of the oil and gas enterprises in Nigeria as well as to produce a respectable return on the loan, long-term debts should be applied to long-term business strategies. The first line of attack should once more be equity funding.

Keywords: 1.*Indebtedness, 2.Debt, 3.Equity, 4.Performance and firms.*

Introduction

Debt capital as a capital which a business raises by taking out a loan, it can be categorized in terms of long term, midterm, or short term; all of which apply differently to different institutions. The difference between debt capital and equity or share capital is that debt capital suppliers often receive a fixed yearly percentage return on their loan rather than becoming owners of the business like equity or share capital subscribers do. On the expansion of organisations and for its strategic investments, debt financing offers both benefits and drawbacks that help the businesses avoid circumstances that would hinder their financial performance (FP).

As the globe becomes more globalised, a company's business performance serves as a gauge of its success and competitiveness (Abosede, 2020). Firms FP should continually be measure in order to keep the company in a going concern position in current and future time as well (Lenka, 2017). Indebtedness refers to the way the

firms finance its assets. Its represent the long term, short term and total debt located at the left hand side of the statement of financial position which is the liability plus equity of the company (Abosede, 2020).

It may also refer to the volume of debt, whether long-term, short-term, or overall, that a company or investor uses to finance their enterprise. It is a measurement of the proportion of equity and debt that a corporation employs to finance its assets, according to Joseph (2018). As a result of the financial benefits it offers (also known as a tax shield), scholars feel debt financing is preferable to internal financing (Abubakar & Garba, 2019). One of a company's long-term activity financing sources that significantly affects how well it performs is debt (Nwude, Itiri, Abgadua & Udeh, 2016; Prempeh, Sekyere & Asare, 2016). The agreement that the company must repay the debt and the interest charges are the main problems or challenges with debt because they put the company at risk of financial distress or bankruptcy (Nwaolisa & Chinjindu, 2016). Additionally, a portion of the firm's cash flow must be used to pay off the debt (Jeleel & Olayiwola, 2017).

Over indebtedness is a fundamental element of social exclusion that can result in humiliation, loss of reputation, and in the worst situations, suicidal thoughts (Schicks, 2014). Financial leverage increases as a company's debt load increases. External sources are one of the main methods by which a company can boost performance (Kenn-Ndubuisi & Nweke, 2019). (Ken-Ndubuisi & Oyema, 2018) claim that external sources are crucial for accelerating a company's growth since they enable them to use their existing resources to grow faster than they had planned. Consequently, various businesses use various forms of funding to support their operations (MacCarthy & Ahulu, 2019). In terms of FP, companies with a lower amount of debt will probably fare better.

The price of debt is fixed. The level of indebtedness therefore rises as a company's debt level climbs. Borrowed money used for investments is referred to as indebtedness. It is a sign of good corporate governance when management of a company uses debt to boost the firm's profit. Equity or debt financing can be used to fund investments by oil and gas companies (Wainaina, 2014).

Indebtedness can be in form of a loan or in form of debt (other borrowing). Indebtedness proceeds are reinvested to earn a greater return more than interest expense and cost incurred due to debt acquisition. This means that if oil and gas company’s marginal rate of return on asset is higher than the oil and gas (O&G) company’s marginal rate of interest expense payable on the debt, then the oil and gas company should increase the debt level since it will also increase return on equity. Contrary, when the O&G 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 return on equity (Kithandi and Katua, 2020). Hence, this study examines the effects of indebtedness on FP of listed O&G companies in Nigeria.

Statement of the Problem

The debt level in O&G firm determines the amounts of fixed costs paid by the oil and gas firm. This fixed cost associated with the debt/borrowed finances is referred to as cost of debt which is generally called interest amount. Also, O&G companies that borrow so much from their creditors incur high cost of debt hence lowering the profits/net income, thus, indebtedness affect companies’ FP and income levels of companies listed in O&G Sector in Nigeria.

