

THE RELATIONSHIP BETWEEN FINANCIAL RATIO ANALYSIS AND CORPORATE PROFITABILITY: A STUDY OF SELECTED QUOTED OIL AND GAS COMPANIES IN NIGERIA

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ABSTRACT: *The title of this work is the relationship between financial ratio analysis and corporate profitability: a study of selected quoted oil and gas companies in Nigeria. The issue of deciding on an effective financial ratio analysis for corporate profitability has been a major problem of most oil and gas companies in Nigeria. The successful selection and use of appropriate planning tool is one of the key elements of a firm's financial strategy. Therefore, proper care and attention need to be given while such decision is taken. Thus, financial ratio analysis relationship has been discovered as having immense potentials to help organization in improving their revenue generation ability as well as minimization of costs. The purpose of this study is to examine the relationship between financial ratio analysis and corporate profitability of Nigeria oil and gas industry over a period of five (5) years (2008-2012). This work employed five (5) financial ratio analysis such as total assets turnover ratio (TATR), debt equity ratio (DER), debtor's turnover ratio (DTR), interest coverage (IC) and creditors' turnover ratio (CTR) in determining their relationship and effect on corporate profitability (Return on assets) of oil and gas companies in Nigeria. The ex-post facts research design was used in this study. Corporate profitability as a dependent variable is represented by return on assets (ROA) while financial ratio analysis stand as TATR, DTR, DER, IC and CTR for independent variables. The data were obtained from the financial account and annual reports (both statement of comprehensive income and statement of financial position) of the selected quoted oil and gas companies on the Nigeria stock exchange (NSE). Descriptive statistics, Pearson correlation and regressions were employed to find out the relationship between the variables and their effect on corporate profitability. The results of the analysis shows that total assets turnover ratio (TATR), debtor's turnover ratio (DTR) and interest coverage (IC) have positive relationship and statistically significant with corporate profitability while debt equity ratio (DER) and creditor's turnover ratio (CTR) have negative relationship and statistically insignificant with corporate profitability in the Nigeria oil and gas industry. The analysis also revealed that the debtor's turnover ratio (DTR) has positive relationship and statistically significant with total assets turnover ratio (TATR) and IC have effect on corporate profitability while DTR, DER and CTR have no effect on corporate profitability in quoted oil and gas companies in Nigeria. The results further suggested that only 46.9% of the variations on the dependent variable were caused by the independent variables in our model suggesting that 53.1% of the variations in corporate profitability were caused by other factors outside our model. Based on the other findings, the researcher recommends that the management should not make use of debt finance in the performance of their growth. The study also recommend that creditor's and purchases must be equal in order to take the advantage of credit facility and any discount associated with prompt payment for products to increase the corporate profitability. Management should utilize its assets efficiently in order to generate more income for the company.*

KEYWORDS: Debtor's Turnover Ratio, Creditor's Turnover Ratio, Interest Coverage, Return On Assets, Pearson Correlation, Financial Ratio Analysis, Growth And Financial Statement.

INTRODUCTION

Every firm is mostly concerned with its profitability. Investors all over the world put their money into a business so as to get some returns on their investment in any form of business (sole proprietorship, partnership or corporations). In small and medium business, owners have direct or indirect control over the management of their business. In this extent they themselves are responsible for the profits and losses. On the other hand, in the case of large companies such as public limited Liability Company. The management of the affairs of such companies is usually done by the management team on behalf of owners in line with objectives of the shareholders especially as it relates to corporate profitability and payback period. If a small business has outside investors who have invested their resources into the company, the primary concern of ensuring that such investments are protected, becomes the major problem of decision makers. This assurance can be achieved through corporate profitability and efficient performance. Profitability ratios have proved to be some of the most dependable tools to ensure a company's overall efficiency and performance. Many researchers have studied the corporate profitability in many ways but none of them have studied the relationship between financial ratio analysis and corporate profitability. As a result, the researchers chose to examine the relationship between financial ratio analysis and corporate profitability in quoted oil and gas companies in Nigeria. Okwuosa (2005) opines that ratio analysis is one number expressed in terms of another to show the relationship between two variables. He adds that in financial accounting and reporting, it is generally agreed that there are certain relationship between items shown in the profit and loss account and those in balance sheet as well as items in these statements, so ratios are used as means of expressing these relationship. Emekekwe (2008) sees financial ratio analysis as a financial ratio that will aid the investor in coming to a conclusion about the need to invest in a particular firm. These ratios will prima at facie aid the investor to have an insight into the running of the organization. Because of the importance attached to ratios, various ratios have been established as an indicator of corporate performance. Osisoma (2000) defines financial ratio as analysis of the resolutions or separation of data into their elements or component parts, the tracing of facts to their source with a view to discovering the general principles underlying individual phenomena. He contends that the analysis of financial account is therefore the interpretation, amplification and translation of facts and data contained in the financial statements, the purpose being the drawing of relevant conclusions therefore making inferences as to business operations, financial positions and future prospects. Pandey (2010) sees financial ratio analysis as a process of identifying the financial strength and weakness of the firm by properly establishing relationships in the firm through properly establishing relationships between the items of the balance sheet and the profit and loss account. He adds that ratio analysis is a powerful tool of financial analysis. A ratio is used as a bench mark for evaluating the financial position and performance of a firm so the relationship between two accounting figures expressed mathematically is known as financial ratio or (simply as a ratio).