Since the profit will be needed to finance the debts, this implies that the bigger the debt, the lesser the profit. No matter what kind of debt is accumulated or where it comes from, a growth in the ratio of debt has a negative impact on the company's reputation. As stated farther down a crucial part of the Nigerian economy is played by the O&G sector. Nigeria's economy increasingly depends on crude oil for survival after oil was

discovered there in 1956, which caused the agriculture sector to collapse. The profitability of Nigeria's O&G business and its level of debt, according to Nwaolisa & Chjindu (2016), are in contradiction. From 2003 to 2012, the performance of firms in Nigeria was examined by Oladejo, Tolulope, Ikpetan, and Olokoyo (2015). Return on asset, leverage, firm size, tax, and year effect were the study's study variables. It was discovered that there was a negative relationship between leverage and a firm's FP and a positive relationship between a firm's FP and three explanatory variables. The study used secondary data from the annual reports of six selected Nigerian petroleum companies.

The theory of static trade-offs, which was supported by Oke & Obalade (2015), claimed that highly profitable companies use more debt to finance their operations because there is little risk associated with bankruptcy and they anticipate that the tax shield will be significant for the company's financing needs. Nwaolisa and Chijindu (2017) used return on asset, return on equity, debt to equity, and earnings per share as proxies for FP of the companies from 1993 to 2013 and discovered a negative impact on the profitability of O&G corporations. The results, however, go against Coke & 'Obalade's (2015) hypothesis that large companies with greater tangible assets would finance their operations with greater debt. In a study by Akparhuere, Eze, and Unah (2015) on the impact of capital structure on retained earnings in the O&G industry, it was found that retained earnings positively affect determined borrowing while share capital positively and strongly determines retained earnings. The study came to the conclusion that borrowing should be increased in order to increase retained earnings.

Many predictors of FP have been identified in studies conducted in Nigeria and elsewhere, including those by Oladeji, Tolulope, Ikpefan, and Olokoyo (2015), Akpahuere, Eze & Unah (2015), Oke & Obalade (2015), and Nwaolisa & Chijindu (2016). Some of the predictors that have been identified are return on asset, tax, earnings per share, retains earnings, profitability, age, and tangibleness. However, the link between debt and a company's performance in the downstream O&G sector has not yet been conclusively established because there has been little research on the impact of debt on a firm's FP, particularly in Nigeria's downstream O&G sector. In addition, the study's variable analyses' scope also needs to be expanded.

The inability of the companies under study to trade on the Nigerian exchange group (NEG), when combined, has made it difficult to fully comprehend the impact of debt on the FP of Nigerian O&G corporations. To that end, this study focused on the broad impact of indebtedness on business FP, which has challenged empirical evidence of the underlying association between indebtedness and firm’s FP of the O&G industries. This revealed a noticeable gap in the empirical research between indebtedness {Long Term Debt Ratio (LTDR) and Total Debt Ratio (TDR)} and FP (proxy with Return on Assets (ROA)) of listed O&G firms in Nigeria, this now serve as a yardstick for this study.

Review of Related Literature

Conceptual Review

Indebtedness

Kennon (2010) defined indebtedness as the proportion of capital (money) used in a certain sort of business. According to Pandey (2005), a company's indebtedness shows the proportionate relationship between long-term debt and equity, whereas its financial structure is represented by the numerous ways it raises money. According to Abor (2005), a company's debt is the precise proportion of equity and debt utilized to finance its operations. A company's method of financing its assets through a combination of debt, equity, or hybrid securities is referred to as its level of indebtedness (Saad, 2010). In this context, "hybrid securities" refers to a class of securities that contain aspects of debt and equity, have a set or variable rate of return, and give the

holder the option of converting the security into a share of the underlying company. Long- and short-term debt, common equity, and preferred equity collectively make up a company's total debt (San & Heng, 2011).

Combining a company's debt and equity is what is referred to as indebtedness. It may also be referred to as the method by which a corporation finances its assets through a combination of equity, debt, or hybrid securities. Because hybrid securities combine both equity and debt, a company's indebtedness is the sum of its liabilities. According to Asaolu (2021), the different parts of a company's debt can be broken down into three categories: equity capital, preference capital, and long-term loan (debt) capital. Equity capital is referred to as contributed capital, which is the money that was initially invested in the company in exchange for stock shares, and retained profits, which are profits that the company has held onto for the purposes of bolstering its balance sheet, business expansion, growth, and acquisition. Asaolu (2021) views debt capital, which is long-term debt used by the company to finance its investment decisions while coming up with its principal and also paying back interest, as a hybrid that combines the features of debentures and equity shares except for the benefits. Preference capital, however, is seen as a hybrid.

Long Term Debt

Long-term debt is a resource that has a maturity date that is more than a year from the date of the current balance sheet (Lancett, 2008). When the time left before the loan is due for repayment shrinks to less than a year over time, long-term debt becomes short-term debt. Investments in a company that have longer payback times are financed with long-term debt. Because it is protected by explicitly specified contractual terms, long-term debt financing typically has lower sensitivity to short-term shocks. This makes them more stable than short-term debt (Muchugia, 2013).
The expansion of the business's operating capacity and the purchase of capital assets like machinery are both intimately related to long-term debt financing. The majority of the time, long-term debt financing is organised and defined (Lancett, 2008). Hence, monitoring and maintaining long-term debt financing accounts requires less resource allocation than short-term debt financing, like supplier credit, which is subject to change over time and requires continuous monitoring. Alternatives to needing to buy the asset, such as long-term debt financing solutions like leases, give a certain amount of freedom (Uremadu and Onyekachi, 2019). A common form of financing employed globally is long-term debt. With little attention given to its literature, long-term debt financing is a rapidly expanding concept in the O&G sector.

Total Debt Ratio

All other factors being equal, a higher leverage ratio would lead to a decrease in the agency cost of outside equity and improved firm performance. The agency hypothesis, according to Muritala (2012), assumes that the higher the leverage is expected to lower the agency costs, which reduces inefficiency and improves company performance. Therefore, we anticipate that the debt ratio will continue to have a negative correlation with company performance.

Debt to Equity

Debt financing occurs when a company sells corporate bonds, trade bills, or notes to retail, institutional, or both, investors in order to raise funds for working capital or capital expenditures. Lenders obtain a commitment that the debt will be returned in full, including interest, in exchange for their financial support. Although it might be difficult to get, debt financing frequently gives cash at lower rates than equity financing,

particularly during periods of historically low interest rates. The fact that loan interest is tax deductible is another benefit of debt financing (Thorsell & Cornelius, 2009).

Equity financing is the practise of raising money by selling shares in a business. Equity financing encompasses not only the selling of common equity but also the sale of other equity or quasi-equity instruments including preferred stock, convertible preferred stock, and equity units that include common shares and warrants. With equity financing, businesses have less debt to repay and no longer experience problems with credit worthiness. However, owners of the business lose control, split profits, and possible conflict may occur (Pandey, 2005).

In this way, a company's debt is the combination of equity and capital that is used to finance its operations and the acquisition of assets. However, the most important and challenging questions in corporate finance are whether or not optimum indebtedness exists (Okonkwo, Adigwe, Ezu and Oko, 2020).

Financial Performance (FP)

FP is a subjective indicator of how well a company can utilise its resources in order to carry out its core function of conducting business and generating revenues in the long run. Financial performance is also used as a broad indicator of a company's overall financial health over time, and it can be used to compare similar companies within the same industry or across all related businesses or sectors. Accounting Key Performance Indicators like Return on Assets, Return on Sales, Earnings Before Interest and Tax, Economic Value Added, or Sales Growth are used to measure financial performance (Crabtree & DeBusk, 2008). Since any business that seeks to make a profit publishes these numbers for its yearly financial reporting, these data have the benefit of being widely available (Chenhall, et al., 2007). To measure the amount of EBIT a company can generate for each Naira of assets it holds, this study adopted the use of return on assets.

Return on Assets (ROA)

ROA entails the classical financial indicators or accounting ratios used by firms to measure profitability. This concept has been perceived and applied differently. ROA is an indicator of how profitable a company is, relative to its total assets. It gives an idea as to how efficient management is at using its assets to generate earnings. ROA is an indicator of how profitable a company is relative to its total assets. An indication of management's asset use efficiency is provided by ROA. ROA is shown as a percentage and is calculated by dividing a company's annual earnings by all of its assets (Haniffa and Huduib, 2006).

Theoretical Review

Pecking Order Theory (POT)

The most well-known theories of corporate leverage is Donaldson's POT of debt, which was first presented in 1961. It contradicts the notion that firms should have a certain mix of debt and equity financing that lowers their cost of capital. According to the notion, a corporation has a clearly defined order of preference when it comes to the financial sources it chooses to utilise while looking for ways to finance its long-term investments. The use of internal money, or retained earnings, should be a company's first choice, followed by debt and external equity, according to this statement. He contends that when businesses become more successful, they borrow less money since they will have enough internal resources to fund their investment projects (Uremadu and Onyekachi, 2019).