Statement of the Problem

Literatures have shown that most of the studies conducted on financial ratio analysis and corporate profitability dwell largely on financial sectors. However, inadequate financial ratio analysis has remained a problem for firms in Nigeria due to its negative effect on their profitability (oloboyede 2007), Smith (1993) also noticed that a large number of business failures in the past have been blamed on the inability of the financial managers to plan and control the financial ratios of their respective firms. Adegoke (2007) further observes that some

firms in Nigeria with some promising investments with high rate of return have turned out to be failures and frustrated and out of business due to lack of inadequate use of financial ratio. Nigeria as a country is yet to determine a better relating tool for corporate profitability in industries. Because of this, many problems have been found or discovered to be hindrance to the entire business sectors. A look at the annual reports of oil and gas companies in Nigeria shows large fluctuations in the profits. This variation of profit among oil and gas companies suggests that some specific factors play crucial roles in influencing oil and gas companies' profitability. It is therefore essential to identify these factors and how they relate to corporate profitability in Nigeria. It is sad to note that in developing countries such as Nigeria, only few studies have been carried out on the issue of corporate profitability of oil and gas industries, hence there is a need for more studies in the oil and gas sector in developing countries. These problems have necessitated this research work to determine the relationship between financial ratio analysis and corporate profitability in order to assist in identification of the factors of corporate profitability to avoid losses and also to help solve these problems faced by Nigerians and other countries of the world in choosing the best relating tools to use for corporate profitability.

Objectives of the Study

The main objective of this study is to ascertain the relationship between financial ratio analysis and corporate profitability in oil and gas sector in Nigeria. The specific objectives of this study are:

- To examine the relationship between total assets turnover ratio (TATR) and return on assets (ROA) of quoted oil and gas companies in Nigeria.
- To determine whether debtor turnover ratio (DTR) have any significant relationship with return on assets (ROA) of quoted oil and gas companies in Nigeria
- To identify the relationship of debt equity ratio (DER) on return on assets (ROA) of quoted oil and gas companies in Nigeria.
- To know the extent of relationship of the interest coverage (IC) has on return on assets (ROA) of quoted oil and gas companies in Nigeria.
- To establish if there is any significant relationship between creditors' turnover ratio (CTR) and return on assets (ROA) of quoted oil and gas companies in Nigeria.

Statement of Hypotheses

Based on the research questions, the following hypotheses were formulated:

- H₁: Total assets turnover ratio (TATR) has no relationship on Return of assets (ROA) of quoted oil and gas companies in Nigeria
- H₂: There is no significant relationship between debtor's turnover ratio (DTR) and Return on assets (ROA) of quoted oil and gas companies in Nigeria
- H₃: Debt equity ratio (DER) has a relationship on Return on assets (ROA) of quoted oil and gas companies in Nigeria
- H₄: There is no relationship between interest coverage (IC) and Return on assets (ROA) of quoted oil and gas companies in Nigeria.
- H₅: There is no significant relationship between creditor turnover ratio (CTR) and Return on assets (ROA) of quoted oil and gas companies in Nigeria.

Conceptual Framework

Financial ratios are mathematical equations derived from information presenting on a company's financial statement. All financial ratios are used as indicators to reveal the financial health of the company, but some key ratios reveal a company's strength more than others. They are represented in percentage or decimal format, which allows you to compare a company's ratios to its competitors. Organizational leaders, investors and creditors should understand how to calculate key financial ratio and their importance in analyzing the financial pulse of a firm. Novinson (2008) is of the view that financial ratio analysis provide information on a company's profitability, efficiency and ability to pay its bills. He adds that financial ratios are useful because the financial analyst can apply them to any business even if the financial analyst is not an expert in an industry. Nicholson (2006) says that many financial ratios are used to evaluate investments. Generally investors look to ratios to determine the profitability of a company and the value of its shares but financial ratios can also be used to evaluate operations, liquidity and leverage.

Financial ratios are calculated measurements taken to analyze the economic welfare of a business. The ratios often compare financial statement data with stock market trading information for published traded companies. Financial ratios are important tool of economic decision making for all business (Lofi 2009).