Furthermore, he contends that a corporation should look for external financing when its internal resources are insufficient, preferably through bank loans or corporate bonds. The final and least desirable source of funding is the issuance of fresh equity capital after exhausted internal and bank borrowing as well as corporate bonds. POT, which claims that businesses priorities their sources of financing (from internal financing to equity) in accordance with the principle of least effort or least resistance, raising equity is preferred for financing, companies priorities their sources of funding (from internal financing to equity) according to this theory. Internal funds are therefore utilised first, followed by the issuance of debt when necessary and the issuance of equity when it is not practical to issue any more debt (Uremadu and Onyekachi, 2019).

There is no clearly defined target debt ratio, according to Olarewaju (2019), who cited Myers and Majluf's adaptation of the POT from 1984. This theory explains the effect of asymmetric knowledge upon the mispricing of new securities. In their opinion, managers are often seen by investors as having more knowledge of the companies' price-sensitive information. According to investor view, managers only issue dangerous securities when they are excessively priced. New stock issues are underpriced as a result of investors' perceptions. The existing stockholders can suffer significant losses as a result of this under pricing when it gets to a certain point. Companies typically meet their financing needs by choosing retained earnings as their primary source of funding, followed by debt, and then external equity financing in order to avoid the issue caused by information asymmetry (Olarewaju, 2019).

POT served as the foundation for this study since it encompasses all relevant aspects of corporate organisation debt and how it affects firm FP.

Agency Theory (AT)

This theory explains the interaction between the principal (shareholders) and the agent of the principal (business managers). This shows that the company might be seen as a loosely defined network of contracts between resource owners. When one or more people, known as principals, hire one or more people, known as agents, to perform a service and then give the agents decision-making authority, an agency relationship is created (Olarewaju, 2019).

The idea of AT was first put forth by Berle and Means in 1932, who contended that ownership and control of large firms are increasingly becoming separate due to a constant decrease of equity ownership. Professional management has the chance to put their interests ahead of shareholders in this scenario.

Jensen and Meckling (1976), referenced by Olarewaju (2019), stated that for an ideal debt level in indebtedness by minimising the agency costs resulting from the divergent interest of managers with shareholders and debt holders. They recommend either increasing managers' stock ownership in the company to align their interests with those of the owners or using debt as a tool to rein in managers' propensity for excessive extra-consumption. Agency dilemma related to free-cash flow is presented by Jensen, (1986), as quoted by Olarewaju (2019). The amount of "free" cash that managers have access to can be decreased, he claimed, by increasing the stake that managers own in the company or by increasing the debt level.

Debt can be used as a control mechanism, with lenders and shareholders acting as the main participants in the corporate governance system, since organisations with a high debt to equity ratio provide management less decision-making authority than do firms with a high equity ratio.

Empirical Review

Asaolu (2021) investigated the variations in the dynamics of the O&G and Manufacturing sectors in the United States as well as the effects of debt on their FP. The study uses secondary data from the New York Stock Exchange (NYSE) and NASDAQ for a ten (10) year period, from 2010 to 2019. It produced the estimation findings using E-View 9.0. To test the set of hypotheses, the study has used sectoral analysis and the panel least square estimate approach on the data that have been gathered. The outcome demonstrates that while debt structure improves the FP, a fast increase in such leverage tends to lower firm FP for all the firms examined. The coefficients of asset tangibility, interest and dividend growth, directors' shares/inside ownership, and non-debt tax shield are extremely important in the outcome. They show positive correlations, suggesting that these factors influence company FP on average across both sectors; in particular, the findings show that more tax-efficient enterprises do better. The study so suggests, among other things, that choosing debt as a source of capital financing be done in line with the costs and benefits connected with the usage of debt.

Oke and Fadaka (2021) looked into the debt levels and FP of Nigerian companies that manufacture consumer items and are listed on the NEG. This study was necessary due to discrepancies in previous findings regarding the link between debt and corporate success. Secondary data was gathered from companies that manufacture consumer items and are listed on the NEG. In this study, 18 listed manufacturing enterprises from 2008 to 2018 were sampled using the panel data approach. The study employed return on equity, return on asset, Tobin's Q, and earnings per share as the dependent variables, which are widely used accounting and financial indicators in the extensive literature on the topic. Long-term debt, short-term debt, overall debt ratios, and growth were used to measure indebtedness, the study's independent variable. Size was a control variable in the study as well. The findings of the regression analysis used in this study demonstrate a negative link between FP and debt levels in publicly traded Nigerian manufacturing enterprises. For the 18 companies that manufacture consumer items, growth and performance also had a positive link.

The effect of debt on the operation of publicly traded Nigerian downstream O&G firms is examined by Abosede (2020). The primary goal of the study is to determine whether or not debt has an effect on the financial performance of the publicly traded Nigerian downstream O&G firms, using ROA and ROCE as proxies for FP. The study analysed secondary data from 11 oil and gas businesses that were listed on the NEG between 2007 and 2019. To investigate the association between the variables, multiple regressions were used to evaluate the obtained data. Using the pooled ordinary least square, fixed effect, and random effect models, long-term debt, short-term debt, and total debt are used as proxies for debt. Following calculation, the study discovered that long-term debt has a negative and considerable impact on the FP of listed Nigerian downstream O&G companies. The report suggests that listed downstream O&G corporations in Nigeria should effectively utilise long-term debts to grow their capital employed with the goal of achieving a higher return on investment to offset their cost of capital and boost their retained earnings.

In their 2020 study, Okonkwo, Adigwe, Ezu, and Oko sought to determine the impact of debt on the FP of O&G businesses listed on the NEG. The main goal is to establish a link between total debt to total equity on return on equity and debt to total assets on return on assets of oil and gas businesses listed on the NEG. The financial statements and annual reports of the oil and gas businesses listed on the Nigerian Stock Exchange were a reliable source for secondary data. The statistics range from 2005 to 2018. The data was analysed using E-views 10.0 software. The results of the data analysis show that total debt to total equity has a significant impact on return on equity of O&G companies listed on the NEG while total debt to total assets has no significant impact on return on assets of O&G companies listed on the NEG. The study came to the conclusion that financial performance is independent of debt because businesses prefer internal financing before turning to any kind of external financing because it has lower costs and doesn't necessitate the additional disclosure of confidential financial information that could result in stricter market discipline and a possible loss of

competitive advantage. It suggests that oil and gas companies fund their operations with more equity capital as it has a substantial impact on shareholders' wealth and that firm management should create a debt-equity mix capable of boosting return on assets regardless of the measurement of indebtedness measure employed.

Using secondary data from the annual reports of seven publicly traded O&G companies in Nigeria and the daily official lists of the NEG for the years 2005 to 2016, Abubakar (2020) studied the impact of financial leverage on FP. Descriptive statistics like mean, median, minimum, maximum, standard deviation, coefficient of variation, skewness, and kurtosis were used to present the data, and the random effects panel estimator was used to assess the impact of financial leverage variables like short-term debt ratio (STDR), long-term debt ratio (LTDR), and total debt equity ratio (TDER) on financial performance as measured by return on equity (ROE). The F-test and the Hausman test for best model selection revealed that the random effects model (REM) was the best panel estimator in this study. The regression results show that TDER has a significant negative impact on financial performance as measured by ROE while STDR and LTDR have no significant impact. The study comes to the conclusion that increased financial leverage in the debt of listed O&G corporations in Nigeria degrades shareholders wealth as assessed by ROE. According to the report, oil and gas companies should replace at least 90% of their debt with equity through bonus issues, rights issues, and better retention ratios in their debt.

Oyakhire (2019) investigated the relationship between debt and O&G company FP in Nigeria (2014–2018). For this study, the annual financial statements of all the listed O&G businesses on the NEG were used. The association between debt and financial success was examined using multiple regression analysis. Return on equity (ROE) and return on asset (ROA), with debt ratio (DR) serving as a capital variable According to the study, debt and financial performance are significantly correlated. Therefore, the study suggests that management of O&G businesses should make use of a short-term debt management plan to improve their financial performance.

The effect of debt on corporate FP in Nigeria was explored by Uremadu and Onyekachi (2019), with a particular focus on the consumer goods sector of the economy. The data were analysed using multiple regression and OLS. According to the study's findings, Nigerian consumer goods companies' corporate FP was negatively and negligibly impacted by their level of debt. Long-term debt to total assets had a negative and minor effect on returns on assets, as did total debt to equity. Thus, the study came to the conclusion that debt levels are not a significant factor in determining how well a company performs. Hence, the study advises managers to exercise caution when using debt as a source of financing because there is a link between debt and a corporate firm's performance that is unfavourable. Additionally, as this is congruent with the pecking order theory, the corporate entity should endeavour to finance its operations using retained earnings and turn to debt as a last resort. This suggests that the study strongly advises corporate firms to use more equity than debt in financing their business activities. This is because, despite the fact that debt capital can increase a business's value, there comes a point where it becomes detrimental (negative) or unfavourable to the business.