Okwuosa (2005) argues that ratios are used as a means of expressing these relationships. He adds that the act of ratio analysis lies first of all with determining the most appropriate ratio to be employed in a given circumstance. Nwoha (2006) sees ratio analysis as a tool for interpreting financial statement. He continues that it is a technique that compares certain related items in the financial statements to each other in a meaningful manner. It also provides insight into two important areas of management such as the return of investment made and the soundness of the company financial condition. According to Murray State University, financial ratios serve two purposes. First, the ratio over time gives you an idea of whether the company is growing or deteriorating financially. Secondly, financial ratio can be compared to standard ratios for that industry to determine how the company is functioning compared with other companies in that industry. Ugwuanyi (2004) opines that ratio analysis techniques investigate the firm performance through financial ratios. He adds that a ratio is used as a benchmark for evaluating the financial position and performance of a firm. Financial ratios are mostly frequently and widely used in practice to assess firms' financial performance and condition. He says that over the past years, financial ratios have been objected to empirical analysis to find their other uses. This focus in empirical studies has been mostly on ascertaining the prediction power of financial ratios which have been investigated in the following areas: Corporate bankruptcy / Sickness, Credit Ratings, Acquisition/Mergers target and relationship of financial ratios to industry targets (Pandey, 2010). Ratio analysis is the most important device for interpreting the performances of companies from their financial statement (ICAN 2006).

Dave (2012) defines profitability as an ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. Profitability is also the ability of a given investment to earn a return from its use. However, the term "profitability" is an index of efficiency and management guide to greater efficiency. Although profitability is an important yard stick for measuring the efficiency and conversely, a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply reveals a satisfactory balance between the values received and the values given. The change in operational efficiency is march one of the factors on which profitable of an enterprise largely depends. Moreover

there are many other factors besides efficiency which affect the profitability. Carole (2012) says profitability means that the revenue exceeds the expenses of the business; this is different from comparing assets and liabilities on a balance sheet to determine financial position. A profitable business may be in a weak financial position and a business with a strong financial position may not be profitable. He adds that it must be evaluated on both a long term and a short term basis because business goals and decision may differ depending on the time frame used. To look at whether an enterprise is generally profitable in typical or average years, the most frequently used tool is the enterprise budget. The enterprise budget compares arrival cost and returns for a business using average values for some period of time. It gives a general idea of profitability over the period of time for a typical set of costs, price, yields and feed conversion ratios. Because it is based on average values for fixed price and yield, it can be used only to analyze the prospects for an enterprise in a general way. It is not a good measure of the short term profitability of a specific business. To analyze the short term profitability of business, the appropriate financial statement is the income statement. Unlike enterprise budget, an income statement typically is prepared for the business for one specific year. It itemizes all revenue and all expenses for that year. For this reason, it is also referred to as a profit and loss statement or P & L. Novinson (2008) states that profitability ratios show how much money the company is earning in comparison to the amount of money shareholders have invested in it and the amount of money the company has borrowed from banks. The price-to-earnings ratio, which is the price of a share of the company's stock divided by the profit the company earns per share shows whether the shares are overpriced or underpriced in comparison with other companies. Emekekwe (2008) argues that profitability of a firm depends on several factors such as government policy, political activities, competitive position of the firm in the industry, union actions with regards to salaries and wages etc. The point here is that as long as management has utilized its resources efficiently, it is of no consequence whether it makes profit or not. A firm has several objectives but "profit maximization" is said to be paramount among these (Damilola 2007). Because "profit maximization" as a concept suffers some inherent limitations, such would rather substitute it with wealth maximization. It is nevertheless true that profit is a tool for efficient resource allocation because it is the most appropriate measure of corporate performance under competitive market conditions. Conceptually, profit can note the excess of revenue generated by a firm over its associated cost for an accounting period. Operationally, the term profit is imprecise, as many variants exist. The term profit could refer to profit tax, profit after tax, gross profit, net profit, profit per share, return on assets, return on equity among other variants (Egbidi 2009). This imprecision has often posed decisional challenges to researchers who must select an appropriate variant to proxy profitability. However, the most commonly used variants as appropriate measure of profitability includes gross operating profit (GOP), net operating profit (NOP), return on assets (ROA) and return on equity (ROE) (Tervel and Solano, 2006, Deloof, 2003 and Raheman and Nasr, 2007). This researcher concludes that profitability ratios are viewed as another variable to identify and measure financial ratio analysis. He contends that profitability is a crucial indicator for determining the financial position of the firm. The firm is considered financially weak when its profitability is sliding or the profitability is weak compared to other firms in the industry. The researcher decides to adopt return on assets (ROA) as a measure of corporate profitability.

DESCRIPTION OF VARIABLES**Debtors Turnover Ratio (DTR)**

Nweze (2011) opines that debtor's ratio consists of debtors' turnover and the collection period. The debtor's turnover gives the number of times debts are collected during the years. The debtors turnover is found by dividing net sales (credit) (if any available, the total sales or total turnover) by the average debtor or total debtors. Average debtors are found by adding the beginning debtors to the ending debtors and dividing by two. The higher the debtor's turnover the better, since it means that the company is collecting quickly from customers. These funds can then be invested for a return. The drop in the debtor's turnover ratio is significant; indicating a serious problem in collecting from customers, therefore, a careful analysis of the company's credit policy is required. The average collection period or the number of days sales remain with debtors is found by dividing the debtor's turnover into 365 days. The higher collection period indicates a danger that customers' balances may become uncollectible. Perhaps, the company selling to highly marginal customers-a customer whose credit worthiness is very much in doubt.