Usman (2019) looked at how debt affected the Nigerian consumer goods sector's FP. The consumer goods businesses registered on the NEG made up the study's population. A sample size of six companies was used, and a filter sampling technique was used during a five-year period, from 2012 to 2016. Financial success as measured by return on asset (ROA) serves as the study's dependent variable, and its independent variables are long-term debt (LTD), short-term debt (STD), and shareholders' money (ROE). Using E-views 8.0, descriptive statistics, correlation analysis, and regression analysis were performed on the data obtained from the annual report and accounts of the chosen companies. At a significance level of 0.05 (5%), the analysis's findings were tested. The study's conclusions indicate that short-term indebtedness have no discernible influence on the FP of publicly traded companies in Nigeria's consumer goods sector. Additionally, it was shown that the FP of

listed companies in the Nigerian consumer goods sector is not significantly impacted by long-term indebtedness. Additionally, it was found that equity significantly affects the financial success of listed companies in Nigeria's consumer products sector. The study suggested that instead of basing their judgments on arbitrary generalizations, companies should think critically and compare the expense of accessing a particular source of capital with the benefit that may be obtained from it. Managers will be able to guarantee a profit at the end of the day with the help of this.

Research Methodology

The Ex-Post Facto research design was used. This type of research design is one that takes place after the event or fact had taken place. The secondary source of data is used for this study. The annual reports and accounts of the 10 companies in the O&G sector listed in the Nigeria stock exchange during the financial years of 2011 to 2020 are used for getting data to measure indebtedness and financial performance of the listed O&G firms in NEG

The statistical technique of data analysis was adopted as well as descriptive statistics, correlation matrix and ordinary least square (OLS) method by using E-VIEW 9.0 statistical computer software. The regression model was adopted from the study of Alamgir, Abdullah & Khalid (2019), which was modified to suit the variable of the study. The model which specifies that financial performance (proxy with Return on Assets (ROA) is significantly influenced variables of indebtedness {Long Term Debt Ratio (LTDR), Total Debt Ratio (TDR) and Debt to Equity Ratio (DTER)} is formulated as follows,

ROA = f (LTDR, TDR, DTER)

ROA= β0 + β_1LTDR **+β_2TDR + β_3DTER +E**

Where;

E = Error Term

β0 = Intercept

β1 – β3 = Coefficient of the Independent Variables.

The a priori expectation is β1, β2, β3, is lesser or greater than 0.

Result and Discussions

Table 4.2.1: Descriptive Statistics

	ROA	LTDR	TDR	DTER
Mean	-6.356028	0.235799	0.680851	2.356007
Median	0.030517	0.110413	0.696838	2.058642
Maximum	13.35961	1.801022	1.375801	15.90025
Minimum	-260.3597	0.000671	0.056357	-13.04063
Std. Dev.	37.83394	0.297789	0.212858	2.959737
Skewness	-6.232559	2.661916	0.304990	-0.617708
Kurtosis	41.35872	12.58251	5.194597	13.68659
Jarque-Bera	6574.865	490.6850	21.18568	472.5620
Probability	0.000000	0.000000	0.000025	0.000000
Sum	-616.5347	23.10826	66.72345	230.8887
Sum Sq. Dev.	137415.1	8.601766	4.394926	849.7243
Observations	97	98	98	98

Source: E-VIEW Output Version 9.0, 2022.

Table 4.2.1 above shows the summary statistics for the LTDR, TDR, DTER and ROA. ROA had a mean of -6.3560 for the ten (10) O&G firms within the period 2011 to 2020, with a maximum and minimum of 13.3596 and -260.3597 respectively while the standard deviation (SD) is 37.8340. This shows that ROA volatility is about 37.83%. LTDR. From the summary statistics result above, LTDR have a minimum value of 0.0007, maximum value of 1.8010, an average value of 0.2358 and SD value of 0.2979. This shows that LTDR volatility is about 29.79%. TDR is represented by total debt divided total assets. From the summary statistics result above, TDR have a minimum value of 0.0564, maximum value of 1.3758, an average value of 0.6809 and SD value of 0.2129. This shows that TDR volatility is about 21.29%. DTER, is represented by Total debt (long-term & short-term debt) divided by equity. From the summary statistics result above, DTER have a minimum value of -13.0406, maximum value of 15.9001, an average value of 2.3560 and SD value of 2.9597. This shows that DTER volatility is about 295.97%.

Finally, the SD shows that ROA is the most volatile variable and follows by DTER. The kurtosis that measures the peakness of the distribution reveals that ROA and DTER are leptokurtic indicating that the distributions are peaked relative to normal distribution, while LTDR and TDR are platykurtic, which implies that the distribution of the variables are flat relative to normal distribution. Lastly, the Jarque-Bera statistics reveals that the variables are normally distributed at 5% significant level. Hence, Jarque-Bera statistics for all variables is significant because they are lesser than 0.05; hence we reject the null hypothesis and conclude that the series is normally distributed (or have a normal distribution).

Table 4.3.1: Correlation output

	ROA	LTDR	TDR	DTER
ROA	1.000000			
LTDR	-0.127675	1.000000		
TDR	0.091437	-0.035311	1.000000	
DTER	0.058245	-0.151705	0.231319	1.000000

Source: E-VIEW Output Version 9.0, 2022.

LTDR and ROA

The LTDR is strongly negatively correlated with FP proxy by ROA with a coefficient of correlation of -0.1277. The correlation coefficient (r) of -0.1277, which indicate a strong negative correlation between LTDR and FP proxy by ROA because the correlation coefficient (r) of -0.1277 is greater than 0.05.

TDR and ROA

TDR has strong positive correlation of FP proxy by ROA. With correlation coefficient (r) of 0.0914, which indicate a strong positive correlation between TDR and ROA because the correlation coefficient (r) of 0.0914 is greater than 0.05. This implies that an increase in the TDR would have influence on the FP of the listed O&G firms in Nigeria.

DTER and ROA

DTER has strong positive correlation of FP proxy by ROA. With correlation coefficient (r) of 0.0582, which indicate a strong positive correlation between TDR and ROA because the correlation coefficient (r) of 0.0582 is

greater than 0.05. This implies that an increase in the TDR would have influence on the FP of the listed O&G firms in Nigeria.

Finally, the correlation matrix that is presented in Table 4.3.1, and it shows the absence of multi-co linearity among the variables since the correlation values are less than 0.7. Furthermore, the result shows the explanatory variables namely; LTDR has negative strong correlation with ROA while TDR and DTER have positive strong correlation with ROA in Nigeria.

Table 4.4.1: Regression Result

Dependent Variable: ROA
Method: Panel Least Squares
Date: 10/01/21 Time: 23:56
Sample: 2011 2020
Periods included: 10
Cross-sections included: 10
Total panel (unbalanced) observations: 97

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.22206	13.41067	-0.985936	0.3267
LTDR	-15.40693	13.12776	-1.173614	0.2435
TDR	14.58572	18.64943	0.782100	0.4361
DTER	0.264318	1.356180	0.194899	0.8459
R-squared	0.024266	Mean dependent var		-6.356028
Adjusted R-squared	-0.007210	S.D. dependent var		37.83394
S.E. of regression	37.97009	Akaike info criterion		10.15184
Sum squared resid	134080.7	Schwarz criterion		10.25801
Log likelihood	-488.3641	Hannan-Quinn criter.		10.19477
F-statistic	0.770939	Durbin-Watson stat		1.833916
Prob(F-statistic)	0.513148			

Source: E-VIEW Output Version 9.0, 2022.

$H0_1$: There is no meaningful connection between LTDR and ROA of O&G firms in Nigeria.

The coefficient of LTDR is -15.4069 with a t-value of -1.1736 and an associated p-value (sig. value) of 0.2435 in the Multiple Regression result in Table 4.4.1 above. This implies that it has a detrimental impact on the ROA of O&G companies in Nigeria. The effect is not meaningful connection, as indicated by the p-value of 0.2435 being greater than 0.05 (5%) level significance. The null hypothesis, which states that there is no meaningful association between LTDR and ROA of O&G enterprises in Nigeria, is thus accepted in place of the alternate hypothesis. The coefficient of LTDR is -15.4069, indicating that there is a negative correlation between LTDR and ROA for O&G companies in Nigeria. The ROA of Nigerian O&G companies would decline by 1540.69% for every one percent (1%) change in LTDR. LTDR has no appreciable impact on the ROA of Nigerian O&G companies. In contrast to the findings of Adegboyega, Jayeola, Kajola, and Asaolu (2019), who established a significant relationship between LTDR and firm FP, this finding is in line with those of Olarewaju (2019) and Abubakar (2020), who found no significant relationship between long-term debt and firm FP.