$$\text{Debtor turnover} = \frac{\text{Net Credit Sales}}{\text{Average Debtors}}$$

$$\text{Or} \quad \frac{\text{Sales}}{\text{Debtors}}$$

$$\text{Average collection period} = \frac{365}{\text{Average Turnover}}$$

Adeniyi (2008) states that a relatively high turnover for debtor's account usually means that the accounts have a relatively short average life. The debtor's turnover ratio indicates the rate at which customers are paying up and should approximate to the credit terms allowed by the business. These variants reveal whether or not company sales are being made to credit worthy customers. They may indicate to management the need to review the credit control policies, credit collection method and sales policy of the business.

$$\frac{\text{Net Sales}}{\text{Average balance of debtors} - \text{Provision for bad debts}}$$

Leahy (2012) sees debtor's turnover ratio as accounts receivable variable that measures the impact of a company's credit function in profitability. This impact includes the risk associated with extending credit. He adds that the higher the ratio of accounts receivables to sales, the greater the manufacturer's profitability. Otherwise, there would be no reason for the company to provide this function.

Finally, the researcher concludes that the correct formula to be used in analyzing this debtor's turnover ratio is

$$\frac{\text{Sales}}{\text{Debtors}}$$

Creditor's Turnover Ratio (CTR)

Okwuosa (2005) says that creditor's turnover ratio indicates the average number of times creditor's turnover is paid within a year. High creditor turnover ratio indicates that the company

is not taking advantage of credit facility and this may result in loss of profit as a result of interest on borrowed funds or bank overdraft needed to meet up. On the other hand, low creditor's turnover ratio indicates that the company is not taking advantage of any discount associated with prompt payment and this may lead to increase in their cost of sales and consequently decrease their profit. Therefore, a company should ensure that its creditor's turnover ratio is neither too high nor too low.

$$\text{Creditor's turnover} = \frac{\text{Creditor Purchases}}{\text{Average Creditors}}$$

$$\text{Or} \quad \frac{\text{Purchases}}{\text{Creditors}}$$

Leahy (2012) argues that creditor's turnover ratio is designed to capture the effect of borrowing on the profitability of a company. It also measures the manufacturer's ability to negotiate the terms of purchases. The impact of this variable on profitability depends upon how the business is financed. If the manufacturer has to borrow to make up for accounts payable, then the higher the ratio of accounts payable to cost of goods sold, the lower the expected profitability. If on the other hand, the business is financed through retained earnings, then the higher the expected profitability but if the cost of using retained earnings is less than the cost of borrowing. We cannot tell in advance which of the forces is more important.

Because of the non-availability of purchases in the data collected, the researchers desire to adopt this formula to find creditor's turnover ratio

$$\text{Creditor's turnover ratio} = \frac{\text{Cost of Sales}}{\text{Creditor's}}$$

Debt to Equity Ratio (DER)

Nwude (2003) defines debt to equity ratio as a measure of the proportion of debt to shareholders fund (i.e. Net Worth) in the total financing of a business items such as accumulated losses and deferred expenditures are eliminated from the shareholders' funds before using it as the denominator. The ratio indicates how much naira was raised as debt for N1 of equity. The debt to equity ratio is a financial ratio indicating the relative proportion of equity and debt used to finance a company's assets which is an indicator of the financial leverage. It is equal to total debt divided by shareholders' equity. The two components are often taken from the firm's balance sheet. When used to calculate a company's financial leverage, the debt usually includes only the long-term debt (LTD). This is a useful measure as it helps the investor see the way management has financial operations. A high debt / equity ratio generally means that a company has been aggressive in financing its growth with debt. This can result in volatile earnings as a result of the additional interest expenses as well as volatile cash flow as principal payment on debt come due. If a lot of debt is used to finance increased operations (high debt to equity) the company could potentially generate more earnings per share than it would have without this outside financing. If this were to increase earnings by a greater amount than the interest on debt, then the shareholders benefit as more earnings are being spread among the same amount of stock. However, as stated, increased interest and the need to repay the principal on borrowed fund can far outweigh the benefit, it is used to measure the net worth of the organization.

$$\text{Debt to Equity ratio} = \frac{\text{Total liabilities}}{\text{Shareholders Equity}}$$

This is one of the most important metrics to measure and manage as you create strategic plans.

Total Assets Turnover Ratio (TATR)

Ezeamama (2010) defines total assets turnover as ratio that expresses the number of times the value of asset utilized by the firm has been generated into sales.

$$\text{Total asset turnover ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

Okwuosa (2005) adds that the total asset turnover indicates the efficiency of the enterprise in utilization on total assets to generate income. For all assets turnover, the more the number of times turnover, the more efficient the enterprises will be deemed to be in the utilization of assets to generate income. Osisioma (2000) states that this ratio measures the efficiency of the use of the capital invested in the assets by relating the main naira volume of sales to the total assets employed in the business. The larger the naira value of sales per naira of invested capital, the larger will be the earnings on each naira invested in the assets of the business. The ratio is also a broad measure of the efficiency of the use of capital, since the total assets include plant and other fixed assets as well as current assets. It helps management to determine if the sales volume is sufficient, relative to the capital commitment in the business.

$$\frac{\text{Net Sales}}{\text{Total Assets}}$$

Interest Coverage (IC)

Pandey (2010) says that interest coverage ratio or the times-interest-earned is used to test the firms' debt-servicing capacity. The interest coverage ratio is computed by dividing earnings before interest and taxes (EBIT) by interest charges.

$$\text{Interest Coverage} = \frac{\text{EBIT}}{\text{Interest}}$$

The interest coverage ratio shows the number of times the interest charges are covered by funds that are ordinarily available for their payment. Since taxes are computed after interest, interest coverage is calculated in relation to before tax earnings. Depreciation is a non-cash item. Therefore, funds equals to depreciation are also available to pay interest charges. This ratio indicates the extent to which earnings may fall without causing any embarrassment to the firm regarding the payment of the interest charges. A higher ratio is desirable, but too high a ratio indicates that the firm is very conservative in using debt and that it is not using credit to the best advantage of shareholders. A lower ratio indicates excessive use of debt or inefficient operations. The firm should make efforts to improve the operating efficiency or relieve debt to have a comfortable coverage ratio.

Emekekwe (2008) says that interest coverage ratio measures the number of times that a firm can earn the interest it hopes to pay. To debt holders (Bonds and debenture holders), if the ratio is high, then it is a welcome sign to potential investors. But if the number of times is very little,

then potential creditors will have to watch out, as their future incomes will be very uncertain. This is represented by the formula

$$= \frac{\text{Net income} + \text{Fixed charges}}{\text{Fixed Charges}}$$

Return on Assets (ROA)

Emekewue (2008) states that return on assets is a ratio that seeks to measure the amount of profit generated from the entire assets of the firm. It is expressed as:

$$\frac{\text{Profit Before Interest and Tax (PBIT)}}{\text{Total Assets}}$$

THEORETICAL FRAMEWORK

The corporate profitability has been studied by different authors in many ways, but none of them had studied on the relationship between financial ratios analysis and corporate profitability of oil and gas companies in Nigeria. As a result of this, the researchers chose this research work to show how the financial ratio analysis relates to corporate profitability of quoted oil and gas companies. Dave (2012) studies capital structure and profitability of the firms listed on Nigeria stock exchange. The observed negative association between long-term debt and profitability suggested that top management should take interest in capital structure to improve profitability. He adds that the relationship between working capital management and profitability of 131 companies listed in the Nigeria stock exchange for the period shows that account renewable inventories and account payables had negative relationship with profitability. However, the relationship between account receivables and account payables with profitability was highly significant; while the relationship of inventory with profitability was not statistically significant suggesting that account receivable and account payables are the areas to be focused on to improve the profitability of the firm. Niresh (2012) says that of a non-financial firm, although there are considerable inter industry difference in the capital structure of firms due to the unique of each industry business; the intra-firm variations are attributed to the business and financial risk of individual firms. Most studies found a negative relationship between profitability and leverage. Chary, et al (2011) argues that the relationship between working capital and the profitability has been an interesting debate in financial management. Working capital decision affects both liquidity and profitability excess investment and working capital may result in poor liquidity. He adds that management need to tradeoff between liquidity and profitability to maximizes shareholders wealth. To understand the impact of working capital on profitability, one needs to establish the relationship between these two statistical measures such as correlation and regression models which can be used to understand such relationship. Leahy (2012) examines the determinants of profitability for a segment of the U.S Pharmaceutical Industry. He tested the proposition that profitability is related to functions performed and risks assumed by a company. As in those studies, the result varies according to the measure of profitability employed. He also found that the result did not vary systematically according to estimation method and suggests that results vary with the industry examined.

Because of this literature review above, the researcher concludes that there are significantly effects between all dependents variables and independent variables of this study. The financial ratios will also help the management in planning, acquisition, allocation in order to achieve the

goal (s) of the organization with minimum financial discomfort and maximum benefit which is profit maximization.

Moreover, if the management manages their finance very well, it will increase the profit made by the organization while if it does not, the profit of the organization will be affected or decreased. In other words, inventory turnover ratio and debtor's turnover ratio are to be maintained for better profitability. Creditors may be kept at higher levels for shortening the length of net trade cycle. Furthermore, this inverse relationship between net trade cycle and return on assets was found to be different across industries depending on the type of industry. Finally, the relationship between variables such as those between working capital management and profitability indicates that the efficient working capital management increases profitability, one should expect a negative relationship between the measure of working capital management and profitability variable. There is negative relationship between gross profitability on the one hand and the measure of working capital management on the other hand. This is consistent with the view that the time lag between expenditure for purchases of raw material and the collecting of sales of finished goods can be too long and that decreasing this time lag increases profitability.