$H0_2$: There is no meaningful connection between TDR and ROA of O&G firms in Nigeria.

The coefficient of TDR is 14.5857 with a t-value of 0.7821 and an associated p-value (sig. value) of 0.4361 for the Multiple Regression results in Table 4.4.1 above. This shows that TDR has a favourable impact on O&G enterprises' ROA in Nigeria. This suggests that the effect is not meaningful connection because the p-value of 0.4361 is above the threshold of 0.05 (5%) level significance. As a result, we reject the alternative hypothesis and support the null hypothesis, according to which there is no connection between TDR and ROA for O&G companies in Nigeria. The TDR coefficient is 14.5857, suggesting that TDR and ROA of O&G enterprises in Nigeria are positively correlated. A 1% rise in TDR would result in a 1488.57% increase in ROA. TDR has no appreciable impact on Nigerian listed O&G firms' ROA. This result is consistent with those of Abubakar (2020), Aziz & Abbas, and Adegboyega, Jayeola, Kajola & Asaolu, (2019), who found no meaningful connection between total debt and firm financial performance. In contrast, Alamgir, Abdullah & Khalid's (2019) findings found a significant correlation between total debt and firm FP.

$H0_3$: There is no meaningful connection between DTER and ROA of O&G firms in Nigeria.

Finally, Table 4.4.1 above's Multiple Regression findings show that the DTER coefficient is 0.2643 with a t-value of 0.1949 and an associated p-value (sig. value) of 0.8451. This shows that DTER has a favourable impact on O&G enterprises' ROA in Nigeria. This suggests that the effect is not meaningful connection because the p-value of 0.8451 is over the threshold of 0.05 (5%) level significance. Determining that there is no meaningful association between DTER and ROA of O&G enterprises in Nigeria leads to rejecting the alternative hypothesis and accepting the null hypothesis. DTER has a positive trend with ROA of O&G enterprises in Nigeria, according to the coefficient of 0.2643, which is calculated. An increase in DTER of one percent (1%) would result in an increase in ROA of 26.43%. DTER doesn't meaningful affect the ROA of Nigerian listed O&G companies. This result is consistent with the findings of Kakanda, Bello, and Abba (2016), who found no meaningful connection between total debt and firm FP. However, Abubakar (2020), in contrast to the findings of Akani & Kenn-Ndubuisi (2017), found a meaningful connection between total debt and firm FP.

From the above, there is conclusive evidence of serial or autocorrelation since the Durbin Watson calculated value of 1.8339 is less than "2". The findings were that TDR and DTER positively and significantly determine firm FP proxy by ROA except LTDR. Also, the F-Statistics with a value of 0.7709 with P-value of 0.5131 showed that all the independent variables [LTDR, TDR and DTER] jointly affected the dependent variable (ROA) of listed O&G firms in Nigeria.

Conclusion and Recommendations

Firms' operations are financed by either internal or external capital. It is imperative on the organization's management to decide which means best suits the firm at a particular point in time. This study looked at how debt had an impact on the FP of listed oil and gas companies in Nigeria from 2011 to 2020. (10years). According to the findings summary, it was found that ROA is not significantly impacted by LTDR, TDR, or DTER. The analysis came to the conclusion that debt had little to no effect on how well listed Nigerian oil and gas companies were doing financially. The study therefore suggests that, in light of the summary of data;

- To optimise their earning potential and produce a fair return on the debt, O&G enterprises in Nigeria should use LTDR to their long-term business plans. Once more, equity financing should be the initial course of action.
- The panel regression outcome of this research demonstrates that the TDR and long-term debt to total asset have no bearing on the success of the firms. The best performance of businesses in the O&G sector can be achieved by carefully balancing debt to total assets and debt to common equity.

Therefore, businesses should always strive to find that perfect combination in order to fulfil their overall mission.

- To boost their FP, non-financial companies listed on the NSG should change the ratio of debt to equity in their financial mix.

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