METHODOLOGY

In conducting this research work, the available data on the study are secondary source of data. The population of quoted oil and gas companies in Nigeria stock exchange (NSE) at the end of 2013 was fifteen (15)

They are as follows:

1. Afroil Plc
2. Anino International Plc
3. Capital Oil Plc
4. Eterna Plc
5. Forte Oil Plc
6. Japaul Oil and Maritime Services Plc
7. Mobil Oil Nig Plc
8. MRS Oil Plc
9. RAK Unity Ltd Pet. Plc
10. SEPLAT Petroleum Development Company Plc
11. Total Nigeria Ltd
12. Natvitus Energy PLC (formally known as ventures Pet. plc)
13. Oando Plc
14. BECO Petroleum Product Plc
15. Conoil Nigeria Plc

Because of unavailability of data from Nigeria stock exchange (NSE) Onitsha branch and internet, the researcher decides to use six (6) out of the fifteen (15) quoted oil and gas companies in Nigeria and five (5) year's annual reports and financial statement 2008-2012. The data extracted from this publication related to the oil and gas companies of total assets turnover ratio (TATR), debtors turnover ratio (DTR), debt equity ratio, interest coverage (IC), creditor's turnover ratio (CTR) and return on assets (ROA). The researcher employed only

secondary data for this study. The six (6) selected companies are Total Nigeria Plc, Oando Plc; Mobil Nigeria Plc, Conoil Plc, Eterna Plc and MRS Oil Ngeria Plc.

METHOD OF INVESTIGATION

Descriptive Analysis

Descriptive analysis is the first step of this analysis, it will help researcher to describe relevant aspects of financial ratio analysis and provide detailed information about each relevant variables. Researchers have already been conducted in our area of study and a lot of information is already on hand and SPSS software has been used for analysis of the different variables in this study.

Quantitative Analysis

In quantitative analysis, this research applied two methods first, correlation models, specifically Pearson correlation to measure the degree of association between different variables under consideration. Secondly, the researchers used regression analysis to examine the relationship of independent variables with dependent variable. By using this method, the researchers will be able to identify the significance of each explanatory variable to the model. The model used was multiple regressions (more than one independent variable). The researchers also used ordinary least squares (OLS) method for analysis of hypothesis stated in a multiple form. For this purpose of analysis the MS Excel software used to run regression. The researchers equally used the Pearson correlation to test each hypothesis of each selected quoted oil and gas companies in Nigeria. We can see the entire variable chosen and their method used for calculation as given in the following table. So the variables that have been used are:

No.	Variables	Method used for Calculation
1.	Total assets turnover ratio (TATR)	$= \frac{\text{Sales}}{\text{Total Assets}}$
2.	Debtors turnover ratio (DTR)	$= \frac{\text{Sales}}{\text{Trade Debtors}}$
3.	Debt equity ratio (DER)	$= \frac{\text{Total abilities}}{\text{Shareholders' fund or equity}}$
4.	Interest coverage (IC)	$= \frac{\text{Earnings before interest \& tax}}{\text{Interest}}$
5.	Creditor's turnover ratio	$= \frac{\text{Cost of Sales}}{\text{Trade Creditors}}$
6.	Return on assets (ROA)	$= \frac{\text{Profit before tax}}{\text{Total assets}}$

Model Specifications

The choice of ordinary least squares (OLS) for the project work is derived from the fact that its computational procedures is simple and the estimates obtained from this procedure have optional properties which include linearity, Unbiasedness, Mini-variance and mean squared error estimation (Koutsoyians, 2003).

In carrying out this project work on the relationship between financial ratio analysis and corporate profitability, the researcher develops a compact form of our model as follow

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \dots + \varepsilon_i$$

Where

Y = Dependent variable of company

X = Independent variable of company

b_0 = Intercept for X variable of company

b_1 - b_5 = Coefficient for the independent variables x of companies, denoting the nature of relationship with dependent variable Y (or parameters)

ε_i = The error term

n = Coefficient for each of the independent variables.

Specifically, where researchers convert the above general least square model into our specified variables it becomes:

$$(\text{ROA})_{yt} = b_0 + b_1(\text{TATR})_{yt} + b_2(\text{DTR})_{yt} + b_3(\text{DER})_{yt} + b_4(\text{IC})_{yt} + b_5(\text{CTR})_{yt} + \varepsilon_i$$

Where

ROA = Return on Assets

TATR = Total Assets Turnover Ratio

DTR = Debtor's Turnover Ratio

DER = Debt-equity Ratio

IC = Interest Coverage

CTR = Creditors' Turnover Ratio

RESULTS AND DISCUSSIONS OF FINDINGS**Table 1: Descriptive Statistics**

	Mean	Std. Deviation	N
ROA	0.818	0.08977	23
TATR	2.3804	0.82899	23
DTR	8.8816	5.70959	23
DER	3.8565	2.36915	23
IC	9.5806	10.59496	23
CTR	10.6486	13.47070	23

Source: Authors' SPSS Output

The descriptive statistics shows that over the period under study, financial ratio analysis measured by total assets turnover ratio (TATR), debtor's turnover ratio (DTR), debt equity ratio (DER), interest coverage (IC) and creditor's turnover ratio (CTR) have positive mean value which ranges from 2.3804 for total assets turnover ratio (TATR) to 10.6486 in creditor's turnover ratio (CTR). The creditor's turnover ratio (CTR), interest coverage, debtor's turnover ratio (DTR) and debt equity ratio (DER) have the highest standard deviation of 13.47070, 10.59496, 5.70959 and 2.36915 respectively. This indicates that the observations in the data set are widely dispersed from the mean. This table above also shows that total asset turnover ratio (TATR) has the lowest value of mean and standard deviation of 2.3804 and 0.82899 respectively. The relationships among the studied variables were tested using Pearson correlation and the outcomes are presented in the table 2 below.

The model specification involves the parameters of the function Koutsoyians (2003) and Onwumere (2008).

Table 2: Correlations

		ROA	TATR	DTR	DER	IC	CTR
Pearson Correlation	ROA						
	TATR	.626					
	DTR	.414	.505				
	DER	-.066	.198	.261			
	IC	.580	.293	.291	-.074		
	CTR	-.063	-.007	-.193	-.126	-.245	
Sig. (1- tailed)	ROA						
	TATR	.001					
	DTR	.025	.007				
	DER	.382	.182	.115			
	IC	.002	.087	.089	.368		
	CTR	.388	.488	.189	.283	.129	

*Correlation is significant at 0.05 levels (5%)

**Correlation is significant at 0.01 levels (1%)

The correlations table above show that total assets turnover ratio (TATR) and interest coverage (IC) have very strong positive relationship with return on assets (ROA), debtor's turnover ratio (DTR) has weak positive relationship with return on assets (ROA) while debt equity ratio (DER) and creditor's turnover ratio (CTR) have very weak negative relationship with return on assets (ROA). The strength of these relationship is indeed at 62.6%, 41.4%, -6.6%, 58% and -6.3% for total assets turnover ratio (TATR), debtor's turnover ratio (DTR), debt equity ratio (DER), interest coverage (IC) and creditor's turnover ratio (CTR) respectively. This indicates that as total assets turnover ratio (TATR), debtor's turnover ratio (DTR), and interest coverage (IC) increases the return on asset will also increases while when debt equity ratio (DER) and creditor's turnover ratio (CTR) increases, return on assets will decreases. The table also reveals that total assets turnover ratio and interest coverage have positive relationship with return on assets. The tailed significance level of 1% shows that but total assets turnover ratio and interest coverage are statistically significant at 0.001 and 0.002 respectively while debtors turnover ratio (DTR) has positive relationship with return on assets, the one tailed significance level of 58 shows a statistically significance at 0.025. The debt equity ratio (DER) and creditor's turnover ratio (CTR) shows negative relationship and statistically insignificant with return on asset (ROA). The table also reviews that debtor's turnover ratio (DTR), debt equity ratio (DER) and interest coverage have positive relationship with total asset turnover ratio (TATR) at 50.5%, 19.81 and 29.3% respectively while creditor's turnover ratio shows negative relationship with total assets turnover ratio (TATR) at -0.7%. The debt equity ratio, interest coverage and creditor's turnover ratio (CTR) shows statistically insignificantly with total assets turnover (TATR) while debtors' turnover ratio (DTR) shows statistically insignificantly with total assets turnover ratio (TATR) at 0.007 of 1% level of significance. Debt equity ratio (DER) and interest coverage (IC) have weak positive relationship with debtor's turnover ratio (DTR) and creditor's turnover ratio (CTR) has weak negative relationship with debtor's turnover ratio (DTR) at 20.1%, 21.1% and -19.3 respectively. The table indicates that debt equity ratio (DER), interest coverage and creditor's turnover ratio (CTR) are statistically insignificantly with debtor's turnover ratio (DTR), interest coverage (IC) and creditor's turnover ratio (CTR) have weak negative relationship at -7.4% and -12.6% respectively insignificant with debt equity ratio (DER), creditor's turnover ratio (CTR) has a weak negative relationship with interest coverage (IC) at 24.5% and statistically insignificant with interest coverage (IC) at 0.129.

Table 3: Model Summary

Model	R	R ²	Adj R ²	Std. Error of the Estimate	Change Statistics					Durbin- Watson
					R ² change	F. change	df1	df2	Sig Change	
1	.768 ^a	.589	.469	.06545	.589	4.879	5	17	.006	2.128

a. Predictors: (constant) CTR, TATR, DER, IC, DTR

b. Dependent Variable: ROA

The above table shows that coefficient of multiple determination R-square which explains the extent to which the independent variables affect the dependent variable in this case, 0.589 or 58.9% of the variations in the independent variable where explained by the independent variable while the independent variables. The adjusted R-square, a more conservative way of looking at the Coefficient of determination is less than 50%. In this case 0.469 or 46.9% of the

variations in the dependent variable is not explained by the independent variables. So this indicates that creditors turnover ratio (CTR), total asset turnover ratio (TATR), debt equity ratio (DER), interest coverage (IC) and debtor's turnover ratio (DTR) are not the major determine factor of return on asset (ROA) of the quoted oil and gas companies in Nigeria, Only 0.531 or 53.1% of the variation and determinate by other factors outside the selected independent variables for this study. Moreover, this table also shows the results of $f=4.879$ at significance level of 0.006 with $df(5.7)$ and Durbin-Watson is 2.128.

Table 4: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 (Constant)	-.071	.047		-1.500	.152
TATR	-.053	.020	.489	2.620	.018
DTR	.002	.003	.096	.505	.620
DER	-.006	.006	-.153	-.923	.369
IC	.003	.001	.407	2.349	.031
CTR	.000	.001	.039	.238	.814

a. Dependent variable: ROA

The total assets turnover ratio (TATR) has strong positive relationship with return on assets (ROA) and statistically significant at 0.018 of 5% level of significance. This result is strengthened by the fact that t-calculated of TATR is higher than the critical value of $t=2$, thus, the weight of the evidence suggests that we accept the alternative hypothesis that total assets turnover ratio (TATR) has a relationship on return on asset (ROA) of quoted oil and gas companies in Nigeria. This table also indicates that total assets turnover ratio has an effect on return on assets of quoted oil and gas companies in Nigeria. This means that a change in total assets practically has no effect on Nigeria oil and gas industry profitability. This is in consonance with the findings of Enekwe (2012) and Okwo, et al (2012) found significant and positive relationship while Enekwe, et al (2013) shows insignificant and negative relationship.

Also the table on debtors' turnover ratio (DTR) stands at $0.505 < t*2$ confirming that it is statistically insignificant to quoted oil and gas companies profitability. This indicator shows that debtor's turnover ratio (DTR) has positive relationship and does not statistically affect the profitability of the Nigeria oil and gas industry insignificantly. However, its significance level at 0.620 renders the t-calculated of DTR statistically insignificant. Therefore, it suggests that null hypothesis (H_0) be accepted and alternative hypothesis (H_i) be rejected. This means that debt equity ratio (DER) has no relationship on return on assets (ROA) of quoted oil and gas companies in Nigeria. A decrease on debt equity ratio will bring an increase in the profitability by number of times the value of that calculated of DER. So DER appears not be an important determinant of profitability, this result is consistent with the study of Okwo, et al (2012), Enekwe (2012), Akinmolegun (2012) while Eunju and Soacheong (2005) found insignificant and positive relationship between debt equity ratio and performance. Rashimi and Sinha (2004), ukachi (2011), Alcock et.al (2013) and Napompech (2012) found insignificant and negative relationship between debt ratio and performance.

Furthermore, the t-calculated of interest coverage (IC) shows 2.349 which indicate that interest coverage (IC) has very strong and positive relationship with return on assets (ROA). The

corresponding significance level of 0.031 at 5% level of significance shows that it is statistically significant. It means that interest coverage (IC) statistically affects return on assets (ROA) significantly in the quoted oil and gas companies in Nigeria. In this case, we concluded that alternative hypothesis (H₁) will be accepted which states that there is a relationship between interest coverage (IC) and return on assets (ROA) of quoted oil and gas companies. So, any increase in interest of the companies will also increase the return on asset (ROA). It also shows that the companies make use of interest (debt financing) on the financing of their organizational growth.

Finally, the coefficient presented above reveals that creditor's turnover ratio (CTR) has positive relationship and does not statistically affect the profitability of Nigeria oil and gas industries. Given that, to calculate of $0.238 < t^*2$, we confirm this confirmation is strengthened with the p-value of $0.814 > 0.05$ level of significance value. In this case, we rejected alternative hypothesis (H₁) and accept null hypothesis (H₀) which implies that there is no significant relationship between creditor's turnover ratio (CTR) and return on asset (ROA) of quoted oil and gas companies in Nigeria. Enekwe (2012), Okwo, et al (2013) found insignificant and negative relationship between creditors' velocity and profitability. The result on creditor's turnover ratio (CTR) indicates that it is not a determinant of profitability in quoted oil and gas companies in Nigeria. Also, the test output described below provide considerable reliability to the results and the emerging multiple regression equation is as

$$ROA=0.071+0.053(TATR) +0.002(DTR)-0.006(DER) +0.003(IC) +0.000(CTR) + \epsilon_i$$

RECOMMENDATIONS

Based on the findings of this study, the researcher recommended among other as follows:

- That management of oil and gas companies in Nigeria should make use of debt finance in the performance of their companies' growth.
- That management should maintain their creditor's turnover ratio at a zero point because neither too high nor too low is good for the company, so a creditor's turnover ratio should be at a point where the creditors and purchases (cost of sales) are equal. In this point, the company will make the advantage of credit facility and any discount associated with prompt payment of goods to increase their profitability index.
- That the management of the oil and gas companies should maintain a high debtor's turnover ratio because it will help in increasing their investment by reinvesting the funds collected from their customers.
- That the management should utilize its cost efficiently in generating more income for the company. The oil and gas companies should expand its business in order to make more sales and more profits.
- That the management should utilize its assets efficiently in generating more income for the company. The oil and gas companies should expand its business in order to make more sales and more profits.

- That the management should also control and monitor the interest coverage used in the companies in order to avoid liquidation.
- That the management should observe their credit facilities management in order not to affect the total assets of the company.

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